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A dominant topic of debate among theoretical linguistics is the architecture of the human language faculty. This issue is not only important in the research tradition of Generative Grammar, an instance of what we may call Formal Grammar, but also in other approaches such as that of Functional Grammar, the research tradition established by Simon Dik (Dik 1989). In both research traditions, a number of architectural models of linguistic competence have been proposed. These models are similar in that they start from a modular view, that is, linguistic competence is characterised as set of interacting modules. These modules also interact with non-linguistic modules, more general cognitive faculties such as perception and reasoning (Dik 1989, Jackendoff 2002). In that sense, generative and functional linguists have been working on the same topic. The central role of issues of architecture in Generative Grammar is made very clear in Jackendoff (2002). Therefore, it should come as no surprise that at the Vrije Universiteit linguists from different research traditions can work together in a fruitful way in a common research programme with the title ‘The architecture of the human language faculty’.

To make this point more concrete, let us focus on one architectural issue, the position of inflection and derivation in the grammatical architecture. In both frameworks it has been proposed by some that inflection and derivation form different modules of the grammar. From a functional perspective, this is so because derivation has the function of enriching the fund of predicates, whereas inflection serves to compute the correct form of lexical expressions in specific syntactic contexts (Dik 1989: 297ff). This proposal may therefore be qualified as ‘split morphology’. In the framework of generative grammar, Anderson (1992) also argued for ‘split morphology’: derivation is pre-syntactic, while inflection is post-syntactic. Anderson’s arguments for split morphology are primarily of a formal nature: in complex words, inflectional elements are peripheral with respect to derivational elements, and this follows from the proposed organization of the grammar, with morphology divided across two ordered modules, separated by a syntactic module.

The actual facts of language pose a problem for this split morphology hypothesis. In particular, it has been observed that certain types of inflection may feed word formation. For instance, English past participles may function as adjectives, and hence feed de-adjectival word formation, as illustrated by the derived noun *excitedness*. Plural forms of nouns may occur within compounds, as is the case in Dutch *stedenraad* ‘cities council’ (compare *stadsraad* ‘city council’), and in English *appeals court*. In particular what I have called inherent inflection (Booij 1994, 1996) can be found inside words. Another example is the occurrence of semantic case forms as parts of compounds in Finnish, as in *maalta-pako* ‘country-ABLATIVE-flight, rural depopulation’. Such observations therefore propose a challenge to generative and functional models alike.

Another topic of interest shared by Generative Grammar and Functional Grammar is the relation between the lexicon and the rules of grammar. Dik (1989: 291ff) proposed the following division of labour between these two: the lexicon contains basic predicates and terms (= simplex words), idioms, and complex words that cannot be formed by means of a productive rule, such as the past tense forms of the English ablauting verbs. Regular past tense forms. On the other hand, are not listed in the lexicon, but derived by rule. Dik acknowledges that there nevertheless regularities involved in formation of past tense forms and participles of ablauting verbs. The relevant patterns of vowel alternation are not accounted for by rule, but are considered regularities in the lexicon (Dik 1989: 293). This model is thus exactly the same as that proposed by Pinker (1999) within the research tradition of Generative Grammar, the Dual Mechanism theory.

As to the lexical storage of regular inflected forms such as the plural noun *books*, Dik (1989: 292) states: “In a functional grammar of English, however, this form need not be stored, because it *can* be formed by general rule. The lexicon will thus contain those forms which a speaker must necessarily know if he is to be able to use them correctly”. This position is completely in line with Pinker’s so-called Dual Mechanism theory mentioned above. However, this position suffers from the rule/list fallacy. Dik (1989: 292) explicitly mentions the possibility that a speaker of English may have stored *books* as ready-made in his lexical memory. Yet, he does not want to allow for the storage of *books* in the lexicon seen as a module of grammar. From the point of view of psychological adequacy, this position is not tenable because there is massive evidence that regular plural forms of nouns are stored in lexical memory (cf Booij 1999, relevant key publications are mentioned in Booij 2005: Chapter 10).

This example serves to show the strong similarity in research questions posed by what some consider different theories or paradigms. Given their shared interest in issues of architecture of the human language faculty, it is useful for formal and functional grammarians alike to look at phenomena that are revealing as to architecture. In this paper, I therefore focus on phenomena that throw some light on architectural issues, related to the relation between lexicon and syntax.

In a very simplistic view, the relation between lexicon and syntax can be described as follows: the lexicon provides the words (and other lexical units) that are concatenated into well-formed sentences by the principles, rules and constraints of the syntax. The lexicon can be expanded by means of rules of word formation, such as compounding and derivation, which are therefore usually qualified as lexical rules. However, it has been frequently observed that syntactic phrases may form parts of complex words, in particular compounds. The following examples from English and Dutch illustrate this:

- (1) do-not-call registry [New York Times 10 July 2003]
all-you-can-eat restaurant
the Google-yourself environment
a 6 to 3 decision (court decision with majority of 6 to 3) [New York Times July 22, 2003]

een ik-zie-duizend-beren-op-mijn-weg-cultuur (Trouw 10 Jan 2004)
 ‘a I see thousands bears on my way culture’
 niets-aan-de-hand-muziek (music at the dentist’s) [NRC 17 May 2003]
 nothing at the hand music ‘nothing wrong music’
 moet-kunnen-generatie [NRC 2 Jan 2002]
 must-can-generation ‘permissive generation’
 buiten-de-deur-eters [NRC 22 October 2002]
 out of the door eaters ‘eaters in restaurants’

These examples illustrate that phrases of different sorts can appear in the non-head position of compounds. This implies that syntax and lexicon must have access to each other. Compounding is a lexical rule that serves to expand the set of lexical expressions. Yet, it makes use of word sequences that are defined as well formed by another module of the grammar, namely the syntactic module. Thus, these phenomena require a more sophisticated theory about the organization of the grammar than the simplistic one mentioned above: the lexicon must allow for syntactic information to be used in lexical rules. Inversely, the existence of idioms implies that the lexical units of which syntax makes use in building sentences may be larger than words. The meaning of the phrase *up to snuff* is not derivable from its constituent parts, and hence must be specified in the lexicon, is a lexical unit. The pervasiveness of idiomatic use of language, including conventionalized and fixed expressions has rightly received a lot of attention lately, also in work by Hannay and Mackenzie, and is an enormous challenge to second language learners, as Dutch second language users of English experience daily. The same will apply, I assume, to speakers of Dutch with English as their first language, may be even to Lachlan Mackenzie.

Another challenge for theorists of the relation between lexicon and syntax is formed by separable complex verbs such as the particle verbs of English, German and Dutch. A particle verb such as *to put down* is obviously not a word, but a phrase since the two constituents can be split, as in *He put the book down*. In Dik (1989), the creation of particle verbs forms part of the set of predicate formation rules, which suggests that such rules can also account for certain types of phrases. Yet, this word combination can feed word formation since a book may be advertised as *unputdownable*. The base of this adjective, *putdownable*, is an adjective derived from the word combination *put down*. The same observation holds for the noun *put-out-er* that occurs in the Harry Potter novel *The Philosopher’s Stone*, and is derived from the word combination *put out*.

The proper analysis of Dutch and German particle verbs has been the subject of a lengthy debate (cf. Booij 1990, 2002 and the literature mentioned there). Their interesting aspect is that the formation of such particle verbs is productive. Yet, the meaning of such verbs is not completely predictable from the meaning of their constituents words when used as separate lexemes. For example,

the Dutch preposition / adverb *op* has a number of related meanings. When used in combination with a verb, as in *op bellen* ‘to phone’ it has one specific meaning only, something like ‘activated cognitively’. The same meaning is found in *oppiepen* ‘lit. to beep up’, as in *de dokter oppiepen* ‘to beep up the doctor’, an example provided by Corrien Blom. The set of expressions of the type *op V* with the meaning ‘to activate cognitively by V-ing’ can be extended, as the example *oppiepen* illustrates. This means that we have to allow for what has been called ‘constructional idioms’ by Jackendoff (2002): phrases that have to be stored in the lexicon, and in which one or more positions is variable. In the case of *op + V*, this means that the lexicon contains a constructional idiom of the following form:

(2) [[*op*]_P [*x*]_V]_V

The introduction of constructional idioms has implications for both the view of the lexicon as advocated in Dik (1989) and the standard view of the lexicon in generative grammar, since pieces of syntax have to be made part of the lexicon.

Before I discuss this analysis of particle verbs in more detail, let me point out that each proper theory of grammar must be able to do justice to the phenomenon of ‘constructions’ as studied in particular in the framework of Construction Grammar. Constructions are syntactic patterns that are often instantiations of more general syntactic patterns of a language that have started to lead a life of their own. Some of them reflect the syntax of a previous stage of the language. Consider the following two Dutch phrases:

(3) tot vervelen-s toe
 tot scheuren-s toe [NCRV TV guide, 15 Nov 2002]

The first example is a lexicalized phrase with genitive case marking on the infinitive. The second example is an extension of this pattern to the verb *scheuren* ‘to tear’. Here, we may speak of analogical extension of an idiom. That is, it does not necessarily imply that there is a productive construction *tot INF-s toe*. The same applies to the following observation by Fred Weerman in *Onze Taal*, November 2002):

(4) Dit is des vrouws ‘This is the task of a woman’

probably coined on analogy with *Dit is des mans* ‘This is the task of a man’. The remarkable property here is that a feminine noun, *vrouw*, carries a historically masculine genitive suffix. Another example of such a pattern is the Hebrew periphrastic superlative which we find in English *Song of songs* and

Dutch *ijdelheid der ijdelheden* and *heilige der heiligen*. This pattern is not easily extendable, but we can do it incidentally, as in *de oorlog der oorlogen*.

An example of a productive multi-word pattern is the Dutch construction *een ons of twee* ‘lit. an ounce or two, about two ounces’, in which the number word position is a variable position that can be occupied by all cardinal number names. Another good example is the Dutch *een schat van een kind* ‘a sweetheart of a child, a sweet child’ construction which we find in some form or another in many European languages. This pattern can be easily extended, as in:

- (5) een kast van een huis ‘a cupboard of a house, a huge house’
 een dijk van een bekeuring ‘a dike of a fine, a huge fine’
 een juweel van een collega ‘a jewel of a colleague, an excellent colleague’
 een scheet van een baby ‘a fart of a baby, a very nice baby’

Let us now go back to particle verbs, and see how they should be analyzed. First, let us note that particle-verb combinations may form productive patterns. For instance, the adverb *af* invokes a perfective meaning when used with a verb as in *afconcluderen* ‘to draw final conclusions’ and *aftesten* ‘to test’. The particle *uit* is also used for this purpose, as in *uitprinten* ‘to print out’, *uitonderhandelen* ‘to bring negotiations to an end’, and *uitpuzzelen* ‘to find out’.

An intriguing property of these particles is that they also seem to convert nouns into verbs, as in:

- | | | |
|-----|---|---------------------|
| (6) | aankutten ‘to linger’ | < kut ‘cunt’ |
| | instraten ‘sorting out mail by street’ | < straat ‘street’ |
| | napapegaaien ‘to imitate’ | < papegaai ‘parrot’ |
| | ophokken ‘to put chickens in a hen-house’ | < hok ‘henhouse’ |
| | ophypen ‘to turn into a hype’ | < hype ‘hype’ |
| | overwinteren ‘to hibernate’ | < winter ‘winter’ |

This seems to be a problem if particle verbs are considered phrases, since syntactic structure cannot alter the syntactic category of a word. This is the prerogative of word formation. These facts can be interpreted as follows: the use of these particles has been made possible by first converting nouns into verbs, a productive process in Dutch. The co-occurrence of noun to verb conversion and particle verb formation can be expressed by the concept of conflation: these two patterns have been conflated into a new pattern in the lexicon of Dutch that gives rise to particle verbs that look as if they are derived directly from nouns.

- (7) $[[y]_P [x]_V]_V, [[x]_N]_V \rightarrow [[y]_P [[x]_N]_V]_V$

This is thus a case of the combination of two lexical patterns into a new type through the simple operation of unification. This new pattern of template may be assumed to have its own existence in the lexicon.

The notion ‘constructional idiom’ is an enlightening one for dealing with productive multi-word combinations that have specific idiosyncratic properties, as is the case for particle verbs. Such patterns are specified as lexical templates with variable positions. Such templates are also quite adequate for the specification of morphological patterns (Booij, to appear). For instance, the following template expresses that Dutch has a productive process for the construction of de-verbal adjectives in *-baar*:

(8) $[[x]_V \text{baar}]_A$ ‘being able to be V-d’

The notion ‘constructional idiom’ can also be applied in the analysis of a specific set of Dutch past participles such as

(9) uit-gegeten ‘lit. out-eaten, finished with eating’
 uit-geschilderd ‘lit. out-painted, finished with painting’
 uit-gekleuterd ‘lit. out-toddlered, finished being a toddler (“totdat haar dochter uitgekleuterd was”, J. Pardoën, *Trouw*, 5 April 2002)
 uit-gebodemd ‘lit. out-bottomed, has reached its lowest point, said of shares on the stock market, *Trouw*, 2 Nov 1999)

The crucial observation here is that the form of these words is that of the past participle of a particle verb. Yet, these particle verbs themselves do not exist as such. For instance, Dutch does not have the particle verb *uiteten*, at least not with the meaning ‘to finish eating’. And the use of the word *uitgekleuterd* does not presuppose the existence of a particle verb *uitkleuteren*. Hence, it is the combination of the particle *uit* with the past participle of a verb that has acquired the specific meaning ‘finished with the activity denoted by the verb’. This pattern is a unification of the template for *uit-V* particle verbs and that for past participles in general. The conflated pattern appears to have started a life of its own from the semantic point of view. In the case of *uitgekleuterd* we even observe a case of conflation of three lexical patterns, since the presupposed verbal stem *kleuter* is a case of noun-to-verb conversion.

In conclusion, the lexicon is not just a list of simplex words, idiosyncratic complex words, and idiomatic word combinations. It also contains a set of templates, both for complex words and for constructional idioms, which express generalizations about existing complex words and phrases in the lexicon, and specify how new complex words and (lexical) phrases can be formed. This conclusion

necessitates a rethinking of the relation between the lexicon and the syntactic module of the grammar, and hence of the architecture of the human language faculty, for Generative Grammarians and Functional Grammarians alike.

References

- Anderson, Stephen R. (1992), *A-morphous Morphology*. Cambridge: Cambridge University Press.
- Booij, Geert (1990), 'The Boundary between Morphology and Syntax: Separable Complex Verbs in Dutch', *Yearbook of Morphology 1990*, edited by Geert Booij and Jaap van Marle. Dordrecht: Foris, 45-63.
- Booij, Geert (1994), 'Against Split Morphology', *Yearbook of Morphology 1993*, Dordrecht: Kluwer, 27-50.
- Booij, Geert (1996), 'Inherent versus Contextual Inflection and the Split Morphology Hypothesis', *Yearbook of Morphology 1995*. Dordrecht: Kluwer, 1-16.
- Booij, Geert (1999), 'Lexical Storage and Regular Processes; Comments on Clahsen (1999)', *Brain and Behavioral Sciences* 22, 1016.
- Booij, Geert (2002), 'Constructional Idioms, Morphology, and the Dutch Lexicon', *Journal of Germanic Linguistics* 14, 301-327.
- Booij, Geert (2005), *The Grammar of Words. An Introduction to Linguistic Morphology*. Oxford: Oxford University Press.
- Booij, Geert (to appear), 'Construction morphology and the demarcation of compounding and derivation', in W. U. Dressler et al (eds.), *Morphologica 2004*. Amsterdam / Philadelphia: Benjamins.
- Dik, Simon C. (1989), *The Theory of Functional Grammar. Part I: The Structure of the Clause*. Dordrecht: Foris
- Jackendoff, Ray S. (2002), *Foundations of Language*. Oxford: Oxford University Press
- Pinker, Steven. (1999), *Words and Rules*. New York: Basic Books.