Construction Morphology

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Abstract
In construction morphology, complex words are seen as constructions on the word level. The notion 'construction', a pairing of form and meaning, as developed in the theory of Construction Grammar, is essential for an insightful account of the properties of complex words. Morphological patterns can be represented as constructional schemas that express generalizations about sets of existing complex words and word forms, and provide the recipes for coining new (forms of) words. Such schemas form part of a hierarchical lexicon with generalizations on different levels of abstraction, they account for holistic properties of complex words that are not derivable from their constituents, and they can be unified into complex schemas that express the co-occurrence of certain types of word formation. The format of constructional schemas is also appropriate for phrasal lexical units with word-like functions such as phrasal names, particle verbs, and periphrastic expressions.

1. Introduction
The theory of construction morphology (CM) aims at a better understanding of the relation between syntax, morphology, and the lexicon, and of the semantic properties of complex words. It provides a framework in which both the differences and the commonalities of word level constructs and phrase level constructs can be accounted for.

There are two basic approaches to the linguistic analysis of complex words. In the morpheme-based approach, which was dominant in post-Bloomfieldian American linguistics, a complex word is seen as a concatenation of morphemes. In this approach, morphological analysis is conceived of as the 'syntax of morphemes'. For instance, the English word *awareness* can be analyzed as the concatenation of the adjectival morpheme *aware* and the nominalizing suffix *-ness* that evokes the meaning 'state, property'. Similarly, the past tense form *walked* is analyzed as the concatenation of the morphemes *walk* and *-ed*.

This tradition of morphological analysis is manifest in the theory of Distributed Morphology (Harley and Noyer 1999). Alternatively, we might take a word-based perspective in which words are the starting points of morphological analysis. In this kind of morphological analysis, we compare sets of words like the following:

(1) a. bald  b. baldness
    big    bigness
    black  blackness
    British Britishness

We then conclude to a formal difference between the words in (1a) and those in (1b) that correlates systematically with a meaning difference: the words in (1b) have an additional sequence *-ness* compared to those in (1a) and denote the property or state expressed by the adjectives (1a). This paradigmatic relationship between these sets of
words can be projected onto the word awareness in the form of word-internal morphological structure:

\[(2) \quad \text{[[aware]}_A \text{ness]}_N\]

Moreover, the set of words in (1) may give rise to an abstract schema of the following form in the mind of the speaker of English:

\[(3) \quad \text{[[x]}_A \text{ness]}_N \text{ ‘the property/state of A’}\]

This schema expresses a generalization about the form and meaning of existing deadjectival nouns in -ness listed in the English lexicon, and also functions as the starting point for coining new English nouns in -ness. That is, new deverbal nouns in -ness are not necessarily coined on analogy with a specific existing word in -ness, but may be formed on the basis of this abstract schema. A new word is formed by replacing the variable x in the schema with a concrete adjective. For instance, the unification of the adjective [carless]_A with schema (3) results in the word construct \[[\text{carless}]_V \text{ness]}_N\] with the meaning ‘the state of being without a car’ (source: Time, October 5, 2009). That is, through unification the variables in the formal structure and the semantic specification of the schema are turned into constants. Unification is the basic operation, both at the word level and the phrase level, to create well formed linguistic expressions.

The idea that word formation patterns can be seen as abstractions across sets of related words is rooted in a venerable tradition. For instance, the German linguist Hermann Paul wrote in his famous Prinzipien der Sprachgeschichte, published in 1880, that the language learner will start with learning individual words and word forms, but will gradually abstract away from the concrete words (s)he has learned, and coin new words and word forms according to abstract schemas. This enables the language user to be creative both in word formation and in inflection (Paul 1880 [3rd edition 1898]). This tradition is continued in the paradigmatic approach to word formation (Schultink 1962; Van Marle 1985), and in recent work in varieties of non-transformational generative grammar such as Head-driven Phrase Structure Grammar (HPSG) (Riehemann 1998, 2001).

As such morphological schemas depend on relationships between words, this morphological model has been called the network model (Bybee 1995), and the notion ‘network’ is indeed a proper term for conceptualizing the set of relationships between words in a lexicon (Bochner 1993). Schema (3) may be said to license the individual nouns in -ness in the English lexicon. Complex words, once coined, will be stored in the lexicon of a language (which generalizes over the lexical memories of the individual speakers of that language), if they have idiosyncratic properties and/or have become conventionalized.

CM assumes that complex words, i.e. the outputs of morphological operations, can be listed in the lexicon. Morphological schemas therefore have two functions: they express predictable properties of existing complex words and indicate how new ones can be coined (Jackendoff 1975). This conception of the grammar avoids the well known rule versus list fallacy (Langacker 1987), the unwarranted assumption that linguistic constructs are either generated by rule or listed and that being listed excludes a linguistic construct from being linked to a rule at the same time.

The relation between schema (3) and the individual words that conform to this schema is that of ‘instantiation’: each of the nouns in -ness listed in (1) instantiate the schema in (3). Schema (3) provides a direct account of the fact that -ness is a bound morpheme that does not occur as a word by itself.

What is the implication of word-based morphology as outlined above for our conception of the architecture of the grammar? How does morphology fit into that architecture?
My starting point is that each word is a linguistic sign, a pairing of form, and meaning. The form of a word in its turn comprises two dimensions, its phonological form, and its morpho-syntactic properties. Hence, each word is a pairing of three types of information. Morphology affects all three dimensions of words. That is why we need a ‘tripartite parallel architecture’ of the grammar (Jackendoff 2002, 2007; Culicover and Jackendoff 2005, 2006). In sum, a word is a complex piece of information, and morphology deals with the systematic pairing of form and meaning at the word level. In the next sections, I will adduce a number of observations and arguments in favor of the claim that the notion ‘construction’ and the related notion of ‘hierarchical lexicon’ are indispensable for an insightful analysis of complex words. In this article I will focus on the relevance of the constructional approach for word formation, but it is equally relevant for inflectional phenomena, as I will briefly explain at the end of this article.

2. Constructions

The notion construction (defined as a pairing of form and meaning) is a traditional notion used in thousands of linguistic articles and books. In most cases, it refers to a syntactic pattern in which particular formal properties correlate with specific semantics that is not completely compositional, but yet predictable. For instance, many linguists of English speak of the passive construction because sentences with passive meaning in English have a specific syntactic form that correlates with a specific passive meaning.

A famous example of a syntactic construction is the caused motion construction exemplified by sentence (4) (Goldberg 2006):

(4) Pat sneezed the foam off the cappucino

In this sentence, the verb to sneeze is used as a transitive verb, although it is normally an intransitive verb. Its use as a transitive verb correlates with the presence of an object that moves along a path specified by a PP. The transitivity of the verb to sneeze, and the meaning component that the sneezing caused the foam to move is therefore to be seen as a property of this construction as a whole.

The notion ‘construction’ plays an important role in a number of recent linguistic models: Construction Grammar (Goldberg 1995, 2006; Croft 2001; Fried and Östman 2004), the Simpler Syntax Model (Culicover and Jackendoff 2005, 2006), Cognitive Linguistics (Langacker 1999), and HPSG (Sag et al. 2003; Sag 2007). The following features of the constructional approach are of high relevance for the further articulation of CM:

(5) Pieces of syntactic structure can be listed in the lexicon with associated meanings, just as individual words are; these are the MEANINGFUL CONSTRUCTIONS of the language.

Construction grammar makes no principled distinction between words and rules: a lexical entry is more word-like to the extent that it is fully specified, and more rule-like to the extent that it contains variables […]

Lexical entries are arranged in an inheritance hierarchy. (Jackendoff 2008).

It should be clear by now that the notion ‘construction’ has relevance for the theory of word structure because complex words, like syntactic constructs, are instantiations of constructional schemas. The view that complex words instantiate morphological constructions is also stated explicitly in Croft (2001), Goldberg (2006: 5), and Inkelas and Zoll (2005). An example of a constructional analysis of prefixed words is the analysis of English be-verbs in Petré and Cuyckens (2008). Yet, the investigation of the
constructional aspects of word structure is still in its beginnings (Culicover and Jackendoff 2006). The next sections will present a number of arguments in favor of the constructional approach to word formation, and its relevance for inflection will be briefly argued for at the end of this article.

3. The hierarchical lexicon

Let us return to the schema for English deadjectival nouns in (3). This schema can be qualified as a constructional idiom at the word level, that is, a word level construction with one fixed position, that of the suffix. Constructional idioms are schemas in which one or more positions are lexically fixed. For instance, in the English construction N₁, after N₂, exemplified by year after year, book after book, etc. with the meaning ‘Ns in succession’ the preposition slot is lexically fixed as after whereas the N positions are variables. The individual deadjectival nouns in -ness are morphological constructs that instantiate construction schema (3). Each individual noun in -ness listed in the English lexicon is dominated by this schema and inherits its predictable properties from schema (3) and from its adjectival base word. Hence, if a listed complex word is completely regular, all information concerning this word counts as redundant, except for the information that it exists, that is, belongs to the lexical convention of English.

Schema (3) is a case of derivation, word formation by means of an affix. Patterns of compounding, the other main type of word formation in English, can also be represented straightforwardly as constructions, as illustrated in schema (6) for nominal compounds which, like most English compounds, are right-headed:

(6) \[ [a]Xₐ [b]Nᵢ \rightarrow [\text{SEM}_i \text{ with relation } R \text{ to } \text{SEM}_k] \]

This kind of notation is used in Jackendoff (2002). The double arrow symbolizes the relationship between a particular form and a particular meaning. The variable X stands for the major lexical categories (N, V, A, and P). The variables a and b in this schema stand for arbitrary sound sequences. The variables i, j, and k stand for the lexical indexes on the phonological, syntactic, and semantic (SEM) properties of words. The use of phonological variables indicates that phonological information does not play a restrictive role in this type of word formation. In (6), the meaning contribution of the compound schema is specified, as morphology deals with the correlation between form and meaning in sets of complex words. The nature of R, the semantic relation between the two parts of a compound, is not specified in the schema but has to be determined for each individual compound on the basis of the meaning of the compound constituents, and encyclopedic and contextual knowledge (Downing 1977); for a discussion of the semantic regularities involved, see Jackendoff (2009). Schema (6) thus specifies only the very general meaning contribution of the compound construction that it establishes a semantic relation of some sort between the two constituents, and also that the right constituent, which is the formal head of a compound, is its semantic head as well: a towel rack, for instance, is a kind of rack, not a kind of towel.

The following English compounds exemplify the various options defined by schema (6):

(7) NN bookshelf, desk top, towel rack
VN drawbridge, pull tab
AN blackbird, greenhouse
PN afterthought, overdose, inland
The four patterns listed in (7) are subcases of schema (6). They differ in certain ways. For instance, whereas in NN compounding the modifier N can be a compound itself, this is not the case for AN compounds:

(8) NN recursive modifier: [[reference book] [shelf]], [[kitchen towel] [rack]]
AN recursive modifier: *[[snow white] [rack]], *[[light-green] [house]]

Therefore, we need subschemas of (6) in which such specific restrictions are specified.

A clear advantage of this representation of English nominal compounds is that we do not need a Right-hand Head Rule (Williams 1981) to express the generalization that the word class of an English nominal compound is the same as that of its right constituent. Schema (6) will in its turn be dominated by a more general right-headed schema for all English compounds including those with a verbal or adjectival head (brain-wash, light-green), in which the head position is specified as Y (Y = N, V, A). Thus, the necessity of both schemas and subschemas for English compounds illustrates the importance of the notion ‘hierarchical lexicon’ for morphological analysis.

4. Holistic properties of morphological constructions

An important argument for using the notion ‘morphological construction’ is that it enables us to specify predictable semantic properties of sets of derived words that cannot be deduced from the semantic properties of their constituent parts. An example is the use of full reduplication for the expression of the plural meaning on nouns in Malay:

(9) ana ‘child’ ana-ana ‘children’
rumah ‘house’ rumah-rumah ‘houses’

In such reduplication constructions, the notion ‘plurality’ is not expressed by one of the constituents of the plural noun; it is the construction as such, a configuration with two identical constituents, that evokes this meaning.

Another example comes from Romance languages. French, Italian, and Spanish have nominal compounds of the form VN such as:

(10) a. French
chauffe-eau ‘water heater’
coupe-ongles ‘nail clipper’
garde-barrière ‘gate keeper’
grille-pain ‘toaster’

b. Italian
lava-piatti ‘dish washer’
mangia-patate ‘potato eater’
porta-lettere ‘postman’
rompi-capo ‘brain teaser, puzzle’

c. Spanish
lanza-cohetes ‘rocket launcher’
come-curas ‘lit. eat priests, anti-clerical’
mata-sanes ‘lit. kill healthy people, quack doctor’
limpia-botas ‘lit. clean boots, boot black’

These VN compounds are all nominal compounds, consisting of a verbal stem followed by a noun in either the singular or the plural form. These are exocentric compounds, as the noun on the right is neither the formal nor the semantic head of the compound. For
instance, the Italian compound word *lava-piatti* does not denote a certain type of *piatti* ‘plates’, but an instrument that washes dishes. So there is no constituent to which the meaning component ‘agent/instrument’ of these compounds can be assigned, even though this meaning component is systematically present in these compounds. This is why one finds analyses in the linguistic literature in which a nominalizing zero-suffix is postulated, on analogy with overt agentive/instrumental noun-creating suffixes such as English deverbal -er. The problem of such analyses is that there is no other motivation for such zero-elements than the agent/instrument meaning, and the fact that the relevant complex words are nouns. The position of such a zero-affix (is it a prefix or a suffix?) is completely arbitrary. In a constructional analysis, the agent/instrument meaning is specified as a semantic property of the VN construction as a whole. Thus, the following schema can be assumed for such Romance VN compounds:

\[
[[V_k][N_i]_{Nj} \leftrightarrow \text{AGENT/INSTRUMENT}_j \text{ OF ACTION}_k \text{ ON OBJECT}_i]
\]

Schema (11) represents a morphological construction in which a specific morphological form (exocentric compounds of the form VN) correlates with a non-compositional, but predictable meaning. An additional predictable but non-compositional property of the French exocentric VN-compounds is that they have masculine gender, irrespective of the gender of the N-constituent. Exocentric compounds thus provide a strong argument in favor of a constructional analysis of word formation.

5. **Semantic subpatterns**

The morphological schemas introduced above form part of a hierarchical lexicon, in which schemas dominate individual complex words. By default, complex words inherit the information specified in a schema, but a particular piece of information may be overruled by an individual lexical item that instantiates that schema. For instance, the Dutch suffix -baar ‘-able’ attaches to transitive verbs to form adjectives with the meaning ‘can be V-ed’, for instance *lees-baar* ‘read-able’ derived from the transitive verb *lees* ‘to read’. Yet, there are a few adjectives in -baar attached to intransitive verbs, such as *werkbaar* ‘work-able’ derived from the intransitive verb *werk* ‘to work’. By making use of the notion of default inheritance (Briscoe et al. 1993; Kilbury et al. 2006), we allow for exceptional properties of words to be expressed without giving up the generalizations that hold for most words of that class. In the specification of *werkbaar* as an existing adjective of Dutch, the inherited specification that its verbal base is a transitive verb is overruled.

In the domain of compounding, we also need subschemas because certain words may receive a specific interpretation when they form part of a compound that they do not have when used as independent words. This is, for instance, the case for a number of nouns in Dutch NA compounds that have an intensifier meaning:

\[
\text{(12) Intensifying lexemes in Dutch X A compounds}
\]

<table>
<thead>
<tr>
<th>Noun</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>ber-e ‘bear’</td>
<td>bere-sterk ‘very strong’, bere-aardig ‘very kind’</td>
</tr>
<tr>
<td>bloed ‘blood’</td>
<td>bloed-serieus ‘very serious’, bloed-link ‘very risky’</td>
</tr>
<tr>
<td>dood ‘death’</td>
<td>dood-eng ‘very scary’, dood-gewoon ‘very ordinary’</td>
</tr>
<tr>
<td>kei ‘boulder’</td>
<td>kei-good ‘very good’, kei-gaaf ‘very nice’</td>
</tr>
<tr>
<td>pis ‘piss’</td>
<td>pis-nijdig ‘very angry’, pis-woedend ‘very angry’</td>
</tr>
<tr>
<td>poep ‘shit’</td>
<td>poep-heet ‘very hot’, poep-lekker ‘very pleasant’</td>
</tr>
</tbody>
</table>

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ret-e ‘ass’  rete-leuk ‘very nice’, rete-spannend ‘very exciting’
reuz-e ‘giant’  reuze-leuk ‘very nice’, reuze-tof ‘very good’

(The -e’s in ber-e, ret-e, and reuz-e denote schwas that function as a linking element.) This productive use of lexemes as intensifiers can be expressed by subschemas for adjectival compounding in which the first position is lexically fixed. Hence, these are constructional idioms at the word level, such as:

(13) $[[\text{bere}]_{\text{N}} \left[\text{x} \right]_{\text{A}}]_{\text{A}} \leftrightarrow \text{very SEM}_i$

Schema (13) is a subschema of the NA compounding schema for Dutch; it will inherit all properties of this general schema such as its right-headedness. However, the normal meaning contribution of the modifier noun ber-e ‘bear’ is overruled by the meaning of the modifying constituent as specified in (13), in accordance with the principle of default inheritance.

This type of semantic development can be found in many languages. Here is an example from Maale, a North Omotic language spoken in Southern Ethiopia. The noun nayi ‘child’ has developed the general meaning ‘agent’, as illustrated by the following complex words (Amha 2001):

(14) a. bayi nayi
cattle child
‘one who brings cattle to the grazing area’
b. waari nayi
goat child
‘one who takes care of goats’
c. móótsi naya
cattle.camp child
‘one who lives in a cattle camp and takes care of cattle there’

Because cattle herding is historically a task of children in the Maale-speaking society, the word for child has acquired a more general agent meaning. Therefore, a specific compound schema with naya as its right constituent, and with this agent meaning is required.

6. Schema unification

The Dutch deverbal adjectives in -baar ‘-able’ mentioned above form a productive derivational category, which can be subsequently prefixed with the negative prefix on- ‘un-’. In many cases, the intermediate adjective is only a possible word, and not listed in the lexicon. This is the case for, among many others, the following adjectives:

(15) | Verb | Deverbal adjective | On-adjective |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>bedwing ‘suppress’</td>
<td>bedwing-baar ‘suppressable’</td>
<td>on-bedwing-baar ‘unsuppressable’</td>
</tr>
<tr>
<td>bestel ‘deliver’</td>
<td>bestel-baar ‘deliverable’</td>
<td>on-bestel-baar ‘undeliverable’</td>
</tr>
<tr>
<td>blus ‘extinguish’</td>
<td>blus-baar ‘extinguishable’</td>
<td>on-blus-baar ‘unextinguishable’</td>
</tr>
</tbody>
</table>

This pattern suggests that two word formation schemas can be unified into one complex schema that licenses multiply complex adjectives without the existence of the intermediate positive adjective being required. The data in (15) imply that the following schema unification applies:
(16) \([\text{on A}]_A + \text{[Vbaar]}_A = \text{[on[[Vbaar]_A]_A}\)

The unification of word formation templates accounts for the possibility of simultaneous use of two or more word formation patterns (in the example above the formation of deverbal adjectives and \(\text{on-}\)adjectives). The availability of such unified templates is the result of the language user’s ability to establish a direct relation between a base word and a complex word that is two or more derivational steps away from that base word. Such unified schemas do not complicate the grammar, because their properties follow from the unification of independently established word formation schemas. Thus, language users may coin a new multiply complex negative adjective such as Dutch \(\text{onbedwingbaar} \) ‘unsuppressable’ directly from a verbal base \(\text{bedwing} \) ‘suppress’ without an intermediate step.

An example of the use of a unified word formation schema from English is the simultaneous attachment of the prefix \(\text{de(s)}\) and the verbalizing suffix \(-\text{ate} \) or \(-\text{ize} \) to nouns or adjectives, as in:

(17)  
<table>
<thead>
<tr>
<th>Noun</th>
<th>Verb</th>
</tr>
</thead>
<tbody>
<tr>
<td>caffeine</td>
<td>de-caffein-ate</td>
</tr>
<tr>
<td>moral</td>
<td>de-moral-ize</td>
</tr>
<tr>
<td>mythology</td>
<td>de-mytholog-ize</td>
</tr>
<tr>
<td>nuclear</td>
<td>de-nuclear-ize</td>
</tr>
<tr>
<td>Stalin</td>
<td>de-stalin-ize</td>
</tr>
</tbody>
</table>

An intermediate verb like \(\text{to stalinize} \) is certainly a possible verb. Yet, we should not require the existence of this verb as a necessary intermediate step in the coining of \(\text{destalinization} \), as it is not the case that the use of the verb \(\text{destalinize} \) presupposes that the object involved has first been subject to a process of stalinization. That is, we assume a unified template of the following form for verbs such as \(\text{destalinize} \):

(18) \([\text{de } [\text{x}]_{\text{NI}}, \text{ize}]_\text{V} \leftrightarrow \text{REMOVE PROPERTY RELATED TO SEM}_i\)

In sum, by representing word formation processes as constructional schemas that can be unified, it is possible to express that a multiply complex word can be derived in one step from a base word that is two degrees less complex.

7. Word-like phrasal expressions

The lexicon is the repository of all simplex words and of all complex words that are idiosyncratic and/or conventionalized. In addition, the lexicon has to specify multi-word units that are idiomatic. The unpredictable properties of a linguistic construct have to be learned and memorized by the speaker. The size of idiomatic constructs may vary from sentences (for instance, proverbs) to phrases consisting of two words, the minimal size for lexical phrases (for instance, the NP \(\text{red tape} \) as idiom for bureaucracy, or \(\text{black death} \) for ‘pest’).

Lexical units may be construed productively by means of syntactic principles, although they are word-like. Such constructs are sometimes referred to as ‘loose compounds’. The advantage of a constructional approach to the analysis of such lexical units is that the similarities with complex words can be expressed, without losing sight of the fact that they reflect the syntactic principles of the language involved. Such loose compounds are characteristic of Romance languages. For instance, the following French phrases are all used as lexical units (Fradin 2003):
The patterns exemplified in (19) have a certain degree of productivity. In particular, the French construction \( N \circ N \) is very productive for coining new names for objects, as illustrated in (20):

(20) moulin à poivre ‘pepper mill’
   verre à vin ‘wine glas’
   bois à feu ‘firewood’
   fruit à confiture ‘jam fruit’
   moteur à essence ‘petrol engine’

Note the difference between verre à vin ‘wine glass’ and verre de vin ‘glass of wine’. The constructs with \( à \) have typically the role of classifying labels for entities.

As has been pointed out in the recent literature, multi-word expressions (MWEs) are not just fixed sequences of words with an atomic meaning but differ in their degree of compositionality and syntactic flexibility (Pitt and Katz 2000; Sag et al. 2002). The notion ‘constructional idiom’ introduced above can be used to do justice to certain aspects of this flexibility, in particular to the fact that idiomatic constructions can receive new instantiations. The \( N \circ N \) construction reflects the syntax of French: in French NPs, the head N precedes its complement, and PP complements begin with a preposition, such as \( à \). Yet, the \( N \circ N \) constructs are special in that the preposition is followed by a bare noun, whereas normally in a PP, the N must be preceded by a determiner. The use of bare nouns is tied to using nouns for non-referential, classificatory purposes. In sum, the \( N \circ N \) construction is a subschema of the French NP construction [N PP], with the specific properties that the preposition is fixed as \( à \), and the complement of the preposition is a bare noun. The semantics of the construction is similar to that for the English nominal compounds discussed above. The semantic role of the preposition \( à \) is establishing some semantic relationship between the head noun on the left and the right noun that functions as a modifier.

Another class of word-like phrasal units is the phrasal verbs of Germanic languages, usually referred to as particle verbs. Examples from English are to put down and to phone up. The Dutch equivalents of these particle verbs are neer-leggen and op-bellen, respectively, with the particle preceding the verb (written as one word, even though they are phrasal and other words can come in between the particle and the verb) (Blom and Booij 2003; Blom 2005a,b). The separability of these particles is illustrated by the following example:

(21) a. Ik hoorde dat Jan zijn moeder op belde
   ‘I heard that John phoned his mother’
   b. Jan belde zijn moeder op
   John phoned his mother up
   ‘John phoned his mother’

In the embedded clause in (21a), the particle appears right in front of the verb; but in main clause (21b), the finite verb has to appear in second position, whereas the particle
occurs at the end of the sentence. This shows that particle verbs are phrasal in nature, in accordance with the principle of Lexical Integrity that syntactic rules cannot move parts of words. Hence, we have to assume phrasal constructional schemas for the various types of particle verbs, in which the specific meaning contribution of each particle is specified. For instance, the specific meaning of the word *op ‘up’* used as a particle is that of cognitive activation:

\[
\text{{[[op]}_P [x]_{V'}V} \leftrightarrow \text{ACTIVATE COGNITIVELY BY SEM}_i
\]

(V’ indicates a syntactic projection of V, expressing that particle verbs are minimal phrases.)

These particle verbs function as alternatives for prefixation in the coinage of complex predicates, and this explains the restricted productivity of deverbal prefixation in Germanic languages: there is strong competition from particle verb formation which is a functionally equivalent means of creating complex predicates. Particle verbs can thus be seen as instantiations of phrasal constructional idioms, whereas prefixed verbs are instantiations of constructional idioms at the word level. This distinction is illustrated here by means of the following minimal pairs from Dutch:

\[
\text{Particle verb} \quad \text{Prefixed verb}
\]

<table>
<thead>
<tr>
<th>Over komen ‘to come over’</th>
<th>Over-komen ‘to happen to’</th>
</tr>
</thead>
<tbody>
<tr>
<td>Door leven ‘to continue living’</td>
<td>Door-leven ‘to live through’</td>
</tr>
</tbody>
</table>

Prefixed verbs are not split in main clauses, unlike particle verbs. Hence, the difference between the following two sentences:

(24) a. Jan komt het weekend over
     John comes the weekend over
     ‘John comes over for the weekend’

b. Jan over-kwam een ongeluk
    John over-came an accident
    ‘An accident happened to John’

In sum, particle verbs are lexical, yet phrasal units, and we can do justice to their properties by analyzing them as being formed according to phrasal constructional schemas. By using the notion ‘constructional idiom’ for the analysis of particle verbs, we can maintain the boundary between phrasal and morphological constructs, and yet do justice to the word-like properties of particle verbs.

8. Inflection

Inflectional phenomena provide strong arguments for the constructional approach. The classical problem of inflectional morphology is the complicated relation between form and meaning. It is often impossible to assign a specific meaning to an inflectional affix, because its actual value depends on the kind of stem it combines with, and the properties of that stem, unless one allows for large sets of homonymous inflectional affixes. Consider, for instance, the paradigm of masculine and neuter nouns (declension I) in Russian (Gurevich 2006: 51):

\[
\begin{array}{cc}
\text{Masculine} & \text{Neuter} \\
\hline
\text{SG} & \text{SG} \\
\text{NOM} & \text{stol} & \text{bljud-o} \\
\text{PL} & \text{stol-y} & \text{bljud-a}
\end{array}
\]
As these paradigms illustrate, the same ending, for instance -a, may have different interpretations depending on the class of the noun. Moreover, the particular value expressed is a combination of properties, such as [ACC.SG] or [NOM.PL]. That is, there is no one-to-one correspondence between form and morpho-syntactic properties. One also finds elements in inflectional forms such as the thematic vowels of verbal conjugation in Latin and the Romance languages that do not contribute by themselves to the meaning of the inflected forms; they are ‘morphomic’ properties (Aronoff 1994). Hence, the morpho-syntactic properties of each word form in the paradigm are best considered as constructional properties, that is, as properties of the word form as a whole. This may be expressed by morphological schemas that abstract, for instance, over words of the same declension class such as the Russian ACC/GEN.SG word forms stola and bljuda in (25):

\[(x-a)_{i01} \leftrightarrow [N]_i, \text{ masc.sg, acc/\text{gen} } \leftrightarrow \text{SEM}_i\]

where \(x\) is a phonological variable for nominal stems, and \(\omega\) is a phonological word. The meaning \(\text{SEM}_i\) mentioned here is that of the lexeme. The semantic interpretation of the morpho-syntactic features is not specified here, because this interpretation depends on the syntactic contexts in which a word occurs.

Another argument for the constructional approach to inflection is formed by periphrastic expressions. For instance, in English the word combination ‘have + past participle’ is used to express the perfect tense of verbs. In this construction, the verb have does not express the meaning ‘to possess’, but a grammatical meaning of perfectivity, in combination with the past participle. The grammatical meaning of perfect tense is a property of this construction as a whole (Sadler and Spencer 2001; Ackerman and Stump 2004; Spencer 2004). Hence, periphrastic inflectional forms are to be treated as constructional idioms in which the auxiliary is lexically fixed, whereas the slot for the participle is a variable. The semantic properties of periphrastic forms, such as perfectivity, are holistic properties that are specified as properties of the construction.

9. Conclusion

In this article, I have argued that the notion ‘construction’ should be used for insightful analyses of morphological phenomena. In this approach, the distinction between syntax and morphology is maintained. Yet, the similarities between syntactic and morphological constructs can be expressed as well. In particular, we find constructional idioms at both the syntactic and the word level and thus, we can account for the word-like function of productive phrasal constructions such as the ‘loose compounds’ of Romance languages and the particle verbs of Germanic languages. Constructional schemas form part of a hierarchical lexicon, which makes it possible to express subgeneralizations about sets of complex words without obliterating the properties they share with other complex words.
Short Biography


Notes
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Works Cited


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