

## VI. Einheiten der morphologischen Struktur

### Units of morphological structure

#### 39. Lexical, morphological and syntactic symbolization

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##### 1. Introduction

Languages offer a variety of means of expression, especially for grammatical notions. Morphology, which is concerned with the combination of meaningful units into words, can only be fully understood in the context of the complete array of expression and combination types. In this article, similarities and differences among the major **expression types** or **symbolization types** – syntactic, free grammatical, inflectional, derivational, compositional and lexical – are described in terms of a series of continua with both diachronic and cognitive motivation (cf. 2). These continua involve phonetic, morphophonemic, grammatical and semantic criteria (cf. 3–6). The relation between the formal and semantic criteria is non-arbitrary, and thus part of the discussion will be directed toward explaining which meanings are expressed by which symbolization type (cf. 7).

##### 2. Symbolization types

Two or more meaningful units may be combined in different ways. The form of combination with the least fusion between the two units and fewest restrictions on possible co-occurrence is **syntactic expression**, in which two meanings are expressed in two independent words. For instance, the causative notion and an intransitive verbal notion are expressed separately in the phrases *cause to die* or *make [something] fall*. In **morphological**

**expression**, the two meaningful units are expressed in distinct morphemes, but they are combined into a single word. In English, the causative suffix *-en* on an adjective yields the meaning 'cause to become ...', e.g. *blacken*, *straighten*. In Turkish, the causative suffix can be added to dynamic intransitive verbs, as in *düşürmek* '[to] make fall, drop' vs. *düşmek* '[to] fall'. **Lexical expression** involves the combination of various semantic features into a single indivisible morpheme which has lexical status, that is, functions as a noun, verb, adjective or other lexical category and has material content. For instance, *walk* and *wade* describe a similar type of movement, but *wade* includes the additional semantic specification that the movement be through shallow water. Lexical distinctions sometimes correspond to distinctions made grammatically elsewhere, such as the English distinction between *die* and *kill* ('cause to die') and *fall* and *drop* ('cause to fall, allow to fall').

Within morphological symbolization it is customary to distinguish between inflectional and derivational morphology (cf. Art. 38). **Inflectional morphemes** are those bound grammatical morphemes that belong to obligatory categories, that is, categories from which one member must be chosen given the grammatical context. English inflections include the categories number (singular, plural) for nouns and tense (present, past) for verbs. Besides affixation, inflectional expression includes other formal processes, such as changes in the base, as in English *ring* vs. *rang* (cf. Ch. VIII). **Derivational morphemes** are also bound, that is, either affixal or expressed through stem changes, but they do not belong to obligatory categories. They also may change the lexical category of the stem, as when the adjective *happy* becomes the abstract noun *happiness*, or the noun *reason* becomes the adjective *reasonable* (cf. Art. 86, 89). **Composition** or **compounding** may also be considered a type of morpholog-

ical symbolization. It involves the juxtaposition in a single word of two lexical units – two morphemes that have lexical status and material content. Thus *headache* and *typewriter* are compounds (cf. Art. 37, 86–88).

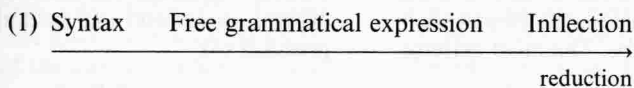
Syntactic expression may occur in more than one type. The words involved in syntactic expression may be lexical or grammatical. In the latter case we speak of **free grammatical morphemes**. Examples include non-bound grammatical morphemes such as articles, prepositions or verbal auxiliaries. Free grammatical morphemes are usually associated with a particular construction, which may also involve certain affixes, and which expresses grammatical meaning. English *be going to*, for example, uses the erstwhile lexical stem *go*, the grammatical morphemes *-ing* and *to*, and the copula *be*, whose status is somewhat intermediate between lexical and grammatical. This construction qualifies as free grammatical because although the component parts are fused (as in *gonna*) and the construction has a fixed position, it is not affixed to a lexical unit. The term *periphrasis* is sometimes appropriate for constructions involving non-bound morphemes in their expression (cf. Art. 68, 78). Clitics are also a subtype of free grammatical expression. Clitics are grammatical morphemes that behave as though they are non-bound in terms of their distribution – that is, they may change their position under different grammatical conditions (e.g. Spanish clitic object pronouns precede the finite verb, as in *me lo dió* '(s)he gave it to me', but follow the imperative and nonfinite verbs, as in *dámelo* 'give it to me!'), or they are in construction with a phrase or clause rather than a single lexical unit (e.g. the English possessive, as in *the man next door's car*, where *'s* attaches to the end of the noun phrase). Despite the distributional independence, however, clitics are unstressed and behave as though they are phonologically part of the preceding or following word (cf. Art. 41). Thus clitics represent an intermediate type between syntactic and morphological symbolization.

The boundaries between these different symbolization types are not discrete, but rather each type is a focal point on a continuum. Therefore the different phonetic, morphophonemic, grammatical and semantic properties of the types will be presented in terms of several continuous scales (cf. 3–7).

### 3. Reduction in phonetic content

As a general rule, lexical morphemes tend to be longer than grammatical morphemes in terms of the number of constituent phonological segments. In addition, affixes, especially inflections, tend to use only a limited number of the phonological distinctions available in a language. For instance, English uses only coronal consonants and the reduced vowel in its inflectional suffixes. This correspondence creates a kind of iconicity (cf. Art. 30) in which the more specific, less predictable and perhaps contextually more important semantic content of lexical morphemes is expressed by the longer, less predictable phonological material (cf. Givón 1990: 969). The actual mechanism that creates this iconicity is, however, diachronic. As lexical material erodes into grammatical material in the process of grammaticalization, semantic content and phonological content are eroded in parallel, producing a situation in which the units that have the least semantic content are also the phonologically most reduced (cf. Bybee et al. 1994; Art. 145).

Since free grammatical expression evolves out of lexical units in syntactic combination, we can observe a difference in phonetic content between freely formed syntactic constructions and grammaticized periphrastic ones. Thus *going to* has its full phonetic realization in *I am going to the library*, while in its grammatical use, as in *I think I'm gonna cry*, both the vowels and the consonants are substantially reduced. Periphrastic constructions are in turn usually longer than inflections. This relationship is summarized in (1), where the arrow points in the direction of increasing reduction.



A similar relationship can be seen between compounds and derivational morphemes. Both elements of the compound are lexical and enter into the compound as unreduced, except that the stress may be reduced on one

element. If one element is frequently used in compounds it may begin to reduce in size. Thus the *-ly* suffix that is used on nouns to make adjectives (e.g. *friendly*) and on adjectives to make adverbs (e.g. *quickly*) derives

from the Old English *-lice* 'having the appearance or form of' which in turn derives from a noun meaning 'body'. As this one element of the compound became frequently used in many different compounds, it lost its final consonant, unlike the independent form *like* which has a long vowel and final consonant. (2) shows this diachronic relation:

(2) Composition Derivation  
 →  
reduction

#### 4. Fusion

The degree of fusion of two elements can be determined by both grammatical and phonological criteria. The grammatical criteria include the extent to which the relative position of one is fixed with regard to the other, and

(3) Syntax    Free grammatical expression    Composition    Inflection    Derivation  
 →  
 less fused more fused

The freest type of combination and the one with the least fusion is the syntactic combination of lexical units, although there are some syntactic combinations, such as idioms, that are relatively fixed. Free grammatical expression is by definition not affixal, but some degree of fusion exists to the extent that relative positions are fixed and the construction as a whole has meaning that is not just derivable from the sum of the parts. Compounds also exhibit fusion since no lexical elements can come between the parts of a compound, and there is usually some prosodic feature of compounds that treats them as a single unit.

Inflection and derivation (which derive diachronically from free grammatical expression and compounding respectively) are by definition affixal and thus more fused than any other expression types. Again by definition affixes allow no open class items to intervene between them and the stem. As to the degree of fusion, this can be further differentiated by the extent of allomorphy in stem and suffix, since the more the two units are phonetically compressed, the greater their effect on one other will be. The most extreme

the extent to which other elements, particularly open class elements, are allowed to intervene between the two. Phonological criteria are applicable in some languages: two units are more fused if the combined unit is treated as a word by stress and by other rules, such as vowel harmony rules, whose domain is the word. Morphophonemic fusion is manifest in allomorphic variation that is conditioned in the combination. Such variation includes effects that the stem may have on an affix, either phonologically motivated or more arbitrary, as in the regular alternates of the English past tense (as in *walked*, *played*, and *waited*) or the more arbitrary alternates of the past participle (*-ed* vs. *-en*), and effects that the affix has on the stem, as in English past tense forms *kept* and *left* (cf. *keep* and *leave*). The continuum (3) shows how all of the expression types are ranked with regard to fusion:

degree of fusion in derivation and inflection is pure stem change with no affix. Inflection and derivation cover approximately the same formal range of expression, both allowing affixes and stem change, but there are probably more derivational categories that can have an effect on the stem than there are inflectional ones, since agreement, tense and mood are very infrequently expressed by stem change or even accompanied by stem change (cf. Bybee 1985: 36f.).

Greater fusion in both compounding and derivation leads to lexical expression, although in both cases the process usually involves meaning as well as form. For instance, the fusion of *breakfast* involved the reduction of both vowels, and the loss of secondary stress on the second syllable. Derived words can also undergo similar fusion as when the productively formed *highness*, e.g. in the phrase *Your Highness*, loses secondary stress on the suffix and comes to rhyme with *minus*.

The fusion criterion gives us two diachronic continua, one leading to inflectional expression (4) and one leading to lexical expression (5):

(4) Syntax    Free grammatical expression    Inflection  
 →  
fusion

(5) Syntax    Composition    Derivation    Lexical expression  
 →  
fusion

## 5. Grammatical factors

The major criterion that distinguishes lexical and grammatical morphemes is membership in open vs. closed classes, where *class* refers to a set of mutually exclusive forms and *open* vs. *closed* refers to the ease with which the class accepts new members. Even this criterion is scalar, since both parameters are continuous. First is the definition of classhood, which relies upon shared distribution, as this distribution may be more or less heavily governed by grammatical rules. Derivation and compounding are word-formation devices in the sense that they create new lexical words that then enter into grammatical structure according to the rules for their category, but their internal make-up is not influenced by properties of the clause. On the other hand, both bound and free grammatical morphemes are heavily restricted in their distribution.

The second parameter is the size of the class: open classes are always large, but closed classes may be small or large. In inflection, we often find categories with only one overt member contrasting with a zero, while in a system that fuses the expression of person, number and gender of subject and object, one class may have dozens of members (e.g. Maung, of North Australia; cf. Capell & Hinch 1970: 66–85). Periphrastic classes can be larger also: while the class of English modal auxiliaries is heavily bound by grammatical rules, it still contains nine members – somewhat on the large side for a closed class in the languages of the world. Categories that are usually thought of as lexical may also be represented by closed classes. Adjectives and adverbs in some languages constitute closed classes (cf. Dixon 1977; Art. 74). Nouns that may be incorporated often constitute a fixed set, which nonetheless may have as many as a hundred members (e.g. in Tiwi; cf. Osborne 1974: 47–50; Art. 88).

Another important grammatical criterion is the one that best distinguishes inflection from derivation: the criterion of obligatoriness (cf. Greenberg 1954; Matthews 1991: 43–54; Anderson 1982: 585–591). Obligatory categories are associated with the particular structure of the clause or phrase to such an extent that one member of the category must appear. Thus English noun phrases with count nouns require marking for number. Every Spanish finite verb must have an indication of tense or aspect (either present, future, preterite or imperfective), mood, person

and number. While inflectional categories are by definition obligatory, periphrastic categories may or may not be. An example of a non-bound obligatory category is the English determiner system, since a singular noun must have some type of determiner and the lack of a determiner is meaningful, signalling a non-specific noun (e.g. *rabbits multiply quickly*). On the other hand, derivation, compounding and lexical expression are never obligatory in this sense. A consequence of obligatoriness is that every stem must occur with some member of the obligatory category. Thus gaps in inflectional paradigms are relatively rare, and occur only where they are semantically motivated (e.g. the first person singular of the verb 'to rain' may be missing; cf. Art. 67). On the other hand, idiosyncratic gaps in the application of derivational morphology are common. Thus we have *prevent*, *prevention* but not \**preventment* and *resent*, *resentment* but not \**resention*.

## 6. Semantic factors

The phonetic, morphophonemic, and grammatical parameters governing the expression types correlate to some extent with certain semantic parameters. Some of them are concerned with the type of semantic content found in the individual unit (cf. 6.1), while a second set is concerned with the semantic results of the fusion of two units (cf. 6.2).

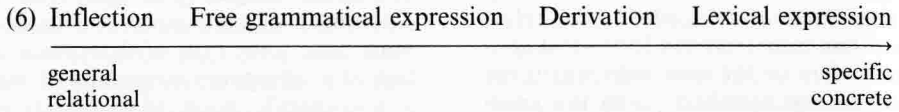
### 6.1. Semantic content

**Lexical content** may be characterized as basic or concrete, describing as it does objects, actions, and qualities, and **grammatical content** may be called relational: it constructs the fundamental form of the proposition by tying concrete concepts together (cf. Sapir 1921: 93). Relational concepts may be more or less concrete; the more concrete ones are expressed by derivation, and the less concrete ones by inflection and word order (cf. Art. 27). Lexical content is also more specific, with each unit being specified by multiple features, while relational content is highly generalized and sometimes fully described by a single feature, such as 'before the moment of speech' (for past tense), or 'more than one' (for plural). Of course, lexical items may be more or less specific, with a noun like *cup* being more specific than *thing*, and the verb *calculate* being more specific than *do*. Grammatical meaning may also be more or less specific; a dual is more specific than a plural, a completive, meaning 'to do something thor-



oughly and completely, totally affecting the patient' as in Tucano *bapèòami* 'he ate all of it', more specific than a simple past or perfec-

tive 'he ate' (cf. Sorenson 1969: 174). In general, however, the following scale holds for generality of meaning:



The degree of specificity or generality of the semantic content of a morpheme is directly related to the size of the class that morpheme belongs to. Inflectional morphemes such as those signalling tense tend to belong to small sets and to have very general meaning. Animate nouns tend to belong to very large sets and to have more specific meaning.

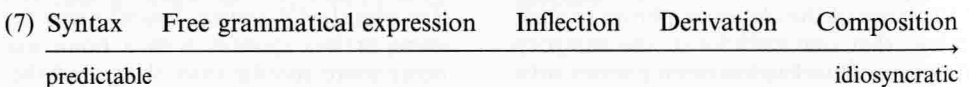
A number of recent studies suggest that the range of meanings expressed inflectionally is characterizable as a small universal set (cf. Bybee 1985; Dahl 1985; Ch. XIII–XIV). The same can be said for some (perhaps all) areas of derivational morphology (cf. Comrie 1985; Comrie & Thompson 1985; Woodworth 1991), and for free grammatical expression (cf. Dahl 1985; Bybee et al. 1994). Lexical meaning may be somewhat more language-specific, especially the lexical content of verbs, which are more abstract and relational than concrete nouns (cf. Talmy 1985; Gentner 1981).

## 6.2. Semantic combination

In addition to these criteria, which distinguish types of meaning expressed by individual morphemes, differences may be found in the way that meanings are combined in the various expression types. The first difference concerns the predictability versus idiosyncrasy of the meaning resulting from the combination of two semantic units (cf. Art. 82). Meanings expressed by word order, such as grammatical relations of subject or object of verb tend to remain stable over different noun and verb categories. Periphrastic constructions and inflections also tend to have predictable meaning across a range of combinations, although there are some cases of inflections that have different interpretations with different stem classes, such as anteriors

or perfectives whose meaning is 'present state' with stative predicates. For instance, in Kanuri, the suffix *-nà* is used for 'anterior' (or 'perfect') with dynamic predicates, such as *isànà* 'they have arrived' but for 'present state' with stative predicates such as *nòngnà* 'I know' or *rààknà* 'I want to, I like to' (cf. Hutchison 1981: 121f.).

Derivational combinations have predictable meaning when they are formed and often retain such predictable meanings, as in English *-able*, in *washable*, or *curable*, but it is also common for derived combinations to take on unpredictable meaning over time. Thus *awful* no longer means 'full of awe' but rather can be used about the object or situation which inspired awe, and is further restricted as an adjective to describing the object or situation as bad, which was not part of the original meaning. As an adverb with *-ly* the negative sense is lost and it is just an intensifier: *This is awfully good*. Lexical elements forming a compound have predictable meaning only in the particular speech or cultural context because a variety of relations may hold between the two members of the compound. Thus in *air condition* the noun is the object, but in *air flow* it is the subject; in *air brush*, *air* is the means or instrument and in *aircraft*, it is the medium for travel. That compounds are not predictable in meaning becomes evident when one compares them to new or rare derivational combinations, such as *ethnicness* or *ringable*, whose parts have a predictable relationship regardless of the context of their use. Lexical expression represents the extreme pole of idiosyncrasy, since there is no way to predict the meaning of the sum of the parts as there are no formal parts to be summed. Continuum (7) summarizes the degree of predictability of each symbolization type:



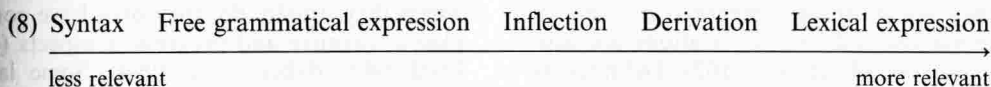
The second parameter in semantic combination, relevance, concerns the extent to which the meaning of one unit directly affects

or modifies the meaning of the other (cf. Bybee 1985: 13). Degree of relevance predicts the likelihood that two meaningful elements

will occur together and the degree to which they will have fused expression. On the syntactic level, relevance predicts that the elements internal to the noun phrase and verb phrase will occur adjacent to one another and in general that the linguistic distance corresponds to the conceptual distance (cf. Haiman 1983: 814). With free grammatical and inflectional expression, the relevance principle predicts the ordering of grammatical elements with respect to the lexical stem according to the meaning of the grammatical elements and how relevant the meaning is to the stem. Thus since valence and aspect are the categories that are most exclusively relevant to the verb, they tend to be expressed by elements that are closest to the verb stem – either by periphrases or affixes that are close in, or by derivation or lexical expression (cf. Bybee 1985; Art. 77). For nouns, gender affects the meaning of the stem more than number or case, and thus tends to be closer to the stem, or to have derivational or lexical expression (cf. Art. 73). Verbal categories such as tense and mood are relevant to the verb, but have the whole proposition in their scope and thus are more commonly ex-

pressed by more external affixes and periphrasis, or even clitics.

Derivational categories often have a high degree of relevance, evidenced by the fact that the combination of the affix with the stem produces a new word – that is, there is cohesion in the resulting concept. For instance, causatives may have periphrastic, derivational or lexical expression, but the degree of semantic cohesion of the concepts differs according to expression type. The Japanese periphrastic causatives *sin* + *sase* 'die + cause', and *tomar* + *sase* 'stop + cause' do not mean the same thing as the more fused causatives such as *tome* 'stop' or lexical causatives such as *koros* 'kill'. The synthetic forms connote simultaneity of cause and result, with physical contact between causer and causee, while the periphrastic forms allow the inference that the cause was less direct and two events may have been involved (cf. Haiman 1983: 784). This example shows also that in lexical expression the units of meaning are so relevant to one another that they produce a coherent and discrete concept of their own. The scale of degree of relevance of two semantic features to each other is shown in (8):



## 7. Meanings possible for each type of expression

Because of the formal and semantic characteristics of each expression type, certain meanings have a tendency to be expressed in some of these ways but not others. For compounding the mere juxtaposition of lexical items is meaningful. This meaning does not derive from linguistic units with inherent semantic content as in the other expression types, but rather has its source in the inferences that can be made from the linguistic and non-linguistic context. The relationship between the two elements of a compound can be any of the relationships that may hold between the two elements in the categories represented, that is, two nouns, noun-verb, etc. (cf. 6.2). Which relation is intended depends upon the meanings of the two lexical items and the broader context in which the compound is used.

Inflection, derivation and free grammatical symbolization express many similar semantic notions. Inflectional expression is

used for the smallest, most constrained set of notions, because it must be semantically general enough to be applicable to all (or almost all) lexical stems (cf. Bybee 1985: 16–19). Derivation tolerates much more lexical idiosyncrasy and specificity of meaning. Free grammatical expression is also often specific. Thus in the domain of tense and aspect the more specific and lexically restricted meanings – completives, inchoatives and iteratives – may be expressed either periphrastically or derivationally. Progressives are usually periphrastic, and futures are sometimes periphrastic and sometimes inflectional (cf. Dahl 1985: 184–189). The more generalized tenses, such as present and past are usually inflectional (although they may be periphrastic), but they are never derivational, as their content is deictic and has the whole proposition in its scope. The more generalized aspects, perfective and imperfective, are almost always inflectional. In the less usual circumstance that perfective and imperfective are expressed derivationally, as they are in Slavic languages, the sense is more specific, in that

the perfective expresses the attainment of a limit, and there is considerable lexical idiosyncrasy (cf. Dahl 1985: 84–89; Art. 109 and 110). The moods and modalities that can be inflectional are again the most generalized ones, those which have a whole proposition in their scope – subordinating moods, imperatives and epistemic moods. Modalities expressing desire, obligation, or ability most often take free grammatical expression (cf. Bybee 1985: 166; Art. 111). Derivational or periphrastic expression is also possible for valence-changing constructions, such as causative, transitivizers and intransitivizers, and periphrastic expression is possible for voice functions, such as passive, reciprocal and reflexive (cf. Art. 107 and 108). Morphemes indexing person, number and gender agreement on verbs are almost always inflectional, but some languages have a derivational category of “plurality of action” that partially overlaps with number agreement (cf. Art. 100).

Morphemes in construction with nouns such as numeral classifiers are usually not bound to the noun, but may have some internal fusion of their own (cf. Art. 75). While case markers are usually bound to the noun if they are postposed, preposed markers of grammatical and locative relations are usually not bound (cf. Art. 102). Definiteness markers may be bound or not bound, but neither case nor definiteness have any derivational counterparts. Plural, on the other hand, which is often inflectionally expressed on nouns, has a derivational counterpart in the collective, and plural in Indo-European languages in some ways resembles derivation (cf. Art. 100 and 101). Gender and similar noun classifications are lexically determined and thus more closely resemble derivational categories, even where the classification interacts thoroughly with case and number (cf. Art. 97). Diminutive and augmentative must also be considered derivational, even where their use is very productive and interacts with inflection (cf. Art. 99). Adjective comparison may be either derivational or periphrastic (cf. Art. 114). Agreement for gender and number in adjectives is inflectional, even though in nouns gender is derivational or lexical (cf. Kuryłowicz 1964). In adjectives gender and number are not inherent to the adjective, but rather an index of the same categories in nouns. Other common derivational processes are those which nominalize verbs and verbalize nouns. Occasionally these same processes

are accomplished periphrastically (cf. Woodworth 1991).

Languages utilize the different symbolization types to varying degrees. The well-known distinction between analytic and synthetic languages is based on the observation that some languages (e.g. Mandarin Chinese), termed analytic, make very little use of inflectional marking and rely instead on syntactic expression and composition, sometimes with derivational morphology as well. Typical synthetic languages (such as Latin), on the other hand, make use of inflectional morphology to a greater degree, while also using the other symbolization types. Since the distinctions between expression types involve both formal and semantic criteria, languages that use certain formal types of expression will express certain types of meaning, and languages that lack certain types of expression will lack certain types of meaning (cf. Sapir 1921). Thus languages without inflection will lack person and number categories and often also lack tense distinctions such as past and present, and the most generalized aspectual distinctions, such as perfective and imperfective (cf. Dahl 1985). On the other hand, if these languages have periphrasis, which they usually do, they may have completive, iterative and progressive aspects (cf. Dahl 1985; Bybee et al. 1994). Some languages have very rich derivational possibilities while others have none, again affecting the types of meaning that are overtly expressed (cf. Art. 115 and 116).

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