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Adjective and attribution

Category and operation

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Abstract

Modification is subservient to either reference or predication. Modification at the service of reference is attribution. These operations appear in language at two levels. At the level of discourse, they manifest themselves in complex constructions establishing referential, predicative and modifying relations among units. At the level of the language system, they take the form of syntactic operations whose products crystallize in the form of categories like noun, verb and adjective. This alternative is the basis for different ways of fulfilling the function of modification in a language.

At the uppermost functional level, the hierarchical inequality of the three linguistic operations allows for modification to be treated as a subtype of predication. From this derive differences in the extent to which the syntactic operation of modification is formalized in a language. The ancillary function of a modifier may be left to discourse prosody. Contrariwise, if modification is formalized, it may take the form of a syntactic operation at higher levels starting from the sentence level downwards. Within the linguistic system, the function may be fulfilled at the interface between grammar and lexicon, by the primary categorization of a set of concepts as modifiers, i.e. as adjectives and adverbs.

The levels of discourse and of the system are interdependent in such a way that what is fixed in the system does not need to be brought about in discourse. If a language possesses the category of the adjective, its lexemes enter discourse with a predisposition ('primary function') of serving as modifiers. Whenever such a lexeme actually has a modifying function, no operation of (re-)categorization is necessary. Whenever it has a different function, it is recategorized. The task in developing a language system which supports economy in discourse is therefore to confer a primary categorization to a class of concepts such as to minimize the need for recategorization in discourse. One property of precategorial concepts able to serve as a criterion in a regular way is their semantic class. In this respect, the question is: is there a semantic class of concepts whose primary function is modification?

However, since word classes are semiotic entities, they have both a semantic and a formal side without a perfect mapping between the two. Consequently, there are also asemantic categorizations of lexical concepts, in other words, subdivisions of word classes and assignment of items to word classes by asemantic criteria. Given this, the semantic basis of a word class like the adjective can only be a cross-linguistic tendency rather than a universal law.

Keywords: adjective, attribute, reference, predication, modification, apposition, word class, primary function, property, state, linguistic category, linguistic operation, time-stability

1 Propositional and syntactic operations

1.1 Reference, predication and modification

Linguistic operations which create a proposition are called propositional acts in Searle 1969 and may here be called propositional operations on the understanding that an act may be composed of operations, while an operation is by definition elementary. Moreover, in speech act theory, propositional acts are bound up with a speech act, whereas propositional operations, as we shall see shortly, may grammaticalize at lower levels of linguistic structuring, where conscious control is not necessarily involved.

Two propositional operations are firmly established in semantic theory: **Reference** is "an act of identifying some entity that the speaker intends to talk about" (Searle 1969: 85). **Predication** (o.c. 102) ascribes a property to a referent. While the idea behind the latter definition is hardly improvable, the choice of the term 'property' is unfortunate in two respects: First, in the underlying logical theory, a property is by definition a monovalent predicate. This definition, thus, presupposes a binary division of a proposition into subject and predicate. Such a division is indeed often reflected in linguistic structure, but not always. Predications that predicate a relation between arguments should not be excluded by definition (cf. Lyons 1977: 434f). Second, in the conception used in what follows, a property is a predicate of a special semantic kind, contrasting, among other things, with the concepts of state and of event. It therefore seems preferable to say that a predication ascribes some semantic content to referents. Both of the operations of reference and predication are necessary for a proposition.¹

In E1a, *the chalk* is used as a referring expression. In #b, *an argument* is used as a predicate, and so is *argued* in #c.

- E1 a. Would you pass me the chalk?
 b. That is an argument.
 c. Peter argued.

For a long time, linguistics has deviated from logic in counting with a third operation of a similar kind, viz. **modification**.² Modification enriches a concept. It is neutral to the alternative of whether the modified is a referential or a predicable concept.³ With or without the modification, the former may then function as an anchor in reference, i.e. as the notional core of a referential expression, as in E2a, or be converted into a predicable, as in #b, while the latter may directly function as a predicate, as in #c.

- E2 a. Would you pass me the red chalk?
 b. That is an invalid argument.
 c. Peter argued erroneously.

¹ With some simplification and with Chafe 1970, we may assume that an aivalent predication like *it's cold*, where *it* is neither deictic nor anaphoric, ascribes the predicate *cold* to a referent to be construed.

² vindicated explicitly in the present theoretical context in Croft 1991, ch. 2f

³ The term 'referential concept' is slightly oxymoric, as concepts by definition do not refer. What is meant is a kind of concept which (without adaptation) forms the semantic core of an expression **referring** to the entity occupying its logical argument position, as opposed to a predicable concept, which **predicates** on these entities. And again, it is a logical, rather than grammatical, argument position, since only in predicate calculus do all concepts, including those corresponding to nouns, have an argument position, while in terms of grammatical valency, only relational nouns like 'mother' have a valency slot, and this is not occupied by the referent of such a noun and therefore remains out of consideration here.

As revealed by a comparison of E1 and E2, the referential and predicative operations are constitutive for the propositions in question, while the modifications are optional. They are optional not only in syntactic terms; from a semantic point of view, too, the sentences of E1 are complete and meaningful and may succeed if used in utterances. By contrast, the heads of the referential and predicative expressions of E2 fail on the syntactic condition: If the modified heads are dropped, as in E3, the sentences become ungrammatical.

- E3 a. *Would you pass me the red?
 b. *That is an invalid.
 c. *Peter erroneously.

Given this, it is hard to judge about semantic acceptability or completeness. Certainly there are languages in which the counterparts to E3 would be grammatical – even if elliptic – and meaningful, e.g. in Latin and Russian. This, however, presupposes one of two things: Either further operations are involved which provide empty heads to the modifiers, as would be the case in the two languages mentioned. Or else the translation equivalents of the modifiers of E2 are not born modifiers, but instead of a nominal or verbal category.

The members of some word classes are “born modifiers”; members of other word classes must be converted before they can serve as modifiers. The modifiers in E2a and #b are simply proposed to their heads, without any further structural apparatus being required. By contrast, the modifier in E4 is not identical with the referential expression it is based on.

- E4 This is Sheila’s handkerchief.

Sheila is a pure noun phrase and semantically a referential expression. *Sheila’s* is a cased noun phrase which does not refer to Sheila but to the set of things which are hers. This gets clearer in constructions like E5.

- E5 This handkerchief is Sheila’s.

E5 obviously does not say that the handkerchief is Sheila but that it is in the set of things that are related to Sheila as a possessor. Applying the genitive to a nominal expression like *Sheila* thus downgrades it to the syntactic function of a modifier and semantically converts the referring expression into a function. Such a function is, semantically, a subordinate predicate in the same sense as the modifiers in E2.⁴ The crucial difference is that the function in E4 has been created by an operation, while the modifier in E2a and b is the product of no visible operation.

All modifiers share their combinatory potential, which is some kind of self-subordination to a syntagma of a certain category so that the syntagma resulting from the combination again belongs to the same category. In other words, modification forms **endocentric constructions**. This combinatory potential may be modeled, or hypostatized, in the theory as an argument position born by the modifier and occupied by the modified.

Within the general category of modifiers, there are two subcategories with respect to operational complexity: A “born” modifier is a stem whose grammatical categorization at the lexical level embodies a modifying argument position, which enables it to combine as a modifier with a head without the intervention of any further grammatical operation. Consequently, modification is its **primary function**. (§2 will be devoted to the concept of the primary function and the methodological problem of determining it for some word class.) The other modifiers are created by the application of a modifying operation to bases of different categories whose primary function is not modification. Such an operation is modeled in the theory

⁴ Cf. Kaznelson 1974: 189-200 on mutual derivational relations between predicative and attributive categories.

as the equipment of the base with a modifying argument position. For instance, the adjective *red* has a modifying argument position as part of its lexical-grammatical equipment, while the cased NP *Sheila's* in E4 and E5 is the result of an operation which equips the referring expression *Sheila* with a modifying argument position.

Not all kinds of concepts are used as modifiers with equal naturalness. We will return in §3 to the question of whether there is a conceptual category particularly suitable to serve as modifiers. The literature mostly uses the term ‘property concept’ for such a category. However, since we need this term for something else (s. §3.2), we will speak of **quality concepts** instead, emptying thus the notion of quality of most of the features it may be associated with. A quality concept here is a qualifying concept, a quality being any concept which is not taken as a self-standing entity (like a referential concept) but rather as a feature appearing on an entity – thus, a concept used as a modifier. Likewise, a word designating a quality concept will be called a **quality word** (rather than a “property word”, “adjectival” or “word with adjectival meaning”, as in other sources).

Modification of a referential concept produces an endocentric nominal expression. This kind of modification is **attribution**. At this point, we can propose a provisional definition of the adjective: An **adjective** is a member of a word class whose primary function is attribution. This definition of the adjective thus takes recourse not to the semantic category of modifier concepts, but instead to its role in the operation of modification. It presupposes the definition of the noun s.s. within the theory of parts of speech. Such a definition will, in turn, appeal to the operation of reference introduced above. At any rate, the definition of the adjective cannot directly mention referring expressions as the semantic category of the modified, since the set of referring expressions includes expressions of other syntactic categories, importantly pronouns and sentences, which cannot be modified.⁵

This definition of the adjective leaves open at least two further possibilities that must be briefly mentioned. First, there can be adjectives which, although being (by definition) primary modifiers, do not modify a concept by characterizing it by another concept and instead serve element selection (s. §3.1.3). This may be the case for certain semantic classes of adjectives, e.g. provenience adjectives like *French* and *German*. We will come back to these in §3.2.3. Second, there can be, in a language, word classes whose primary function is modification, but which modify expressions of other syntactic categories, for instance verbs and adjectives. These modifiers are commonly subsumed under the general category of **adverb**. Just like adjectives, adverbs may be subdivided into primary adverbs like *fast* and derived adverbs like *quickly* and *erroneously* (E2c). Moreover, this heterogeneous class may also be subdivided according to the category of the modified head; s. §2.2. Adverbs are, thus, members of a word class whose primary function is the modification of non-nominal expressions. Adverbial modification is also called **adjunction**. We will come back to it in §4.3.2.

As gets clear from the respective definitions, reference and predication are propositional operations, while modification is not. Its *definiens* involves the demoted rank of the modifier, where the demotion in question may be signaled by any linguistic means. Modification is consequently a linguistic operation which may take the form of a grammatical operation whose prototype is realized at the level of syntax (s. Lehmann 2013, §4.4.3.1). It is therefore no wonder that it does not figure in a theory of speech acts. We shall see in §3 whether anything general can be said about the semantic correlate of the subordinate nature of modification and

⁵ What can refer is a sentence as provided by sentence modality, not just the propositional core of a sentence. The latter, however, is what is modified by a sentence adverbial; cf. §4.3.2 below and Hengeveld 1989.

the propositional or discourse functions of modifiers which would be valid at the same level as the semantic, propositional or discourse properties of referential expressions and predicates.

1.2 Modification, government and apposition

Modification – and, more in particular, attribution – has been established as a certain linguistic operation. Its reflex in grammatical structure is a **relation** of the same name. Now modification must be delimited against two concepts of the same theoretical level, viz. government and apposition. Nominal **government** (called complementation in Matthews 1981, ch. 7) is illustrated by E6.

- E6 a. I met Peter's daughter.
 b. She is an ambassador of the Argentinian Republic.

E6a and #b are analogous to E2a and #b in featuring a nominal expression expanded by a dependent, in referential and predicative function, resp. However, paraphrases of these constructions involving predications, as in E7, are much worse than E5 (or E16 below).

- E7 a. *I met a daughter who is Peter's.
 b. *She is an ambassador who is of the Argentinian Republic.

Like the modifiers of E2, the referential expressions constituting the modifier in E6 pin down the reference to a subset of the set designated by their head and possibly even to one individual, as in E6a. In addition, however, they occupy a semantic argument position of their head. In semantic terms, they are therefore not modifiers, but arguments of a relational concept. This is the semantic feature that distinguishes government from modification. However, in quite a few languages including English, the same syntactic construction is used for nominal modification (E2a and b) and nominal government (E6), so that semantic tests must be appealed to in order to distinguish the two. A similar situation obtains for verbal dependents.

- E8 a. Sheila opened the door with force.
 b. Sheila quarreled with Peter.

The prepositional phrase *with force* in E8a is a modifier – more specifically, an adjunct – just as the synonymous adverb *forcefully* would be (cf. E2c), while the phrase *with Peter* in #b, apparently of the same structure, is an argument of the verbal predicate. As is the case with nominal dependents, not structural, but behavioral properties of the dependents in question allow us to distinguish an adjunct from an actant of a verb.

Although constructions of the type of E6 are thereby excluded from modification, the borderline between government and modification is clear-cut only in theory. In operationalizing the concepts, the main problem is to ascertain whether the head – the nominal head in E6 or the verbal head in E8 – does or does not possess the argument position in question. In the absence of structural correlates, operationalization of the concept of argument position involves the criterion of **latency** (advocated in Matthews 1981: 125f, 153). A syntactic component is latent in a construction if it is missing from it but is understood to fill an argument position of it; that is, the meaning of the construction is construed by inserting the latent component in it. In this sense, the prepositional dependent of E8b is latent in E9.

E9 Sheila quarreled.

E10 She is an ambassador (of the Argentinian Republic).

Likewise in E10, we may assume that an ambassador is necessarily the ambassador of some state, which would be latent if the attribute were omitted. However, certainly a sentence such as E10 can be used successfully in a discourse where that state remains unidentified. Consequently, is *the Argentinian Republic* in E10 a governed or a modifying dependent? Such cases occupy the fuzzy area between government and modification. There is no need here to try and convert a polar opposition into a categorical opposition.

Apposition is illustrated by E11.

E11 Would you pass me the chalk, the red one?

Comparing E11 with E2a, we observe that they are synonymous at discourse level, while they are not synonymous with regard to the particular grammatical operations that achieve reference. The semantic difference resides in the fact that the intended referent is identified in a two-step procedure in E11, but in one step in E2a. Of course, in both sentences the referent is identified in the intersection of the set of pieces of chalk with the set of red things. Structurally, however, this is achieved in E2a by just one referential expression identifying the same referent which is identified by the combination of two referential expressions in E11. As may be seen, the difference between attribution and apposition has a structural and a semantic side. Structurally, apposition is the combination of two syntagmas of the same category into a construction which is again of the same category. Foregoing the possibility of apposition in other spheres of syntax, we restrict our attention here to the category of nominal expressions. Also foregoing the construction of close apposition (of the type *Queen Elizabeth*), the nominal expressions in question are noun phrases, thus referential expressions. The semantic correlate of this construction is then the use of two (or more) referential expressions which may or may not be coreferential but which jointly apply to only one referent.⁶

Again, the borderline between attribution and apposition is sharp in theory: Both create binary syntactic constructions; but the construction resulting from attribution, being endocentric, is asymmetric,⁷ while the loose appositive construction is symmetric in terms of component categories. More specifically, the attribute (being a modifier) contains an argument position for the other member of the construction, while in apposition, no member is relational in this sense. As a matter of fact, however, linguistic variation – typological and diachronic variation – creates a transition zone between these two opposites.

- E12 a. raudon-ą skarel-ę
LITHUANIAN red-ACC.SG scarf-ACC.SG
'red scarf [acc.]'
- b. raudon-ą-ją skarel-ę
red-ACC.SG-DEF scarf-ACC.SG
'(the) red scarf [acc.]'

⁶ For instance in E11, the two referential expressions *the chalk* and *the red one* are meant to apply to the same referent. They would therefore be considered as coreferential by definition. However, a normal use of E11 in a discourse would imply that the speaker does not consider the expression *the chalk* to be sufficient to identify the referent in question.

⁷ In the conception of endocentricity presupposed here, apposition is not endocentric (cf. Matthews 1981: 147-151).

Thus, the Lithuanian adjective attribute of E12a (Holvoet & Spraunienė 2012:66) is clearly a modifier, agreeing with its head in gender, number and case. The corresponding component of #b bears what is diachronically the mark of definiteness; it literally means ‘the white one’.⁸ The construction is thus similar to the one in E11, which is clearly appositive. As we shall see in §4.5.2, appositive constructions of the kind of E11 are a frequent diachronic source of attributive constructions.

2 Distribution and primary function

2.1 The concept of word class

We now have to ask how a word class is defined. In linguistic methodology, the identification of the word class ‘adjective’ in a language works like the identification of any other word class:

- (1) One posits, on the basis of some linguistic theory, those properties which characterize the prototypical member of the word class in question independently of a specific language.⁹
- (2) One identifies, in language L, those words – if any – which correspond to the prototypical characterization.
- (3) One analyzes the distribution of these words and thus formulates those structural properties which distinguish them from words of other classes of L.
- (4) One defines, for L, the word class in question on the basis of these structural properties and subsumes under it all the words of L which share these properties.

The crucial question is, of course: Which are those properties that the entire definitional procedure is based on? Since they are independent of a particular language, they cannot be structural, but can only be functional properties. Given cognition and communication as the two basic functions of language, such functional properties are essentially of two kinds, viz. cognitive and communicative properties of linguistic signs. The entire business of word classes is to make sets of concepts available in different communicative functions (cf. Dabóczy in this volume). What these communicative functions are differs for major and minor word classes (Lehmann 2010, §7). For the major ones, they are such high-level functions as reference, predication and modification. For a sign to be available in some such function means that its combinatory potential comprises the corresponding syntactic function, and this ultimately means that its distribution covers this function. The starting point, however, for setting up a word class is a propositional or syntactic function. In the definition of the adjective, it is the modificative function that plays this basic role.

This approach contrasts with so-called ‘notional theories of parts of speech’ which base a word class on categories of concepts designated by its members, and where the adjective is a property word because it is the essence of the adjective to designate a property. Such definitions of the adjective are as old as modern linguistics. We shall see in §5 that while it is true that the prototypical adjective designates a property, this fact is not a constitutive component of the concept of the adjective.

Once one has established the word class ‘adjective’ for language L, one can then proceed to a semasiological analysis with the goal of identifying the kinds of concepts coded in this word class. This procedure allows the analyst to say such things as that adjectives of L1

⁸ The historically definite form of the adjective also occurs in indefinite contexts in Modern Lithuanian; s. Holvoet & Spraunienė 2012.

⁹ Cf. Lyons 1977: 440 on the prototypical nature of ontological concepts of parts of speech.

include concepts of state, while adjectives of L2 exclude them (states being coded as verbs in L2, for instance).¹⁰

2.2 Distribution of modifiers

A modifier is a grammatical component which depends on some head in an endocentric construction. Categories which are common for heads in endocentric constructions include the ones shown in Table 1.¹¹

Table 1 *Endocentric constructions*

endocentric construction	head	modifier	example
nominal group	noun s.s.	attribute	exact measure
verbal group	verb	adverbial (adjunct)	hit exactly
adjectival group	adjective	adverbial	exactly rectangular
adverbial group	adverb	adverbial	exactly tomorrow

Table 1 shows several things. First, a modifier may modify a primary clause component, viz. a noun (including in subject function) and a verb (including the main predicate); but it may also modify a dependent and in particular a modifier, viz. an adjective or an adverb. Second, established linguistic terminology provides a special term only for the adnominal and the adverbial modifier, viz. the attribute and the adjunct. All the non-adnominal modifiers are adverbials. Likewise, for the word classes dedicated to these modifier functions there is a separate term only for the adnominal function, viz. the adjective. All the others are commonly called adverb. Third, a given lexeme may be used in several of these functions. English has lexemes distributed over all of the functions of Table 1. Finally, use of a lexeme in any of these modificative functions may or may not require an operation of categorization. In English, all of those functions which traditional terminology dubs ‘adverbial’ may involve overt adverbialization for those lexemes for which the process is regular and productive, as in E2c.

Just as English does not distinguish formally between adverbial, adjectival and adverbial adverbs, so a language may fail to distinguish formally between all of these adverbials and adjectivals. This is the case for the modifiers of Hixkaryana (s. §4.4.2).¹²

Just like several other kinds of construction may be used in predicative function, the same goes for modifiers. In English, the adverbial functioning as predicate in E13b requires a copula just like the adjectival in #a.

- E13 a. It is hot.
b. It is here / tomorrow.

This set of examples is evidence that adjective and adverb even in a language like English, where they are clearly separate word classes, share several traits in their distribution which allow them to be classed together in a superclass ‘modifier’.

¹⁰ Cf. Knobloch (“Kriterien für ‘Adjektive’ im Sprachvergleich”) in this volume.

¹¹ Table 1 simplifies the situation in various respects. For instance, it leaves out sentence adverbials; cf. fn. 5.

¹² In German, most members of the adjective class are used in attribute and in adjunct function without any derivation. Thus, the same lexemes serve in both functions, the formal difference residing only in the declension in the former function.

2.3 The concept of primary function

While the notional approach to parts of speech is notoriously laden with methodological problems of operationalization, the approach based on propositional and syntactic functions is not without such problems, either. The function in which speakers want to have a certain concept available depends on the moment of the discourse they are engaged in.¹³ The distribution of a linguistic sign is therefore rarely limited to just one syntactic function; it will typically be available in more than one. Then if there is a class of words which are used in modification, but also in some other function, one needs some such methodological concept as ‘primary function’ in order to be able to identify adjectives on the basis of the modifying function.

Consequently, some considerations must be devoted to the methodological problem of determining the **primary function** of some word class. The idea behind this concept is that a word class is a distribution class and that the whole business of word classes is to have concepts available with a certain combinatory potential, i.e. with a certain distribution. Now if members of some word class have a distribution such that they appear in more than one syntactic function, then it may be of methodological relevance for their linguistic categorization to determine their primary function. This may be defined as that syntactic function which requires no grammatical operation to use a member of that word class in it.¹⁴

The problem in operationalizing this definition is, of course, to ascertain whether, in a given context, a grammatical operation has been applied. In Kuryłowicz’s original conception, a “formal change” from a “base form” to a “derived form” is assumed. This seems to presuppose some kind of markedness relation such that the derived form bears some additional grammatical formative lacking from the base form. There are many cases where application of such a criterion is straightforward. For instance in English, the bare adjective combines as a prenominal attribute with a head noun, while its use as a predicate requires a copula. A similar situation obtains in Romance and many other languages. Here attribution is clearly the primary function of this distribution class, and therefore the category that its members are in is called ‘adjective’.

In other languages, the situation is more complicated. Often, members of a certain word class are marked by a certain grammatical formative in attributive use and by another formative in predicative use. One such language is German, where adjectives show agreement and, consequently, desinences in attributive position, but show nothing of the sort, and instead require a copula, in predicative position. As long as there is no theory according to which the agreement morphemes would not count as formatives marking attributive use, structural complexity in attributive and predicative use is almost equal. Then we either have to conclude that German and many other languages lack the category of adjective, or we need a different criterion to determine the primary function.

¹³ Coseriu 1972 insists that this is exactly why parts of speech are called this (instead of ‘parts of the language system’). Cf. also Lehmann 2008, §2.

¹⁴ This approach to the formation of word-class concepts is due to Kuryłowicz 1936: 43: “Si le changement de la fonction syntaxique d’une forme A entraîne le changement formel de A en B (la fonction lexicale reste la même), est fonction syntaxique primaire celle qui correspond à la forme-base, et fonction syntaxique secondaire celle qui correspond à la forme dérivée.” On this criterion, Kuryłowicz bases the thesis (p. 44) “qu’il existe une *hiérarchie* entre les différentes fonctions syntaxiques d’une partie du discours donnée, et que pour chaque partie du discours il existe une fonction-base ou fonction primaire.” This is taken up, among others, in Croft 1991 and Bhat & Pustet 2000: 757.

There are, in fact, alternative ways of determining the primary function of a word class. Often, a subset of the members of a word class has a reduced distribution. Assume a situation where the adjective, by default, occurs as an attribute, as a nominal predicate and as an adverbial. Then if there are adjectives with a reduced distribution, they should be limited to the primary function. In other words, the primary function of a word class is that function which may be the only one in a language, or the only one for a subset of the class in a language.

This criterion seems theoretically well-founded and does work for several languages. Languages with a word class whose members can exclusively function as attributes include Japanese (s. below), Takelma, Supyire and Tinrin (Bhat & Pustet 2000: 764). Furthermore, a small subset of the adjectives of Kassena (Gur) and of Babungo (Bantu) are only used in attribution (Wetzer 1996: 72f). It is methodologically straightforward to consider these classes as adjectives.

However, this operationalization of the criterion of primary function again meets with problems in a language like German. While the default adjective is used in attributive, predicative and adverbial function, there are (sub-)classes of words whose distribution is limited to one or two of these. Table 2 shows words which occur in any or more of these three contexts. The set of contexts in which a word occurs defines its distribution. Since all of the logical combinations of these three contexts occur, this yields the seven distribution classes constituting the rows of Table 2.

Table 2 *Some German distribution classes*

distribution class	example	meaning	context		
			attributive	predicative	adverbial
standard adjective	fleißig	industrious	+	+	+
purely nominal adjective	gewillt	willing	+	+	-
non-predicative adjective	ständig	constant	+	-	+
purely attributive adjective: adnoun	dortig	there	+	-	-
non-attributive adjective	getrost	confident	-	+	+
purely predicative adjective: adcopula	quitt	quits	-	+	-
adverb	gern	with pleasure	-	-	+

The question is which of these classes are adjectives. Assume that a word is limited to attributive function. Then the primary criterion by which we recognize it as an adjective is its agreement with the head noun.¹⁵ A word that is limited to adverbial function does not inflect. A word that is limited to predicative function would be a verb if it conjugated. The question of whether it might be an adjective arises only if it does not conjugate and instead combines with a copula in predicative function. If it declined, this would entail – for German – that it is not limited to predicative function, which however is the distribution presupposed here. Consequently, the words which are limited to adverbial or predicative function may, in principle, belong to any of the word classes which do not inflect (cf. Dabóczy in this volume).

¹⁵ Some words which occupy the same syntactic slot but do not inflect in the standard language (like *lila* ‘lilac’) are (explicable) exceptions.

A word that is limited to adverbial function is an adverb. There seems to be no way to diagnose an adjective which is limited to adverbial function. The problem of adjectives which are not used as attributes therefore concerns words which occur in predicative function. E14 provides a select list of German items which are listed¹⁶ as adjectives which are limited to predicative position. The adcopulas under #a are non-relational, those under #b take a complement.

- E14 a. entzwei ‘broken’, futsch ‘gone, blown’, pleite ‘bankrupt’
 b. schuld ‘guilty’, eingedenk ‘remembering, mindful’

A special class of words that are limited to predicative function but do not conjugate is not provided for by current word-class theories. One solution is to subsume such words under the class of adverbs if they are non-relational, and under the class of adpositions if they are relational. In German grammar, *eingedenk* is categorized as an adjective and as a homonymous preposition in *Duden online*.¹⁷ The categorization of such words as adverbs and adpositions does not, however, actually solve the problem of their peculiar distribution, since adverbs and adpositions are not generally limited to use in the predicate after a copula, either. The categorization of such words as adjectives seems plausible on a semantic basis, since at least some of them like *entzwei* and *schuld* characterize the subject as being in a specific state, something not generally afforded by adverbs and adpositions. Moreover, the categorization of *eingedenk* as an adjective may be supported by the existence of its negative counterpart *uneingedenk* ‘forgetful’, as this derivation is typical of adjectives and generally not available for prepositions.¹⁸

It may therefore be concluded that there are, in German, some adjectives whose distribution is limited to predicative function. Now there are classes of words limited to attributive function and classes of words limited to predicative function. Both of these might be categorized as subclasses of that distribution class which occurs in all three functions. But again, there is so far no ground for calling this class ‘adjective’, since we have not been able to determine modification as its primary function. It seems that ultimately only a productivity consideration would resolve this dilemma: the set of words restricted to attributive function is far larger and even productive, while the set of words restricted to predicative function is very small and unproductive. So much for methodological considerations which would save the category ‘adjective’ for languages like German.

The case of the Japanese verb may be even more intricate methodologically.

- E15 a. Ano hito=ga hon=o kai-ta.
 JAPANESE D3 person=NOM book=ACC write-PST
 ‘That person wrote a book.’
 b. Kore=wa ano hito=ga kai-ta hon desu.
 D2=TOP [D3 person=NOM write-PST] book COP
 ‘This is the book (which) that person wrote.’

The verb of an independent declarative clause, as in E15a, shows tense, but no person or number. The same is true of the verb in an attributive clause, marked by brackets in #b. Since the

¹⁶ They are still listed under this rubric in Drosdowski et al. 1984: 272. More recently, Zifonun et al. 1997: 44, 56 coined the term ‘adcopula’ for this class. S. also Eichinger 2011.

¹⁷ <http://www.duden.de/rechtschreibung/>

¹⁸ Paradigmatic lexical relations may also be considered: *entzwei* is synonymous with the adjective *kaputt* ‘broken’ and antonymous to the adjective *heil* ‘intact’.

same form may be used in predicate and in attribute function, there is no formal criterion of its primary use. In such a situation, the entire word-class system must be considered (cf. §4.4.3.3). The language possesses, in addition, a small class of words which are only used in attributive function – so-called adnouns (Iwasaki 2013: 65 and Lehmann & Nishina 2015, §4.1.1) – and which, by this criterion, can be regarded as adjectives. On the other hand, if the class of which *kai-* ‘write’ is a member did not constitute the class of verbs, then Japanese would lack the word class ‘verb’. It is by such higher-level considerations that a word class with unmarked attributive function is nevertheless not categorized as adjective.

3 The semantics of modification and modifiers

3.1 Semantics of modification

The semantic side of modification may be approached from the point of view of predicate logic. There, the meaning of a syntagma like Latin *homo novus* ‘newcomer’ would be formalized as something like ‘entity *x* such that *HOMO(x)* and *NOVUS(x)*’. In this perspective, the noun *s.s.* and the adjective appear to be on a par and coreferential. That is, the structural side of modification, *viz.* the subordination of the modifier under the modified, has no reflex in this kind of semantic representation. This may or may not be adequate for an adjective like the Latin one which, by its declension, includes a pronominal element and might therefore be analyzed as a referential expression. It is not adequate for the English counterpart of this example, *new man*. The meaning of *new one* differs from the meaning of *new*: while the former expression may possibly refer in a discourse, the latter cannot. Consequently, the semantic side of modification does not reduce to coreference.

The expression *enrich* in the characterization of ‘modification’ offered in §1.1 is vague. Actually, two kinds of modification must be distinguished according to the nature of the modifier, which may be called concept characterization and concept anchoring (cf. Lehmann 1984, ch. 2.4).

3.1.1 Concept characterization

In the examples of E2, the modifier is itself a concept. Its syntagmatic relation to its head may be paraphrased by a predication, as in E16.

- E16
- a. Would you pass me the chalk which is red?
 - b. That is an argument which is invalid.
 - c. Peter’s argument was erroneous.

While these paraphrases may be clumsy, they serve to show that the semantic relation of *red* to *chalk* in #a, of *invalid* to *argument* in #b and of *erroneously* to *argued* in #c is a kind of predication, rendered explicit in E16. Depending on the category of the modified, this is achieved in either of two ways: In E2a and #b the modified is a referential concept; so here in E16a and #b, the modifying concept is the predicate of a relative clause, which latter is syntactically subordinate to the modified head. In E2c, the modified is a predicable concept; so in E16c, the main predication has been nominalized into the subject of a proposition, on which the modifying concept is now predicated. In either case, two operations are involved in E16, predication and downgrading. They render explicit what is implicit in modification as present in E2: On the one hand, modification is a kind of predication. On the other, it is at a lower level than the predication that completes the proposition, as it is subordinate to one of the

components of the latter. Thus, in comparison with the predications of E16 considered inside their clause, the modifiers of E2 are demoted. To be precise, they are demoted to a lower level of syntactic structure, as they depend on the head of a referential expression or of a predicate, respectively.¹⁹

From a semantic point of view, the modifiers in E2 are concepts. They combine with the concepts represented by their heads in such a way as to form a more specific concept. Let us call this kind of modification **concept characterization**.

3.1.2 Concept anchoring

The adnominal dependents in E17 also come under the traditional concept of modifier. These modifiers, however, are no concepts.

- E17 a. Peter picked up Sheila's handkerchief.
 b. This must be a handkerchief of Sheila's.

E17a and #b are analogous to E2a and #b in that the modified expression in #a is a referential expression, while the modified expression in #b is a predicate. The sentences of E17 differ from those of E2 in that the modifier *Sheila's* in E17a is not a concept, but based on a referential expression, and the modifier *of Sheila's* in #b is based on the same referential expression.

While the modifier in concept characterization enriches the intension of the core concept, the modifiers of E17 do not do this. Instead, they select, from the extension of the core concept, that subset of elements which bears a certain relation to the referent represented by the modifier (a "reference point" according to Langacker 1993). This kind of modification may be called **concept anchoring**. Since the anchor is not a concept, but a referent, concept anchoring may be seen as an operation on the extension rather than on the intension of a concept. Its function may be called **element selection**.

Nominal attributes like the ones in E17 are the simplest way to achieve concept anchoring. Another strategy implementing this operation is provided by relative clause formation, as in E18.

- E18 a. Peter picked up the handkerchief which belonged to Sheila.
 b. This must be a handkerchief which has often been deployed for other purposes.

As suggested by the examples, relative clauses are more complex, but also more powerful than other kinds of attributes. As already argued by means of E16a and #b, they are downgraded predications not only in purely semantic terms, but visibly at the level of syntactic structure.

Relative clauses are the most versatile among all attributes. They may reduce to a property verb (cf. §4.4.3.2), in which case they afford concept characterization. By means of a plurivalent dynamic predicate, they may relate their head to a set of other referents, thus allowing even more specificity than a nominal attribute. For this reason, the relative construction as such cannot be assigned a fixed position on the continuum between concept characterization and concept anchoring. It may, however, be said that whatever a relative clause can achieve in terms of concept characterization can be achieved more efficiently by a simple adjective attribute, while no other type of attribute achieves the same degree of detail in element selection as afforded by a relative clause.

¹⁹ The fundamentals for this approach were laid in Jespersen 1924, ch. 7.

Just as the concept of concept characterization applies equally to referential and predicable concepts, the concept of concept anchoring here applied to referential concepts would equally apply to predicable concepts. However, this is too distant from the topic of this paper.

3.1.3 Restriction

The modifiers in all of the above examples are restrictive. A modification is restrictive iff it reduces the extension of the modified core. In concept formation, this may be achieved both by concept characterization and by concept anchoring. Restriction of concepts allows enhanced precision both in reference and in predication.

As suggested above, concept anchoring is more powerful for the purpose of element selection than is concept characterization, as it may track down a referent by its relations to other, pre-established referents instead of merely by its properties. Under favorable conditions, element selection suffices to identify exactly one referent, as may be the case in E17a. However, neither restriction in general nor element selection in particular are at the exclusive service of reference. On the one hand, in a given situation, a given ball may be equally well or even better identified as the blue ball (characterization) than as the ball which is closest to the table (anchoring). And on the other hand, an attribute – be it a characterizing or anchoring attribute – does not by itself execute the operation of reference and does not even produce specific – as opposed to non-specific – reference of its nominal group. A nominal group provided by an attribute can still function as a predicate or in a non-specific referential expression, as in E18b.

3.2 Adjectival semantics

3.2.1 Quality concepts

For a long time, notional theories of parts of speech have defined the adjective as a word that designates a property. While this holds for the prototype of the adjective where it exists as a word class, it is of little help in the analytic operations of determining whether a language has adjectives in the first place and, in a second step, identifying the members of the class. As far as the semantic side is concerned, in languages with a rich class of adjectives, only a subset of them designates properties. The others designate states, emotions, the quality of being related to something and even the size and cardinality of sets. This is a rather heterogeneous set of semantic fields. Recent onomasiological approaches to word classes have set up a certain conceptual domain and investigated how its concepts are categorized in languages. From its start, application of this approach to the adjective faces the terminological problem of providing a term that covers such a heterogeneous conceptual domain. They have mostly been called property concepts. This term, however, is needed for just one of the semantic fields commonly covered by adjectives. This is why the terms ‘quality concept’ and ‘quality word’ are used in the present treatise.

At least some deductive reasoning is possible in the question of what kind of modification is typical for adjectives. As was seen in §3.1, nominal attributes achieve concept anchoring because they relate their head concept to a referent, while adjectival attributes achieve concept characterization. Now relative adjectives like *Palestinian* are usually based on nominal attributes. It is thus foreseeable that these will not belong to the core of adjectival concepts (cf. Kaznelson 1974:206).

The question remains whether there is a particular kind of concepts which are especially apt for attribution, and if so, which kind. The empirical approach to this question consists in

collecting the set of adjectives (identified by the procedure outlined in §2) in a set of languages and determine their semantic intersection set. This was first done in Dixon 1977. The approach has brought to light a set of conceptual fields which constitute the core of adjectival meanings.²⁰

3.2.2 Gradable concepts

The very core of concepts which are designated by adjectives if at all the language has any, and which reappear in endocentric nominal derivation (§4.5.1), is constituted by a set of **gradable** concepts like ‘big’ and ‘good’. Overall, prototypical adjectives are gradable, either by degree modifiers like ‘very’ and ‘rather’ or even by a morphological category, viz. comparison like *bigger*, *biggest*. With some marginal exceptions, only adjectives and deadjectival adverbs are susceptible of this operation.

Gradability is intimately related to **antonymy**: if X is bigger than Y, then Y is relatively small. Again, there are antonymous adjectives, but no antonymous nouns or verbs (other than those derived from antonymous adjectives) and very few antonymous adverbs. The explanation of this fact must derive from the nature of the quality concept: The most basic quality concepts consist of a simple, i.e. non-composite quality, while referential entities are carriers of a cluster of qualities; referential concepts are constituted by the agglomeration of a set of diverse features (Jespersen 1924 *apud* Lyons 1977: 447). If this is so, then there is no single dimension in which a referential concept might be graded, while this is possible for an elementary quality concept (Jespersen 1924, Wierzbicka 1986, Bhat & Pustet 2000, §2.1).

The set of semantic categories which are represented in even the smallest closed adjective classes comprises the ones of Table 3 (according to Wetzter 1996):²¹

Table 3 *Semantic categories of prototypical adjectives*

category	examples
(geometric) dimension	big, small
value	good, bad
age	old, new
color	white, black

The examples given in Table 3 exhaust the adjectives of Igbo (Dixon 1977 *apud* Bhat & Pustet 2000: 767). It is noteworthy that they all designate **properties**, not states. One may safely conclude that the semantic core of adjectives is constituted by property concepts, although adjective classes that are slightly more comprehensive may include some state concepts like ‘hot’ and ‘cold’.

Color concepts are not gradable by default and are therefore less prototypical than the other three categories of Table 3. Even in a language that does have adjectives, color concepts may belong to a separate (sub-)category with more nominal properties. This is the case, for instance, in Chemehuevi (Wetzter 1996: 9f, Bhat & Pustet 2000: 767). In Japanese, color terms are basically nouns (§4.4.3.3); color modifiers are derived in the quality-verb class.

²⁰ Raskin & Nirenburg 1995 is a thorough survey of the literature on the semantics of English adjectives, considering both their attributive and predicative use.

²¹ Dixon lists, as additional domains, physical property, human propensity and speed.

The difference between properties and **states** essentially lies in time-stability: properties are more time-stable than states. Putting it in simple terms, a property is something characterizing a given entity for its lifetime, while a state is something that it may be in for some time span. There are some clear examples of states like ‘warm’, ‘wet’ and ‘sick’. This is, however, a gradual distinction; and not all quality concepts are easily attributed to either the category of property or of state. Emotions include concepts such as ‘angry’, ‘happy’, ‘sad’, ‘love’. They are sometimes listed separately from states, but may be included as a subtype of this category.

Some languages make a formal distinction between properties and states. It was already mentioned that the set of adjectives of some languages includes properties, but excludes states. In Maori, adjectives designate properties and states. In attributive use, there is no difference between the two subclasses. In predicative use, property adjectives are preceded by a classifier which accompanies predicate nominals, while state adjectives are equipped with verbal tense particles (Bhat & Pustet 2000: 766). Cf. also §4.4.3.3 for Latin.

3.2.3 Non-gradable concepts

If a language has a large and productive class of adjectives, this will include non-gradable concepts. This negative characterization leaves room for much semantic variation. The two most prominent subcategories of non-gradable concepts which tend to figure in the class of adjectives are cardinality and ‘possessive’ relation. **Cardinality** is certainly a dependent concept, but it is unlike the other conceptual classes often categorized as adjectives in that it has no specific semantic content but is a purely quantitative concept. As a consequence, it is open to diverse lexical categorizations. There are both differences among languages and differences between lower and higher numbers as to the categorization of cardinality in the word classes. Some languages like the modern Indo-European languages categorize the lower numbers as adjectives, Lakota categorizes them as verbs, and yet others like Yucatec Maya categorize them as prefixes to numeral classifiers. The categorization of numerals as adjectives must be seen on the background of a universal implicational hierarchy (Lehmann 2010, §4) according to which lower numbers tend more to be conceived as quality concepts and, thus, to be categorized as adjectives, than higher numbers, which tend to be hypostatized to referential concepts and, thus, to be categorized as nouns.

As already indicated in §1.1, the fact that an entity X bears a certain relation to another entity Y may be conceived as a property of X, which may manifest itself in structural terms in its categorization as an adjective. This yields the class of **relative adjectives**.²² We will first say a few words on the semantics of such adjectives and then turn to their productive formation. ‘Relative adjective’ is here used as a cover term for adjectives that relate their head to the entity designated by their base. The class comprises several semantic subclasses, among them adjectives of provenience like *Palestinian* and *French*. They are based on nominal attributes, which anchor rather than characterize the modified concept (§3.1). However, in a language with a binary opposition between an adjectival attribute like *French* and a nominal attribute like *of France*, the structural contrast may be paired with a semantic contrast: the adjective brings the function of the modifier closer to concept characterization. On the one hand, an adjective like *French* tends to designate less a function that relates a thing to France and more a certain (national, cultural, social etc.) quality. Also compare the expressions in E19:

²² These adjectives have often been called relational adjectives. This term, however, is needed for adjectives which take a complement, like those in E14b.

- E19 a. Japanese garden
b. German garden

A web search by a certain search engine on 05/10/2015 produces 7,130,000 hits for E19a and 106,000 hits for #b. This is not because the extension of the concept behind E19a is so much larger – it need not even be. It is because the attribute in E19a designates a quality which restricts the core concept in such a way as to evoke a type that may be found anywhere in or outside Japan, while the attribute in #b just relates the core concept to Germany without evoking any quality commonly associated with this relation.

On the other hand, the far majority of the adjectives which do relate elements of the set designated by the head to elements of the set designated by their base are *derived* adjectives like *Bulgarian*, *wooden*, *masterly*, *verbal*, which tells us that the primary function of their bases is not modification. They are converted into adjectives not on account of their meaning, but in order to have them available as modifiers.

The class of relative adjectives is a large and productive one in many modern Indo-European languages, notably the Slavic languages. Examples E20 are taken from German (derivational suffix in boldface).

- E20 a. behörd**liche** Maßname
GERMAN ‘administrative measure’
b. amt**liche** Beglaubigung der Urkunde
‘official authentication of the document’

Formation of relative adjectives may be productive and regular to an extent that allows the paradigmatic relation between the adjective and its base to be formulated as a transformation. Diagram 1 represents a transformational analysis of E20a,²³

Diagram 1 Derivation of relative adjective

$$[[[A_N -B_{Rel}]_{Adj} C_N]_{Nom} \Leftrightarrow [C_N [G_{Det} A_N]_{NP.Gen}]_{Nom}$$

behörd-liche Maßnahme Maßnahme einer Behörde

where the genitive in the nominal attribute plays the role of B in the adjectival attribute. Even more specific transformational relations may obtain if C itself is a regularly derived noun, notably an action noun, as in E20b. Then the ultimate base of the derivation may be found at an even more elementary level, as shown in Diagram 2.

Diagram 2 Derivation of relative adjectival attribute of action noun

$$1 \quad [[[[A_N -B_{Rel}]_{Adj} [C_V -D_{NR}]_N]_{Nom} E_{NP.Gen}]_{Nom}$$

amt-liche Beglaubig-ung der Urkunde

$$\Leftrightarrow 2 \quad [[[[C_V -D_{NR}]_N E_{NP.Gen}]_{Nom} [F_{Rel} [G_{Det} A_N]_{NP}]_{PrepP}]_{Nom}$$

Beglaubig-ung der Urkunde durch ein Amt

$$\Leftrightarrow 3 \quad [[[G_{Det} A]_{NP.Sbj} [C_{V.fin} E_{NP.Obj}]_{VP}]_S$$

ein Amt beglaubigt die Urkunde

²³ In this, I am honoring Frevel & Knobloch’s (2005: 165) wish to describe the formation of such adjectives as a “grammatical procedure”.

In Diagram 2, the step from construction 2 to 1 is the derivation of the denominal relative adjective, while the step from 3 to 2 is the nominalization of a transitive clause.

On account of transformational relationships as in Diagram 2, such derived adjectives are known in the descriptive literature as agentive and instrumental denominal adjectives (Frevel & Knobloch 2005: 159-161 and Hartlmaier in this volume). Three observations may be noted here:

- (1) Such derived adjectives are often limited in their distribution to the attributive function. This is true of the relative adjectives described by Diagram 1 and Diagram 2.
- (2) The semantic fields occupied by such derived adjectives are typically outside the area delineated by prototypical adjectives.
- (3) As shown by the constituency bracketing, the derivation has the effect that the element A – an argument of the underlying verb – gets into a closer structural and semantic combination with the element C – the underlying verb.

The opposition between the nominal and the adjectival attribute may also manifest itself on the syntagmatic plane. While the adjectival attribute in Diagram 2.1 specifies the kind of action designated by the head, the prepositional attribute in Diagram 2.2 identifies an argument of this action. Therefore the adjectival attribute is compatible with a nominal attribute involving a different noun as argument (Frevel & Knobloch 2005: 172), as in E21.

E21 amtliche Beglaubigung der Urkunde durch den Justizbeamten
 GERMAN ‘official authentication of the document by the law clerk’

When relative adjectives of this type are first formed, they are limited to attributive function (Raskin & Nirenburg 1995). While some may secondarily become usable in predicative function – see below –, some remain confined to the primary function, like *täglich* ‘daily’ and *behördlich* ‘official’. This constraint is comparable to a constraint on derived transitive verbs: While transitive base verbs like German *bauen* ‘build [sth.]’ often have an optional direct object, the direct object of products of a transitivizing derivation, e.g. the applicative verb *bebauen* ‘build on [sth.]’, is always obligatory. Typically, if an operation has the goal of creating expressions with a certain combinatory potential, the distribution of its products is limited to just the context where this potential is needed and deployed.

The distribution of the typical German adjective covers the attributive, predicative and adverbial function (§2.3). An adjective that is only usable as attribute is, although confined to the primary function of the adjective, not a prototypical adjective. What is more, once such a derived adjective does become usable in predicative function, like *amtlich* ‘official’, it typically assumes semantic features representative of the prototypical adjective, viz. it assumes an evaluative function.

One must conclude that the purpose of such derivational processes is not to enrich a certain semantic field but instead to make concepts available in attribute function. The semantic side of the process is not to be sought in a lexical domain – in particular, it is not the formation of concepts of intermediary time stability – but instead at the level of constructional semantics: the modifier thus formed backgrounds the function of concept anchoring inherent in the nominal attribute that it is based on and becomes capable of concept characterization. This is the functional goal of the derivational operation.

3.2.4 Categorical meaning of the adjective?

The search for a categorial meaning of a word class hits upon a theoretical obstacle (Lehmann 2012, §3.1): Word classes are based on parts of speech; and parts of speech bear syntagmatic, not paradigmatic relations to each other. No two word classes form an opposition, and consequently there is no systematic basis for a semantic distinction between them. What we do find are different kinds of attributes. In many languages, the adjectival attribute contrasts with the nominal attribute and the relative clause. While the latter two kinds of attribute owe their existence to a conversion operation (§1.1), the adjective is a “born” attribute. One is therefore entitled to ascribe, with some caution, to the adjective those semantic features in which the adjectival attribute contrasts with the other attributes. As a consequence, the capacity of concept characterization, as opposed to concept anchoring, is inherent in the adjective.

Beyond this, there is no particular semantic feature shared by all the concepts underlying adjectives which would render them singularly apt for attribution.²⁴ Instead, two results may be noted:

- (1) The creation of an adjective is not motivated by the meaning of the underlying concept, but by the goal to use the concept in question as an attribute.²⁵
- (2) A small set of concepts, viz. gradable concepts, are intrinsically apt for concept characterization and are therefore categorized as adjectives in many languages. These then serve as the categorial, not as the semantic, model for the creation of more adjectives.

4 Modification at different linguistic levels

At the end of §1.1, modification is defined as a linguistic operation whose prototype is instantiated at the level of syntax. It has semantic and structural correlates. Given a prototypical concept, it is possible to generate deviations from the prototype by dropping selected definitional criteria. Some phenomena which border on modification have already been reviewed in §1.2. We now keep the semantic nature of modification as formation of complex concepts constant and vary the level of linguistic structure at which it operates. We will pass through all of the levels from discourse down to lexical semantic structure. This is not just an exercise in scientific concept formation. Instead, we will review a set of linguistic strategies which can partially stand in for attribution proper and which enable a language to do partly or even wholly without this operation.

4.1 Attribution vs. predication

Modification was characterized in §1.1 as demoted predication.²⁶ Consequently, the feature distinguishing modification from predication is its downgraded status. The term ‘subordinate’, which suggests itself here, is limited to the syntactic downgrading of a clause, as seen in E16 above. The **downgrading** of a component of linguistic structure should be understood in a more general sense, as its demotion to a lower rank of prominence.

The semantic side of the concept of demotion intended here can be approximated by first considering a difference between reference and predication (Searle 1969: 123): “reference

²⁴ The negativity of this finding is also reflected in Wierzbicka’s (1986: 360) statement that adjectives are words “designating properties which are not ‘meant’ to be used for categorizing”.

²⁵ Already Lyons 1977: 448 surmises that the essence of the adjective may be its modifier status rather than some semantic prototype.

²⁶ Eichinger 2007, §3.2.2 calls it “implicit predication”.

always comes neutrally as to its illocutionary force; predication never comes neutrally but always in one illocutionary mode or another.” This is at least true of predication in independent sentences. Now it makes sense to ask whether modification in general and attribution in particular can be fruitfully characterized with respect to this distinction. This was first tried to explicate, in the terms available at the time, in Becker 1841:

Das Adjektiv ... unterscheidet sich aber von dem Verb wesentlich dadurch, daß es nur die ausgesagte Thätigkeit, und nicht, wie das Verb, auch die /p. 102/ A u s - s a g e ... ausdrückt. Dieser Unterschied der Bedeutung tritt auf eine sehr bestimmte Weise in der Flexion des Verbs und Adjektivs hervor: die Flexion des Adjektivs, z.B. *ein blank-er Degen, mit blank-em Gelde*, bezeichnet durch die Kongruenz die Einheit der a u s g e s a g t e n (prädizirten) Thätigkeit mit dem Sein; die Flexion des Verbs hingegen, z.B. *Der Degen blink-et*, drückt die A u s - s a g e s e l b s t (das Urtheil) aus.²⁷

This attempt at an explanation was taken up and expanded in Steinthal 1847:

[Mens humana] quas cogitationes saepius tanquam subjectum et praedicatum una junxerat comprehensione, eas quamvis copulatione sublata arctius tamen denuo comprehensas tanquam unam sumsit cogitationem ad novamque cum aliis junxit sententiam constituendam. (p. 22)

Inter has sententias: *corona splendet* et *corona est splendida* nullum fere cognoscitur discrimen. A quibus *corona splendida* non notione tanquam materia distinguitur, sed expressionis lingua effectae forma. Sed cum forma mutatur sensus. Nam illis sententiam enunciamus quam ab aliis probari volumus; sed verbis: *corona splendida* rem exprimimus tanquam jamdudum ita judicatam ab omnibusque concessam, ita ut una habeatur composita notio. Enunciationis igitur unitas in notionis unitatem mutata est. (p. 74)²⁸

According to this explication, modification is a kind of subservient predication; attribution is predication at the service of concept formation. By the downgrading, the predicative force gets lost, i.e., it is, even in independent clauses, no longer associated with illocution. Although this seems, in principle, to be an adequate characterization of the semantic side of modification, we will see in the following section that in actual usage, things can be more complicated.

²⁷ ‘The adjective, however, differs essentially from the verb in that it expresses only the predicated activity and not, like the verb, also the predication itself. This semantic difference becomes evident in a very specific way in the inflection of the verb and the adjective: the inflection of the adjective, e.g. ‘a shiny[nom.sg.] épée’, ‘with shiny[dat.sg.] money’, indicates by its agreement the unity of the predicated activity with the being; by contrast, the inflection of the verb, e.g. ‘the épée shine-s’, expresses the predication (the judgement) itself.’

²⁸ ‘The thoughts that the human mind has frequently joined as subject and predicate in one sentence, those, despite lifting their nexus [copula], yet uniting them again more tightly, he has taken as one sole thought and joined with others into the constitution of a new sentence.

Between these sentences: *the crown shines* and *the crown is shining*, almost no difference is discerned. From these, *shining crown* differs not by the notion as some matter [the *designatum*], but by the form of the expression effectuated by language. With the form, however, the sense changes. For with those expressions we utter a sentence which we want to be approved of by others; but by the words *shining crown*, we express the thing as long decided and conceded by everybody, so that it is regarded as one composite notion. The unity of the sentence has, thus, changed into the unity of the notion.’ [literal non-idiomatic translations by CL]

4.2 Discourse level: predication instead of modification

For the applicability of modification to a referential concept, it makes a difference whether a referent based on this concept is already in the universe of discourse or is to be introduced into it. In the former case, any further predications cannot delimit the referent meant, since this is *ex hypothesi* completed. Additional predications on it just accumulate information on it. Since modification is downgraded predication, this also excludes modification of identified (*vulgo* “definite”) referents. Things are different if a modification applies to a concept which is not used to designate an identified referent, be it that the referent is just being introduced into the universe of discourse, be it that the concept serves as a predicate. A predication can then restrict the concept in question, thus enabling the selection of a more narrowly delimited referent. Anaphoric reference to the complex entity thus formed by predication identifies the referent thus selected. For instance, if a king reports E22, then the anaphoric *these* in the second clause does not take up the expression *some countries*, but instead refers to the countries left in place.

E22 Some countries, however, I left in place; to these I set borders.

Under the conditions described, the predication of the first clause has the discourse effect of a modifier of its subject. No operation of modification is necessary, since predication achieves all that is necessary. Discourse prosody tells the hearer that the first clause sets up the topic for the second clause. However, the paratactic construction of E22, with an indefinite determiner in the first clause and an anaphoric demonstrative in the second clause, may be grammaticalized into a complex sentence. This is what happened in Late Proto-Indo-European and is still visible in Hittite sentences like E23.

E23	pēdi=ma=kan	kw-ē	KUR.KUR ^{Mes}	daliyan-un
HITTITE	place:LOC=however=down	REL-ACC.PL	countries:PL	leave:PST-1.SG
	‘Which countries, however, I left in place,’			
	nu=smas	ZAG ^{Hi.A} -us	tehh-un	
	CONN=ANA.DAT.PL	border:PL-ACC.PL	put:PST-1.SG	
	‘to these I set borders.’ (KBo IV 7, 116f)			

E23 illustrates a standard case of grammaticalization of a paratactic into a hypotactic construction. The relative pronoun *kwi-* is etymologically identical with the indefinite pronoun ‘some’. Since the initial clause of this **correlative diptych** is subordinated, its predication is downgraded, i.e. it is a kind of modification. Consequently, it can apply to the referential concept ‘countries’ before this is determined. As a consequence, this modificative construction may also be used to identify a referent (‘those countries that I had left in place’) which already is in the universe of discourse.

This example shows two things: First, under the conditions explained, predication can do the service of modification at discourse level. Second, a modificative construction can evolve diachronically out of a predicative construction by grammaticalization.

4.3 Sentence level: trade-off between predication and modification

4.3.1 Predication by attribution

The typical adjective has a secondary use as a nominal predicate. In E24a, the adjective is the core of the predicate.

- E24 a. Gaius audax est.
 LATIN Gaius.M:NOM.SG bold:NOM.SG.M be.PRS:3.SG
 ‘Gaius is bold.’
- b. Gaius homo audax est.
 Gaius.M:NOM.SG man.M:NOM.SG bold:NOM.SG.M be.PRS:3.SG
 ‘Gaius is a bold man.’

In the same position, a nominal modified by an adjective may be used, as in #b. The two sentences are essentially synonymous: since *Gaius* is a male anthroponym, the addition of *homo* as the head noun of the predicate nominal adds no information. Structurally, *audax* is a modifier here. However, given that its head is a hyperonym – no matter whether of the subject or of the predicative adjective –, the attribute is the rhematic component of the sentence. As a result, this modification has the same discourse effect as the predication of E24a (cf. Knobloch 1988: 224f, Thompson 1988, §4).

In languages where the adjective in the occidental sense plays a prominent role in syntax and discourse, texts contain many attributive constructions which are structural condensations of what has the semantic value of a predication at discourse level.²⁹ Given a construction [Det A N], then adjective A has predicative sense if the syntagma means ‘independently identified referent [Det N] is A’, and this does not exclude that other referents subsumed under the concept represented by N are A, too. E25 is an example.

- E25 Pffingsten, das liebliche Fest, war gekommen; (Goethe, *Reineke Fuchs*, Kap. 2, erster Gesang)
 GERMAN ‘Whitsuntide, the lovely feast, had come;’

The function of the adjective attribute is not to select the one lovely feast from among all the feasts, but rather to predicate loveliness on the pre-identified feast of Whitsuntide. This function of the attribute becomes clearer if it is presupposed by the semantic structure of the immediate context, as it is in E26.

- E26 Das milde Urteil wurde mit dem umfassenden Geständnis des Angeklagten begründet. (WDR 15/02/1995)
 GERMAN ‘The mild judgement was justified by the accused’s full confession.’

Here, it is not the judgement that is justified by the confession (it is presumably justified on the basis of applicable law), but rather the mildness of the judgement. Thus, the main predicate of E26 relates not to the head of its subject, but rather to the proposition coded in the subject and, consequently, to the predication comprised by it. One might thus paraphrase the sentence by ‘that the judgement was mild was justified by the accused’s full confession’. The same phenomenon is frequent in English discourse. In E27, we are not dealing with consequences of obedience, but with consequences of the state-of-affairs that some obedience is incomplete.

²⁹ The idea of ‘predication by attribution’ goes back to Kaznelson 1974:199. S. also Lehmann 1984: 175.

E27 consequences of incomplete obedience
(<http://mkperry.blogspot.de/2006/04/consequences-of-incomplete-obedience.html>)

E28 The weak support has made me doubt.

Similarly, if I say E28, it is not the support that has made me doubt but rather its weakness. In such examples, the attribute appearing in the construction is not even deverbal; a simple adjective may do.

In Latin, there is even a specific syntactic construction whose structure involves attribution but whose value is a predication. The *ab urbe condita* construction is an NP consisting of a head nominal H and an attribute A such that the *designata* of H and A form an argument and a predicate, respectively, of a proposition which is the meaning of the NP. In other words, the meaning of the NP is not (as usual) '(kind of) H which is A', but instead 'the fact/event/circumstance that H is A'. The construction is named after a Latin instantiation of it like E29.

E29 anno DLI ab urbe condita ... bellum
LATIN year.M:ABL.SG 551 from city.F:ABL.SG found:PTCP.PASS:F.ABL.SG war.N:NOM.SG
'in the year 551 after the foundation of the city ..., a war'
cum rege Philippo initum est
with king.M:ABL.SG Philipp.M:ABL.SG begin:PTCP.PASS:NOM.SG.N be:3.SG
'with king Philip was begun' (Liv. AUC 31, 5, 1, 1)

Structurally, *ab urbe condita* is a prepositional phrase with a preposition governing a noun phrase in the ablative, whose head is the noun *urbe*, which in turn has an attribute which is the participle *condita*. However, years are not counted from the city but from the event of its foundation. Semantically, therefore, *urbe condita* is a manifestation of a reified proposition, something that would generally be represented by a nominalization like *urbis conditio* 'foundation of the city'.

In certain syntactic domains, there is rule-governed interlingual and intralingual variation between adjectival attribution and predication. This concerns, above all, existential clauses and their subtype, ascriptions of possession. Given the ascription of possession of entity Y which has quality Z to possessor X ('X has a Y of quality Z'), one is actually confronted with two predications at once, one which ascribes possession of Y to X, and another one which characterizes Y. Either of the two can be the (main) predication of the sentence, while the other is downgraded to an attribute, as shown in E30.

E30 a. Sie hatte drei Hühner.
GERMAN 'She had three hens.' (contemporary German)
b. Ihrer Hühner waren drei ...
her:GEN.PL hen:PL be.PST:3.PL three
'Her hens were three ...' (Wilhelm Busch 1865, *Max und Moritz*, Erster Streich)

In modern German just as in English, Spanish and several other European languages, possession of a specified quantity is commonly coded as in E30a: ascription of possession of Y is the main predication, while the modifier Z designating the size of the set is an attribute of noun Y. The opposite possibility is to treat the relation to X as a possessive modifier of Y and predicate its size Z on it, as in the (now obsolete) E30b.

The choice among the alternatives does not appear to matter much in the case of alienable possession as represented by E30. If a language possesses a 'have' verb, it may prefer the first alternative, and otherwise, the latter. Languages which account in their grammar for the alienability contrast would not be able to dissociate syntactically the possessive determiner from an

inalienable possessum Y, so that any construction involving ‘have’ or its more common equivalent EXIST becomes inapplicable. Yucatec Maya, represented by E31, is among these languages.

E31 chowak-tak u múuk' yook le x-ch'uppaal=e'
 YUCATEC long-PL [POSS.3 strength foot DEF F-girl=D3]
 ‘the girl has long legs’ (Lehmann 2002, ch. 4.3.2)

Literally, E31 says ‘long are the legs of the girl’ (the clause subject is bracketed in the gloss). Considering the inalienability of legs, this is, in fact, a natural way of coding this thought. By contrast, the construction appearing in the translation, which is preferred in English (and German), is not functionally motivated, since the intention here is not to ascribe possession of Y to X. What is actually subject to illocutionary force (and exposed to acceptance or contradiction by the hearer) is the ascription of quality Z to Y. This kind of example therefore shows that in certain contexts, predication and attribution may be in complementary distribution or free variation and, by this criterion, isofunctional. They may alternate in a language, as in E30, or among languages, as in E31. And there may even be attributive constructions of a high degree of grammaticalization – viz. the constructions of E29 and of the translation of E31 – which are less well motivated in terms of discourse function than their corresponding predicative construction.

In all the above cases, attribution is the structural manifestation of a predication. Naturally, whenever a predication can stand in for an attribution, no adjective is needed as the head of the predicate; it may as well be a verb. On the other hand, there is in languages with well-developed attribution a wide range of constructions which make use of it, but which would not enable a linguistic argument for the need of attribution.

4.3.2 Adverbial adjunction and predication

An analogous argument can be made for adverbial adjunction. The subsequent series of examples shares the following structure: There is a core proposition P which is the operand of a modifier or outer predicate M (cf. Kaznelson 1974:256-258). German is notorious here for coding M as a modifier where many languages would abide by a matrix predication.

E32 Möglicherweise hängt dies vom Sprachtyp ab.
 GERMAN ‘It is possible that this depends on the linguistic type.’

E33 Hans hat sich vermutlich verspätet.
 GERMAN ‘I suppose John has been late.’

E34 Ich habe dummerweise den Schlüssel vergessen.
 GERMAN ‘It is unfortunate that I forgot the key.’

E35 Das war zugegebenermaßen ein Fehler.
 GERMAN ‘One has to admit that that was a mistake.’

In E32 – E35, German combines a sentence adverb as a modifier with a clause where most languages would make the clause depend on a matrix predicate, as shown by the English translations. To be sure, in all of these cases, English could use a sentence adverb as well. In other languages, however, this would not be so easy. For instance, a Spanish translation of E35 would run along the English, not the German lines.

Again the same observation may be made with respect to adverbials integrated into the verb phrase. The example series of E36 – E40 opposes Portuguese, in the #a versions, and

German, in the #b versions, with respect to coding some M that is semantically a predication on proposition P (cf. Lehmann 1991, §5.1).

E36 a. João **está** lendo um livro.

PORTUGUESE John is reading a book

b. Hans liest **gerade** ein Buch.

GERMAN 'John is reading a book.'

E37 a. O preço da carne **vai** aumentando.

PORTUGUESE the price of:the meat goes increasing

b. Der Fleischpreis steigt **ständig**.

GERMAN 'The meat price is rising constantly.'

E38 a. João **anda** contando mentiras.

PORTUGUESE John walks telling lies

b. Hans erzählt **dauernd** Lügen.

GERMAN 'John is telling lies all the time.'

E39 a. João **continuou** correndo.

PORTUGUESE John kept running

b. Hans lief **weiter**.

GERMAN 'John kept running.'

E40 a. João **gosta** de desenhar bonecos

PORTUGUESE John likes of draw:INF puppets

b. Hans malt **gern** Männchen.

GERMAN 'John likes drawing stick men.'

As may be gathered from the comparison, Portuguese codes this kind of M consistently by the matrix predicate – some kind of semi-grammaticalized auxiliary – and German equally consistently by an adverb or adverbial. English sides with either of the two languages.

Ancient Greek has a few more predicates on situations coded as verbs. In the series E41 – E45, the Greek examples in #a show a higher verb M taking P as a participial subject complement, while the German translations code M as an adverbial inside the modified clause.

E41 a. **ên** gàr katà tèn kapnodókēn

GREEK was for downwards DEF:F.ACC.SG chimney:F.ACC.SG

es tòn oîkon esékhōn

into DEF:M.ACC.SG house:M.ACC.SG extend:PTCP.ACT:M.SG.NOM

ho hélios
DEF:M.SG.NOM sun:M.SG.NOM

'for the sun was just shining down the chimney into the house' (Herodotus *Hist.* 8, 137)

b. die Sonne schien nämlich **gerade** durch den Rauchfang in das Haus hinunter

E42 a. **êita** tòn loipón bión

GREEK afterwards DEF:M.ACC.SG remaining:M.ACC.SG life:M.ACC.SG

katheúdontes **diateloîte** án

sleep:PTCP.ACT:NOM.PL spend:POT:2.PL POT

'then you would keep spending the rest of your life sleeping' (Plato *Apol.* 31a)

- b. danach würdet ihr den Rest des Lebens **weilerschlafen**
- E43 a. **etúgkhanon** prōēn eis ástu oíkothēn aniōn
 GREEK PST:happen:1.SG.before.yesterday into townhouse:ABL up:go:PTCP.ACT:M.SG.NOM
 ‘day before yesterday I happened to walk uptown from home’
- b. vorgestern ging ich **zufällig** von Hause in die Stadt hinauf (Plato *Symp.* 172a)
- E44 a. hoì Hállēnes **éphthasan** toùs polemíous
 GREEK DEF:M.PL.NOM Greek:M.PL.NOM preempt:AOR:3.PL DEF:M.PL.ACC enemy:M.PL.ACC
 epì tò ákron anabántes
 on DEF:N.ACC.SG top:N.SG.ACC climb:AOR.PTCP:M.PL.NOM
 ‘the Greeks climbed the top earlier than the enemies’ (lit.: the Greeks preempted the enemies climbing the top) (Menge 1965 s.v. *phthánō*)
- b. die Griechen erstiegen die Höhe **eher** als die Feinde
- E45 a. pántas **elánthane** dákrua leíbōn
 Greek all:M.PL.ACC PST:escape.notice:3.SG tear:N.PL.ACC shed:PTCP.M.SG.NOM
 ‘unseen by everybody he shed tears’ (Hom. *Od.* 8, 93)
- b. **heimlich** vor allen vergoss er Tränen

We have seen two sets of examples: Those in §4.3.1 show that certain kinds of attribution may be substituted by predication with no change in the discourse-semantic effect. Those in §4.3.2 show that certain kinds of adjunction may be substituted by predication without harm to the discourse-semantic effect. Together, the two sets manifest intralingual and interlingual variation between modification and predication. Predication is a universal propositional operation; it is irreplaceable. Modification is a linguistic operation developed to different degrees and in different areas of grammar in different languages. It is largely replaceable by predication. Modification involves a kind of downgrading. To the extent this is reflected in syntactic dependency, it creates more complex structures at the clause level. Language systems assigning modification a prominent role in the syntax use it to condense two predications into one clause.

In the spirit of Becker and Steinthal quoted in §4.1, one might suppose that if there are two syntactically stacked predications M and P such that M is at a lower structural level than P, such a hierarchical structure would reflect some kind of semantic prominence. In other words, if M is an attribute or an adverbial adjunct to P, then probably P bears the main communicative load, while M is somehow backgrounded. For instance, P might be rhematic or focal or assertive, while M is thematic or presupposed. The examples given in the preceding sections do not bear this out. Not only do the higher or main predicates in those examples which show no modification bear the rhematic force of the utterance, i.e. they are what the illocutionary force applies to; but also the adnominal and adverbial modifiers in the modificative counterparts bear the rhematic force of the sentences in question.³⁰ To explain this with just one example: What E39 is about in both the Portuguese and the German version is not that John runs, but that his running continues. To the extent that this is true, strategies of modification which are deeply entrenched in the system of a language may have counter-iconic uses, ones not foreseen in the early accounts quoted in §4.1. This is another instance of a gen-

³⁰ This is born out by investigations of stress assignment to such constructions, too. It may also be recalled that in many constructions where D depends on H, H is only the structural head, while D bears the semantic information and is therefore rhematic. Constructions for which this is true include familiar periphrastic verb forms, the Australian converb construction and the light-verb construction world-wide.

eral typological principle: If a strategy is highly grammaticalized in a language, it expands beyond its functional locus into uses which appear arbitrary in cross-linguistic perspective and which characterize the language typologically.

4.4 Lexical-syntactic categorization of quality concepts

4.4.1 Syntactic operation and categorization

Modification as a grammatical operation involves the provision of an operator – the modifier – which is relational in such a way that it subordinates itself in an endocentric construction to the head occupying its argument position. There are regular syntactic operations that afford this. Among these are the following:

- (1) for attribution (already briefly mentioned in §1.1)
 - a) of nominal bases: dependency of a cased nominal expression on a nominal expression, nominal attribution for short
 - b) of verbal bases: relative clause formation;
- (2) for adjunction
 - a) of nominal bases: conversion into adjuncts, e.g. by adverbializers or adpositions
 - b) of verbal bases: conversion into adverbial subordinate clauses, gerunds etc.

To the extent such operations are formally and semantically general, they can convert almost anything into a modifier. We will come back to them in the following subsections. At this point, it suffices to record that many languages (e.g. Bororo as discussed in §4.4.3.2) have such operations regardless of the extent to which they possess adjectives and/or adverbs.

As defined in §1.1, an adjective is a member of a word class whose primary function is attribution. This entails that no operation of the sort just enumerated is necessary to use it in attributive function. Many languages possess such a word class, notably modern Indo-European languages like English. These require no illustration here.

4.4.2 Adjunction instead of attribution

In several languages, forms that could be attributes in a nominal expression, typically participles and adjectives, may instead be constructed as a participant-oriented adjunct (called *praedicativum* in traditional grammar and depictive in Himmelmann & Schultze-Berndt (eds.) 2005). The construction is illustrated by E46.

- E46 a. We found Mary weeping.
 b. We found a girl weeping.
- E47 a. We found a weeping Mary.
 b. We found a weeping girl.

The participant-oriented adjunct makes a secondary predication on one of the nominal expressions of the clause, relating to the latter's referent exactly as an attribute would. In fact, the attributive versions of E46 shown in E47 differ minimally in meaning from the former.

The parallelism of E46 and E47 is, however, partly misleading. While the typical attribute is restrictive, the typical participant-oriented adjunct is not. If the head of the construction bears no definite determination, as in the #b examples, both constructions are possible and differ little in meaning. If the head is definite, no restriction is possible; despite structural appearances, modification in E47a is not restrictive. Instead, this is the typical configuration

for a participant-oriented adjunct, as in E46a. The same may be seen in Cabecar (Chibchan, González & Lehmann 2018, ch. 12.1.3). E48 shows a predicative adjective oriented towards a definite antecedent.

E48 i kséi sig-lé=wa taní
 CABECAR 3 string:SPEC draw-O.PRF=TOT tense
 ‘he drew its string taut’

In this language, adjectival and participial modifiers may either be positioned immediately following their head, as in E49a, or displaced, as in #b and in E48. In the former case, the modifier is restrictive; and only under this condition can the complex nominal group be semantically definite. In the latter case, viz. in E49b, the modifier may always be non-restrictive and is necessarily so if the head is semantically definite, as in E48.

E49 a. yís te yís chíchi surúú su-á Túrí ska
 CABECAR 1.SG ERG 1.SG dog white see-PFV Turrialba LOC
 ‘I saw my white dog in Turrialba’
 b. yís te chíchi su-á surúú Túrí ska
 1.SG ERG dog see-PFV white Turrialba LOC
 ‘I saw a white dog in Turrialba’

The semantic configuration of E49b is comparable to the one of the first clause of E22f above: on an indeterminate antecedent in the same clause, restriction need not be coded by attribution.

The Cariban languages (Meira & Gildea 2009) have been described as lacking a class of adjectives and using adverbs in their stead. The situation in Hixkaryana may serve as an example (Derbyshire 1979). The language has a very small set of postnominal quality words including ‘big’, ‘bad’ and ‘dead’. There are also some stative verbs like ‘be dry’. The bulk of quality words are adverbs. This class includes typical adverbial meanings such as ‘here’ and ‘fast’, typical property and state concepts such as ‘good’, ‘bad’, ‘strong’, quantifiers and numerals (o.c. 41). It is fed by a variety of derivational processes. The primary use of adverbs is as adjuncts, as in E50 – E52. They are normally positioned at the clause periphery, no matter whether they are interpreted as predication-oriented, as in E50, or as participant-oriented, as in E51.

E50 ohxe n-hananih-yatxhe wosi
 HIXKARYANA good SBJ.3>OBJ.3-teach-NPST.COLL woman
 ‘the woman teaches them well’ (o.c. 24)

E51 a. asakkanawa w-en-yo
 HIXKARYANA two canoe SBJ.1>OBJ.3-see-IMM.PST
 b. kanawa w-en-yo, asako
 canoe SBJ.1>OBJ.3-see-IMM.PST two
 ‘I saw two canoes’ (o.c. 44)

E52 to-txowi biryekomo komo asako/omeroro
 HIXKARYANA (SBJ.3)go-PSTboy COLL two/all
 ‘two boys / all the boys went’ (o.c. 104)

E53 ohxe rmahaxa n-a-ha ...
 HIXKARYANA good very SBJ.3-be-NPST
 ‘it is really good’ (o.c. 91)

Equipped with the copula, an adverb functions as predicate, as in E53. Alternatively, it can be nominalized, *inter alia* by the suffix *-no* which nominalizes anything, e.g. *ohxa-no* ‘good one’ (o.c. 169). Just as any noun, such a noun can be in apposition with another noun. This is the closest to attribution that the language system gets.

Among the hundreds of example constructions in Derbyshire 1979, there is not a single one that would show an adverb as a component of a nominal expression or in restrictive function (the prenominal position, alleged for E51a l.c., is probably only apparent). Moreover, the language lacks relative clause constructions such that a relative clause would be an attribute to a nominal. It does have possessive constructions in which a prenominal possessor NP depends on a nominal head. However, it is the latter which is marked as relational in the construction, so that the construction does not come under modification (s. §1.2). One has to conclude that Hixkaryana not only lacks a word class whose primary function would be attribution, but also lacks attribution as a grammatical operation. Instead, it abides by the second main variety of modification and modifiers, viz. adjunction and adverbs.

4.4.3 The adjective between noun and verb

The secondary status of the adjective in systems of parts of speech manifests itself in many respects. Often, quality concepts are categorized just as a subcategory of nouns or of verbs. These will be treated in §§4.4.3.1 – 4.4.3.3. However, even in a language where this is not so, or at least where grammatical tradition has always treated the adjective as an independent word class, it tends to share properties with nouns and/or with verbs.³¹ It is possible to set up a gradation of such properties and to assign the adjective of different languages a place on a continuum between the nominal and verbal poles.³² This will not be done here. The following rather concentrates on the question of which operations are involved if a quality concept is categorized one or another way.

4.4.3.1 Noun-like quality words: quality nouns

In the occidental grammaticographic tradition starting with Ancient Greek and Latin grammar, adjectives were classified as a kind of nouns s.l. From a theoretical point of view, the major difference between noun s.s. and adjective consists in the fact that the adjective is a modifier, the noun not. A structural manifestation of the modifying argument slot of the adjective is the possibility of its agreement in morphological categories with the head noun. If a quality concept is, instead, categorized as a noun s.s., it lacks this modificative potential.

There are two basic ways of coding quality concepts as nouns s.s.:

- a) A noun designating a property may designate a carrier of the property, like ‘green one’ instead of ‘green’. Call this the **concrete quality noun**.
- b) A noun designating a property may designate the property itself, like ‘greenness’ instead of ‘green’. Call this the **abstract quality noun**.

A language with a clearly distinct class of adjectives like English possesses distinct syntactic or derivational processes to transfer an adjectival stem into either kind of noun s.s. The regular way of obtaining a concrete quality noun on the basis of an adjective consists in attributing the latter to the dummy noun *one*, as in *green one*. The regular way of getting an abstract

³¹ This is the main topic of Wetzer 1996.

³² One of the first to postulate that the adjective occupies a middle position between the verb and the noun is Becker 1841: 101.

quality noun on the basis of an adjective stem consists in applying a hypostatizing suffix like *-ness* to the latter, as in *greenness*.

4.4.3.1.1 Ambivalent quality nouns

Among those languages which categorize quality concepts as nouns there are quite a few which ignore the above distinction, i.e. whose quality nouns have both a concrete and an abstract meaning. One of these is Warrungu (Maric, Pama-Nyungan; Tsunoda 2011). The language lacks a separate class of adjectives. The class of nouns comprises many words designating properties like ‘good’ and ‘big’ and states like ‘hot’, ‘hungry’ and ‘asleep’. Such words therefore constitute a semantic subclass of nouns. They have the same grammatical properties as substance-designating nouns. This means they take case suffixes and function as actants, as in E54f.

E54 mori~mori nyawa goyba-gali-n
WARRUNGU greedy~greedy NEG give-ANTIP-NFUT
 ‘the greedy one does not give [anything]’ (Tsunoda 2011: 240)

E55 jangerago-nggo ganyji-n gagabaraa
WARRUNGU small-ERG carry-NFUT big
 ‘small ones carry big ones’ (o.c. 268)

There is no number or gender in which quality nouns could agree. More than one nominal expression in a clause sharing their referent agree in case, as in E56³³ and E57.

E56 goyi-nggo ngaya wajo-n
WARRUNGU hungry-ERG 1.SG.NOM cook-NFUT
 ‘being hungry, I cooked [sth.]’ (o.c. 352)

E57 bama-nggo yoray-jo gamo bija-n
WARRUNGU man-ERG quiet-ERG water drink-NFUT
 ‘the man drank water quietly’ (o.c. 240)

Any two coreferential nominal expressions in a clause, as in E56, are in no dependency relation with each other, but in a relation of **syntactic phora** (often called ‘apposition’ in the literature). This is also true of quality nouns, as in E57. Such coreferential nominal expressions move around the clause freely, as shown in E58.

E58 gajarra nyola ganyji-n goman
WARRUNGU possum 3.SG.ERG carry-NFUT other
 ‘she carried another possum’ (o.c. 349)

Most of these nouns have a concrete meaning when they designate the carrier of the quality, as in E59a, and an abstract meaning when they designate the quality itself, as in #b.

E59 a. ngaya woga wona-n
WARRUNGU 1.SG.NOM sleep(ABS) lie-NFUT
 ‘I lay asleep’
 b. ngaya yani woga-wo
 1.SG.NOM go(NFUT) sleep-DAT
 ‘I went for a sleep’ (o.c. 159)

³³ The coreferential words in E56 actually show different cases, but they could not agree more closely.

The same is true of the quality nouns which mean ‘ill(ness)’, ‘anger/angry’ and many more. Neither is there a difference between concrete and abstract quality nouns when they function as predicates, as the language lacks a copula.

4.4.3.1.2 Concrete quality nouns

Quality concepts are categorized as concrete quality nouns in several languages across the globe. Well-described examples include Arabic and Nkore-Kiga (Bantu; Taylor 1985). In Imbabura Quechua (Cole 1982), quality nouns and other nouns do not differ morphologically; both take case and plural suffixes. Either can constitute a complete noun phrase, e.g. *wasi* ‘(a/the) house’, *yuraj* ‘(a/the) white (one)’ (Cole 1982: 76). The two kinds of nouns behave alike both in referential and in predicate function: both combine with the case suffix required by their syntactic function, as shown in E60; and both combine with a copula, as shown in E61.

- E60 a. Juzi jatun-ta-mi chari-n
 QUECHUA Joe big-ACC-VAL have-3
 ‘Joe has a big one’ (o.c. 97)
- b. pay-paj tayta-ka chay wambra-ta-mi wajta-rka
 he-GEN father-TOP that child-ACC-VAL hit-PST(3)
 ‘his father hit that child’ (o.c. 69)
- E61 a. Juan-ka mayistru-mi ka-rka
 QUECHUA John-TOP teacher-VAL be-PST(3)
 ‘John was a teacher’
- b. ñuka wasi-ka yuraj-mi ka-rka
 I house-TOP white-VAL be-PST(3)
 ‘my house was white’ (o.c. 67)

However, nouns s.s. and adjectives differ in their combination with formatives of intensity and derivational operators. A difference in their syntactic combinatory potential appears if they are combined in a noun phrase: then the quality noun precedes the other noun, as in E62.

- E62 yuraj wasi
 QUECHUA white house
 ‘white house’ (o.c. 77)

The language that has provided the prototype for the adjective in the occidental grammar tradition for two thousand years, viz. Latin, actually possesses adjectives of the concrete-quality-noun subtype, and even in a marked way. There is no restriction on the relative order of attribute and head noun. The conversion of adjectives into concrete quality nouns requires no operation whatsoever. What is less known for Latin, and what amounts to an extreme molding of this subtype, is that many nouns s.s. can function as adjectives. The nominal group of E63 features two nominal words, either of which may be the (substantival) head or the (adjectival) attribute in it.

- E63 inimici Germani
 LATIN enemy:M.NOM.PL German:M.NOM.PL
 ‘German enemies’ or ‘hostile Germans’

In E64, two nouns s.s. are combined in an attributive construction. The second of them, *asinus*, is graded; so it must be the attribute.

E64 homines magis asinos numquam vidi (Pl. Pseud. 136)
 LATIN man.M:ACC.PL more ass.M:ACC.PL never see\PRF:1.SG
 ‘I have never seen human beings who were such asses’

Thus, adjectives and nouns s.s. share all grammatical properties except that adjectives inflect for gender and comparison. If one considers, in addition, the fact that many animate nouns show motion (sex-conditioned change of gender), it is little wonder that ancient grammarians only recognized one category of noun s.l., of which the adjective was just a semantic subclass.

4.4.3.1.3 Abstract quality nouns

Let us first illustrate the proper attributive and predicative constructions of abstract quality nouns from a language which presents them in a clean form, viz. Latin. It should be understood that abstract quality nouns do not represent the primary categorization of quality concepts in this language; they are mostly derived nouns. They are used here for illustration because no language is at hand which would represent the archetype of the abstract quality noun more neatly. E65 shows it in attributive function; E66 shows it in predicative function. In both cases, the quality noun goes into the genitive (the *genitivus qualitatis*). E67 features an abstract quality noun in adverbial function, into which it is converted by the ablative.

E65 cum Lysander Lacedaemonius
 LATIN when Lysander(NOM.SG) Spartan:M.NOM.SG
 vir summae virtutis
 man.M(NOM.SG) highest:F.GEN.SG virtue:F:GEN.SG
 venisset ad eum
 come:PQP.SUBJ:3.SG to ANA:ACC.SG.M
 ‘when Lysander from Sparta, a man of the highest virtue, came to him’ (Cic. *Sen.* 59, 9)

E66 Sed haec
 LATIN but this:N.ACC.PL
 quae robustioris improbitatis sunt
 REL:N.NOM.PL robust:COMP:GEN.SG badness:F:GEN.SG be:PRS.3.PL
 omittamus
 omit:PRS.SUBJ:1.PL
 ‘but let us skip over these things, which are of a hardier sort of villainy’ (Cic. *Phil.* 2, 63, 1)

E67 isti intellexerunt summa diligentia
 LATIN that:M.NOM.PL understand:PRF:3.PL highest:F.ABL.SG diligence:F:ABL.SG
 vitam Sex. Rosci custodiri
 life:F:ACC.SG Sextus Roscius:GEN.SG guard:INF.PASS
 ‘those guys understood that Sextus Roscius’s life was being guarded with the highest diligence’ (Cic. *S. Rosc.* 28, 1)

The examples are typical in that the quality noun is accompanied by its own attribute; an unqualified quality would preferably be coded by an adjective and by an adverb, respectively. However, what matters here is that in attributive, predicative and adverbial function, the quality word evinces regular grammatical features of a noun. This is little wonder, since the purpose of a nominal derivation is precisely the need for nominal properties.

The primary categorization of quality concepts as abstract quality nouns is found in LoNkundo (Bantu language of the Mongo people, Kongo; Hulstaert 1938). They are the closest to adjectives that the language can muster. There is a possessive attribute construction [X_{Nom} Y_{At} Z_{NP}], where X is the possessed noun or nominal, Z is the possessor NP and Y is the attributor *-a*. Y takes a prefix by which it agrees with X in class and number, while Z has its own class and number, as shown in E68.

- E68 a. bo-nkáná ó-a bǒ -me
LoNkUNDO CL1.SG-grandchild CL1.SG-AT CL1.SG-husband
‘grandchild of the husband’
- b. ba-nkáná b-a bǒ -me
CL1.PL-grandchild CL1.PL-AT CL1.SG-husband
‘grandchildren of the husband’ (o.c. 26)

The attributive construction for quality nouns is like for any other noun. Compare E69 with E68.

- E69 a. y-omba y-a bɔ-lótsi
LoNkUNDO CL5.SG-thing CL5.SG-AT CL2.SG-goodness
‘good thing (lit.: thing of goodness)’
- b. t-oma tsw-a bɔ-lótsi
CL5.PL-thing CL5.PL-AT CL2.SG-goodness
‘good things (lit.: things of goodness)’ (o.c. 35)
- c. e-tóo é-â w-ěɓ
CL3.SG-garment CL3.SG-AT CL2.SG-whiteness
‘white garment (lit. garment of whiteness)’ (cf. o.c. 32)

Four quality nouns deviate from this simple pattern, viz. ‘good’, ‘bad’, ‘big’ and ‘long’ (o.c. 36). First, they show the plural number of the head noun if and only if its prefix is *ba-* (which is the case in classes 1, 4 and 8, but not in E69). This subpattern is illustrated by E70.

- E70 a. bo-nto ó-â bɔ-lótsi
LoNkUNDO CL1.SG-person CL1.SG-AT CL2.SG-goodness
‘good person’
- b. ba-nto b-ǎ ba-lótsi
CL1.PL-person CL1.PL-AT CL1.PL-goodness
‘good persons’ (o.c. 26, 35)

Second, if the head noun is plural but its class prefix is not *ba-*, then these quality nouns retain their own singular class prefix and do not (optionally) go into the plural. The exception of these four quality words is noteworthy in our context because they code some of the very most basic property concepts (s. §3.2.2).

In predicative function, the quality noun combines with a copula like any other noun. While the copula agrees with the subject (as any other verb would), the predicate noun does so only optionally, as can be checked in E71.

- E71 a. e-tóo e-le w-ěɓ
LoNkUNDO CL3.SG-garment CL3.SG-COP CL2.SG-whiteness
‘the garment is white’
- b. bi-tóo bi-le w-ěɓ ~ by-ěɓ
CL3.PL-garment CL3.PL-COP CL2.SG-whiteness CL2.PL-whiteness
‘the garments are white’ (l.c. 25)

Finally, quality words may also be used in adverbial function, as in E72.

E72 á-kendá-ki i-kɔ́kɛ́
 LoNkUNDO SBJ.CL1.SG-go- PST CL4.SG-quiet
 ‘he went slowly/quietly’ (o.c. 97)

The set of notions for which the above-described is the primary categorization properly includes ‘good’, ‘bad’, ‘big’, ‘small’, ‘long’, ‘short’, ‘clean’, ‘clever’, ‘white’, ‘strong’, ‘slow’, thus, practically all of the basic quality concepts. Languages which categorize quality concepts primarily as abstract nouns are relatively rare across the globe. LoNkundo is one of the few available cases.³⁴ Nor is this an entirely clean case. The ideal system would have the abstract quality noun in some marked nominal dependency relation under all circumstances, as illustrated above for Latin. Evidently, the categorization as nouns s.s. is less clear-cut in LoNkundo than in the Latin case precisely because the basic lexical category is less distinct than an overtly derived, and thus, explicitly fixed, category.

4.4.3.2 Verb-like quality words: quality verbs

Wayãpi (Tupi-Guaraní, French Guiana and Brazil; Grenand 1980) has active-inactive alignment of verbal actants. Active intransitive verbs are dynamic, inactive ones are stative. The personal prefix cross-referencing the inactive actant (the undergoer) is identical to the nominal prefix cross-referencing the possessor. It is shown by E73.

E73 i-luwã kaalu me
 WAYãPI U.3-cold evening to
 ‘it is cold tonight’ (o.c. 83)

Luwã ‘cold’ belongs to a subset of predicative words – quality words – which share the following distribution:

1. predicate (like ‘be cold’)
2. abstract quality noun (like ‘coldness’)³⁵
3. concrete quality noun (like ‘cold one’)
4. attribute (like ‘cold’)

³⁴ Hausa is repeatedly mentioned in the specialized literature, e.g. in Wetzer 1996: 70f, as a language which has abstract quality nouns instead of adjectives. However, according to Jaggar 2001, ch. 5 and 9.3, the language has a large and productive class of adjectives proper. On the other hand, a set of quality concepts such as ‘cold, bitter, nice’ is categorized as “abstract nouns of sensory quality” (ch. 5.2.6), thus, ‘coldness, bitterness, nicety ...’. This set comprises “60 or more” (p. 104) members, all of which “are analyzable as derived nominals”, whether or not their (nominal!) base is synchronically identifiable. These are abstract quality nouns and do behave as such in attribution and predication.

³⁵ Grenand (1980: 46f) advocates the thesis of the nominal character of quality words in Wayãpi, glossing them mostly by French abstract quality nouns. Unfortunately, all of the examples adduced of stative bases in nominal use show concrete quality nouns; there is in the grammar not a single example which would require an analysis as an abstract quality noun. P. 59 reads: “c’est ainsi que l’on dira ... “la beauté de ce bébé-calebasse”, que l’on rend en français par “cette jolie petite calebasse.” Likewise, Dietrich (2000: 261) claims that a phrase like *wira-za ẽ?ẽ* (tree-fruit sweet) literally means ‘sweetness of the fruit’, while ‘sweet fruit’ is only a eurocentric interpretation. This is impossible because a concrete noun and an abstract noun satisfy different selection restrictions of the verb on which they depend. What would be possible is that the same stem displays categorial indeterminacy between a modifier and an abstract quality noun; but this would precisely have to be shown by adducing them in contexts with verbs selecting concrete vs. abstract arguments.

5. adverbial (like ‘coldly’).

In contexts 1 and 2, these words take the inactive person prefix as shown in E73. Otherwise, there is no derivational element marking a conversion; these words display category-indeterminacy with respect to stative verb, abstract quality noun, concrete quality noun, and adverb.

For stative just as for active verbs in general, there is an oriented nominalization $X=m\tilde{a}\tilde{z}\tilde{e}$ ($X=OR.NR$) ‘one that is (involved in) X’, where ‘is involved in’ paraphrases any argument relation. It is illustrated by E74. If the base is a quality word, as in E75, it alone suffices to yield a concrete quality noun for context #3 above.

E74 aku=mãžẽ
WAYĀPI hot=OR.NR
 ‘the hot one [i.e. the fever]’ (o.c. 100)

E75 piʔa ɔ-y-aɔ ɛnɛ lɛwanũ
WAYĀPI small A.3-RFL-cry you because.of
 ‘the little one is crying because of you’ (o.c. 67)

Attributes (context #4) are postnominal (while word order in general is left-branching). This includes relative clauses, which are nominalizations of verbal constructions, as in E76. Again, if the base is a quality word, as in E77f, the mere stem serves as a postnominal attribute.

E76 y-aʔi i-nupi=mãžẽ lɛwɛ
WAYĀPI DEF-child U.3-laugh=OR.NR with
 ‘with the laughing child / child who laughs’ (o.c. 62)

E77 pila iwɛ a-ɛkii
WAYĀPI fish good A.1.SG-catch
 ‘I caught good fish’ (o.c. 58)

E78 apika katuali mũ
WAYĀPI bank beautiful for
 ‘for a nice bank’ (o.c. 66)

Moreover, the sheer stem of quality words is used in adverbial function (context #5), as in E79b and E80.

E79 a. i-katu=tɛ
WAYĀPI U.3-good=FOC
 ‘it is really good’ (o.c. 92)

 b. a-enu katu
 A.1.SG-understand good
 ‘I understand well’ (o.c. 68)

E80 panãkũ lɛwanũ malã=tɛ a-ata
WAYĀPI pannier because.of slow =FOC A.1-walk
 ‘because of my pannier I am walking slowly’ (o.c. 67)

A few quality concepts are coded by modifying nominal suffixes. These are *-(l)u* and *-(wa)su* (AUGM) ‘big’, *-i* (DIM) ‘small’, *-tĩ* ‘white’, *-(l)ũ* ‘black’, *-ɛʔẽ* ‘authentic’, *-lã(nga)* ‘quasi-, would-be’ and *-kɛ/-ngɛ* ‘past’ (o.c. 49-52). It will be noted that these include some of the most elementary quality concepts. However, it is inadvisable to assume that the language has a closed class of adjectives constituted by these nominal suffixes, since then one would have to count the diminutive and augmentative suffixes in any other language as a closed class of adjectives, too (cf. §4.5.1).

It is possible for a language to possess modification as a syntactic operation, but no process of word formation to enrich the lexical class of modifiers. One such language is Bororo (Macro-Jê, Brazil; Crowell 1979). Constituent order is left-branching. The syntactic strategies of modification are relative clause formation for attribution (E81) and postpositional phrase formation for adjunction.

E81 E-re jo-ridi-re ji-wi ki bi-të.
BORORO 3.PL-NTR OBJ.3.SG-see-NTR REF-REL tapir die-CAUS
 ‘They killed the tapir they saw.’ (o.c. 214)

Quality concepts are categorized as stative verbs. There is a class of adverbs which do function as adjuncts; but it is closed, there are no processes to form adverbs. The regular way of attributing a quality to a verbal construction is to make the latter depend on a matrix stative verb, as already seen in §4.3.2. This is done with (E82, E83) or without (E84, E85) overt nominalization.

E82 A-re i kadë-di pemege-re.
BORORO 2.SG-NTR tree cut-NR good-NTR
 ‘You cut the tree well.’ (lit.: ‘your cutting of the tree was good.’)

E83 E-re karo kadë-di pega-re.
BORORO 3.PL-NTR fish cut-NR bad-NTR
 ‘They cut the fish incorrectly.’

E84 E-meru jae-re.
BORORO 3.PL-walk far-NTR
 ‘They walked a long way.’ (lit.: ‘their walking was far’) (o.c. 27, 120)

E85 E-ra kuri-re.
BORORO 3.PL-sing big-NTR
 ‘They sang a lot.’ (o.c. 135)

This language, thus, has modification both at the syntactic and at the lexical level. However, the modifier lexemes are adverbs, and there is no way of forming such lexemes.

4.4.3.3 Twofold categorization

Japanese is one of those relatively rare languages³⁶ which possess two intermediate word classes between the nominal and the verbal poles of the continuum (Lehmann & Nishina 2015), quality nouns and quality verbs. The Japanese noun may be identified as the distribution class whose members may be immediately followed by a case particle. In attributive function, this is the attributor *no*, as in E86a. In predicative function, nouns do not conjugate and instead combine with an enclitic copula. Japanese quality nouns are abstract quality nouns. This may be defined as a noun which is attributed by means of the attributor *na*, as in #b, instead of the *no* used for nouns s.s.

E86 a. byooki=no hito
JAPANESE illness=GEN person
 ‘ill person’

³⁶ Languages with two classes of quality concepts, one nominal, the other verbal, are listed as “split-adjective languages” in Wetzer 1996.

- b. genki=na hito
vitality=AT person
'healthy person'

Some quality nouns may function as a verbal actant just like nouns s.s., as in E87.

- E87 genki=ga de-ta
JAPANESE vitality=NOM come.out-PST
'(I) got awake/lively'

A minority of quality nouns is of Japanese origin. Morphological analysis or etymology reveals many of these to be deverbal derivations. The majority, however, is of foreign – mainly Chinese or English – origin. This is, thus, a productive word class.

Japanese verbs conjugate directly, i.e. without the use of a copula, for tense and aspect, as illustrated by E88a and E89a. There is no change in form if they function as attributes, as in the #b examples. This is true both of verbs s.s., here called energetic verbs (E88), and for quality verbs (E89).

- E88 a. onnanoko=wa yom-u
JAPANESE girl =TOP read-PRS
'the girl reads'

- b. yom-u onnanoko
read-PRS girl
'reading girl'

- E89 a. kutu=wa aka-i
JAPANESE shoe=TOP red-PRS
'the shoes are red'

- b. aka-i kutu
red-PRS shoe
'red shoes'

Quality verbs share with energetic verbs most of their grammatical properties. However, they differ from them both at the syntactic and at the morphological level: While energetic verbs may have any valency, quality verbs are intransitive. In conjugation, quality verbs show different allomorphs from energetic verbs, among them the present tense morph displayed in the examples. There are yet other differences concerning periphrastic forms. All in all, the conjugation of quality verbs is more laborious than the conjugation of energetic verbs. Moreover, the addressee-honorific form of quality verbs involves the auxiliary *desu*, which is otherwise reserved for nominal predicates. All of this amounts to a position of quality verbs slightly off the verbal pole of the noun-verb continuum.

The set of quality-verb roots is relatively small. The core group comprises basic property and state concepts, including almost all the antonymous pairs and the basic color terms. Their origin is Japanese. An etymological analysis reveals most of their conjugation forms to result from the agglutination of a conjugated form of the existential verb *aru* to an erstwhile adjective stem. This suggests that this was once the class of core adjectives of the language.

Another language illustrating a two-fold categorization of quality concepts as nouns s.l. and as stative verbs is Latin (Lehmann 1995). Here, however, roots are not distributed among two categories; instead, a set of roots may be derived either into an adjective or into a verb stem. In some contexts, the two formations contrast; and then the adjective designates a more intrinsic, permanent quality, while the verb designates a more transitory state. The root *val-* 'strong' is one of these: the adjective *val-id-us* (strong-ADJR-M.NOM.SG) is paradigmatically

opposed to the stative verb *val-e-o* (strong-STAT-1.SG). E90 features the verb in a relative clause; the gloss is deliberately slightly etymological.

E90	Plus	potest	qui	plus	valet.
LATIN	more	powerful:be.3.SG	REL:M.NOM.SG	more	strong:STAT:3.SG
	'He has more power who is stronger.' (Pl. Truc. 813)				

The (contextual) meaning is just 'the stronger one gets his way'; so instead of the relative clause we might simply have *val-id-ior* (strong-ADJR-COMP(M.SG.NOM)) '(the) stronger (one)'. However, in this particular situation, too, one may assume that a state rather than a property is being referred to.

4.5 Morphological level

4.5.1 Modificative derivation

A derivational operation may or may not change the syntactic category of the base. For instance, in deriving *bookish* from the base *book*, we recategorize the nominal base into an adjective; but in deriving *booklet* from the same base, we conserve its category. In the latter case, the only change brought about is a semantic one: the semantic composition of the base is enriched by the features contributed by the derivational operator. This kind of derivation is modificative derivation. In the present context, it is impossible to present a survey of modificative nominal derivation. A few examples must suffice.

Modificative derivation which attaches a quality concept to a referential concept is endocentric denominal nominal derivation. While this purely structural delimitation seems to leave everything open on the semantic side, the semantic range of such formations is actually cross-linguistically quite narrow. A few examples from Italian illustrate this:

E91	cavall	-ino / -one	/ -otto	/ -uccio	
ITALIAN	horse	-DIM	-AUG	-MEL	-PEJ
	'little/big/dear/miserable horse'				

Beside numerous similar suffixes which are in free or idiomatically fixed variation with some of the suffixes illustrated by E91, there is, in Italian, one more suffix which affords this kind of endocentric derivation but is outside the semantic field of E91, viz. *-oide* SIMIL, as in *suffissoide* 'suffixoid'. Apart from this,³⁷ E91 is entirely representative of the interlingual variation here: what one finds in this area are processes of diminution, augmentation and (positive or negative) evaluation.

Now it is clear that these derivations transport the qualitative concepts of 'good', 'bad', 'big' and 'small', which constitute the core of the set of concepts coded by adjectives in the languages of the world. Moreover, as mentioned before, this kind of derivation is found not only in languages which possess adjectives in the traditional sense, but also in languages which categorize quality concepts as verbs or nouns. This tells us two things: First, it is theoretically and methodologically valid to include this kind of derivation in an investigation of modification and the categorization of quality concepts. Second, since derivation is more entrenched in the language system than a lexical field, the semantic core of quality concepts appears to be universally this: evaluation and the basic geometric dimension concepts.³⁸

³⁷ It might be worth investigating whether the similitive meaning here does step out of the line; s. the set of Wayāpi quality suffixes in §4.4.3.2.

³⁸ It is worth noting that the first definition of the adjective extant in history, viz. the one given by Dionysius Thrax in his *Tékhne grammatiké*, ch. 12 "On the noun" (Uhlig (ed.) 1883: 34), defines the

4.5.2 Agreement inflection

At the morphological level, the modificative function of a word may be marked by some inflection, generally agreement with the head nominal. Agreement is Janus-headed in terms of its functions (Bhat & Pustet 2000: 762): On the one hand, it is an asymmetric relation: the attribute shows grammatical categories of its head, not vice versa. In this respect, agreement is clearly a mark of the dependency of the attribute on the head. On the other hand, agreement morphemes are pronominal in nature, both diachronically and in their grammatical feature composition (Lehmann 1982, §7.2). Consequently, a Latin adjective like *novus* does not only mean ‘new’, but also ‘(the/a) new one’. This pronominal inflection is of the category noun s.s.; it is, so to speak, the functional head of the agreeing adjective. It therefore renders the adjectival attribute relatively independent of its head noun. This means that it can be separated from it on the syntagmatic plane and may even function like a noun s.s. without any further operation of substantivization (s. §4.4.3.1.2).

The diachronic path along which agreement of the modifier with its head develops has long been known in Indo-European studies. At a first stage, a nominal expression is followed by another nominal syntagma consisting of an adjective provided with a pronoun or determiner, formalizable as [X]_{N,i} [[Y]_{Adj} [Z]_{Pro}]_{NP,i} (where the order of Y and Z is immaterial). The syntagma YZ bears a relation of syntactic phora to X, indicated by the referential index. This is why Z shows morphological categories of X. XYZ may also form an appositive construction, thus, a noun phrase, as in E11. This is the phase of development shown by Ancient Greek (E92), where Z is the definite article.

E92	ho	ánthrōpos	ho	agathós
GREEK	DEF:NOM.SG.M	man.M:NOM.SG	DEF:NOM.SG.M	good:NOM.SG.M
	‘the good man’			

The reverse order of head and attribute is all but excluded, as already taught by Apollonios Dyscolos (Householder 1981: 76). This leaves little doubt that the construction illustrated by E92 owes its origin to some kind of syntactic phora, paraphrasable as ‘the man, the good one’. At the language stage represented by E92, however, this has become a variant of normal adjective attribution. This diachronic pathway has been used repeatedly in the Indo-European family. The Balto-Slavic definite inflection (as in E12b) is a case in point. Here, Z probably stems from a relative pronoun (Hajnal 1997), so the entire construction originally was a relative construction. This, however, makes no difference for the phoric relation of Z to X. In either case, the latter is the presupposition for the agreement of Z with X. In the next phase of the development, Z coalesces with Y. As a result, Y now agrees with X through its declension desinence. Ancient Greek illustrates this phase, too: The agreement of the adjectival attribute with its head is another, much more advanced and consequently much more archaic, instance of the development on the same diachronic pathway. In other words, attribution by means of the definite article as illustrated by E92 is just a renewal of an inherited strategy.

Just as in Ancient Greek the definite determination of the adjective is restricted to attributive use, so the Balto-Slavic definite adjective is not found in predicative use. Similarly, in the Germanic languages, the adjective agrees with its head in the attributive construction, whereas there is no agreement of the predicative adjective. Moreover, as soon as the phoric function of the agreement is lost, the attributive adjective is also found in prenominal position. All of this is in consonance with the development just sketched. At the same time, it has the conse-

‘epitheton’ as a noun “which is put next to proper or common nouns and signifies praise or blame”.

quence, for the languages named, that the adjective bears morphological marks in the attributive construction which it does not bear in the predicative construction, with the methodological consequences mentioned in §2.3.

4.6 Lexical level: Modification in lexical semantics

In the lexicon, modification takes place at two levels:

- (1) At the level of primary grammatical categorization, a concept may be categorized as a modifier. It may be an adnominal modifier, in which case it is an adjective, or an adverbial modifier, in which case it is an adverb. This type of categorization in the lexicon was treated in §4.4 and is not what is presently at stake.
- (2) At the level of lexical semantics, i.e. of the meaning of a lexeme, a modifying concept may be a semantic component of the meaning of a lexeme, specifically of a nominal or verbal lexeme. This is the topic to be briefly treated here.

As was seen in §4.5.1, quality concepts may be derivational concepts. Now quite in general, any concept – or semantic feature – constituting a derivational meaning may also be part of the semantic composition of a root. Features such as ‘good’, ‘bad’, ‘big’, ‘small’ were shown to be operators of modificative derivation. Similar features have a modificative function in lexical meanings: A bad horse is a jade, a female horse is a mare, a young horse a foal, and so on. Modification of verbal concepts works the same way: To lollop is to walk clumsily, to stroll is to walk leisurely, to sneak is to walk stealthily, and so on. Enriching the inventory of the system by hyponyms of X is an alternative to combining, at the level of ‘parole’, X with a modifier to create an expression hyponymous to it. While the lexicalization of modified concepts can save many adjectives and adverbs, it is clear that it does not provide complete freedom in the creation of such hyponyms; this is only possible in syntax.

The state of the art in lexical semantics is a representation of the feature composition of a lexical meaning in terms of predicate calculus. Each feature is represented by a proposition containing at least one predicate and a set of arguments. The propositions could, in principle, be linked by any of the logical connectives. As a matter of fact, practically only the conjunctive (\wedge) is found in lexical semantic representations. This puts all those propositions at the same level; like for instance an armchair is a piece of furniture, and it is upholstered, and it has armrests, and it is for one person, and so forth. The actual use of nouns in discourse suggests rather that all of these features are not, in fact, on the same level. Instead, to the extent that lexical items are in paradigmatic relations, some features are presupposed as a kind of basic classification, while one of them is the ultimate distinctive feature which sets the *designatum* apart from its cohyponyms. Consider the examples in E93 – E95.

- E93 a. That is not a bachelor; he is married.
 b. That is not a rooster, but a hen.
- E94 a. That is not a bachelor, it is a spinster.
 b. That is not a rooster, but a drake.
- E95 a. That is not a man, it is a woman.
 b. That is not a chicken, but a duck.

The sentences of E93 seem natural; apparently the most discriminative feature of the noun in the first clause is being negated and corrected in the second one. Contrariwise, the sentences in E94 are special. They might be appropriate in metalinguistic use, so that E94a would mean

‘in such a case, the word *bachelor* does not apply; instead you say *spinster*’. In contexts of use rather than mention, it would be much more natural to use E95 instead of E94. The oddness of the sentences in E94 is due to the hierarchy among the semantic features composing the meaning of these nouns. A bachelor is a male person who is unmarried; it is not an unmarried person who is male. Similarly, a rooster is not a male which is a chicken, but rather a chicken that is male. Thus, in the odd sentences of E94, one is disputing not the distinctive feature, but the presupposed classification.³⁹ It thus seems that a kind of modification which is discriminative obtains even inside the semantic composition of a lexical meaning. The rhoticity observed in §4.3.2 for syntactic modifiers appears to be condensed here in lexical semantic structure.

5 Modification and time-stability

There is unanimity in the literature that the category of the adjective has both a labile and an ambivalent status in the word-class system. Labile, because in contrast to the noun and the verb, it is not present in all languages. Ambivalent, because in any given language, it usually shares features with either or both of the categories ‘noun’ and ‘verb’.

Both of these properties of the class have usually been attributed to the position of the adjective on a continuum extending between the poles of the noun and the verb. The adjective is labile because the logic of the continuum requires only two categories on it, the ones that occupy the poles. Any intermediate categories are optional; there may be none, or there may be more than one. The adjective is ambivalent because the properties constituting the continuum are most distinctive at its poles. Any category in the middle necessarily shares a subset of the features of either of the polar categories.

The continuum itself has often been based on the time-stability of the concepts designated. It is plausible that concepts designated by verbs usually have a low time-stability, while concepts designated by nouns usually have a high time-stability. However, as has repeatedly been observed (Thompson 1988, Knobloch 1999), adjectival concepts do not necessarily have a distinct time-stability intermediate between these poles, and for many of them the entire concept of time-stability does not seem to be relevant or even applicable. Moreover, it has been shown (Croft 1991, Lehmann 2013) that the functional foundation of word classes in languages does not reside in semantic categories covered by them, but instead in linguistic operations in which they are involved.

It is true that the prototypical noun designates a maximally time-stable concept and that nouns in general tend to designate time-stable concepts. But this is not because time-stability is the *raison d’être* of nouns, but because nouns are the category in which referential expressions are lexicalized. And while essentially any concept can be made referential, time-stable concepts are typically used for reference, so it makes sense to lexicalize these in the word class destined for reference.

And again, it is true that the prototypical verb designates a minimally time-stable concept and that verbs in general tend to designate time-labile concepts. But this is not because low time-stability is the *raison d’être* of verbs, but because verbs are the category in which predicative expressions are lexicalized. And while essentially any concept can be made predicative, concepts of low time-stability are typically used for predication, so it makes sense to lexicalize these in the word class destined for predication.

³⁹ Cf. also the proposal already made in McCawley 1968 to conceive selection restrictions as presuppositions associated with a lexical meaning.

The same reasoning in a slightly more complex form applies to adjectives. An adnominal modifier, by its very nature, shares properties with verbs and with nouns. Since it is a modifier, it is predicative like a verb, even though at a subordinate level. And since it is adnominal, it shares the referential potential of its head noun, even though at a subordinate level. The subordinate level at which a modifier functions explains the labile nature of the adjective. And the predicative and referential features deriving from its being an adnominal modifier explain its ambivalence between the noun and the verb.

One of the manifold interdependencies between discourse and the system consists in the fact that what is fixed in the system does not need to be generated in discourse. If a language possesses the category of the adjective, its lexemes enter discourse with a predisposition ('primary function') of serving as modifiers. Whenever such a lexeme actually has a modifying function, no relevant discourse operation is necessary. Whenever it has a different function, it is recategorized. The task in developing a language system which supports economy in discourse is therefore to confer a primary categorization to a concept and a class of concepts such as to minimize the need for (re-)categorization in discourse. One property of precategorial concepts able to serve as a criterion in a regular way is their semantic class. In this respect, the question is: is there a semantic class of concepts whose primary function is modification?

The notion of time-stability here comes into play in a very indirect way. The above review echoes and supports the thesis that the core of quality concepts is constituted by gradable concepts, which are a subcategory of property concepts. These are, at the same time, the simplest and most generally applicable quality concepts by which referential concepts may be further specified. While the feature of time-stability is essentially inapplicable to evaluative concepts such as 'good' and 'bad', dimension concepts like 'big' and 'small' yield rather stable subclasses of referential concepts – a little less stable than the entities themselves. It is, thus, the prototype of quality concepts that has led to the generalization of the intermediate time-stability of adjectives. In actual fact, however, in languages with a rich and productive class of adjectives, most adjectives designate neither properties nor states nor concepts of intermediate time-stability, be it that their time-stability is rather closer to the poles occupied by the noun and the verb, be it that they designate concepts outside the dimension of time-stability. Instead, the category 'adjective' is simply the receptacle for the lexicalization of adnominal modifiers.

6 Conclusion

For a language to maintain a word class of adjectives and/or of adverbs in the lexicon means for it to categorize a set of concepts as modifiers at the lexical-syntactic level. In other words, a subset of lexical items is provided by syntactic features which determine their primary function as modifiers. On the background of the availability of modificative operations briefly reviewed in §4.4.1, this categorization amounts to a shift of a certain linguistic function from the operational plane to the categorial plane.

To explain: The modification of a noun (or nominal group) by an adjective is a simple operation, viz. attribution. It reduces to the syntagmatic combination of the modifier with the nominal expression as its head, for instance by putting it in front. The modification of a noun by a nominal attribute is a complex procedure. It first involves an operation of conversion of a nominal base into a modifier, for instance by putting it into the genitive case. This is presupposed by the operation of attribution proper, which again consists in the combination of the genitival modifier with its head. The same goes for a relative clause. The first step is the con-

version of a verbal clause into a modifier, called relativization. In a second step, the relative clause is combined, as an attribute, with its head noun.

As a consequence, if something is to be modified by M, then there are two possibilities: Either one selects for M a linguistic sign of just any category. Then one first requires a conversion of this sign into a modifier. Technically speaking, this amounts to the equipment of M with a modificative argument position, i.e. an argument position to be occupied by a head in an endocentric construction. Once M has this combinatory potential, the second step is then modification proper. Or else one selects for M a linguistic sign which already comes equipped with a modificative argument position. Then all one has to do is the second step. This latter option, however, presupposes that there is, in the linguistic system, a stock of signs of the category in question. In this perspective, for a language to possess adjectives means that the system spares the speakers a conversion operation. Categorization of a set of concepts in a certain category is a shift of an operation that would have to be executed at the level of discourse (Saussurean ‘parole’) into the language system (Saussurean ‘langue’).

As we have seen in §4, the operation of modification is largely dispensable in a language. It is not entirely dispensable, as it will always be present at the level of lexical semantics. Furthermore, no language without modification at any grammatical level has been found yet. At any rate, modification complicates the syntax of a language by introducing a level of subordinate predication. This complicates both linguistic activity and the constructions created by it. The maintenance of a category of adjectives and the storage of a set of lexical items of this category complicates the system, but relieves ‘parole’. It is a partial relief for speakers of a language which makes heavy use of attribution.

The presence of adjectives in a language, however, presupposes the availability of the operation of attribution. Even if the language possesses adjectives and these may be used in a given context, the speaker may ignore them. Although certain systematizations are prefabricated in the language system, speakers can free themselves of such “pre-done systematizations”⁴⁰ and take recourse to the operation (cf. Lehmann 2013, §2). In this perspective, the operation of attribution has a higher position in the conceptual hierarchy and in the constitution of a language system than the adjective.

Abbreviations

a) In glosses

A	actor [verbal index function]	COMP	comparative
ABL	ablative	CONN	connective
ABS	absolute	D3	distal demonstrative
ACC	accusative	DAT	dative
ACT	active	DEF	definite
ADJR	adjectivizer	DIM	diminutive
ANA	anaphoric pronoun	ERG	ergative
ANTIP	antipassive	F	feminine
AOR	aorist	FOC	focus
AT	attributor	GEN	genitive
AUG	augmentative	IMM	immediate
CAUS	causative	INF	infinitive
CLx	class x	LOC	locative
COLL	collective	M	masculine

⁴⁰ Knobloch 1999, §1 speaks of “vorgetanen sprachlichen Ordnungen”.

MEL	meliorative	PQP	pluperfect
N	neuter	PRF	perfect
NEG	negative	PRS	present
NFUT	non-future	PST	past
NOM	nominative	PTCP	participle
NPST	non-past	REF	referential case
NR	nominalizer	REL	relative
NTR	neutral aspect	RFL	reflexive
OBJ	object [verbal index function]	SBJ	subject [verbal index function]
OR	oriented	SG	singular
PTCP	participle	STAT	stative
PASS	passive	SUBJ	subjunctive
PEJ	pejorative	TOP	topic
PL	plural	U	undergoer [vbl. index function]
POSS	possessive	VAL	validator
POT	potential		

b) In formulas

Adj	adjective	Obj	object
At	attributor	PreP	prepositional phrase
Det	determiner	Pro	pronoun
fin	finite	Rel	relationalizer
Gen	genitive	Sbj	subject
N	noun	s.l.	sensu lato 'in the wide sense'
Nom	nominal (group)	s.s.	sensu stricto 'in the strict sense'
NP	noun phrase	V	verb
NR	nominalizer		

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