

CHAPTER 57

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THE SYNTAX-LEXICON CONTINUUM

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1. INTRODUCTION

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Traditionally, a relatively sharp line is drawn between the lexicon and the syntax of a language. This distinction is related to the view that a language can be thought of as a dictionary or repository of idiosyncratic forms plus a set of rules or a syntax that combine words extracted from the lexicon into larger chunks such as phrases and clauses. Such a view has important consequences not only for synchronic but also for diachronic descriptions and theories. Standard accounts of the history of the English language such as, for example, the six-volume *Cambridge History of the English Language* as well as its “abridged” version (Hogg and Denison 2006) have separate chapters on syntax and vocabulary. The underlying assumption is that the two are regarded (either implicitly or explicitly) as separate linguistic components. However, various strands of cognitive linguistics such as Langacker’s Cognitive Grammar (see e.g. Langacker 2008) and Croft’s Radical Construction Grammar (see Croft 2001) have put forward the claim that no clear-cut boundaries exist between what are traditionally called lexicon, syntax, and morphology but, rather, that they form a continuum. In what follows, I will first review some of the synchronic arguments in favor of this proposal and then provide some diachronic arguments. Next, I will deal in some detail with a couple of phenomena from the history of English which show why it is useful to assume a continuum.

2. SOME SYNCHRONIC ARGUMENTS

Among the main arguments supporting the syntax-lexicon continuum is the realization that it is sometimes difficult to think of lexemes independently of the syntactic frames or constructions in which they occur (see e.g. Langacker 2008: 240–41). Consider for instance the following resultative sentences:

- (1) a. He cut the bread thin.
 b. He wiped the table clean.
 c. The police kicked him black and blue.

The question is: Is the meaning of the verb the same as that of the resultative construction (the latter meaning can be paraphrased as, roughly, ‘to cause something/someone to end up in a certain state by way of the action named by the verb’, see Boas (2003), Broccias (2003) and Goldberg (1995), among many others)? This seems to be the case with *cut* in (1a), since *cut* has a causative interpretation by default (i.e. it entails a change of state). More problematic is *wipe* in (1b). Intuitively, a change of state is possible but not necessary with *wipe* (cf. *He wiped the table but it didn’t get clean at all*) (i.e. the verb implicates rather than entails a change of state). Finally, one would not probably want to say that *kick* in (1c) either implicates or entails a change of state (i.e. *kick* is probably not categorized as a causative verb by the majority of speakers). Rather, *kick*, even more so than *wipe*, seems to be slotted into a syntactic template (also known as schematic construction or abstract schema), which can be represented informally as NP V NP AP. By contrast, (1a) seems to be “projected” from the verb *cut* by the addition of the adjective *thin*, which merely specifies an implied change of state, so that the lexical item *cut* and the resultative construction coincide. The set of examples in (1) shows therefore that there is a gradation between lexical items and constructions: sometimes the two coincide, sometimes they do not, and some other times their relation is indeterminate.

A second synchronic argument is the observation that various expressions (or constructions) seem to straddle the line between the lexicon and syntax (traditionally conceived) because they are only partially productive. To give just one example, the idiom *have a V*, where *V* stands for a verb, allows *have a drink* and *have a walk* but not **have an eat* or **have a work*, see Wierzbicka (1988) and Croft and Cruse (2004: chapter 9) for extensive discussion.

Third, even when considering the lexicon and syntax as separate components, one cannot fail noticing several similarities:

- Both lexical items and constructions can be polysemous. For example, the noun *mouse* can refer both to an animal and to a computer device. In the realm of syntax, the ditransitive or double object construction (e.g. *She gave him a present*) is polysemous because it does not always imply successful transfer but can in fact mean the opposite as in *The guards refused him a last smoke* (see Goldberg 1995 for details). Further,

certain meanings of lexical items are more central than others. The ‘animal’ meaning of *mouse* is possibly still more central than that of ‘computer device’ and surely more central than the informal one of ‘quiet, nervous person’. Similarly, the ‘successful transfer’ meaning of the double object construction is probably more central than that of ‘unsuccessful transfer’.

- Lexical items can be arranged in hyponymic or taxonomic hierarchies. *Flower*, for instance, is a hypernym of *tulip*, *rose*, *daffodil*, *crocus*, *snowdrop*, and so on. Similarly, the ditransitive construction, as an abstract schema (i.e. NP V NP NP), has various instantiations (see Goldberg 1995) of which cases implying successful transfer and cases implying the denial of transfer are hypernyms (i.e. specific instantiations or realizations).
- “Figurative” processes like metaphor can affect both lexical items and constructions. In the lexical domain, *mouse* as a computer device is a case in point, since its use is motivated by the perceived similarity between the animal and the computer device. In syntax, an example is the hypothesized metaphorical link between the caused motion construction (e.g. *Joe kicked the bottle into the yard*), which describes a change of location due to the action named by the verb, and the resultative construction, see (1) above, which describes a change of state due to the action named by the verb, see Goldberg (1995: 88–89).

Fourth, and perhaps most importantly, the nature of lexical items and constructions can be held to be identical, since both can be viewed as pairings of form and meaning. *Mouse*, for instance, pairs the form /maʊs/ with an ‘animal’ meaning (among others) and the ditransitive construction pairs the form NP V NP NP with a ‘successful transfer’ meaning (among others). Table 1 (for details, see e.g. Croft and Cruse 2004: chapter 9) sums up how traditional labels such as syntax and lexicon map onto the idea that language is just a repository of constructions of varying complexity and specificity (or, conversely, schematicity).¹ Complexity has to do with the number of items assembled together into a construction and specificity has to do with the phonetic “substance” of the items employed so that “noun” is for example schematic for *cat*, *dog*, *computer*, *woman*, and so on. Observe also that idioms are taken to include not only non-transparent expressions like *kick the bucket* but also transparent or compositional phrases like *I love you*, *black cat*, which, as frequently occurring expressions, are assumed to be stored as ready-made units in our mind.

1 Observe that Table 1 implies that everything, including single words like *love*, *black*, *cat*, is a construction. However, I will use the term “construction” only to refer to complex items (i.e. items which include at least two components).

Table 1. The syntax-lexicon continuum

Construction type	Traditional name	Examples
complex and (mostly) schematic	syntax	noun verb noun (i.e. the transitive construction), adjective noun (i.e. a noun phrase)
complex and (mostly) specific	idiom	<i>I love you, black cat</i>
complex but bound	morphology	noun- <i>s</i>
atomic and schematic	word class	verb, adjective, noun, pronoun
atomic and specific	word/lexicon	<i>love, black, cat, I, you</i>

3. SOME DIACHRONIC ARGUMENTS

From a diachronic point of view, one can observe various similarities between lexical items and constructions and, more generally, an interplay between the two. A few examples will suffice.

It has been pointed out that analogical regularization or leveling affects both lexical items and constructions (see e.g. Bybee 2007). For example, many Old English (OE) strong verbs became weak during the Middle English (ME) period (e.g. *bow, brew, climb, flee, flow, help, mourn, row, step, walk, weep*). Importantly, the analogical leveling of strong verbs is a gradual process and its effects depend on frequency so that high-frequency, non-analogical past forms like *went* (vs. a hypothetical form **go-ed*) survived. Similarly, in the syntactic domain, analogical regularization is also gradual and frequency-dependent. For instance, Tottie (1991) shows that the spread of *not* as a negative verbal marker is resisted by certain, high-frequency constructions like *I've done nothing, I know nothing*, which are more common than the variants with *not*, i.e. *I haven't done anything, I don't know anything*.

Another process that affects lexical items and constructions alike is semantic specialization. For example, Present-Day English (PDE) *deer* comes from OE *dēor* but while the former denotes a specific animal, the latter has a more general meaning (i.e. 'animal'). In the syntactic domain, Coleman and De Clerck (2011) have argued that constructions can also become associated with a more restricted set of meanings. They point out that the double object construction allowed certain usages in eighteenth-century English, which are now impossible. The following examples from Coleman and De Clerk (2011) were retrieved from the Corpus of Late Modern English Texts (CLMET) (see De Smet 2005):

- (2) a. And a man that could in so little a space, first love me, then hate, then banish **me** his house [i.e. banish me from his house]. (Richardson, 1740)
- b. ... the young Benedictine holding **him** the torch [i.e. holding the torch for him] as he wrote... (Sterne, 1767)

- c. At her departure she took occasion to whisper **me** her opinion [i.e. whisper her opinion to me] of the widow ... (Fielding, 1749)

Banishment verbs as in (2a), cases with pure beneficiaries (rather than recipients as in *She gave him a book*) as in (2b), and verbs of manner of speaking as in (2c) could all occur in the double object construction in eighteenth-century English.

It is also worth observing that histories of English usually devote considerable attention to lexical borrowing but hardly comment on the fact that syntax or constructions can also be borrowed from other languages, as is possibly the case with various constructions such as the progressive and periphrastic *do* from Celtic (see Hickey on Celtic, this volume).

Alongside diachronic similarities between lexis and syntax (traditionally conceived), researchers have also drawn attention to the interplay between the two. A case in point is grammaticalization, that is, roughly, the development of (more) grammatical/abstract expressions out of lexical/concrete ones (see Hopper and Traugott (2003) for a review, but also Lehmann (2008) and Traugott (2008) on non-lexical grammaticalization). Textbook examples of grammaticalization are the development of the future/intentional construction *be going to/gonna* out of a purposive motion construction containing the verb *go* and the rise of English modal verbs out of OE lexical verbs (e.g. PDE auxiliary *can* from the OE lexical verb *cunnan* ‘to know’). What is important here is the realization that change involves constructions rather than lexical items on their own. In Bybee’s words, “grammaticalization of lexical items takes place within PARTICULAR CONSTRUCTIONS... Thus *going to* does not grammaticalize in the construction exemplified by *I’m going to the gym* but only in the construction in which a verb follows *to*, as in *I’m going to help you*” (Bybee 2010: 106, emphasis original). In terms of the constructions illustrated in Table 1, grammaticalization can be viewed as residing in an increase in schematicity (see e.g. Trousdale 2008) since, for example, in the case of *be going to*, the infinitive slot ends up hosting a wider range of verbs than in its source construction so that even non-motion (non-concrete) uses such as *I’m going to help you* are allowed.

More generally, viewing the lexicon and syntax as a continuum has the major advantage of allowing for a uniform treatment of various diachronic phenomena. If grammaticalization involves, in very general terms, an increase in schematicity (also known as host-class expansion), another major process such as lexicalization (e.g. the change from OE *dæges(e)a*, lit. ‘day’s eye’, to PDE *daisy*; for an introduction, see Brinton and Traugott 2005) can be identified with a reduction in symbolic complexity of expressions gravitating toward the lexical pole of the syntax-lexicon continuum.²

2 But observe that a reduction in symbolic complexity can also occur in grammaticalization. This happens for instance with the compression of *going to* into *gonna* in the future construction *be going to*.

4. CASE STUDIES

The import of the lexicon-syntax continuum is basically twofold: (a) it is not always possible to separate neatly between lexical items and constructions and (b) language can be viewed as a taxonomic network of constructions of increasing complexity (two or more elements are combined) and schematicity (various different tokens of different types are allowed in the slots of a construction). As the *be going to* example mentioned in the previous section shows, recent research has focused on constructional change at least in the sense that scholars have realized that even lexical change must be analyzed with reference to specific contexts of use. This goes hand in hand with the idea that change is gradual and involves the two dimensions of schematicity and complexity, which lie behind the syntax-lexicon continuum hypothesis. In what follows, I will concentrate on a few examples that point to changes in schematicity and thus lend diachronic support to the syntax-lexicon continuum hypothesis. All of them can be viewed as examples of idioms which have become increasingly productive and thus more schematic.

4.1 The *way* construction

An example of an increase in productivity is the development of the so-called *way* construction (for a synchronic description, see Goldberg 1995). In PDE, the verb in the *way* construction can code manner of motion, means of motion, and incidental activity accompanying motion, as in (3), from Israel (1996). Notice, however, that the last usage is not accepted by all speakers.

- (3) a. The wounded soldiers **limped** their way across the field.
 b. Rasselas **dug** his way out of the Happy Valley.
 c. Convulsed with laughter, she **giggled** her way up the stairs.

Israel (1996), relying on data from the *Oxford English Dictionary* (OED), shows that the manner usage originates from a more general ME construction in which verbs of motion take an optional path argument, which was not necessarily *way*, as in (4):³

- (4) To madian lond, **wente** he his **ride**.
 ‘To Madia [i.e. a place], he went riding.’ (a1325 (1250), *Gen. & Exod.*
 (1968), l. 3950)

Observe also that the verb used in (4) is *wend*, a synonym of ‘to go’, but other options such as *go* itself, *ride*, *run* and *pass* are possible. Over time, by analogy, the *way* construction ends up hosting a variety of manner of motion verbs, as in (3a).

3 The OED examples given here are all mentioned in Israel (1996) but the references have been reproduced in the style of the 2010 online edition.

What is interesting for our present purposes is the mixture of productivity and fixedness in the development of this idiom. More and more verbs are possible in the verbal slot of the construction but the path argument slot becomes restricted to *way* so that expressions like *wend one's ride* or *wend one's gate* (where *gate* is a synonym of *road*) are by now obsolete. This mixture of productivity and fixedness, as Trousdale (2010) points out, is a clear indication of how syntax and lexis interact.

Israel further argues that the means of motion usage develops from a later, Early Modern English (EModE) construction, which codes the creation of a path as in (3b) above. By 1650, this construction includes verbs like *pave*, *cut*, *force out* that imply that motion is “achieved despite some obstacle” (Israel 1996: 223). Again by analogy (relying on the “difficulty of motion” interpretation), new usages emerge such as the fighting usage in (5):

- (5) Every step that he takes he must **battle** his way. (1794, R. Southey, *Botany Bay Eclogues*, iii)

This usage in turn gives rise to more abstract instances where the verb no longer codes “physical exertion” (Israel 1996: 224) but describes some “indirect [way] of reaching a goal” (Israel 1996: 224) as in (6):

- (6) Not one man in five hundred could have **spelled** his way through a psalm. (1849, T. B. Macaulay, *Hist. Eng.* I. i. 45)

The two usages, manner and means, ultimately entangle with each other and allow for the extraction of a more general schema, which can motivate the rise of the incidental activity usage, which not all speakers find acceptable.

Although the *way* construction and the *be going to* construction both undergo an increase in schematicity, their development is not identical. Both originate from concrete, motion constructions but while the *way* construction has retained a motion interpretation (albeit a metaphorical one in instances such as (6)), a concrete, motion interpretation is no longer available in the *be going to* construction (e.g. *They are going to sack her*). This suggests why the *way* construction should probably be considered to be on the lexical side of the continuum, not an instance of grammaticalization.

4.2 The adjectival resultative construction

Another example showing the interrelatedness of lexis and syntax is the (adjectival) resultative construction, see (1) above. As I pointed out in section 2, certain examples seem to be “projected” from a verb’s argument structure while others seem to be obtained by slotting a verb into a schematic construction. From a diachronic point of view, the resultative construction, like the *way* construction, shows a progressive increase in schematicity (i.e. greater productivity), but also some degree of fixedness in that a relatively restricted range of adjectives is used (see Boas 2003). In Broccias (2008), I trace the history of the adjectival resultative construction in some detail. In OE, although the complex transitive (causative) use

of the schematic verb *dōn* ‘to do’ (roughly corresponding to PDE *make*), as in (7) (from the York-Toronto-Helsinki Parsed Corpus of Old English Prose (YCOE)), is relatively common, we find very few instances of adjectival resultatives where the verb specifies the means by which the result was brought about.

- (7) gedō ealle þā wyrta swiðe clæne
do all the herbs very clean
‘make all the herbs very clean’ (Bald’s *Leechbook*)

Insofar as the data that have come down to us is not skewed because of the limited number of texts and restricted range of styles from especially the OE period, there seem to be mainly two types of adjectival resultative constructions in OE, both of which describe a forceful interaction where an agent-like entity brings about a change (of state) of a patient-like entity:

- (i) WASH + clean, e.g. *āwascan clæne* (‘wash clean’), *feormian clæne* (‘cleanse clean’)
(ii) CUT + small, e.g. *gnīdan smale* (‘crumble small’), *gescearfian smale* (‘shred small’)

Illustrative examples are offered in (8) and (9) from Visser (1963) (the interested reader is referred to Visser (1963) for more information on the source of these examples):

- (8) gif þū næbbe buteran genōge, āwæsc [hit] swiðe
if you not-have butter enough, wash [it] very
clæne
clean
‘if you don’t have enough butter, wash it very clean’ (*OE Charms*)

- (9) þā wyrta ealla gescearfa swiþe smale
the herbs all shred very small
‘shred all the herbs very small’ (*OE Charms*)

However, it is questionable whether, especially in the older stages of English, the “adjectives” in the means resultative construction are truly such, since they could also be classified as adverbs; hence, I use the ambiguous label “A” to refer to them. What is important about these examples is that the A’s specify or intensify the verbal event so that the constructions seem to be fully compositional and be derived from the verb’s argument structure. By the ME period, we find not only examples of the “cutting small” and “washing clean” types but also cases whose verbs appear to be related to the former types by analogy, such as removal verbs of either concrete or abstract nature (e.g. *strip naked*, *purge clean*), verbs of filling (e.g. *colour blue*), which are the opposite of verbs of removal, verbs of destruction (e.g. *break small*), verbs of hitting (e.g. *beat black and blue*), verbs of change of shape (e.g. *spread wider*), and verbs of food preparation (e.g. *bake hard and stark*). A fairly comprehensive list of the earliest occurrences

in ME is offered in Visser (1963), examples of which, in PDE orthography, are reproduced here:

beat small (1399), *beat black and blue* (1460), *burst (a door) open* (1464), *chew small* (1425), *dye either green or blue* (1486), *eat bare* (1300), *flobber* ('soil') *foul* (1378), *hew small* (1420), *paint bloody* (1377), *paint black* (1400), *rub rody* ('rosy') (1377), *searce* ('sift') *smooth* (1440), *shave smooth and clean* (1412), *shrive clean* (1390), *strike dead* (1375), *strip naked* (1225), *sweep clean* (1325), *wash white and fair* (1225)

Interestingly, in ME we also come across instances where the verb by itself does not necessarily code a result (e.g. *stamp* in (10)) and instances where actions are interpreted as forceful interactions metaphorically (e.g. *purge clean* in (11)) (all the ME examples below are from the Penn-Helsinki Parsed Corpus of Middle English (PPCME2)):

- (10) *stamp (small)*
 and stamp þam samen full small
 and stamp them together full small (*Liber de Diversis Medicinis*)

- (11) *purge (clean)*
 and purge þi sawle of al fylth, als clene as þe
 and purge thy soul of all filth as clean as the
 golde þat es proved in þe
 gold that is proved (see *OED* s.v. *prove*, v. B.I.1.b) in the
 fournes
 furnaces (Richard Rolle, *Epistles*)

Finally, in ME we also find the first examples of “unsubcategorized” objects as in (12) and (13):

- (12) *drink (full of water)*
 And þen ryght as a man leneth to a well and
 And then right as a man leans to a well and
 dryngketh his body full of watyr
 drinks his body full of water (*Mirk's Festial*)

- (13) *eat (full of this colt)*
 and saide / eme wil ye ete your bely ful
 and said eme (i.e. friend) will you eat your belly full
 of this colte
 of this colt (*Caxton's History of Reynard the Fox*)

In neither case is the constructional direct object (*his body, your belly*) a possible object of the verb independently of the resultative construction in which the

verb appears (cf. **A man drinks his body*, **You will eat your belly*), that is, the constructional object is an unsubcategoryed object with respect to the verb.

The final stage in the development of the resultative construction is reached in EModE, when one finds unsubcategoryed objects that are no longer coreferential with the subject as in (14):

- (14) A lover's eyes will gaze an eagle blind. (Shakespeare, *Love's Labour Lost*, IV. iii)

In sum, the development of the resultative construction resides in an increase in schematicity. The early occurrences seem to be projected from lexical items by way of the addition of A's. Over time, by analogy, a wider range of verbs, A's and even unsubcategoryed objects are allowed to appear in it although, as the list from ME reproduced above shows, there is a certain degree of fixedness in the sense that the permitted A's, for example, tend to be limited in type (cf. PDE *I hammered the metal flat* vs. **I hammered the metal triangular*).

4.3 *-ingly* adverbs

The last example I would like to briefly discuss involves *-ingly* adverbs as in (15) and also shows why it is important not to separate lexical items from constructions too neatly.

- (15) a. "I'm not sure this is going to work, you know," said Hermione **warn-ingly**. (Rowling 2000: 228)
 b. He seemed to be making some inquiry of the stranger, who shook his head **unsmilingly** and replied in an undertone. (Rowling 2000: 164)

In (15), it is possible to detect a predicative relation between the intended subject of the *-ingly* verbal base and the subject of the clause where the adverb appears, as the paraphrases in (16) show:

- (16) a. Hermione_i seemed to be warning_i somebody.
 b. He_i shook his head without smiling_i.

In Broccias (forthcoming), I call the usage of the *-ingly* adverb in (16a) subjective because Hermione's act of speaking is interpretable as an act of warning on the part of an observer, while the usage in (16b) is called objective because no evaluation on the part of an observer is involved; (16b) simply describes two concurrent, objective events (i.e. shaking one's head and not smiling). Since these usages are common in the Harry Potter novels, I will refer to them as Harry Potter *-ingly* adverbs for the sake of convenience. It is important to observe that Harry Potter *-ingly* adverbs are typically found with verbs of saying, motion (e.g. body motion as in (15b)) and perception, for example, *Harry was staring unblinkingly ahead of him* (Rowling 2000: 430). This is crucial not only synchronically but also diachronically; otherwise we may come to incorrect conclusions about their development. For example, Killie (1998) shows that *-ingly* adverbs established themselves in the

EModE period but, on closer inspection, this observation turns out not to apply to the Harry Potter type. The *-ingly* adverbs Killie refers to as emerging in the EModE period are mainly adverbs like *willingly* and *accordingly*, which are not amenable to verbal paraphrases like the ones in (16):⁴

- (17) wee desired the (^Moore^) to goe aboard with vs, who **willingly** agreed thereto (cetrav2b)
- (18) **Accordingly** we mett when his Mat=ie= [Mat^{ie}, i.e. Majesty] made us ye enclosed gracious speech... (ceoffic3)

In Broccias (forthcoming), I show that the type illustrated here emerged somewhat later, from the beginning of the nineteenth century (i.e. in the Late Modern English period). Once more, we can see that increases in frequency are local (i.e. restricted to specific constructions). In order to appreciate the development of the Harry Potter *-ingly* adverbs, we need to not isolate lexical items from the constructions in which they occur.

5. CONCLUSION

I have pointed out that language change is often gradual and bottom-up, residing in increases in schematicity, although decreases in schematicity (cf. the case of semantic specialization mentioned in section 3) are also to be reckoned with. From this, it follows that the distinction, or rather the cutting point, between lexis, as the realm of fixedness, and syntax, as the realm of productivity, although useful, is often artificial. The lesson for future research is that it is important to study the development of lexical items with reference to the structural frames in which they occur and, vice versa, it is essential to deal with constructional changes with reference to the specific items that fill up the slots in a construction. More generally, this brief tour through the syntax-lexicon continuum should hopefully have convinced the reader that even in textbooks on the history of English, where lexical change always figures prominently, much more attention should be paid to constructions as partially productive pairings of form and meaning.

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