Rethinking constructional polysemy

The case of the English conative construction

Florent Perek
Freiburg Institute for Advanced Studies

This chapter examines the conative construction, e.g., *I kicked at the ball*, using collexeme analysis. Previous studies report that strong collexemes of a construction provide an indication of its central meaning, from which polysemic extensions are derived. However, the conative construction does not seem to attract a particular kind of verb that could be used to characterize its central meaning. To address this problem, a variant of collexeme analysis is suggested that consists in splitting the verbal distribution into semantic classes and consider "verb-class-specific" constructions independently. For the three classes tested, the most significant collexemes are found to be verbs whose inherent meaning contains the semantic contribution of the construction in that class. Hence, the most attracted collexemes do provide an indication of the constructional meaning, albeit specific to each verb class.

Keywords: collexeme analysis, semantic classes, verb-class-specific constructions

1. Introduction[1]

In constructional approaches to grammar, argument structures are taken to be symbolic pairings of a syntactic structure with a schematic meaning independent of the verbs instantiating them (cf. Goldberg 1995, 2006). For example, the ditransitive construction (e.g., *John offered the children a new merry-go-round*) is a pairing of the double-object syntactic pattern with a core meaning of 'caused possession'. An increasingly large body of evidence from experiments (Goldberg *et al.* 2004) and corpus

1. This chapter is based on material presented at the 4th International Conference of the German Cognitive Linguistics Association on October 8th 2010 in Bremen. I would like to thank the audience of my talk for their interest and comments. I am also indebted to Dylan Glynn, Adele Goldberg and Martin Hilpert for their comments on earlier versions of this chapter.

studies (Stefanowitsch and Gries 2003) suggests that there is a close relation between constructional meaning and constructional usage, in that the meaning of a construction closely corresponds to the meaning of the elements that typically occur in it. In the case of argument structure constructions, this means that the meaning of verbs occurring in a given syntactic pattern determines to a large extent the meaning that will be associated with this syntactic pattern.

Along the same lines, previous corpus-based studies on the interaction of syntax and lexis using the method of collostructional analysis show that "strong collexemes of a construction provide a good indicator of its meaning" (Stefanowitsch and Gries 2003: 227); for example, the ditransitive is biased towards verbs lexicalizing its core meaning of caused possession, such as *give*. Collexeme analysis is thus considered as a valid approach to the analysis of constructional meaning. This chapter presents an attempt to use collostructional analysis to describe the meaning of the conative construction, in which a typically transitive verb is followed not by a direct object, but by a prepositional phrase headed by *at* (e.g., *The waiter wiped at the counter*). As shown by the literature review presented in Section 2, previous research indicates that the meaning of the conative construction is difficult to grasp with a single semantic generalization that would be both accurate and maximally general, which points to a polysemy analysis. Along the lines of Stefanowitsch and Gries (2003), Section 3 considers whether collostructional analysis can inform a polysemy analysis of the conative construction by identifying its central meaning(s), from which other meanings could be derived. However, a collexeme analysis of the construction reveals that no single verb type clearly stands out as prototypical, as is the case with previously studied constructions. These results challenge the claim that collexeme analysis is a good way to characterize the meaning of the construction from the verbs that most prominently occur in it.

In Section 4, a solution to this problem is presented that restores the relation between constructional meaning and verbal use. Drawing on an earlier proposal by Croft (2003) that constructional polysemy is better viewed as generalizations over several semantic classes of verbs rather than extensions from a prototype, a slightly different implementation of collexeme analysis is suggested, whose basic idea is to split the verbal distribution into semantic classes and consider each of these thus-defined "verb-class-specific" constructions independently. The method is applied to three classes of verbs: verbs of striking, verbs of cutting and verbs of pulling. In each class tested, the most significant collexemes are verbs whose meaning inherently contains precisely those aspects of meaning that are arguably contributed by the construction when it is used with other verbs. Hence, the most attracted collexemes do provide an indication of the constructional meaning, albeit specific to each verb class.

The conclusion of this study is two-fold. At the theoretical level, it shows that the polysemy of the conative construction is better seen not as a unified network, but rather as a conglomerate that can be explained by local lexical generalizations

over classes of verbs. Such clusters of low-level generalizations are arguably, at least in this case, a more psychologically valid mental representation of constructional meaning than general schemata deriving from prototypical verbs. At the methodological level, this study shows that looking at the level of verb classes is a useful adaptation of collexeme analysis that can appropriately deal with cases which would otherwise yield results that are difficult to interpret. It allows us to see more clearly what the semantic contribution of a grammatical construction is, albeit for each semantic class separately.

2. The conative construction

The conative construction is most naturally discussed with reference to the conative alternation, whereby the direct object of a transitive verb is realized as a prepositional phrase headed by the preposition *at*, as in *John shot **at** the burglar*. As we will see in this section, the meaning contributed by this syntactic construction is highly variable, which makes a maximally general semantic characterization of the construction challenging, if possible at all.

One of the most cited semantic characterizations of the construction is that of Levin (1993), who suggests that the construction "describes an 'attempted' action without specifying whether the action was actually carried out". Pinker's (1989: 104) description, viz. "the subject is trying to affect the oblique object but may or may not be succeeding", basically refers to the same idea while further specifying the origin of the "attempted action" interpretation, namely that the conative variant lacks the entailment that the referent of the *at*-phrase is affected by whatever activity the agent is engaged in. Finally, Goldberg (1995: 63–64) formulates a construction grammar account of the construction based on these earlier observations, in which she posits that the central meaning contributed by the construction is roughly 'X DIRECTS ACTION AT Y', and accounts for the "attempted action" interpretation reported by Levin and Pinker by stipulating that in such cases "the verb designates the intended result of the act denoted by the construction". The common idea behind all three analyses is the notion that the conative counterpart leaves the affectedness of the *at*-phrase referent unspecified, whereas it is strongly (if not necessarily) implied by the transitive variant.

More recent work on the conative construction shows that this characterization is not by itself sufficient to account for the interpretation of all conative sentences. As Van der Leek (1996: 367) notes, "the conative does not, in its own right, guarantee an intended result reading when featuring otherwise transitive verbs". Both Van der Leek (1996) and Broccias (2001) note that many conative sentences do entail that the patient is affected, albeit to a lesser extent than the transitive counterpart. Verbs of ingestion provide a good example thereof. Indeed, such expressions as *James Bond sipped at his Martini* do entail that at least some of the designated substance was

ingested; what they prevent is a holistic interpretation where the whole substance would be consumed. Non-affectedness thus cannot be a relevant reading for verbs of ingestion, which rather involve a 'bit-by-bit' interpretation. Van der Leek (1996: 367) also notes that "usage of verbs of ingestion in the conative often seems to be motivated by a desire to signal that no real attempt is (or even can be) made to carry out the action to completion". Example (1) (taken from Van der Leek 1996: 367, originally from the Longman Dictionary of Contemporary English) exemplifies such a case:

(1) [Sandy was] sipping at her drink just to be polite

Sentence (1) explicitly specifies the actual goal of the sipping (*to be polite*), and thus entails that Sandy has no real intention to consume the whole drink. In other words, the conative construction can be found in cases where there is apparently no intention on behalf of the agent to affect the target, and hence where actual affectedness is not only unlikely but also (and more importantly) irrelevant.

Subscribing to a constructional approach whereby clausal meaning results from the fusion of a verb's meaning with an abstract schema conveyed by the syntactic construction, Broccias (2001) presents a new analysis of the conative construction. To account for instances not covered by the "attempted action" generalization and to tackle several other issues with previous studies, Broccias argues that the conative construction conveys either one of three schemas: the allative schema, the ablative schema, and the allative/ablative schema, which combines aspects of the first two. The allative schema is described in purely locative terms as involving translational motion towards a target with which contact is not necessarily made, which more or less corresponds to the aforementioned analyses in terms of "attempted action"; note, for example, that Pinker (1989) describes the output of his conative lexical rule in a similar locative fashion as 'X goes towards X acting-on Y'. This is also reminiscent of Goldberg's description of the construction's central meaning in terms of "directed-action". Broccias' ablative schema, contrary to the former one, does imply that contact is made but does not bring about the intended effect and is open to repetition; this schema is involved, for example, with verbs of ingestion, as mentioned earlier.

It should be clear from the previous discussion that the semantic contribution of the conative construction is highly variable, and is, if anything, difficult to grasp with a single generalization. What could stand as the common motivation behind all these uses is the very abstract notion that the conative construction moves the focus to what the agent is doing, regardless of whatever effect this action brings about. This proposal echoes Dixon's (1991: 280) analysis, who notes that "the emphasis is not on the effect of the activity on some specific object […] but rather on the subject's engaging in the activity". While this account seems reasonable at first blush, such an abstract characterization must still go a long way towards the actual semantic contribution with individual verbs, leaving a heavy burden to processes of meaning construction. In addition, such a general meaning could not account for why some verbs (such as

break and *bend*) cannot occur in this construction, since *a priori* any verb meaning involving an agent subject could, in theory, undergo a focus on the agent's activity.

Thus, the syntactic frame [NP V *at* NP] more likely corresponds to several different abstract schemas. Whether or not these schemas can be related in a polysemic network is a matter of debate, but it seems to be a reasonable position. Indeed, the various semantic contributions sketched above can be shown to share family resemblances, which gives credence to a polysemy analysis. For example, both the 'intended-result' and 'bit-by-bit' readings share the notion that, whatever else is going on in the sentence, there is in both cases some goal which is not reached by the agent: bringing about a result on the second entity for the former, and leading an incrementally unfolding event to its completion in the latter.

In the next section, the polysemy of the conative construction is examined on the basis of corpus data. Specifically, it is proposed that the central meaning (or meanings) of the construction can be identified from an examination of its verbal distribution, using the method of collexeme analysis.

3. A collexeme analysis of the conative construction

Previous discussions of constructional polysemy consider that a construction gains additional meanings through semantic extensions from a central meaning. For example, the central meaning of the ditransitive construction is 'actual change of possession', as instantiated by, e.g., the verb *give*. Several semantic extensions are derived from this central meaning, such as 'enabled change of possession' (as with, e.g., *allow*) or 'intended change of possession' (as with many verbs of creation, e.g. *bake*). All these meanings are related in that they all share the notion of some change of possession, but 'actual transfer' is the prototypical meaning since it is both concrete and "basic to human experience", according to Goldberg's (1995: 39) *scene encoding hypothesis*.

How do we identify the central meaning of a construction? In quantitative corpus linguistics, it has been proposed that the verbal distribution of a construction reveals a great deal about its meaning. More precisely, the most frequent verbs occurring in a construction would be those instantiating its central meaning. This section presents an attempt to identify the central meaning of the conative construction on the basis of its verbal usage, using the method of collexeme analysis. Collexeme analysis is one of the specific implementations of the more general method of collostructional analysis suited to the identification of the central meaning of a construction. This section starts with an outline of what the method consists of (cf. Hilpert's contribution (this volume, xxx–xxx) for a more thorough introduction). Drawing on previous research, it is then shown how this method is useful for the study of grammatical constructions. The remainder of this section presents a collexeme analysis of the conative construction.

Table 1. Contingency table for collexeme analysis

	Construction C	**Other constructions**
Lexeme L	F(L in C)	F(L in other C)
Other lexemes	F(other L in C)	F(other L in other C)

3.1 Collexeme analysis

Collexeme analysis was first introduced by Stefanowitsch and Gries (2003) as "an extension of collocational analysis specifically geared to investigating the interaction of lexemes and the grammatical structures associated with them" (*ibid.*: 209). Collexeme analysis is concerned with the words occurring in a given slot of a chosen construction, and more particularly with "determining the degree to which particular slots in a grammatical structure prefer, or are restricted to, a particular set or semantic class of lexical items" (*ibid.*: 211).

The method starts with the identification of a particular construction in a corpus, and of a particular slot of that construction that can be filled with different lexical items. For each lexeme occurring in the slot, the following contingency table must be calculated, as in Table 1.

This contingency table is then submitted to a distributional statistic (often the Fisher-exact test[2]) to calculate the collostruction strength of the lexeme. This value gives an index of the degree of statistical association between the lexeme and the construction, given their frequency of co-occurrence, the frequency of the lexeme elsewhere, and the frequency of other lexemes in the construction. The verbs in the distribution are then ranked according to their collostruction strength.

The final step (interpretation) consists of using this ordered list of collexemes to inform a description of the meaning of the grammatical construction, which is essentially guided by the theoretical assumptions of the constructional approach. In construction grammar, the occurrence of a lexeme in a construction is to a large extent determined by the degree of *semantic compatibility* (cf. Goldberg 1995) between the meaning of the lexeme and that of the construction (or more precisely, the meaning assigned by the construction to the particular slot under study). In collexeme analysis, collostruction strength is assumed to correlate with semantic compatibility: lexemes are more attracted to some constructional slot (i.e. occur in that slot more often than expected) if they are more semantically compatible with the slot. It thus follows that the strongest collexemes of a construction, as the most semantically compatible lexemes, are a potential source of information about the meaning of the construction.

2. Despite the wide range of available distributional statistics, Stefanowitsch and Gries (2003: 218) argue that the Fisher exact test is a perfect choice for collostructional analysis: it "neither makes any distributional assumptions, nor does it require any particular sample size".

The task of the analyst is thus to track down the origin of semantic compatibility from the lexical semantics of these collexemes, so as to deduce a characterization of the constructional meaning.

Stefanowitsch and Gries (2003) illustrate their claims with a few case studies showing the usefulness of the method for the description of grammatical constructions. Two of these are of particular interest for us here: the *into*-causative construction (Subj V Obj *into* V-*ing*) and the famous ditransitive construction (Subj V Obj1 Obj2).

For the *into*-causative, Stefanowitsch and Gries (2003) looked at the first verb slot of the construction and found that the top collexemes are verbs "instantiating the two major sub-senses of the construction, namely 'trickery' (as exemplified by *trick*/*fool* […]) and 'force' (as exemplified by *coerce*/*force* […])" (p. 226), while verbs instantiating senses of the construction that are intuitively less central (such as 'verbal coercion' and 'persuasion through a positive or negative stimulus') appear much further down the list.

As to the ditransitive construction, the verb *give* turns out to be by far its strongest collexeme, which is to be expected given the principle of semantic compatibility: among the many ways in which a verb can be compatible with a construction, *give* and the ditransitive exemplify the optimal case where there is semantic identity. In other words, since the verb *give* is maximally compatible with the ditransitive construction, it comes as no surprise that it is its strongest collexeme. Yet, the authors argue that, contrary to what happens with the *into*-causative construction, the basic 'transfer' sense of the ditransitive is not overwhelmingly dominant in the collexemes of the construction, in that there are relatively few significant collexemes instantiating the central sense in the whole list (6 out of 30, 10 including metaphorical uses such as *tell*, *show* and *teach*). Rather, the high diversity of verbs provides, according to Stefanowitsch and Gries , evidence for the polysemy analysis of the construction put forward by Goldberg. It is indeed true that instances of the central sense are a minority among the collexemes in terms of the number of types, but these few types are clearly clustered towards the top of the list: at least four of them (eight including the metaphorical uses) are among the top ten collexemes.

Thus, for both constructions, there seems to be a strong tendency for the top collexemes to instantiate the most central meaning(s). Both case studies thus present evidence that collexeme analysis is a valid quantitative method to profile the meaning of constructions from their prominent verbal collocates. As Stefanowitsch and Gries (2003: 227) conclude, "strong collexemes of a construction provide a good indicator of its meaning". Therefore, the method should be helpful in identifying the elusive meaning of the conative construction.

3.2 Data collection

The verbal distribution of the conative construction was extracted from the prose fiction part of the BNC, containing about 16 million words in 431 texts primarily drawn from novels. The choice of this corpus was neither arbitrary nor unmotivated. Intuitively, the conative construction seems to carry a complex descriptive function which makes it more at home in narrative genres, and probably not to be found so frequently in spontaneous spoken language. The latter intuition is actually borne out by an earlier attempt at finding conative sentences in the conversation part of the corpus, revealing that the construction is extremely rare in that register (only 17 tokens in 4 million words).

The corpus was queried for all verbs followed by the preposition *at* (with an optional intervening adverb) in the same sentence, with the exclusion of frequent verbs that cannot support a conative reading and for which *at* can only be used in a purely locative sense (e.g. *be*, *stay*, *live*, *arrive*, etc.).[3] The resulting set of sentences was manually annotated to select only conative sentences, which were defined according to two criteria: (1) the verb has to be transitive, and (2) the interpretation of the sentences has to fall somehow into one of those described in the previous section. Sentences with coordinated verbs were duplicated in the dataset (one duplicate per verb). This yielded a final set of 2,563 instances, distributed over 159 verb types.

3.3 Results

The collostruction strength of each verb in the construction was computed by *Coll.analysis 3*, an R program written and kindly provided by Stefan Gries, with the Fisher exact test as a distributional statistic.[4] Following Stefanowitsch and Gries (2005), *Coll.analysis* applies a log transformation to the *p*-values yielded by the Fisher exact test, and changes the sign to a plus if the association is one of attraction (i.e. the actual verb's frequency exceeds the expected frequency) and to a minus in case of repulsion (i.e. the actual verb's frequency is below the expected frequency). This gives a more readable value than the *p*-values, often expressed in powers of ten. A collostruction strength above 1.301 means that the verb is significantly attracted to the construction; a collostruction strength below –1.301 means that the verb is significantly repelled by the construction. As noted above, the verbs at the top of the

3. The Corpus Query Processor program, part of the Corpus Workbench suite developed at the University of Stuttgart (http://cwb.sourceforge.net/), was used to query the corpus. The corpus was assembled from the XML version of the BNC with a script that parsed all texts of the corpus and copied only those with the "prose-fiction" genre attribute. Another script then converted the corpus into a format readable by CQP.

4. Available at: http://www.linguistics.ucsb.edu/faculty/stgries/teaching/groningen/.

Table 2. The thirty strongest collexemes of the conative construction in BNC-prose-fiction

Rank	Verb	f(conative:all)	coll.strength	Rank	Verb	f(conative:all)	coll.strength
1	tug	226:661	209.92	16	hammer	(29:263)	12.87
2	clutch	179:823	127.13	17	snatch	(43:567)	12.86
3	dab	72:166	75.74	18	jab	(24:180)	12.58
4	claw	53:156	49.14	19	scrabble	(18:112)	11
5	gnaw	43:97	46.02	20	paw	(13:56)	10.23
6	sniff	73:643	32.05	21	scratch	(35:524)	9.13
7	nibble	36:121	31.26	22	slash	(17:149)	8.07
8	sip	71:689	28.56	23	swipe	(9:32)	8.07
9	peck	(29:87)	26.95	24	niggle	(8:26)	7.58
10	nag	(31:107)	26.62	25	poke	(26:364)	7.55
11	pluck	(44:300)	24.13	26	suck	(35:656)	6.7
12	tear	(91:1363)	22.51	27	prod	(17:190)	6.52
13	stab	(36:291)	17.41	28	kick	(51:1186)	6.44
14	grab	(76:1217)	17.29	29	lap	(11:112)	4.82
15	hack	(22:140)	13.08	30	strain	(23:466)	4.13

distribution ordered by collostruction strength provide an indication of the constructional meaning.

The thirty strongest collexemes of the conative construction are reported in Table 2. As it turns out, the construction attracts a great variety of verbs. Almost all verb classes allowed in the construction are represented in that list: verbs of pulling (*tug*, *pluck*), verbs of seizing and holding (*clutch*, *claw*, *grab*, *snatch*), verbs of hitting and touching (*dab*, *claw*, *peck*, *stab*, *hammer*, *jab*, *paw*, *swipe*, *poke*, *prod*, *kick*), verbs of ingestion (*gnaw*, *nibble*, *sip*, *peck*, *suck*, *lap*), verbs of cutting (*tear*, *hack*, *slash*), etc. This result is not surprising in itself, as constructions are often associated with several related senses, and therefore several classes of verbs. Again, this points to a polysemy analysis, as indeed the collexemes presented in Table 2 arguably instantiate different senses of the construction. For example, assuming Broccias' (2001) distinctions (cf. Section 2), *clutch*, *stab* and *kick* mostly instantiate the allative schema, while *nibble*, *hack* and *suck* rather instantiate the ablative schema.

While it is, *a priori*, not problematic that the construction attracts different classes of verbs, the list of collexemes is, however, not particularly helpful in characterizing the construction's meaning. Moreover, contrary to what happens in the case studies reviewed above, there does not seem to be a class of verbs that the construction attracts in particular. The list presents alternations of very different types of verbs, and no particular class seems to be more strongly attracted than the others. For example, the five most attracted collexemes exemplify precisely five different verb classes: *tug* (verb of pulling), *clutch* (verb of seizing/holding), *dab* (verb of touching/hitting), *claw*

(verb of hitting or seizing/touching) and *gnaw* (verb of eating/chewing). Moreover, these verbs exemplify various semantic aspects of the construction: *tug at* entails no change of location and an inherent repetition of the attempt, *clutch at* and *claw at* entail either missed contact or prolonged exertion of a force, *dab at* entails little or no affectedness, *gnaw at* entails no completion.

Thus, contrary to what Stefanowitsch and Gries (2003) found with the ditransitive construction, collexeme analysis is not helpful in identifying one (or more) particular sense of the conative construction which would be central and from which the other senses would be derived. As a matter of fact, there need not be an identifiable verb class corresponding to each constructional sense: since the senses of the conative construction are so highly abstract, they are liable to be combined with a great variety of verbs from different semantic classes. Hence, it is not particularly surprising that the collexeme list of the conative construction (or probably of any abstract construction) is not as easily interpretable as that of the ditransitive construction. As one reviewer suggests, this might be because the semantics of the conative construction is less directly related to basic bodily experience than that of the ditransitive or of the caused-motion construction; as such, it is less likely to correspond to patterns of lexicalization in the language in general. This means that collexeme analysis in its present form would not be able to identify the senses of many constructions, at least not as neatly as those of the ditransitive construction (for example).

3.4 Towards a solution

In the face of such results, this chapter suggests another approach based on a refinement of collexeme analysis, which might be more informative in the case of the conative construction, and probably many other constructions. This approach is motivated by an earlier proposal by Croft (2003), who criticizes the concept of constructional polysemy, and thus the related notion of a "central" meaning.

According to Croft, the very concept of constructional polysemy is problematic in several respects. The main problem can be roughly summarized as follows: how can a construction be considered truly polysemous if its meaning in context only depends on the verb it is being instantiated with? In the case of the ditransitive construction, Croft (*ibid.*: 55) notes that "each semantic class is associated with only one sense of the ditransitive construction". This seems to be in part semantically motivated: for example, the fact that the modal extension ('conditions of satisfaction imply that X causes Y to have Z') is the only one occurring with *promise* (for instance) is expected since it is the only extension whose specifications do not conflict with the meaning of the verb. However, why the extension 'X intends that Y have Z' is the only one compatible with verbs of creation appears to be completely arbitrary, since there is nothing in the verb's meaning that blatantly conflicts with a number of the other extensions, whose instantiation with the verb would make perfect sense.

A polysemic analysis of the conative construction runs into exactly the same problem: while there can be several different readings of a single conative sentence, not all interpretations are equally available in all instances. For example, in no case would conative sentences with verbs of ingestion mean 'X moves towards Y in order to ingest Y'. Conversely, verbs of rubbing could never be used in the conative construction to convey the meaning 'X rubs a part of Y and goes towards having Y totally rubbed', let alone an allative interpretation (i.e. 'X goes towards Y to rub Y').[5] Sometimes the unavailability of some readings is straightforwardly explained by intrinsic properties of the verbs themselves: for example, the impossibility of an incremental reading with semelfactives such as *hit* and *kick* can be explained by the aspectual properties of these verbs and more particularly the absence of an incremental theme. However, there are still perfectly sensible combinations that, nonetheless, are disallowed, which would not be the case if the construction was truly polysemous.

Croft suggests that such cases are more appropriately accounted for not by considering the construction as authentically polysemous, but by treating it as several "verb-class-specific constructions", i.e. lower-level generalizations of a constructional meaning over a clearly delimited semantic verb class, instantiated only with verbs of that class. The remainder of this chapter presents evidence that this view might also be more appropriate for the conative construction. As observed in Table 2, no particular meaning stands out in the whole distribution of the construction. However, if we look again at Table 2 by focusing on verbs from a specific semantic field, a clearer picture emerges. A class that is fairly easy to delimit is that of verbs of eating. Table 3 reports the distribution of verbs of eating in the conative construction (the significantly attracted and significantly repelled collexemes appear on a gray background).

Table 3. Verbs of eating in the conative construction and their collostruction

Verb	f(conative:all)	coll.strength
nibble	36:121	31.26
peck	29:87	26.95
suck	35:656	6.7
lick	20:488	2.68
gulp	9:267	1.07
gobble	1:60	−0.18
munch	1:84	−0.3
pick	79:4678	−1.1

5. Conative uses of *rub* and other similar verbs (*wipe*, *brush*, …) do receive a form of "non-affectedness" interpretation which is not 'X tries to rub Y' but rather corresponds to a scenario in which some entity remains unaffected; this entity might be mentioned (as in *rub at the stain*) or might remain implicit or unspecified (as in *rub at the counter*, which most likely entails that the agent's goal is to clean the counter and that this goal is not achieved).

The most attracted verb in that class, *nibble*, denotes an event of eating where only a small amount of some substance is ingested, and is therefore inherently compatible with the "bit-by-bit" reading supported by the construction. In fact, this verb is similar to *give* in the ditransitive construction: assuming a more specific eating-conative construction instantiated by verbs of eating only and whose meaning would be 'eat in a bit-by-bit fashion', the meaning of *nibble* is identical to the meaning of that construction, which largely motivates the prominent occurrence of that verb in the construction.

The other significantly attracted collexemes also support the 'bit-by-bit' interpretation. *Peck* typically refers to how birds eat, by moving their beak forward repeatedly; in the conative construction, it is also frequently used to refer to people eating only a small amount of their meal. *Suck* and *lick* are not purely verbs of eating but rather describe a kind of action that an agent performs on another entity; when they are used to describe events of eating (and they very often are in the corpus), both typically refer to a slow and gradual means of ingestion through the progressive dissolution of a substance. Finally, the sole collexeme repelled by the construction is *eat*; this again reflects the semantic preferences of the construction, as *eat* is a maximally neutral verb of ingestion which is more commonly used to denote total consumption and lends itself less easily to a 'bit-by-bit' interpretation.[6]

This simple example shows that focusing on a particular class of verbs clearly captures what the semantic contribution of the construction is for this particular class. Thus, a collexeme analysis at the level of individual verb classes seems to be a promising approach. The next section elaborates on this proposal and presents a version of collexeme analysis based on semantic classes.

4. A collexeme analysis of verb-class-specific constructions

In the previous section, it was found that a collexeme analysis performed on the whole distribution of the conative construction is not very helpful in characterizing its constructional meaning and does not clearly support a polysemy analysis either.

6. As Dylan Glynn notes in a review of an earlier version of this chapter, it is somehow unexpected that *pick* does not appear among the attracted collexemes of the construction, let alone that it almost reaches the threshold of repulsion, since *pick at* indeed seems to be a prime example of the 'bit-by-bit' reading induced by the construction. This result is explained by the fact that the verb *pick* is highly polysemous and at the same time highly frequent, and that it is not primarily a verb of eating: in fact, it probably occurs in this sense in the conative construction only. This asymmetry in the semantic distribution of *pick* thus appears to obscure its contribution to our understanding of the meaning of the construction. The general issue of the relation between frequency of verb forms and frequency of verb senses is taken up again in Section 4.1.2.

It was observed that a clearer picture emerges if we look only at verbs from a specific semantic class (in that case, verbs of eating): the meaning of the strongest collexemes clearly reflects the semantic contribution of the construction for this semantic class. This section outlines a more principled and systematic formulation of this approach and then presents its application to three classes of verbs: verbs of cutting, verbs of pulling and verbs of striking.

4.1 Method

This section first explains how verbs in this study were classified into semantic classes. It then turns to some statistical issues posed by the present approach.

4.1.1 *Determining verb classes*

The present approach first requires that the verbs from the distribution of the conative construction are sorted into several classes. Of course, a given verb form can correspond to several meanings, and these meanings can belong to different semantic classes. For example, in Table 2, *peck* and *pick* can function as verbs of eating but also as verbs of striking (albeit more rarely). However, the frequencies obtained from the corpus are frequencies of verb forms, not of verb meanings, and thus some of these frequencies may actually be distributed over several semantic classes. All instances of a verb form cannot just be assigned to a single class or be counted in several classes simultaneously: it must be determined for each token to which semantic class it belongs.

For the example of verb-class-specific collexeme analysis presented in the last section, the field of verbs of eating was relatively easy to select from the whole distribution. However, it might not be so easy to identify, on the sole basis of intuition, the verb classes found in the distribution and the semantic class each verb token belongs to. To facilitate this process, an external lexicographic source was relied on: WordNet (Fellbaum 1998), a lexical database of the English language which was created and is being maintained at the Cognitive Science Laboratory of Princeton University. It groups English words into sets of synonyms (called synsets) and provides lists of the various meanings of each word form that can be looked up to perform semantic annotation. Starting with an established list of sense distinctions, instead of building it during the annotation process, is not only convenient: it also allows the achievement of a crucial feature of empirical studies of meaning: overt operationalization (cf. Glynn 2010), in the sense that the analytical criteria are overtly identified. This makes the analysis falsifiable, since it permits it to be repeated on the same data or on another dataset (e.g. for the purpose of comparison).

The list of verb senses could be drawn from any dictionary, but WordNet presents another useful feature for this approach: it records relations between synsets such as hyponymy, hyperonymy, part-whole relations, entailments, etc. Of particular interest

to us, the relations of hyponymy (and conversely, hyperonymy) connect the synsets into a type hierarchy, which can be used to define verb classes: a verb class includes the verbs of a given synset and all of its hypernyms, i.e. verbs whose meaning includes (and often, elaborates) the meaning of the synset. Hence, co-hyponyms belong to the same class. In sum, WordNet can be used both to annotate for verb senses and to define verb classes on the basis of the annotated data and hyponymy/hyperonymy relations between senses recorded in the database.

It has been noted elsewhere that WordNet sense distinctions are somehow arbitrary and sometimes so fine-grained that it is practically impossible to apply the classification to naturally occurring examples (not to mention the theoretical vacuity and actual impracticability of the very notion of sharp sense boundaries, cf. Kilgariff 1997; Glynn 2010). While this is true in many cases, in the context of this study it is often unproblematic to ignore some sense distinctions as long as they do not extend over different verb classes. For example, *drag* has two senses in WordNet that may apply to conative uses of the verb: (i) 'pull, as against a resistance' and (ii) 'draw slowly or heavily'. It is not at all clear from the glosses what the semantic difference is supposed to be, and if anything it is very subtle and therefore not easily applicable to the annotation of examples in context. This distinction can, however, be ignored, since both senses have *pull* as their direct hyperonym: they can thus be conflated into a single entry, *drag*, subsumed by the class of verbs of pulling. Even though the fine-grained sense distinctions posited in WordNet might not always be well-grounded, the coarser-grained distinctions imposed by verb classes are more reliable and more easily noticeable. This strategy thus avoids the pitfalls of drawing strict sense boundaries.

The original dataset was manually annotated for WordNet senses with the help of an interactive program.[7] As it turns out, while some verbs are highly polysemic according to WordNet's classification, the conative construction is usually restricted to one or two senses of these verbs, and most verbs can belong to only one semantic class when they occur in the construction. The verb sense distribution was built by calculating the frequency of each word sense in the construction. Each verb sense in this distribution was then annotated with the synset ID of its direct hyperonym, or with its own synset ID if the verb sense is a hyperonym of other verbs in the distribution. This ID identifies both the class to which the verb belongs, and the most general verb (i.e. hyperonym) of that class. In the case of classes subsumed by another class, which can be diagnosed by the hyperonym of one class being a hyponym of the hyperonym of another class, the lower class was merged into the higher one. As a last step, in each class, senses of the same verb form were collapsed into one cell summing

7. This tool was written in Java and uses the JWNL API to read the WordNet 3.0 files (http://sourceforge.net/projects/jwordnet/), downloaded from the website (http://wordnet.princeton.edu/wordnet/download/).

all frequencies of the verb form. With this method, maximally large and distinctive verb classes were obtained.

4.1.2 *Statistical matters*

In the collexeme analysis of verbs of ingestion in Section 3.4, verbs were just filtered out on the basis of their belonging to the semantic class under study. However, if the verb-class-specific constructions hypothesis is taken seriously, a collexeme analysis of a specific semantic class only makes sense if the collostruct under consideration is not the general construction but a more specific one taking only verbs of this semantic class, and since such constructions have a lower frequency than the more general one, the actual collostruction strength values could be slightly different, hence changing the significance of some collexemes and possibly the order of the collexeme list. The frequency of a verb-class-specific construction is obtained by summing the frequency of all verb senses in the class.

There is, however, still one missing set of frequencies: the frequency of each verb sense in other constructions. Unfortunately, except with a semantically annotated corpus, there is no easy way to determine this frequency, as it is practically intractable to manually annotate the whole corpus for verb senses. It must be acknowledged that this is an inherent weakness of this approach. However, as serious as it might be, this problem can be attenuated using two methods. First, in each verb class, only those verb senses that were by far the most frequent instance of their verb form are kept in the analysis. For example, *catch* occurs only seven times as a verb of striking in the conative construction versus fifty times in other senses (mainly as a verb of seizing); it was thus removed from the list of verbs of striking and does not appear in Table 5. The rationale behind this decision is that a verb form occurring clearly less prominently in a given verb-class-specific construction than in the other ones should be a weak collexeme of the construction anyway and is not likely to tell us much about the constructional meaning.[8] Second, the overall frequency of the verb form was used for each verb sense, which makes the assumption that every occurrence of each verb form in the corpus has the meaning that the verb has in the conative construction. This is, of course, surely false for polysemous verbs, though not overly problematic for this study since it will merely downplay the collostruction strength of verbs. Indeed, the frequency of a verb sense is at least as high as the frequency of the verb form, and for polysemous forms it is *a priori* lower. The approximate collostruction strength calculated with the frequency of the verb form will thus be lower than the theoretical collostruction strength that would be calculated with the frequency of the verb sense, thus probably narrowing the range of significant collexemes. As it turns out, this

8. The deleted verbs include: *scrape*, *scratch* and *slash* for the cutting-conative construction, *catch*, *pick*, *tweak* and *twitch* for the pulling-conative construction, and *catch*, *jab*, *peck*, *pick* and *poke* for the striking-conative construction.

possible downplaying of the attraction of the verbs to the construction does not prevent the identification of a number of interesting collexemes in each class.

4.2 Results

This section reports the collexeme analysis performed on the cutting-conative, pulling-conative and striking-conative constructions, defined as elaborations of the conative construction instantiated, respectively, by verbs of cutting, verbs of pulling and verbs of striking.

4.2.1 *Verbs of cutting*

Events of cutting involve an agent moving a suitable instrument over the surface of an object, and causing a rupture in the physical integrity of that object as a result. With verbs of cutting, the conative construction does not support the allative interpretation (or at least not literally): contact is necessarily made between some instrument and the referent of the *at*-phrase, but this contact does not bring about the effect that the transitive use of the verb would entail: the cutting either fails entirely, or is too minimal for one to consider that the object is indeed cut. Hence, conative uses of verbs of cutting often convey the implicature that the action performed to do the cutting is repeated.

Table 4 presents the collexemes of the cutting-conative construction. The analysis reveals three significantly attracted collexemes: *hack*, *saw* and *chip*. All three collexemes are particularly suited to the semantic contribution of the cutting-conative construction.

The lexemes *hack* and *saw* are inherently repetitive: an event of hacking or sawing always consists of several identical actions. Moreover, a single movement (a stroke of a hacking tool or of a saw) generally does not by itself bring about the intended effect on the patient, e.g. cutting something to bits or sawing a piece of wood apart; the

Table 4. Collexemes of the cutting-conative construction

Verb	f(conative:all)	coll.strength	WordNet gloss
hack	22:140	19.76	cut with a hacking tool
saw	6:74	3.69	cut with a saw
chip	4:93	1.63	break a small piece off from
chisel	2:39	1.11	carve with a chisel
snip	2:54	0.87	sever or remove by pinching or snipping
chop	3:174	0.47	cut into pieces
slice	3:237	0.27	make a clean cut through
nick	2:163	0.23	cut a nick into
cut	4:3075	–22.71	separate with or as if with an instrument

movement must be repeated until the desired effect is obtained. Hence *hack* and *saw* naturally support the semantic contribution of the cutting-conative construction in their conceptual semantics, i.e. both 'no-significant-effect' and 'repetition'.

The item *chip* inherently features only one of these two aspects. In any event of chipping, only a small piece of the patient is broken off, and *chip* does not in any case support a truly holistic interpretation, i.e. an object that is chipped is only minimally affected and keeps its overall physical integrity, compared to what happens with true verbs of change of state like *break*. Events of chipping must be repeated if the patient is to be considered significantly affected.

The only significantly repelled collexeme in the list is *cut*. Its repulsion can be explained by its status as a maximally neutral verb of cutting (and indeed the hyperonym of the whole class), which thus does not carry any semantic elaboration that would promote its use in the conative construction. In addition, *cut* lends itself to a holistic interpretation to a much larger extent than the attracted collexemes.

4.2.2 *Verbs of pulling*

Events of pulling consist in an agent exerting a force on a patient, usually in order to move the patient towards self or to affect it in some other way (e.g. open a door). The effect on the patient is not an inherent feature of these verbs, but is rather a frequent implicature of their transitive use. The conative construction prevents this implicature of change of location/state, thus bringing the interpretation towards an 'attempted action' reading. Such uses also easily allow an interpretation of repeated actions, since a single iteration of pulling does not bring about a significant effect.

Table 5 lists the collexemes of the pulling-conative construction. The construction has two significantly attracted collexemes: *tug* and *pluck*. According to the *Oxford English Dictionary*, *tug* applies to events where the puller puts a lot of energy in the pulling, or exerts a force during an extended period. Hence, *tug* focuses on the effort the agent puts into the act of pulling, and not so much on the dynamics of the event itself, i.e. whether the patient is set in motion or not.

Table 5. Collexemes of the pulling-conative construction

Verb	f(conative:all)	coll.strength	WordNet gloss
tug	226:661	153.73	pull hard
pluck	42:300	10.31	pull or pull out sharply
wrench	12:314	–0.49	twist or pull violently or suddenly
yank	1:122	–1.64	pull, or move with a sudden movement
haul	5:411	–3.9	draw slowly or heavily
jerk	8:717	–7.02	pull, or move with a sudden movement
drag	25:1528	–10.49	draw slowly or heavily
pull	138:6024	–38.41	apply force so as to cause motion towards the source of the motion

Pluck as a verb of pulling is often used to refer to the removal of some object from where it grows, e.g. fruit, plants, hair, or feathers. To overcome the inherent resistance of the ground to which the object is attached (e.g. skin, branch, earth), acts of plucking frequently involve a sharp and sudden pull so as to abruptly separate the object from its ground (as alluded to by WordNet's gloss). The more general use of this verb to refer to other kinds of pulling keeps this 'sharp and sudden' aspect. Due to their short duration, acts of plucking are particularly prone to repetition.

As indicated earlier, the repelled collexemes may have slightly overestimated repulsion scores; thus, the values of the five repelled collexemes (*yank*, *haul*, *jerk*, *drag* and *pull*) have to be interpreted with caution. However, the last two (*drag* and *pull*) provide some interesting insight into the construction's meaning. *Drag* is more appropriately described as a verb of accompanied motion (i.e. where both agent and theme move along the same path, like *bring*) rather than a pure verb of pulling: it strongly presupposes the motion of the patient, which makes it at odds with the conative construction. *Pull* is, of course, the hyperonym of the semantic class, i.e., it is arguably the most neutral verb of pulling. Since it has no inherent semantic traits that particularly favor the conative reading(s), its appearance as a repelled collexeme is expected.

4.2.3 *Verbs of striking*

Verbs of striking represent the largest of the three semantic classes under study. It comprises verbs that have either *hit* or *strike* as their hyperonym in WordNet. Events of striking consist in an agent performing some movement in the direction of a patient, aiming at forceful contact with the patient, usually with the intention of affecting it in some way (doing it harm or damage). In the conative construction, verbs of striking typically assume an allative interpretation: some effort is directed towards a goal (here, bringing about an effect on the patient) that is not reached.

Table 6 lists the collexemes of the striking-conative construction. The significantly attracted collexemes include *dab*, *hammer*, *swipe*, *buffet*, *kick*, *pummel* and *swat*, and all of these verbs feature one or more particular semantic traits favored by the construction.[9]

The verb *dab*, by far the strongest collexeme, is categorized by WordNet as a verb of striking, though it is a very peculiar one. Contrary to more typical members, dabbing involves little energy and is normally not aimed at affecting the target, or at least not negatively. Rather, typical instances of dabbing include using a cloth to gather and remove a substance (like blood or tears) from a surface, or gently applying a substance

9. Table 5 also lists *buffet* as a significant collexeme. However, it is a very rare verb in our reasonably large corpus, occurring only twice, yet each time in the conative construction, which probably explains why it reaches the significance threshold. Since its rarity makes it a poor candidate as a relevant and telling collexeme of the construction, it was removed from the discussion.

Table 6. Collexemes of the striking-conative construction

Verb	f(conative:all)	coll.strength	WordNet gloss
dab	(71:166)	66.44	hit lightly
hammer	(29:263)	9.56	beat with or as if with a hammer
swipe	(9:32)	6.81	strike with a swiping motion
buffet	(2:2)	3.1	strike against forcefully
kick	(51:1186)	2.89	strike with the foot
pummel	(4:31)	1.98	strike, usually with the fist
swat	(3:27)	1.41	hit swiftly with a violent blow
batter	(7:161)	0.78	strike against forcefully
slap	(16:510)	0.44	hit with something flat, like a paddle or the open hand
tap	(24:802)	0.4	strike lightly
lash	(8:265)	0.33	strike as if by whipping
whack	(1:37)	–0.14	hit hard
scuff	(1:44)	–0.19	poke at with the foot or toe
whip	(9:350)	–0.32	strike as if by whipping
bat	(1:71)	–0.39	strike with, or as if with a bat
bash	(1:85)	–0.51	hit hard
punch	(5:278)	–0.69	deliver a quick blow to
pound	(4:245)	–0.75	hit hard with the hand, fist, or some heavy instrument
thump	(4:322)	–1.31	hit hard with the hand, fist, or some heavy instrument
hook	(2:228)	–1.37	hit with a hook
beat	(27:1372)	–1.62	hit repeatedly
bang	(8:602)	–1.96	strike violently
smash	(4:421)	–2.14	hit hard
pat	(6:545)	–2.3	hit lightly
strike	(34:1990)	–3.39	deliver a sharp blow, as with the hand, fist, or weapon
hit	(7:2007)	–17.96	deal a blow to, either with the hand or with an instrument

on a surface (e.g. for medical or cosmetic purposes). This typical lack of affectedness of the patient in an act of dabbing is in line with the meaning of 'non-effective action' that the conative construction is often claimed to convey.

The verb *hammer* originally refers to an act of hitting involving a hammer or a similar tool as an instrument; in that restricted use, typical things that can be hammered include nails, metal sheets and other metallic goods. If anything, this use of *hammer* typically entails repetition, i.e., just as with *hack* in Section 4.2.1, any event of hammering normally involves multiple blows on the patient, since a single blow does

not suffice in affecting the patient in the intended way. For example, nails are rarely properly hammered into a wall with a single blow, but rather inserted only partly, and the hammering must be repeated as many times as necessary. Similarly, a sheet of metal can never be shaped into any appropriate form with a single blow; it has to be worked until the intended shape is arrived at. Of course, the verb in its modern use is not restricted to describe exclusively acts of striking with a hammer, but the aspects of 'minimal effect' and 'repetition' found in the original meaning of the verb arguably subsist, as modern dictionaries confirm it, and the instrumental component is echoed by the notion of a forceful and violent striking usually accompanied by loud noise (which many dictionaries gloss as 'as if with a hammer').

The verbs *swipe*, *kick* and *swat* are similar cases in that they refer to a precisely defined shape of motion in space. In other words, what makes an event of swiping, kicking or swatting, is, above all, a particular movement performed by the agent, respectively a swinging blow[10] (of the arm or of an instrument), an outward motion of the foot, and the motion of a flat surface (an open hand or an instrument with the appropriate shape) through the air so that the surface hits a target (often an insect, crushing it). This makes these verbs agent-centered, i.e., they focus on describing what the agent is doing rather than the effects that its action may have. In addition, *kick* specifies the body part involved (a leg), further reinforcing its agent-centered character. Strikingly, there turn out to be much fewer verbs with a focus on the shape of motion among the other (i.e. non-attracted) collexemes. Possible candidates include *lash*, *whip*, *slap* and possibly *punch*; however, the shape evoked by the former two is due to the kind of instrument used rather than the action performed itself, and the latter two less obviously refer to a fully described shape. The other verbs rather focus on the manner of impact or on its effects. It thus seems that this semantic property ('precisely defined shape') is highly correlated with the striking-conative construction.

Finally, *pummel* combines aspects of *hammer* and of the agent-centered verbs. It is slightly agent-focused since it refers to a particular body part (the fists). But more importantly, it is inherently repetitive, as all consulted dictionaries indicate: pummeling consists of a succession of small blows, most often dealt with the fists.

As for the repelled collexemes, the usual cautioning remarks apply. Let us, however, note that, just like with the cutting- and pulling-conative constructions, the maximally neutral verbs *hit* and *strike* are, as expected, the most repelled collexemes of the striking-conative construction.

10. As a confirmation of this analysis, the OED notes that *swipe* is chiefly used in the context of cricket.

4.3 Discussion

As should be clear from the preceding discussion, Stefanowitsch and Gries's (2003) claims about the relation between the collexemes attracted to a construction and that construction's meaning are clearly borne out for these three verb-class-specific instantiations of the conative construction. Namely, the attracted collexemes all prominently profile in their inherent semantics one or more semantic trait(s) that the construction contributes by itself when it occurs with other verbs. The semantic generalizations that each collexeme supports are reported in Table 7.

The collexeme list clearly exemplifies the principle of semantic compatibility and how this principle bears on usage; namely, verbs with a meaning that lends itself particularly well to the interpretation sanctioned by the construction are "attracted" by it: they are much more frequent in that construction than chance would predict. Conversely, the hyperonym of the semantic class is the most repelled collexeme in each case, which the principle of semantic compatibility also predicts since such verbs are supposedly the most neutral verbs in their class, and thus do not profile any particular semantic trait that would attract them to the construction.

In conclusion, it seems possible to characterize the meaning of the conative construction, or more precisely, the meaning the construction contributes when it

Table 7. Semantic generalizations supported by the collexemes of verb-class-specific constructions

Construction Verb-class-specific	Collexemes	Semantic generalization(s)
cutting-conative	*hack* *saw*	event consisting of several identical movements with a minimal individual effect; hence it is inherently unbounded and repetitive
	chip	minimal effect; no holistic interpretation
pulling-conative	*tug*	focus on the efforts (energy and duration) that the agent puts in the action rather than its effects
	pluck	*idem*, plus a short duration which makes it prone to repetition
striking-conative	*dab*	lowly energetic; patient often not directly affected
	hammer	inherently consists of several repeated blows; a single blow does not produce a sufficient effect
	swipe *kick* *swat*	agent-centered: they profile a precisely defined motion that the agent performs, as well as information on the entity set in motion
	pummel	profiles a body part (fists), inherently repetitive

combines with verbs of each semantic class under study, simply by attending to the salient semantic properties of the collexemes in each class. Of course, these collexemes do not lexicalize one of the meanings of the conative construction *per se*, as is the case with *give* and the ditransitive construction. But there is still arguably some abstract semantic quality shared between the collexemes and the constructional meaning as it occurs with other verbs. Such a semantic characterization would be much more difficult (if possible at all) to arrive at by looking at the entire distribution, i.e. at the level of the general construction vs. the more specific verb-class-specific constructions. The methodological and theoretical implications of this finding are elaborated on in the concluding words of the next section.

5. Conclusion

As the first large-scale corpus-based investigation of the conative construction, this study contributes to the documentation of the construction's usage. Its initial goal was to see what the verbs most frequently used with the construction could tell us about its meaning, drawing on the method of collexeme analysis. As it turns out, a collexeme analysis of the construction based on data from the prose-fiction part of the BNC fails to highlight its central meaning(s), since there does not seem to be a particular kind of verb that the construction attracts. Hence, while the collexeme list is not totally at odds with the meaning of the construction as it has been characterized introspectively, in this case collexeme analysis does not seem to be helpful in characterizing it precisely. To solve this problem, a different kind of analysis was proposed. Instead of considering the conative construction as a whole, the focus was shifted to verb-class-specific constructions, i.e. elaborations of a construction instantiated by verbs from a specific semantic class. A collexeme analysis was performed on three verb-class-specific constructions, respectively instantiated by verbs of cutting, verbs of pulling and verbs of striking, identified on the basis of the lexical database WordNet.

The collexemes of each of these lower-level constructions feature in their inherent meaning the semantic traits that are characteristic of verbs of that class when they occur in the construction. In other words, collexeme analysis profiles the constructional meaning much better at the level of each verb class than at the most general level. Of course, it does not mean that collexeme analysis is ineffective for the conative construction taken as a whole: it is just not particularly telling. The collexemes found for the overarching construction are attracted because they are more compatible with the constructional meaning. But the conative construction is so multifaceted when taken at the most general level that it is much easier to understand why these verbs are collexemes and what this tells us about the meaning of the construction if we go down to the level of verb classes.

On the theoretical side, these results shed some light on the nature of constructional generalizations. Namely, a long-standing debate in constructional approaches to grammar is concerned with which level of generalization best reflects speakers' knowledge of constructions. In the case of argument structure, earlier constructional approaches (cf. Fillmore and Kay ms.; Goldberg 1995) sought to posit the broadest generalizations possible by positing one single very abstract meaning accounting for all instances of the construction, either directly or through an extension of the constructional meaning. However, more recent research questions this commitment and emphasizes the importance of lower levels of generalizations to appropriately account for the distribution and meaning of constructions; see, for example, Boas' (2003) concept of "mini-constructions" to account for English resultatives, and of course Croft's (2003) proposal for "verb-class-specific constructions" (cf. also Fillmore 2001; Glynn 2004). Of course, the debate "general vs. local" might appear null and void in a truly constructional account, in which both abstract schemas and their various elaborations can be stored at any level of generality. But if a number of local generalizations alone account for what appears at first sight to be a single general construction, this casts the question of whether the overarching construction is needed at all, all the more so if the local generalizations provide a better account in terms of accuracy and coverage. This is precisely what happens with the conative construction: to the extent that speakers attend to frequently occurring verbs in some syntactic context, and use that information to "get a 'fix' on the construction's meaning" (Goldberg 2006: 92), they can usefully exploit this lexical semantic information only at the level of verb-class-specific-constructions. Under this view, a verb appears to be a collexeme of the general construction *only* because it is, first and foremost, a collexeme of a verb-class-specific construction. In sum, the results of this study suggest a different view of the polysemy of the conative construction, which can plausibly be extended to other constructions. The various meanings of the conative construction are better seen not as a network of related senses, but as a cluster of low-level generalizations over similar verb meanings, in line with Croft's (2003) proposal. As a reviewer points out, it thus would seem as if we are actually dealing with a case of constructional homonymy, i.e. several constructions sharing the same form but conveying different meanings. However, the possibility that these verb-class-specific constructions might be, at least to some extent, unified under a higher-level generalization should not be entirely rejected. The fact that low-level generalizations can determine the semantic contribution of the syntactic pattern for verbs of the semantic class does not exclude the possibility of cross-generalizations between different classes. First, if several distinct verb classes receive the same semantic contribution (which is plausible, since the conative construction conveys a wide yet still limited range of meanings), they could form a single higher generalization, which in turn could be used to produce new combinations. Second, patterns of analogy between different classes might well play a major role in determining the distribution and in helping speakers get at the correct

interpretation, forming generalizations of intermediate scope. The generalizations accounting for the conative construction could well be centered on a few classes first, from which an abstract meaning could be extracted and applied to other verbs and classes. Such a scenario is probably necessary to explain the inclusion of "orphans", i.e. verbs whose semantic class does not have any other representative in the distribution.

Obviously, there is still much to learn about the workings of constructional generalizations. I hope, however, to have presented in this chapter a promising application of collexeme analysis to understand the mechanisms of constructional abstraction and the possible underlying representations on the basis of corpus data.

References

Boas, H. (2003). *A constructional approach to resultatives*. Stanford: CSLI Publications.

Broccias, C. (2001). Allative and ablative *at*-constructions. In M. Andronis, C. Ball, H. Elston, & S. Neuvel (Eds.), *CLS 37: The main session: Papers from the 37th meeting of the Chicago linguistic society*. Volume 1 (pp. 67–82). Chicago: Chicago Linguistic Society.

Croft, W. (2003). Lexical rules vs. constructions: A false dichotomy. In H. Cuyckens, T. Berg, R. Dirven, & K. Panther (Eds.), *Motivation in language: Studies in honour of Günter Radden* (pp. 49–68). Amsterdam: John Benjamins.

Dixon, R. (1991). *A new approach to English grammar: On semantic principles*. Oxford: Clarendon Press.

Fellbaum, C. (1998) (Ed.). *WordNet: An electronic lexical database*. Cambridge, MA: MIT Press.

Fillmore, C., & Kay, P. (MS). *Construction Grammar (course reader)*. University of California, Berkeley.

Fillmore, C. (2001). Mini-grammars of some time-when expressions in English. In J. Bybee, & M. Noonan (Eds.), *Complex sentences in grammar and discourse: Essays in honor of Sandra A. Thompson* (pp. 31–60). Amsterdam: John Benjamins.

Glynn, D. (2004). Constructions at the crossroads: The place of construction grammar between field and frame. *Annual Review of Cognitive Linguistics*, 2, 197–233. DOI: 10.1075/arcl.2.07gly

Glynn, D. (2010). Testing the hypothesis: Objectivity and verification in usage-based cognitive semantics. In D. Glynn, & K. Fischer (Eds.), *Quantitative cognitive semantics: Corpus-driven approaches* (pp. 239–270). Berlin: Mouton de Gruyter. DOI: 10.1515/9783110226423

Goldberg, A. (1995). *Constructions: A construction grammar approach to argument structure*. Chicago: University of Chicago Press.

Goldberg, A. (2006). *Constructions at work: The nature of generalization in language*. Oxford: Oxford University Press.

Goldberg, A., Casenhiser, D., & Sethuraman, N. (2004). Learning argument structure generalizations. *Cognitive Linguistics*, 15(3), 289–316. DOI: 10.1515/cogl.2004.011

Kilgarriff, A. (1997). I don't believe in word senses. *Computers and the Humanities*, 31(2), 91–113. DOI: 10.1023/A:1000583911091

Levin, B. (1993). *English verb classes and alternations*. Chicago: Chicago University Press.

Pinker, S. (1989). *Learnability and cognition: The acquisition of argument structure*. Cambridge, MA: MIT Press.

Stefanowitsch, A., & Gries, S. T. (2003). Collostructions: Investigating the interaction between words and constructions. *International Journal of Corpus Linguistics*, 8(2), 209–243. DOI: 10.1075/ijcl.8.2.03ste

Stefanowitsch, A., & Gries, S. T. (2005). Covarying collexemes. *Corpus Linguistics and Linguistic Theory*, 1(1), 1-43. DOI: 10.1515/cllt.2005.1.1.1

Van der Leek, F. (1996). The English conative construction: A compositional account. In L. Dobrin, K. Singer, & L. McNair (Eds.), *CLS 32: The main session: Papers from the 32th meeting of the Chicago linguistic society* (pp. 363–378). Chicago: Chicago Linguistic Society.