

Idiomatcity and the Theory of Grammar

Term paper for the course 'Wort, Phrasem, Phrase'
summer term 2006
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on 02 October 2006

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Idiomatic expressions pose difficulties to prominent theories of grammar. Idioms appear, in contrast to entities like sentences, phrases, morphemes or phonemes, to be no uniform grammatical category, but a fuzzy set encompassing structurally diverse phenomena. While some idiomatic formatives do expose syntactic or semantic traits deviant from the formatives' non-idiomatic usage, a wide range of cases licences grammatical processes which cannot be explained by a formalism based on a notion of fundamental arbitrariness. Similar to the formally difficult to define, yet easily and intuitively understood concept of 'word', a formal account of idioms must rely to some extent on the notion of convention.

1. Introduction: The Notion of Convention and the Theory of Grammar

Language widely defined as the faculty of the human mind to relate between symbols and meaning by means of *convention*. This faculty and its mode d'emploi is called grammar. Every utterance encountered by a speaker may be judged whether or not it conforms to the conventions of grammar, i.e. whether or not the utterance is grammatical. The grammaticality judgement of the speaker can be theoretically explained by formalising the conventions which hold in language and showing deductively whether or not those conventions are being obeyed. So far, it appears, the best way of scientifically explaining grammar must consider several general domains of grammaticality, depending on the type of sign involved. When dealing with words, for example, convention is a function of relating some element classified as *word* to something which we perceive to be an entity in the world. Thus, we might rightly object to somebody referring to a horse by the word "cockroach", on the grounds that, at least in our understanding of the conventions, a horse is a horse, and not a cockroach. In a tempting, though vain attempt we could try to formalize the relation as follows: A word "x" may grammatically refer to something, if that something is, in fact, an x. However, the subject does not seem to be that clear altogether: Even though John Doe is referred to by his co-workers at the factory by the nickname of "jack hammer", we would not say that John is, in fact, a jack hammer. Nor would we like to prescribe his co-workers how to make their reference to John. Yet, if we try to dodge the expression "in fact", and rephrase our theory for some word "x" to grammatically refer to something, if that something is, plainly, x, then we encounter a different problem: Although, in some cases, a book might be a doorstop by means of serving so, there would be something awkward in picking up a door stop to read at the public library, precisely because such a book is not, in fact, a doorstop. There seems to be an antinomy lurking in our attempt to build a theory of grammar based on the notion of word: Once we have good reason to explain why something may go by a word, we incidentally find just as much justification why it might not. Maybe we were mistaken to consider grammaticality an inherent property of words? Yet, grammaticality seems to be involved, vaguely speaking, with something that has to do with words.

It seems only when we disregard the constitutional function which broader morphological, semantic or pragmatic processes serve, that explanation is made doubtful. If the lexicon is defined to hold those, and only those, grammatical formatives which are entirely arbitrary, the word will not be considered among them, for often it will already have been subjected to domains in which processes of a more general nature apply.

What then, about the role of linguistic convention in phrases or complete sentences? As above, intuitively, and in line with the principle of compositionality, the convention seems to be a type of relating words and their phrasal mode of assembly to a hypothetical or factual situation in the world. The linguistic perspective might be thought of as twofold: On the one hand, the reference of individual words is not completely arbitrary, but, as indicated above, encompassed by a system of conventions which are external to the word. In each language there is a paradigm defining which words may apply in a specific syntactic configuration, given a specific referential situation. On the other hand, the phrasal structure may itself assert an imprint on the grammatical conventions involved: "Billy Ray shot the sheriff" could constitute a grammatical English sentence, but when uttered by a speaker with the intention to say that, actually, the sheriff shot Billy Ray, it would not. So we might, naively, construct a formal apparatus to deal with these facts. We might, suppose, posit a set of rules:

S->NP VP
 NP -> Billy Ray
 VP -> V NP
 NP -> the sheriff
 V[ext=SHOOTER] -> shot [NP=ONE-SHOT]

Additionally to the rules of phrase structure, we introduce a semantic apparatus by which we will determine that "shot" refers to the complex predicate "SHOOT+PAST" and define its c-commanding NP to be the "SHOOTER" and its complement NP to be the "ONE-SHOT". This would, primitively, enable us, given a set of words and a configurational scheme, to determine that "Billy Ray shot the sheriff" is a grammatical sentence exactly if both Billy Ray is the hypothetical shooter and the sheriff is the hypothetical person shot. However, as discussed earlier, language has disturbing means to complicate formal analysis. Indeed, when confronted with data that is completely or at least partly idiomatic in nature, some confusions arise as to exactly which kind of conventions hold for these phrases. Given, for example, the phrase "to shoot the messenger" (to sanction the bearer of bad news) would lead some to argue that since, in fact, there is no shooting going on in the situation described, the meaning must ensue solely within the syntactic complex of the phrase. Under such perspective, the conventions on how to use the word "shoot" literally, cannot account for its figurative use. For synchronic considerations, then, the relationship between lexical constituents and syntactic phrase seems completely arbitrary. There are others, however, who argue that this

relationship is not entirely that arbitrary at all and consequently claim that some, or maybe even most, idioms are partly or even completely compositional in nature. Let us refer to the earlier standpoint as the *distributionalist* one, while we will talk about the later one by terms of the *lexicalist* viewpoint. The question as to which of these to adopt in one's analyses is an enquiry on how a theory of grammar is to adequately deal with the phenomenon of idioms. In the following work, we shall try to give an answer to this question by showing that an extreme distributionalist line of explanation draws on an ill-conceived grammar-internal notion of the phenomenon akin to the antinomical reasoning outlined in the initial paragraph of this section. Furthermore, we would like to discuss the status of some arguments which have been put forward in defence of distributionalist analysis and close with the description of a formal apparatus which we find may more adequately deal with the phenomenon.

2. On Defining Idioms by Syntactic Behaviour

Schenk (1995) remarks on the methodology of how to define idioms:

"[While] linguistic wisdom teaches us that a linguist working in a grammatical framework observes a linguistic phenomenon, shows that it constitutes a class or whatever (makes generalizations) ... For idioms this is not what happens" (ibid., p. 255)

Instead, Schenk observes, in many cases a definition is given in terms of non-compositionality or abnormal semantics *before the fact*, and afterwards is matched by fitting choice of example-data. Schenk consequentially objects such methodology and chooses to prefer an analysis which solely relies on distributional data, such as (1).

- (1) a. John made tremendous headway/progress.
- b. The headway/progress John made was tremendous.
- c. Headway/progress I do not expect John to make.
- d. It was a lot of headway/progress John made.

From the paradigm in (1), Schenk infers that since both expressions are identical both in distribution and interpretation, their status regarding idiomaticity should be thought of as being equal, as well. This is to imply that "if the grammatical framework dictates that 'make progress' is not an idiom, then 'make headway' is also not an idiom." (ibid., p. 256). He then goes on by assuming a class of syntactic operations which are defined for meaningful¹ expressions only. That is to say, that these

¹ In a semantic sense of term, i.e. devoid of semantic content.

syntactic operations do not allow for expletives, existential there or pleonastic subjects. In that class, Schenk includes the following:

1. control
2. topicalization
3. clefting
4. pseudo-cleft
5. (internal) modification
6. relativization
7. pronominal reference
8. wh-questioning

By exemplifying on the basis of a rather restricted sample² that the operations listed under (2) are not grammatical for chunks in idiomatic expressions, he argues that idiom chunks bear the same distribution as expressions otherwise considered semantically void, and thus, too, shall be considered meaningless. Concludingly, he remarks that "the decision as to which expressions are to be considered idioms has become an empirical issue" (ibid., p. 263).

While Schenk might be right that the operations listed in (2) behave as a class regarding the semantic content of the expressions they apply to, we consider his view that idioms constitute a grammatical entity due to their distributional behaviour to be arguable. His justification seems methodologically inadequate, insofar as he considers the definition of idioms to follow from his limited distributional analysis. Nunberg et al. (1994) restate the objection on empirical grounds: A categorical definition, as above, does not "characterize idioms as the term is generally understood" (ibid., p. 494). While it explains some distributional facts about some idioms, this does not justify exempting those which do not correspond to Schenk's classificational scheme. For purpose of illustration, consider the following table:

- | | | |
|----|--|---|
| a. | <i>'Leben in die Bude bringen'</i> | <i>'neues Leben in die Bude bringen'</i> |
| b. | <i>'mit spitzer Feder rechnen'</i> | <i>'mit besonders spitzer Feder rechnen'</i> |
| c. | <i>'jmd. fällt ein Stein vom Herzen'</i> | <i>'jmd. fällt ein schwerer Stein vom Herzen'</i> |
| d. | <i>'sich eine kalte Dusche holen'</i> | <i>'sich eine eisig kalte Dusche holen'</i> |
| e. | <i>'jmd. das Geld aus der Tasche ziehen'</i> | <i>'jmd. das Geld aus der leeren Tasche ziehen'</i> |

We find that in the examples above, the expressions do retain their idiomatic interpretation although they have been modified internally. Nunberg et al. (1994) argue on the same account, that many idiomatic expressions can undergo processes considered operative on a semantic level without

2 For the most part, he evaluates on the basis of a single idiom from a set of two.

loosing idiomaticity (idid. pp. 500), including topicalization, modification and pronominal reference. Thus, a significant amount of data contradicts Schenk's explanation. Although, in some cases, it may be argued that intuitions on modified idiomatic phrases are rather dubious, we reckon that enough clear-cut examples remain to make this a valid point.

3. Syntactic vs. Semantic Modification

The possibility to modify constituents within idiomatic phrases has been put forward as a prominent argument for compositionality in idioms. In the case of "keep tabs on someone", for instance, it is possible to form "keep close tabs on someone" by modification (example from Nunberg et al., 1994). The underlying assumption is, that what can be semantically modified, must already have an independent meaning of its own. Nicolas (1995) put up an empirical survey to argue against this supposition. His theoretical claim is that it can make sense to modify an otherwise meaningless expression, as long as such a modification applies, on the semantic level, to the whole complex expression which the modified constituent is a part of. The hypothesis goes such that syntactically internal modification is equivalent to semantically external modification, so that no distinctive semantics exist for such phrases and, accordingly, there is no reason to assume individual semantic representations on idiomatic constituents.

To validate this hypothesis, Nicolas conducted a corpus-based survey. The corpus was searched for forms of 75 pre-defined idioms, extracting those found including intervening material which would then be considered as possibly modifying. The extracted material would then be tested introspectively in two dimensions:

1. Is the idiom containing the specific modifier a well-formed idiomatic expression?
2. Does replacement of the adjective with a corresponding adverbial expression yield a synonymous phrase?

For all corpus instances of those idioms considered, the survey yielded positive results in both dimensions. Nicolas takes this as support his view that syntactically internal modification is semantically external, modifying the meaning of the whole phrase instead of an individual component.

Again drawing on Nunberg et al. (1994), as well as our own data, we find empirical evidence that the hypothetical synonymy of internal and external modification cannot be maintained. Nunberg et al. (1994), for example, discuss the phrase 'to leave no stone unturned'. While modification produces 'to leave no legal stone unturned' (to utilise any legal measure), the meaning of 'legally leave no stone unturned' is non-synonymous with the original idiom (meaning 'to take any measure that is

legal'). Accordingly, the German expression 'mit besonders spitzer Feder rechnen' ('to consider pedantically') does not correspond to 'besonders mit spitzer Feder rechnen' ('especially to consider pedantically'). Thus, we conclude that internal modification is operative on a semantic level and can indeed be employed as evidence that lexical components of idiomatic phrases do carry distinctive meaning, insofar as components can be handled semantically in line with specific individuals being distinct from the whole situation which holds between them.

4. Conventions on the Composition of Idioms

In the section above, it has been argued that the phenomenon of idiomaticity is not reducible to the fact that some idioms are characterised by restrictions on operations pre-defined for the domain of semantically void content. Nevertheless, it remains evident that there is a connection between the semantic analysability of idioms and their syntactic behaviour. In the terminology of Nunberg et al. (1994), the tendency, in general, seems to be that 'phrasal idioms' are syntactically rather inflexible, while 'idiomatic combinations' show a differing, but larger, degree of flexibility³. It was shown by Gibbs & Nayak (1989) that this intuition also corresponds to psycholinguistic facts. They argue that the "semantic analysability of an idiom affects people's intuitions about its syntactic productivity" (quote from Gibbs (1990)). The insight that the figurative processes which underlie idioms are to a large extent causally prior to their syntactic flexibility is further backed up by Gibbs (1990). Gibbs shows that regarding the nature of compositional analysis idioms are given, it has to be assumed that there are processes functioning independently on a level distinct from syntax, so that the figurative processes are no mere historical facts incorporated into syntax arbitrarily, as per lexical subcategorisation.

In positive terms, Gibbs uses the notion of conceptual metaphor to assume a principled domain underlying idiomatic combinations. Considering, for example, 'to flip your lid' and 'to explode', which both refer to the act of expressing anger, Gibbs would posit a conceptual metaphor, such as 'ANGER IS HEATED FLUID IN A CONTAINER', since, also shown by studying peoples mental images for those idioms, expressions like these are generally perceived in line of images involving heated fluid in a container. To establish that such metaphors do in fact exist independently and are no mere generalizations over otherwise coincidental historical processes, participants were interviewed on the specific kinaesthetic events associated with the images. Those events were detailed enough to be beyond the scope of the idioms' figurative meanings. For expressions like 'flip your lid' and 'hit the ceiling' for example, Gibbs assumes that there is no necessity to describe those events in terms of a force causing a container to release pressure, since there are diverse means by

3 Idiomatic combinations are, according to Nunberg et al., those idioms which can be given a compositional interpretation, while idiomatic phrases are those which cannot.

which a lid may be flipped as well as diverse means for a ceiling being hit. However, participants being interviewed consistently described the situation in such terms. Overall, "participants' mental images [...] were highly consistent with 75% of their mental images for the different groups of idioms involving similar general images" (ibid., p. 106). This high degree of consistency demonstrates the influence which cognitive processes exert on idioms and can be seen as concurring evidence that a reductionist effort to explain idioms in terms of syntax only must be judged as highly inadequate. Since there is independent reason to assume the existence of cognitive motivation in idioms, the hypothetical connection between syntactic productivity and decomposable idioms must not be considered coincidental.

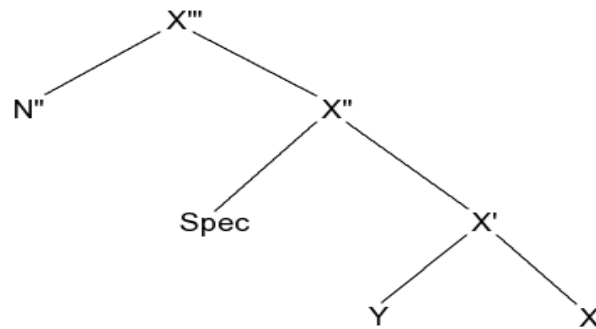
5. Idiomaticity and X-bar Syntax

While until now we have tried to shed light on how syntactic and semantic modifications of idioms are related to one another and how this relation can be applied to make statements about compositionality of idioms, in the following section we shall examine approaches in terms of X-bar syntax on how the various properties of idioms can be formally explained by a theory of grammar. That is, rather than categorising idiomatic expressions in terms of features they expose, we shall show in which ways a formalism of grammar and especially the lexicon needs to be customised in order to be capable of including idioms as well.

For this purpose we shall have a look at the article 'En Bloc Insertion' by Frank van Gestel, published in 'Idioms: Structural and psychological perspectives' (date). In this work van Gestel introduces several approaches of formalising idiom features in the X-bar syntax framework.

5.1 Analysis of Idiomatic Fixation in X-bar Syntax

As has already been outlined in the introductory section of this work, idiomatic expressions tend to pose some difficulties for the usual grammar theories, X-bar theory being no exception. Let us have a look at the following figure in order to make clear the essential aspects of X-bar theory:



The essential idea behind this theory can be paraphrased by saying that there is a lexical head (the 'X' in the tree above) that defines the syntactic structure and behaviour of the phrase which contains it and that the crucial features of this lexical head is preserved throughout the projections, which are marked by the number of bars (hence 'X-bar') behind the 'X' (van Gestel, p. 76):

"Properties of the lexical head mount the projection line; and qualities assigned to the maximal projection from the outside, such as Case and theta role, ultimately land on the head down the projection."

Whereas most conventional sentences of a language usually can be covered out of the box simply by specifying syntactic rules for that language, one has to contrive further principles for accommodating idiomatic expressions. van Gestel (p. 78) proposes the following crucial principle:

"Idiomatic fixation primarily and therefore minimally consists of the selection of a lexical head by another lexical head."

The term 'idiomatic fixation' is based on the assumption that components of an idiom select other components with which they occur conventionally in a fixed distribution, thereby creating the idiomatic instead of the literal (or compositional) meaning of the respective phrase. Such a conventional relation, instead of a merely collocational one, can for instance be stipulated to exist if the constituents of a collocation do not allow the usual syntactic processes.

While, for example, the Dutch collocation 'op termijn' (in the future) can be modified freely by adding terms like 'korte' ('op korte termijn': at short notice) or 'zo'n' ('op zo'n termijn': at such notice), such an insertion operation cannot be carried out for the structurally identical collocation 'bij voorkeur', which can be attributed to the fact that the latter is an idiomatically combining expression (van Gestel, p. 78).

Note however that idiomatic fixation does not necessarily apply to all components of an idiom, thereby still allowing for partially compositionally interpretation, variables and internal modification (van Gestel, p. 80):

"Degrees of idiomatic fixation are defined in terms of X-bar projection levels."

This means that - although generally adhering to the aforesaid idiomatic fixation principle - idioms expose a varying degree of fixation 'minimal head selection' and 'frozenness' making up the two extreme edges of the continuum and idiomatization of parts of phrases lying in between (van Gestel, p. 80). For example, take into consideration the following idiomatic expressions from German:

- a. 'mit x zu Buche schlagen'
to add x to the overall result
- b. 'die beleidigte Leberwurst spielen'
to sulk

Whereas the first expression does not allow any modifications of the phrase 'zu Buche' and therefore must be considered as 'frozen' in terms of the theory sketched here, the second one at least permits modifications like 'eine verdammt beleidigte Leberwurst spielen' (to sulk extremely) and hence can be seen as only partially idiomatized.

A further implication of idiomatic fixation being defined in terms of X-bar projection levels is what van Gestel calls the 'opaqueness claim'. According to this claim any idiomatic expression is structurally and lexically frozen on all the X-bar levels below the level on which idiomaticity is located (van Gestel, p. 81). This notion roughly corresponds to the one of 'idiomatic phrases' in Nunberg et al. (1994), since these expressions display no distributed (and hence compositionally derivable) meaning, that is their internal structure, if there is one, remains opaque on the surface. For instance, have a look at another pair of examples taken from German:

- a. 'Die dümmsten Bauern haben die dicksten Kartoffeln.'
Fortune favours fools. (literally: 'The most stupid farmers harvest the biggest potatoes.')
- b. 'an jemandem einen Narren gefressen haben'
to be especially fond of someone

While the first expression can be divided into the two easily recognisable components 'die dümmsten Bauern' (figuratively standing for foolish people) and 'dicksten Kartoffeln' (figuratively representing fortune), the second phrase cannot be divided into any parts that are meaningful in an idiomatic kind of way at all and hence is to be considered opaque.

5.2 Idioms and the Lexicon

Keeping this account of idioms in X-bar syntax in mind, several questions regarding idioms arise when it comes to their relation to the lexicon as assumed storage facility for everything idiosyncratic, including idioms. First of all, how are idioms stored in the lexicon; secondly, in what respect do idiom entries differ from their fellow lexical ones and finally, in which way are the information in the lexicon projected into syntactic structure (van Gestel, p. 85)? In terms of X-bar syntax there are two general approaches of linking the lexicon with the actual syntactic structure: The idiom rule approach and the listeme approach.

5.2.1 The Idiom Rule Approach

This approach, proposed by Chomsky in 1980 suggests an idiom rule that has the following consequences when, for instance, applied to the idiomatic expression 'to kick the bucket' (van Gestel, p. 85):

1. The erasure of the regular syntactic and semantic properties of the individual items 'kick' and 'bucket'.
2. The incorporation of the object NP into the V-node.
3. The assignment of the meaning 'DIE' to the derived configuration.

A further assumption that comes with this approach is that idiomatic strings have regular literal counterparts (van Gestel, p. 86):

"Crucial assumptions of this approach are that idiomatic strings have regular, literal counterparts and that idioms contain only strings that reflect the regular selectional and word order possibilities of Deep structure."

Van Gestel continues by bringing forward four arguments against this approach:

First of all, there are combinations that cannot be regularly produced according to the underlying grammar. Take, for instance, the English expression 'by and large', which consists of a preposition, an adjective and a conjunction superficially seeming to link the two former components. However, in standard English grammar there is no rule like $XP \rightarrow P \text{ CONJ ADJ}$ (Nunberg et al., 1994: p. 515).

Furthermore, some idioms contain words that occur exclusively in these idioms. A theory assuming that idioms have literal counterparts would imply that all words in an idiom are lexical items on their own that can occur freely and independently. An example is the Dutch expression 'van lieverlee' meaning 'by degrees' since the word 'lieverlee' can only occur in this specific idiom and thus contradicts the aforementioned view that idioms reflect the same selectional potential as non-idiomatic expressions. (van Gestel, p. 87)

Moreover, certain idioms contain historically amalgamated and inflected forms. If one assumes that the lexicon does not contain such idiosyncratic forms, we again run into the problem that the expressions have no literal counterpart as these constituents cannot occur freely. Again, consider the Dutch example 'ten eigen bate' which means 'to one's own benefit' and contains the term 'ten', which is no part of present-day grammar of Dutch, but rather a merged expression created from the preposition 'te' and the obsolete case-marked article 'den' (van Gestel, p. 87)

Finally, some idioms have fixed word orders that cannot be accounted for by the respective D-structure rules of the given. Consider for instance the Dutch phrase 'er helpt geen lievermoederen aan' ('there is no help in this matter'), which in usual Dutch should rather contain a single word 'eraan' instead of the two separate terms 'er' and 'aan' (van Gestel, p. 88)

Hence, the idiom rule approach cannot explain all idiom-related phenomena, the reason being that it is impossible to insert single lexical items for idiomatic ingredients that are not single items at all or that may occur only in syntactic positions not available in D-structure. Furthermore, lexical specification, that is the way of storing and differentiating levels of fixation in the lexicon remains unclear in this approach (van Gestel, p. 89):

"A further fundamental shortcoming is that it is in no way clear how the lexical specification of idioms - storage, idiomaticity and differentiation of fixation - should be effectuated."

For this very reason, in the following section we shall introduce another approach that appears to be more suitable, though not completely without problems either.

5.2.2 The Listeme Approach

In contrast to the previous theory of lexical insertion in syntactic structure, the approach dealt with in this section mainly consists of the assumption that idioms are lexically stored as 'syntactic objects' (Di Sciullo/Williams, 1987) or 'partial trees'. This means that the degree of fixation of an idiom will be represented in terms of X-bar levels, which allows for the various syntactic structures idioms can expose (van Gestel, p. 89-90):

"Its [the listeme approach's] core assumption is that idioms are lexically stored as 'syntactic objects' [...]. The obvious way to do this is by representing them in the lexicon as partial trees [...]."

"Given that the degree of fixation is represented by the X-bar level of the idiom [...], a smaller or larger subtree may be registered as idiomatic [...]."

What is more, the listeme theory for lexical insertion can accommodate idiosyncrasies like words that cannot occur freely outside their idiomatic distribution, as well as synchronically obsolete word forms. This is achieved simply by placing these words in their respective positions in the syntactic tree with no need to further specify them on account of the idiomatic expression being inserted as a whole - a process van Gestel calls 'en bloc insertion' - which then has to satisfy the relevant syntactic and semantic lexicon-external principles, instead of the single entities in its syntactic tree (van Gestel, p. 90):

"The parts of unproducible combinations like *by and large* may be attached under one node, the character of which remains to be determined, the whole being insertable into syntactic structure irrespective of its internal structure."

However more appropriate the listeme approach for lexical insertion of idiomatic expressions seems to be, some problems arise, too:

First of all, van Gestel (p. 90) states that in spite of the improvements over the idiom rule approach the question of how the implementation of insertion of syntactic sub-trees from the lexicon into syntactic structure actually works remains. The obvious assumption that en bloc insertion works as a process on consummately generated syntactic structures entails a simultaneous insertion on all the positions in the syntactic sub-tree involved in the process instead of only single terminal elements each (van Gestel, p. 90):

"First, instead of a one-by-one insertion procedure during which subsequent preterminal heads are filled, lexical insertion of a subtree boils down to the simultaneous filling of more than one X₀ position."

Moreover, the listeme approach gives rise to difficulties similar to those of the idiom rule variant. Conjoined expressions like the amalgamated 'ten' in 'ten eigen bate' (see above) still cannot be licensed. The term 'ten' in this example is, as has been mentioned before, a merged expression created from the preposition 'te' and the obsolete case-marked article 'den', which does not occur elsewhere but in idioms and therefore cannot be accommodated using the general phrase structure rules for the language.(van Gestel, p. 90):

"Amalgamations of P and Det like *ten* and *ter* in (22) do not fit in any preterminal node generated by the base rules; and idioms with word orders unlike D-structure orders are uninsertable, because their structures do not match D-structure."

A possible solution to this problem might be van Gestel's (p. 90-91) proposal to allow the generative process to start and stop at any level. This would allow us to insert lexicon entries containing subtrees no matter how complex, into the respective D-structure with no need to further expand its nodes (van Gestel, p. 90):

"In order to make en bloc insertion work on all levels and for all the kinds of individual syntactic structures that the idiomatic subtrees may exhibit, I propose the optional application of X-bar rules. That is, I assume that the base rules operate in such a way that the generative process can start and stop at any level."

van Gestel (p. 91) nevertheless admits that this might seem like a 'deus ex machina', however, according to van Gestel it appears to be a natural consequence, if the underlying rule system itself is free to start branching at any level (van Gestel, p. 91):

"The way base rules apply in the proposal just mentioned may seem a deus ex machina. However, it appears to be a natural consequence of the rule system introduced in (1)-(2). There it was claimed that the structure-generating process is free to start at any level defined on (1)."

Concludingly, it can be said that the process of en bloc insertion of listemes as described here, provides us with a possible way of properly accommodating idiomatic in the lexicon and in grammar as whole. However, as has been shown above, some intricacies remain that cannot be solved easily.

In the following section, we therefore shall have a look at a theory called lexical licensing which, as we shall see, still has some advantages over the framework presented here.

6. Interfacing the Lexicon with Syntactic Structure

In this section, another approach for interfacing a structurally revised lexicon with syntactic structures will be presented by means of the article 'The Boundaries of the Lexicon' by Ray Jackendoff, which was also published in 'Idioms: Structural and psychological perspectives' (date).

6.1 A Generative Perspective on the Structure of the Lexicon

Jackendoff first summarises what he calls 'received views' of the lexicon in generative grammar, that is to say the way in which the lexicon and its structure is usually pictured in this particular framework (Jackendoff, date: p. 133):

According to this assumption, first of all, the lexicon predominantly consists of words, idioms (and other expressions which consist of several words) making up only a fairly small subset.

Secondly, lexical items are inserted into D-structure by substituting terminal symbols in a syntactic tree with the respective lexical item, which, as we have already seen in the previous section, creates a problem for idioms which do not correspond to such a terminal symbol.

Furthermore, lexical items are interpreted compositionally after insertion into syntactic structure. Again, as has been indicated before, this causes problems concerning idioms, since some, if not most, idioms have non-compositional meanings.

Finally, according to Jackendoff (date) it is a widely accepted in generative grammar that the lexicon only consists of entities that cannot be predicted from rules, which eliminates everything redundant from the lexicon.

Keeping these views in mind, clichés (sayings that, in contrast to idioms, can be interpreted compositionally: 'any friend of yours is a friend of mine.' (Jackendoff, date: p. 135)), quotes, idioms etc. are excluded from the lexicon in order to constrain knowledge of language in an attempt to shape the underlying language model in a modular fashion. However elegant this approach might be, Jackendoff makes a point by stating that "one cannot just choose the strongest possible hypothesis because it is the most falsifiable and then end up excluding phenomena because they are not core grammar" (Jackendoff, date: p. 136).

6.2 Modularity and the Advantages of Lexical Licensing

Following Jackendoff (1987) each sentence as well as each lexical item can be considered a triple $\langle PS, SS, CS \rangle$ (PS = phonological structure, SS = syntactic structure, CS = conceptual structure). In the traditional Chomskyan view PS and CS play no role in syntactic well-formedness, that is syntactic rules generate regardless of meaning and pronunciation, which inevitably leads to overgeneration (consider for example Chomsky's famous 'Colourful green ideas sleep furiously.'). In full grammatical derivation this overgeneration is constrained by the necessity for SS to correspond properly to PS and CS (Jackendoff, date: p. 140):

"However, in full grammatical derivation, the massive overgeneration of the syntactic formation rules is constrained by the necessity for SS to correspond properly to PS and CS - to be pronounceable and meaningful."

Jackendoff (date) continues to outline a view under which there is no such thing as lexical insertion, but only the satisfaction of constraints, that is lexical items are not inserted for terminal symbols, but simply correspond to (near-)terminal symbols regarding their PS, SS and CS (Jackendoff, date: p. 144):

"In short, the formal role of lexical items is not that they are inserted into syntactic derivations but rather that they license the correspondence of certain (near-)terminal symbols of syntactic structure with phonological and conceptual structures."

This lexical licensing approach seems to fit more naturally in current unification frameworks like HPSG, where features of specific entities correspond to those of the syntactic structures they are used in (Jackendoff, date: p. 145):

"Now that unification and constraint satisfaction are widely acknowledged as fundamental operations in grammatical theory, lexical licensing looks much more natural."

Furthermore, it separates information according to the levels of representation, so syntactic theory can be left unaltered (Jackendoff, date: p. 145):

"Because syntactic theory in practice enforces this separation of information, it is possible to leave syntactic theory otherwise unaltered, at least for a first approximation [...]."

Apart from these formal advantages, the lexical licensing approach bears several practical advantages over lexical insertion. For example, some linguistic data such as defective lexical items like 'fiddle-de-dee' or 'ouch' cannot be accounted for using a theory of lexical insertion, as these do not appear to have any surface syntactic structure that could possibly be substituted for a terminal symbol. Using lexical licensing, however, expressions like these can easily be accommodated by assuming a triple $\langle PS, \{\}, \{\} \rangle$ or $\langle PS, \{\}, CS \rangle$ respectively. These entries are only licensed in environments where no syntactic structure is required (Jackendoff, date: p. 146):

"They [defective lexical items] therefore can be used in contexts where no syntax is required - for example as exclamations and in syntactic environments such as the phrase *yummy yummy yummy* or "*Ouch*", *he said* that place no syntactic constraints on the string in question."

Most importantly, this approach allows licensing at a level that comprises entities larger than a word, for instance at the level of VP, which allows for idioms as well (Jackendoff, date: p. 146)

Lexical licensing, however, necessitates changing the lexicon in way that it cannot only contain X0

categories, but phrasal categories, too. The size of such a unit that is licensable is not inherently limited, meaning that it can be as large as IP (Jackendoff, date: 148):

"First, how large a unit is it possible to license? [...] Examples like *the cat's got NP's tongue* suggest that IP-sized units are possible."

A collision of such a structure with the requirements of the principle of compositionality, can be avoided by stipulating that full linking is only necessary for productive syntactic patterns, that is, if a phrase is lexically listed, there is no need to build its meaning from its parts, as the meaning itself is already contained as a property of the respective entry (Jackendoff, date: p. 148):

"But the basic idea is that full linking is necessary only for productive syntactic composition, that is, syntactic composition in the usual generative sense."

When listing syntactic phrases in the lexicon, the question of redundancy and information cost arises immediately. Jackendoff (date) suggests that instead of being measured in terms of features listed in the lexicon information be measured in terms of non-redundancy or independent information content, i.e. by their learning cost. He admits, though, that this perspective on information is incoherent with classical von Neuman views on information theory (Jackendoff, date: p. 149):

"The idea is that lexical entries are fully listed but that lexical rules render parts of these entries redundant, so the cost of learning them and listing them is less. Although such a notion of cost can be made formally coherent (I think), its implementation in a real system admittedly remains somewhat hazy."

6.3 Parallels between Idioms and Compounds

Jackendoff's (date) approach not only has an impact on the treatment of idioms, but on all classes of compounds whose members cannot be interpreted on a mere compositional basis (e.g. 'cranberry'), as either their PS, SS or CS has been overridden (Jackendoff, date: p. 150).

Such non-compositional, and hence at least partly conventional, lexical entries consist of listing the fixed expression and specifying overridden elements.

As is the case with idioms, the redundant parts of these entries have to be listed, too. However, due to their predictability, they do not contribute to the information of this entry.

6.4 Effects of Lexical Licensing on Lexicon Structure

With the changes to lexicon structure outlined above in mind, the boundary between lexicon and rules of grammar begin to blur. A strict separation of lexicon and grammar therefore does not seem to be possible anymore. Jackendoff's (date) point of view on how lexicon and syntax interface and how the lexicon needs to be structured when putting aspects like idiomatic phrases into consideration can be boiled down to the following statements (Jackendoff, date: p. 156):

1. There are too many idioms to regard them as marginal.
2. Anything that is stored in memory in phonological or syntactic format counts as language.
3. Lexical insertion is unsatisfactory for interpreting idioms.
4. Lexical licensing allows for fixed expressions as well, because, like words, they are fixed matchings of <PS, SS, CS>.
5. The theoretical machinery of morphology has to take into consideration aspects like listing of partly redundant instances of productive patterns, specialisation of such instances and the possibility for overwriting features.

7. Summary and Conclusion

Idiomatic expressions have been discussed in relation to the notion of a theory of grammar. Traditionally, idioms were assumed to fall outside of the scope of linguistic convention and were, as such, to be disregarded outside of the boundaries of the lexicon. We scrutinised the implementation of a distributionalist scheme that aimed to justify reductive accounts of idioms by asserting a class of semantically void formatives to account for certain syntactic restrictions in idioms. Such a categorical invocation of idiomaticity is contradicted by empirical data which proved some idioms to be quite flexible syntactically and that they may, for example, undergo internal modification. We assume modification to be a valid test for idiom-internal syntactic constituency, because modified phrases are non-synonymous, depending on the position of the modifier. We then presented psycholinguistic arguments which per se made categorical explanation doubtful, thus extending our hypothesis beyond specific generalisations made by Schenk (1995). Because we must assume more general cognitive processes at work in idioms, a theory looking for cognitive adequacy cannot treat them as atomic components of the lexicon, but must consider their conceptual and phrasal structure. Consequentially, we have discussed several accounts of how to formally accommodate idioms in theories of grammar more adequately.

First of all, we have presented two approaches in terms of X-bar syntax: The idiom rule approach and the listeme approach. While the first one is based on the assumption that idioms have literal counterparts and the process of idiomatic interpretation of an expression simply works by deleting literal meaning of that particular expression and replacing it with the non-literal one, the second approach posits that idioms and other syntactically complex expressions are listed in the lexicon as a complete entity instead of being composed of single entities during syntactic generation.

Although the listeme approach has several advantages over the idiom rule approach, which for instance cannot account at all for terms that occur exclusively in idiomatic expressions, it still does not seem to be apt for accommodating all the idiomatic phenomena language displays. Though it abstracts from internal structure of an idiomatic expression, which therefore remains opaque on the surface, it nonetheless does not seem capable of explaining idiomatic structures that clearly contradict the phrase structure rules of the language in question.

Finally, we have presented a possible view on how to interface lexicon and syntactic structures in terms of a framework called lexical licensing. The basic assumption behind this approach is that lexical items are not inserted in syntactic structures, but they rather satisfy the demands of a syntactic structure by complying to their feature requirements, that is they *licence* the correspondence of (near-)terminal symbols in syntactic trees to entries in the lexicon. These entries in turn are not restricted to words, but can be phrases as large as IP, too. Hence, idioms and other complex expressions can be accounted for in this model as well.

In this work we have attempted to point out a few directions in which to move for a full-blown account of idiomatic expressions. Nevertheless, some of the approaches presented in the course of this work display at least some flaws or disadvantages, so there is still space for improvements. Another aspect possibly worth examining are the parallels between the entity called 'idiom' and – as already has been indicated in the beginning – an equally unwieldy category called 'word'. Words like idioms, obviously are entities which, although idiosyncratic in a way, involve linguistic regularities. In order to clarify many conflicting intuitions, one has to define the exact boundary between those levels of the respective phenomena which adhere to grammatical principles from those which do not. As for this, the layman's intuitions about terminology might teach theories of grammar a lesson in modesty.

8. References

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