

What should *stockings* look like? On the storage of linguistic units*

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1. What this paper is about

This paper is not about lingerie. As the subtitle suggests, it is about the organization of lexico-grammatical information in the mind. The term *stockings* in the main title, then, refers to the whole of what is ‘stocked’ or ‘stored’ in a speaker’s mental dictionary-*cum*-grammar and that resides there ready for retrieval. This special usage treats the existing word *stockings* as analogous with plural nouns like *earnings*, *leavings* and *sweepings*, which collectively refer to what is earned, left, or swept together, respectively. The question I would like to address is: How should we, as linguists, represent linguistic information in a way that is assumed to be in accordance with the way language users store linguistic knowledge in their grey matter? Of course, unless we carry out neurolinguistic experiments, we can only *guess* at how linguistic information is imprinted in the mind. Nevertheless, some kinds of linguistic description have more psychological plausibility than others.

As an example of linguistic units that need to be represented somehow in the grammar of speakers of English, consider their notorious *phrasal verbs*. Many non-native speakers of English have been made afraid of phrasal verbs at school, where these scary creatures were presented in long vocabulary lists. The emphasis often lies on the unpredictable nature of some combinations. For example, *turn up* means ‘arrive, appear’, but *turn down* does not mean ‘leave, disappear’; rather, it means ‘reject’. Not surprisingly, therefore, there appears to be a profitable exploitation of phrasal verbs in the form of all sorts of dictionaries and workbooks aimed for the English language learner. If you enter “phrasal verbs” in *Amazon.com*, you get well over a hundred matches for your search. Still, this plethora of specialized phrasal verb dictionaries cannot catch up with the creativity of the native speaker, who keeps coming up with new combinations like *barbecue it up*, *be babed out*, *fartass around*, and so on. This creativity reduces to a number of pat-

terns that speakers discern in the language being used around them and extend to form new combinations. To be a competent speaker of a language means to know the patterns in that language. These patterns, in other words, are the linguistics units that make up a grammar.

In what follows, I will give a survey of the organizational principles pertaining the way in which the total stock of linguistic units can efficiently and plausibly be represented in a descriptive grammar. It is my belief that the principles presented below can be applied not only to the description of the linguistic stockings I am most familiar with – those involving particles (Cappelle 2005) – but to the description of all kinds of linguistic stockings.

2. Storage principles

My use of the word *stockings* in the sense described at the outset of this paper is not altogether without an underlying reference to the more standard use of this word, which, as we all know, is to denote a certain type of hosiery. Actually, my presentation of the storage principles of a psychologically plausible descriptive grammar draws upon this lingering lingerie association. Table 1 shows how possible characteristics of the piece of garment can be applied metaphorically and mnemonically to the organization of linguistic information.

Table 1. Possible characteristics of ordinary stockings and how they can be transferred to linguistic stockings

<i>Real stockings</i>	<i>Linguistic stockings</i>
– general-purpose or occasion-specific	– grammatically ‘core’ or ‘peripheral’, or stylistically neutral or marked, but always worthy of description
– transparent	– ideally represented in an clear notational format
– patterned	– showing regularities
– laddered	– showing hierarchical structure
– holed	– containing accidental gaps
– stretchable	– open to creative additions
– netted	– showing network relations

2.1. Storage principle 1: not some but all linguistic objects

All phenomena encountered in real language use are worthy of attention. While one would obviously expect this statement to be endorsed by all linguists, the truth is that the search for Universal Grammar (UG), which has dominated much of linguistic activity since the Chomskyan revolution, has often pushed the irregular and the bizarre literally into the margin of the research agenda. Chomsky proposed a distinction between “core grammar” and a “periphery of marked elements and constructions” (1981: 8) and later suggested that “[a] reasonable approach would be to focus attention on the core system, putting aside phenomena that result from historical accident, dialect mixture, personal idiosyncrasies, and the like” (1995: 20).

Other linguists have defended “the centrality of the periphery” (Joseph 1997). One theoretical framework, in particular, is devoted to accounting for all sorts of linguistic data and firmly denies the existence of a sharp dividing line between core and periphery: Construction Grammar. The webpage devoted to this framework reads like a manifesto: “The appeal of Construction Grammar as a holistic and usage-based framework lies in its commitment to treat all types of expressions as equally central to capturing grammatical patterning (i.e. without assuming that certain forms are more ‘basic’ than others)” (Fried s.d.). Personally, I see little harm in acknowledging that some patterns are more basic or less marked than others, as long as the latter are not, without further ado, relegated to a collection of curiosities that we need not worry about. For example, the subject-predicate construction is more general than the *the X-er... the Y-er...* construction, but this latter pattern is no less part of grammar (e.g. Cappelle [2006], and references given there).

A major accomplishment of the Construction Grammar enterprise has been the study of idioms, not so much fixed phrases like *trip the light fantastic* but rather structures which are less lexically specified and more syntactic in nature. I will give an example shortly. As Hilferty (2003: 49) argues, it is wrong to accuse Construction Grammarians of engaging in “little more than butterfly collecting”, that is, in an “abandonment of the search for generalizations”. This is, indeed, a false charge, since

studying what is idiomatic in a given language is the other side of the coin of studying what is general in that language. The right way to study a so-called idiom is to discover exactly what there is about the expressions that exemplify it that needs to be learned *by linguistic convention*, and in order to discover that, one needs a theory of what is regular or general in the language. (Fillmore s.d.)

So, when deciding whether something is idiomatic, writes Fillmore (s.d.), “[w]e need to distinguish what it is that speakers of a language have to *know outright* from what it is that they have to be able to *figure out* on the basis of the other things that they know”. Jackendoff (2002a: 152), who is in fact not at all a ‘core’ member of the Construction Grammar community, puts it thus: “What parts of an utterance must be stored in long-term memory, and what aspects can be constructed online in working memory?”

One constructional idiom that Jackendoff has recently is illustrated in (1):

- (1) *Richard ran/programmed/cooked/yelled his head/ass/butt off.*
(Jackendoff 2002b)

In case anyone doubted that we are dealing with an idiom here, consider the following examples (taken from the internet):

- (2) a. *They work their ass off.*
b. *It was like 30 degrees and blowing its ass off last night.*
c. *I laughed my proverbial ass off at that movie.*

In (2a), the noun in the direct object is not inflected for number: it is not *asses*, as should probably have been the case if it literally referred to the buttocks of the multiple agents involved. In (2b), the subject *it* refers to the weather, so that *its ass* cannot possibly be given a literal interpretation. If anyone should object that the weather is personalized and that the verb *blow* figures in scatological imagery here, I can add that this pattern also occurs with verbs like *rain*, *storm* and *snow*. In (2c), the writer makes it explicit that the word *ass* is part of an idiom, perhaps to mitigate the taboo value of this word.

The idiom used in these sentences is not just something that belongs in a dictionary of slang. It is not separated from English grammar proper. On the contrary, given that it is an idiom, it *must* be part of the grammar of English, with grammar broadly defined as all the knowledge one has to be equipped with if one is to be a competent speaker of English. Even if you yourself would never use the variant with *ass* or *butt*, you must know, in case someone else uses it, that it does not literally mean what it says. Sure, you might be able to guess so much even if the idiom was not part of your knowledge of English, but this is beside the question. What matters is that nothing about the words themselves (and the way in which they are arranged) tells us that the subject referent’s behind is not really involved in the event.

2.2. Storage principle 2: we need transparent representations

A descriptive grammar of patterns ought to be transparent, in the sense that it should not draw attention to itself as a clever and elegant formalism but instead allow us to see the data *through* it. In other words, it should enable researchers to look at language directly and not through any sort of theoretical ‘filter’ that may sift out certain observations as irrelevant or that may make certain facts invisible to the observer. Jackendoff (1997: 4) rightly warns us in this connection that “excessive preoccupation with formal technology can overwhelm the search for genuine insight into language.”

According to the principle of transparency, a minimal amount of formal formatting should be imposed so as to allow researchers to devote their time to their object language rather than to the ‘representation language’. As a corollary, linguistic data that are represented in a descriptive format should be relatively easy to decode. For example, the idiom we introduced in the previous subsection might be represented as follows:

- (3) [VP V [NP pro’s [N *head*]] [Prt *off*]]_{infmtl}
 ⇔ [VP V [NP pro’s [N *ass*]] [Prt *off*]]_{infmtl & slang}
 ⇔ [VP V [NP pro’s [N *butt*]] [Prt *off*]]_{infmtl & slang}
 ‘V very much’, ‘V intensely’, ‘V to excess’

This simple representation contains information as to

- the phonological content of the idiom.
- the syntactic structure of the idiom: it is a verb phrase, consisting of a verb, followed by a noun phrase and the particle *off*. The noun phrase consists of a pronoun bound by the subject (i.e. a reflexive pronoun) followed by the noun *head*.
- the most prominent realizations of the idiom, all of them linked with a double-headed arrow to indicate that no single realization is ‘basic’.
- the stylistic value of the idiom, which is not the same here for all three variants.
- the meaning of the idiom, indicated by means of some simple but sufficiently accurate semantic paraphrases.

I do not claim that this is also how the idiom at hand is represented in the mind of a competent speaker of English. However, the representation contains information that must be there one way or another.

The notation in (3) is, admittedly, reminiscent of generative grammar. I do not think there is anything problematic about that, provided that one tries

to steer clear of certain excesses in generative grammar that appear nothing short of absurd to anyone who is not a real insider.

Consider for example the way Kayne's (1998: 137) successive movement operations to derive the V – NP – Prt order are truly 'cyclic' (to make a poor pun on a generative term). In Kayne's analysis, the sentence *John invited no strangers in* is derived from *John no strangers in invited*, which in turn is a derivation from *John in invited no strangers*, itself the first derivation of *John invited no strangers in*:

- (4) *John [invited no strangers in]*
 ↓ (particle preposing)
John in_k [invited no strangers t_k]
 ↓ (neg phrase preposing)
John no strangers_i in_k [invited t_i t_k]
 ↓ (VP-preposing)
John [invited t_i t_k]_j no strangers_i in_k t_j
 (after Kayne 1998: 137)

Notice that the output of this whole derivation process is thus identical to its input. Through a sequence of movements, the sentence is transformed into itself. Only, the output has plenty of extra inaudible structure (namely, left-behind traces) that makes it, at least to a generative linguist, a totally different creature compared to the input.

Dehé, who is also a generative linguist, refers to this derivation in her (2002) monograph on the verb-particle construction and wonders in earnest "what the landing site of the VP-preposing is" in Kayne's last derivational step. Now, if this is apparently the first question that springs to mind for linguists working within the latest version of generative grammar, it is easy to see why I am dissatisfied with generative treatments of constructions. On the risk of being both ignorant and disrespectful, *my* first question in relation to Kayne's analysis is: What is the point of setting up such an elaborate series of movement operations if you eventually end up with a sentence that is phonologically indistinguishable from the input sentence?

My personal desideratum for a description-oriented linguistic theory is that it should primarily answer questions about language phenomena rather than raise problems internal to the theory itself. That is what I mean by transparency.

2.3. Storage Principle 3: a grammar is being made up of patterns

That a grammar of a language should contain patterns (in the sense of constructions) may seem self-evident. Yet, in orthodox generative grammar, what we perceive as constructions are claimed to be only ‘epiphenomena’, that is, by-products of movement operations that are prompted by universal principles; and it is the interaction of these general principles that form the Holy Grail of linguistic research—once we have found all the universal laws of language, we will have to conclude that any given construction, such as the passive, is just a chimera. As Chomsky (1988: 71) writes, “[T]he notion of construction, in the traditional sense, effectively disappears, as an artefact.”

In Construction Grammar, by contrast, constructions are not discarded as uninteresting side-effects. On the contrary, if we can accurately describe all the constructions of a language, we can do without some of the movement principles out of whose interaction they supposedly arise. For example, if we allow a pattern of the form (something like) [_{VP} V NP Prt] (a verb, a noun phrase and a particle together making up a verb phrase) to be part of a speaker’s repertoire of stored linguistic units, we do not have to bother about how the order of elements in the sequence *invited no strangers in* comes about. We can then simply say that this sequence is directly licensed by a pattern that exists independently in the grammar.

Crucially, a speaker’s stock of stored items does not uniquely consist of such purely skeletal patterns, which only consist of empty positions representing classes of possible elements. The pattern introduced in 2.1, for example, is already partly filled in with phonologically specified (i.e. lexical) material (the noun *ass/head/butt* and the particle *off*), but it still contains some ‘slots’ into which any element of a certain specified class (verb, reflexive pronoun) can be plugged.

The more open slots a pattern contains, the more it resembles purely syntactic (phrase-structure) rules; the fewer open slots and the more “pre-installed” (Hilferty 2003: 49) elements, the more we enter the realm of the traditional lexicon. Schematicity and specificity are a matter of degree, since patterns can have both schematic and specific elements, i.e. both open slots and fixed words. Because of that, the stored items in a grammar constitute a continuum of syntactic and lexical items. Put differently, there is no rigid distinction between “words and rules”, to use the title of a book by Steven Pinker.

Apart from ‘patterns’ in the sense of ‘constructions’ or ‘structural configurations’, the grammar of a language also contains ‘patterns’ in the broader sense of ‘regularities’ or ‘systematicities’. For example, the fact that

for most active transitive constructs there is a related passive variant is something that speakers of a language know – it is a ‘pattern’ that emerges from the linguistic data they encounter. Similarly, they also know that in the active voice, transitive verb-particle combinations usually allow the particle to be put either before or after the direct object (e.g. *pick up the book / pick the book up*). I will come back to how we can model this kind of knowledge at the end of my paper.

2.4. Storage principle 4: a grammar has hierarchical organization

I have just proposed that patterns linking alternative but semantically related forms should be part of the grammar of a language. This is a claim that is probably controversial in mainstream Construction Grammar, where regular alternations are regarded as Chomskyan transformations in disguise and are therefore excluded. However, Construction Grammar does recognize that there are links between constructions (see also 2.7). One kind of link that plays a central role in Construction Grammar (as well as in Cognitive Grammar in general) is between schematic constructions and their more specific instantiations. Links like these are variously known as “inheritance”, “schema-instance” or “hyponymy” relations.

In the case of the constructional idiom ‘*verb one’s {head / ass / butt} off*’, we find that there is in fact a wider family of similar idioms, including those in the following examples:

- (5) a. *Harold sang his heart out.*
 b. *I cried my eyes out.*
 c. *Richard surfed his brains out.*
 d. *Jane laughed her socks/pants off.*

All the idioms used in these sentences share a sense of ‘to excess’. So, we might posit the existence of a more general, higher-ordered pattern with exactly this meaning, ‘verb to excess’, which is passed on to these more specific idioms. Each specific subidiom also adds its own emotive overtone. For example, if I say *I whatevered my ass off*, this perhaps suggests that the activity was debasing as well as physically exhausting, whereas *I whatevered my heart out* is more likely to suggest that I wilfully carried out an activity that is emotionally exhausting but possibly rewarding.

What these idioms also have in common, apart from the fact that they all say something about the vigour of the event, is that the object NP is not li-

censed by the verb. For example, you can *sing your heart out*, but you can't just **sing your heart*. This property of having a so-called fake object is something that these idioms share with some instances of more general constructions: the transitive verb-particle construction (as in *The dog barked us away*), and on an even more general level the resultative construction (as in *The dog barked us awake* or *He drank himself silly*).

Specific patterns can also *fail* to inherit certain properties of a more general pattern. Put differently, they may have specifications that are in conflict with those of a superordinate pattern. For example, all the sentences in (5) inherit the syntax of the resultative construction, but they override its default semantics. As we have seen, they have a non-literal meaning. If they were true instances of the resultative construction, they would be compatible with a temporal adverbial of the 'in X time' type, as in this sentence:

(6) *Betty exercised her butt off in less than ten days.*

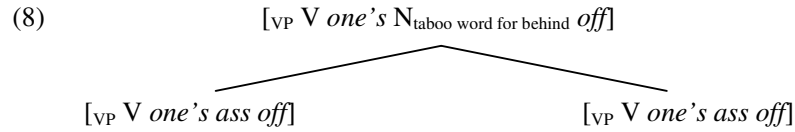
Because of this adverbial, we know that we are not dealing with the constructional idiom under discussion, but with a genuine example of the resultative construction. (That is, this sentence means that Betty, by following an exercise programme, caused the excess fat of her rear to disappear in less than ten days'. By contrast, in *She exercised her butt off for ten days*, the subject might have been excessively engaged in any kind of physical exercise – she might have trained her arm muscles and still have the same voluminous behind.)

The idiom also lacks the property that is so typical of the transitive verb-particle pattern. So, whereas you can either say *She took her coat off* or *She took off her coat*, you can only felicitously say *I worked my head off*, not **I worked off my head*.

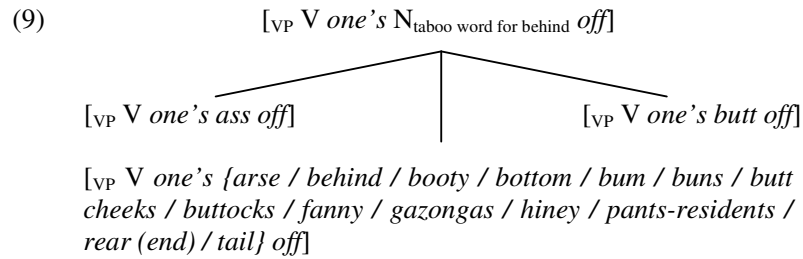
Interestingly, idioms can themselves also have further idiomatic instantiations. For example, *eat one's heart out* does not mean *eat excessively* (as you would expect on the basis of the pattern *verb one's heart out*), but means 'be filled with jealousy' or, for some speakers, 'to fret or worry excessively'.

2.5. Storage principle 5: allow for accidental non-occurrences

A language may disallow combinations that in principle could have been possible. Given that the pattern '*verb one's noun off*' allows a variety of nouns referring to body parts, it is surprising that certain basic-level body terms are *not* used. So, while you can say *I worked my {head/ass/butt} off*,



This more abstract pattern might then in turn license new instances:



Attestations of these extensions have been found on the web. Apparently, language users have a predilection for words referring to this body part. One might even conjecture that there is, quite remarkably, an inverse correlation between the taboo value of a concept and the number of words there exists in a language to actually name that concept. However, some language users appear to censure themselves, for we also find some taboo-reducing typographical variants with asterisks, dollar signs, and the like (*****, *a***, *a\$\$*, *ar\$e*, *b--*, etc.).

As in any form of creativity, the mechanism at work in (7)-(9) is analogy, a process whereby two or more entities are seen as sharing something on a more abstract level. As Langacker (1987: 447) writes, “The ability to make the proper analogy implies the perception of a pattern.” In our case, the perceived pattern is the schematic idiom capturing the commonality between ‘*verb one’s ass off*’ and ‘*verb one’s butt off*’. Kay (2002) refers to schematic patterns like this as “patterns of coining” and proposes that they “be excluded from a grammar, although they do deserve study as meta-grammatical patterns likely to influence grammatical change”. Indeed, not every language user extracts (let alone stores) such a pattern, and, accordingly, we have no way of knowing for sure whether all of its potential output is acceptable (for all speakers) or not – such a pattern does not do what ‘real’ constructions do, namely “yield predictions regarding grammatical and ungrammatical expressions” (Kay 2002). In a similar vein, Langacker (1987: 12) is rightfully careful to refer to “the pervasive influence of analogy” as

one of the “constant contributory (*though seldom determinative*) factors in the gradual evolution of our lexical stock” (my emphasis – B. C.).

2.7. Storage principle 7: represent a grammar as a network of nodes

It was mentioned in 2.4 that more abstract, schematic constructions have grammatical properties that can be passed on to their more specific instances, although instances can sometimes block one or more of these properties. Inheritance is only one kind of relation between constructional patterns. In this final subsection before my conclusion, I would like to point out that constructions can be linked to each other in a variety of ways.

First, constructions can maintain part-whole (‘meronomic’) relations among one another. For example the category ‘verb’, which is a one-word construction of its own, is a proper subpart of the verb-particle construction. The verb in the verb-particle construction inherits the properties of this independent one-word construction. This way, we can simply delegate inflectional matters of verb-particle construction to the part of grammar that takes care of subject-verb agreement, tense, etc.

Second, a construction typically has multiple parents. The ‘transitive verb-particle construction’, as its name indicates, is at once an instance of the transitive construction and an instance of the verb-particle construction. This means that not everything that is typical of either parent has to be repeated in the grammatical description of the transitive verb-particle construction. Of course, it *can* be redundantly repeated, but since specific patterns by default inherit properties from their more abstract schemata, we can in principle suffice with stating a particular property in the relevant schema only. So, we need not state explicitly that the transitive verb-particle pattern can be cast in a passive format – if the circumstances are right, for example, if the (active) object can be easily construed as affected by the activity and if it has some topical value – since this is true for all instances of the more schematic transitive pattern. Likewise, we do not have to state in the description of the transitive verb-particle pattern that it can range from being fully compositional to being fully idiomatic, since this is also the case for intransitive verb-particle patterns, hence for the verb-particle pattern in general.

Third, a construction can also have multiple children, so to speak. For example, the transitive verb-particle pattern has two different realizations (one in which the particle precedes and another in which it follows the object). Constructions which are formally different but semantically very similar can be related via what could be called alternation patterns, which I

claimed in 2.3 are likely to be part of what speakers know about their language. This is not ordinarily recognized in Construction Grammar, although this framework can be fully equipped to model grammatical variation, as I will argue in my conclusion.

The mirror image of such an alternation pattern may well be part of speakers' knowledge as well: two constructions with rather different meanings that can be linked because of their formal similarity, or actually, their formal identity (e.g. [Verb [the X with the Y]] / [Verb [the X] with the Y]). This could be termed an 'ambiguity pattern', but it remains to be seen whether speakers actually store such patterns. Less extreme versions of such ambiguity patterns would be polysemy patterns (*à la* Goldberg 1995: 75), but again we should bear in mind that speakers do not necessarily perceive a semantic link between two different senses of a single form (cf. Croft 1998, Sandra 1998).

3. Construction Grammar Enhanced: now with 'allostructions'

The previous section has provided an informal overview of how linguistic knowledge is stored in a Construction Grammar architecture. Many Construction Grammarians, however, in their focus on individual constructions, are not willing to assign the status of a cognitive unit to regular alternations between constructions, presumably because alternations reek a bit of the disreputable transformations of generative grammar. I have argued elsewhere that by failing to do so, Construction Grammarians run the risk of throwing out the baby with the bath water. Not everything about generative grammar is bad, and the idea that some constructions are related to each other is worthwhile retaining, as long as one does not describe the relation in derivational terms. The fact that an otherwise fixed idiom like *throw {out the baby / the baby out} with the bath water* has two formal realizations adds weight to the claim that acknowledging a link between two constructional patterns, and calling this link a pattern in its own right, seems the right thing to do.

After all, such links exist in phonology and morphology. For example, the *t* in *top* and *stop* are called allophonic variants of each other. These variant realizations (aspirated or plain) are felt to be members of one more abstract sound, a phoneme. Likewise, the English past tense morpheme *-ed* is said to have three allomorphs: the meaning is the same, but the sound is different: it sounds as *d* in *fanned*, as *id* in *faded*, and as *t* in *faxed*.

Seeing an analogy with phonological and morphological variation, Cappelle (to appear) refers to related constructional patterns like *verb object particle* and *verb particle object* as two ‘allostructions’. They are the same in meaning but differ in form, and are linked via a more general pattern in which the order of the particle and the object NP is left underspecified. Given that Construction Grammar makes no principled distinction between sub-word, one-word or multi-word entities as eligible candidates for construction status, the notion of ‘allostructions’ is one that can be applied to any case in which one linguistic unit has several related manifestations.

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