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Aspect in the Making: A Corpus Analysis of English Aspect-Marking Prepositions

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> Certain linguistic regularities are probably emergent rather than having direct cognitive representation (Langacker 1997:232).

1 Introduction

In many languages, certain relational predications (i.e. basic verbs, adpositions) are extremely susceptible to the effects of semantic extension, relexicalization, reanalysis, and ultimately grammaticalization. Adpositions, especially, have been the subject of intense focus in the functional and cognitive linguistics literature for over three decades.[1] An assumption shared by most of these approaches is that synchronic polysemy patterns are the result of diachronic extensions, conflations, and syncretisms within constructions containing certain adpositions. This paper targets one area of heterosemous extension for some English prepositions: as emerging markers of aspect or Aktionsart.

In a recent study investigating the collocational behavior of the cardinal English posture verbs *sit, stand*, and *lie*, we found a particularly revealing aspectual effect when these verbs are followed by the preposition *around* (Newman and Rice 2001; in press). Like the research reported here, this was a corpus-based study, relying chiefly on the ten-million-word spoken com-

[1] See Bolinger (1971), Bennett (1975), Brugman (1981), Lindner (1981), Talmy (1985), Radden (1985), Brinton (1988), Langacker (1992), O'Dowd (1998) for semantic extension patterns affecting English prepositions, and Genetti (1986); Heine, Güldemann, Kilian-Hatz, Lessau, Roberg, Schladt, and Stolz (1993); Svorou (1994); and Bybee, Perkins, and Pagliuca (1994) for a variety of studies tracing the development and subsequent grammaticalization of adpositions cross-linguistically.

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ponent of the British National Corpus (hereafter, sBNC). To illustrate those earlier findings, search queries on the frames *sit around and* and *stand around and* returned lemmatized examples like those shown in (1) and (2):

(1) *sit around and...*
…be depressed, …pray for a miracle, …wait for jobs, …bitch about them, …do nothing, …not make the investment, …watch TV
(2) *stand around and…*
…eat all the provisions, …not do anything to help, …not buy anything, …wait, …laugh, …listen, …twitch, …watch telly

The presence of *around* not only forces a stative rather than active reading of *sit* and *stand* in these sBNC examples, the collocate verb phrase overwhelmingly denotes passivity, durativity, and negativity. The semantics of *around* coupled with inferences associated with the preferred collocate phrases contribute to the overall schema of what we might call a <sit/stand around and V> construction. In earlier work, we characterized these constructions as follows:

(3) *sit around and...*
  a. favors PROGRESSIVE marking
  b. strongly suggests STATIVITY, PERSISTIVENESS, PASSIVITY, NEGATIVITY
  c. has relatively robust yet diverse collocate inventory
(4) *stand around and…*
  a. favors PERFECTIVE marking
  b. suggests NEGATIVE ACTIVITY, PASSIVITY
  c. attracts collocates of social interaction

These aspectual inferences and lexical preferences with *around* were reminiscent of aspectual properties associated with some other English prepositional expressions reported in Rice (1999). That study used an introspective methodology and was careful to characterize any aspectual force contributed by these items as minor or secondary since English already has a fully grammaticalized inflectional and auxiliary-based TAM system. Among the aspectual categories proposed and described in that earlier work were examples like those in (5):

(5) a. CONTINUOUS away: *He sang away at the top of his lungs.*
  b. RESUMPTIVE on: *She drove on while looking for an exit.*
  c. SEMELITERATIVE/CORRECTIVE over: *He took his turn over.*
  d. EXTENDED DURATIVE on and on: *She droned on and on.*

e. ITERATIVE over and over: *He failed the exam over and over*.
f. HABITUAL again and again: *I repeated myself again and again*.

While Rice (1999) did detail the interaction between these prepositions and the transitivity and telicity of their collocate verbs, this earlier study was not able to characterize the extent to which these prepositions' emergent aspectual properties were diffused across the verbal lexicon and thus entrenched in the language. While it acknowledged that these inherently spatial terms had grammaticalized into nonspatial domains, it gave no indication of their frequency, pragmatic associations, preferred collocates, or other usage information about English *again, around, away, on,* and *over* when functioning adverbially. The present paper revisits the Rice (1999) findings in order to corroborate (or not) the intuitions of that earlier analysis with corpus data and to further illustrate and promote corpus-based techniques in cognitive linguistic analysis.

2 Rival Methodologies

In addition to overlooking key usage facts about constructions containing certain aspectualizing prepositions in English, Rice (1999) perpetuated a common misunderstanding about the grammaticalization of functional elements such as prepositions. That study focused narrowly on the target items rather than on the constructional and usage context. Critically, it is items in constructions which grammaticalize [viz. *V around and V*], not items in isolation [**around*] (see Bybee, Perkins, and Pagliuca 1994: 297). As a case in point, Bybee et al. (ibid.: 136) provide a detailed account of how progressives have developed from locatives in a host of languages. For example, the Dutch expression in (6),

(6) *Ik ben aan het studeren.*
(lit. I'm at the studying)
'I am studying.'

conveys the component meanings that (a) an agent (b) is located spatially (c) in the midst of an activity (d) at reference time. However, the relative prominence of components (b) and (c) often get reversed diachronically, as suggested by the literal and free English glosses respectively. Thus the locative element gradually ceases to convey information about the agent's spatial location as much as broader information about the temporal profile of the unfolding event.

This seemingly natural shift of adpositions from marking space to marking time is well attested crosslinguistically and will not be revisited here in any detail. For English, however, we note a range of phenomena

which can be taken as prerequisites or corequisites of prepositional grammaticalization: the pervasiveness of metaphors like TIME IS SPACE (e.g., *Don't eat that sandwich so close to dinner*), STATES ARE LOCATIONS (e.g., *She's in love*; *He's out of luck*), UNFOLDING ACTIVITY IS MOTION ALONG A PATH (e.g., *The program will keep running through the same analysis*); the fact that prepositions display a tendency to particalize (e.g., *They worked it out*), conjunctivize (e.g., *I put the dog out before I left*) or complementize (*For you to quit would be a mistake*); not to mention their natural proximity to verbs (e.g., *Stop running around, Sit down, Shut up*, *What is he working on?).*

Indeed, Bybee and Dahl (1989) cite a range of symptoms of grammaticalization, shown in (7), which, frankly, are only detectable by looking at target items *in situ* and against the wider backdrop of their frequency distribution, the range of items they tend to collocate with, and the relative entrenchment in the language of the expressions (fixed or otherwise) in which they occur:

(7) a. loss of lexical meaning
b. loss of semantic autonomy
c. increase in generality of meaning
d. increase in pragmatic strengthening
e. increased fixedness of position and distribution
f. increase in frequency of occurrence (and diversity of usage contexts)
g. increase in obligatoriness
h. increase in redundancy

The symptoms of full-blown grammaticalization are familiar, yet we would stress that the detection of *incipient* grammaticalization (a term Koops 2001 uses in his study of posture verb auxiliation) is best achieved through corpus techniques. These, rather than introspection alone, give a better sense of the syntactic 'accumulations' of target items (with respect to inflection and collocation) and any meaning components which inhere.

While introspection can certainly set the cooccurrence boundaries of a linguistic phenomenon, indicating which lexical collocates make for an acceptable or unacceptable reading, the methodology is necessarily limited in scope (see Sandra and Rice 1995 and Sandra 1998 for general critiques). A linguist's intuitions may be able to throw a relatively wide net, but they give no indication of the contour of the catch. Moreover, they tend to be subjective and item-centered and consequently miss patterns associated with large or discontinuous strings which do not readily spring to mind. Corpus techniques, on the other hand, are methodologically neutral, empirically verifiable, and wide in scope as well as deep in examples. They therefore allow for frequency of distribution facts to emerge without being filtered by

the poverty of a linguist's insights.[2] In the rest of this paper we report on how speakers use select English prepositions aspectually as evidenced in the sBNC and how certain preposition-containing expressions may be assuming construction status in the language. First, a word about the methodology used in the study reported on here.

In the present study we are concerned with certain prepositions and adverbs on the verge of or clearly signaling aspectual force, as illustrated in (1), (2), and (5) above and discussed in Rice (1999). The target items are *on*, *away*, *over*, *again*, and *around*. We extracted all (or up to 2000 randomized) usages of the target items tagged as adverbial (tagged as AV0 or AVP), not prepositional, from the spoken corpus of the BNC using the SARA search program. We felt that a spoken corpus would be less conservative or formal and more representative of everyday language use. The sBNC contains approximately ten million words and reflects the state of the language in the U.K. during the 1970s-1990s. We sorted the returns from our queries using MonoConc Pro™ and Wordsmith™ and extracted frequency information. We performed many of the more fine-grained counts by hand because the corpus is not semantically tagged. We were particularly concerned with two collocational contexts, V–particle and V–pronoun–particle, and the search results reported below are based on these two contexts alone. We also kept track of TAM marking on the collocate V as tagged in the sBNC: bare stem, infinitive, past, past participle, progressive participle, 3SG. We noted any recurring collocate items (e.g. *same, all, just*) and any recurring expressions or N-grams (e.g. *start all over again)*. Figure 1 gives a sense of the relative frequency of the target items being used adverbially in the sBNC.

3 *Away* and *On*

Rice (1999: 233) associated *away* with CONTINUOUS aspect, that is, marking the continuation of an already ongoing activity. Among the other claims of that introspective study of *away* were those listed in (8):

[2] An illustration of such 'poverty of the imagination' was Rice's (1999) complete overlook of an aspectualized and fully pragmatic use of *again* (cf. Section 4 below for the full account).

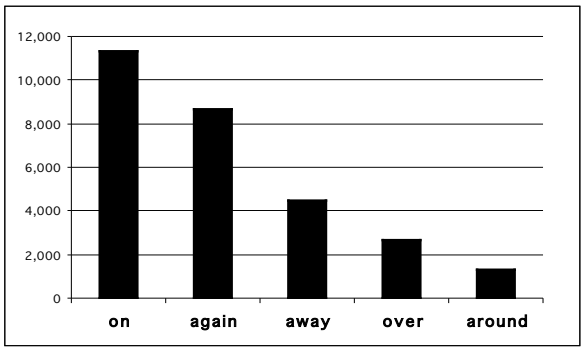

Figure 1. Frequency by item being used adverbially in the sBNC

(8) CONTINUOUS *away*
- a. indicates continuation of an already ongoing activity or process, especially effortless or purposeless continuation
- b. confined to intransitive verbs (unless accompanied by *at* or otherwise denoting some disintegrating activity)
- c. favors verbs denoting overt action
- d. is not used aspectually with verbs of motion
- e. favors verbs in the progressive

Our sBNC search corroborated each of these claims while also yielding new insights. With respect to (8a-d), the most common collocate verbs of aspectual *away* included verbs of overt, repetitive action or disintegration. A representative sample is given in Table 1. The number of occurrences out of the 2000 we randomly downloaded is listed in parentheses, unless the incidence is one.

The most common collocate verbs with adverbial *away* were verbs of translocation or dislocation. With these items, *away* maintains an almost exclusive directional interpretation. The search returns also revealed a collocate verb subclass with aspectual *away* overlooked by Rice (1999)—that of verbs denoting vocalization or other sound-producing activity. In all, three clearly identifiable collocate subclasses can be identified (yet they often blend together semantically: an overtly destructive event may involve repetitive action which produces noise). Finally, our sBNC study spectacularly supported claim (8e). A full 87% of the search returns featured collocate verbs with aspectual *away* inflected as a progressive participle (V-*ing*).

lexical semantics of coverb	*lemmatized examples*
REPETITIVE OR OVERT MOTION	work (9), boogie (3), slave (3), file (2), punch (2), rub (2), dance, hammer, parry, pat, play, potter, pout, print, pump, scribble, shag, shoot, sparkle, spin, type, wave, write
DISINTEGRATION	do [away with] (31), cut (4), wash (4), burn (2), crumble (2), eat (2), fade (2), blaze, boil, chomp, drain, dribble, excavate, hack, munch, rot, scrub, smoulder, trim, waste, wear, whittle
VOCALIZATION OR SOUND-INDUCING	chat (5), tick (4), explain (3), blare (2), chatter (2), chunter (2), whinge (2), chug, click, giggle, hiss, jabber, moan, prattle, scream, shout, sneeze, snore, squeak, twitter, whirr
TRANSLOCATION OR DISLOCATION (*away* not functioning aspectually)	take (151), go (127), be (126), get (101), run (42), give (28), come (26), walk (21), throw (19), move (16), carry (15), send (13), turn (10), put (9), drive (8), stay (7), call (6), blow (5), pull (5), chuck (4), fly (4), sweep (4), head (3), hide (3), keep (3), break (2), clear (2), drift (2), fall, (2), lock (2), look (2), push (2), slip (2), accelerate, back, bounce, cast, cruise, float, gallop, knock, point, ride, sail, skip, smooth, snatch, stand, store, swim, swing, tiptoe, tow, transfer, tuck, wander, wave, whip

Table 1. Collocate verbs from sBNC returns for adverbial *away*

Rice (1999) described *on* as signaling RESUMPTIVE aspect and noted it collocates with more force-dynamic predicates than does *away*. That study characterized *on* as signaling perseverance in the face of disturbance or an expectation of stopping (236). Other attributes of aspectual *on* were those listed in (9):

(9) RESUMPTIVE *on*
- a. indicates continued or resumed purposeful activity
- b. prefers simple tense inflection
- c. slightly disfavors progressive
- d. perfectly acceptable with verbs of motion

Our sBNC query returned 1442 instances of adverbial *on* with intransitive verbs (with transitive verbs, *on* tends to convey a spatial sense as in verb-

particle constructions like *put it on, keep it on*). Of these 1442 instances, a full 71% involve one of five verbs, all of which convey the continuation or resumption of a purposeful activity, including verbs of motion or position: *go on* (516), *carry on* (151), *come on* (145), *hang on* (122), and *get on* (95).[3] This is in keeping with Deane's (2002) observation that only a few verbs tend to supply the bulk of the instances of particular constructions.[4] Some representative returns are shown in (10):

(10) a. *The strike at the coal mine in S. C. drags on and on.*
b. *…then I'd leave him and he'd get on with his writing*
c. *You can carry on analyzing your dreams at your leisure.*

Finally, in agreement with Rice's (1999) observations about collocate verbs with aspectual *on* preferring simple tense inflection rather than progressive, our corpus study found only a 17% incidence of progressive participial forms (N=250). The raw TAM marking incidence for all the collocate verbs occurring with the target items is given in Table 2.

	BARE STEM	INF	SIMPLE PAST	PAST PART	PROG PART	3SG
V-*over*	193 (15)	292 (23)	269 (22)	224 (18)	185 (15)	83 (07)
V-pro-*over*	74 (32)	71 (31)	49 (21)	12 (05)	18 (08)	7 (03)
V-*on*	520 (36)	314 (22)	169 (12)	112 (08)	250 (17)	76 (05)
V-pro-*on*	19 (26)	26 (36)	11 (15)	6 (08)	8 (11)	3 (04)
V-*away*	239 (23)	257 (24)	149 (14)	159 (15)	192 (18)	63 (06)
V-pro-*away*	62 (32)	55 (29)	21 (11)	17 (09)	18 (09)	19 (10)
V-*again*	64 (21)	92 (29)	28 (09)	46 (15)	60 (18)	22 (07)
V-pro-*again*	108 (31)	144 (42)	32 (09)	22 (06)	28 (08)	10 (03)
V-*around*	112 (18)	143 (23)	57 (09)	57 (09)	218 (35)	35 (06)
V-pro-*around*	18 (23)	25 (32)	8 (10)	1 (01)	23 (29)	3 (04)

Table 2. Raw incidence of different inflectional forms for collocate verbs accompanying target items in sBNC (percentages in parentheses)

[3] These examples reflect the count for the lemmatized verbs.

[4] Indeed, with the even more RESUMPTIVE construction <V on with>, just three collocate verbs (*get, carry*, and *go*) account for 90% of the 506 examples in the sBNC.

Although quite dense, Table 2 nicely illustrates the differences among the various prepositions being used aspectually, as well as differences between intransitive and transitive usages of the verb-preposition collocates in terms of their TAM marking. The variation in inflectional distribution we find in this set of corpus searches and the ramifications such a finding has for lexicography and linguistic theory is echoed even more strongly in Newman and Rice (2003, to appear). In these subsequent corpus-based studies, we traced the inflectional and subcategorizational behavior of English *eat* and *drink* and concluded that not only do individual verbs have a lexico-syntactic life of their own (cf. Thompson and Hopper 2001: 44), but individual inflections of individual verbs do as well.

Up to this point the corpus study findings have supported the claims of Rice (1999), a study based entirely on the analyst's intuitions. Support for those earlier characterizations begins to unravel with the next search items.

4 *Over* and *Again*

The spatial preposition *over* has been intensively described in the cognitive linguistics literature, although most of these studies have addressed its spatial senses. Rice (1999: 239-41) associated *over* with SEMELITERATIVE or CORRECTIVE aspect, applying in the context of intentional activities being carried out a second time for corrective purposes or to achieve a different outcome. The aspectual use of *over* was characterized in terms given in (11):

(11) SEMELITERATIVE/CORRECTIVE *over*
- a. indicates action 're-traversal'
- b. verbs must be transitive and 'semi-perfective'
- c. suggests discernibly different outcome
- d. requires presence of volitional agent
- e. incompatible with iterative prefix *re-*

Our search of the sBNC revealed the following returns:

(12)
- a. *…so I'm gonna dig it <u>over</u> and add some more soil*
- b. *I shouldn't have started this <u>over</u> since he takes so long to…*
- c. *…and had to wipe that <u>over</u>.*

That is, out of 1473 (singleton) instances of adverbial *over* downloaded and analyzed, only these three (.002%) could be said to exemplify SEMELITERATIVE or CORRECTIVE force. On one hand, we could say that all of the claims in (11) were substantiated. On the other hand, the robustness of this aspectual usage in English is far from clear. In fact, both singleton uses of aspectual *over*

and conjoined uses of what Rice (1999: 241) called ITERATIVE *over and over* were equally rare. There were only two instances in the sBNC:

(13) a. *I mean we've been going over and over that proposal.*
b. *…it's about us being used over and over.*

Rice (1999) also claimed that conjoined *again and again* marked a kind of HABITUAL aspect in English, but that it was otherwise indistinguishable or virtually interchangeable with ITERATIVE *over and over*. Because *again* has grammaticalized to the point of being unrecognizable with respect to its prepositional source, *against*, we did not include it in the present study. However, a corpus-based comparison of *over and over* and *again and again* would be worthwhile.

The advantage of a corpus-based methodology is that the net can be thrown very wide and search returns can catch unintended and unexpected items. Although the incidence of aspectual *over and over* was dramatically low, a new targeted search of the whole sBNC revealed thirty-five instances of *over and over again*, an aspectualizing phrase ignored in Rice 1999. Typical usages are shown in (14):

(14) a. *I can just use these books over and over again.*
b. *She asks the same question over and over again.*
c. *…hurting you in the same way over and over again.*

Of the thirty-five instances in the sBNC, the word *same* was a close collocate of *over and over again* in thirteen cases (37%). This tight association leads us to posit that the semifixed word sequence, <the same X over and over again>, has become entrenched in the language. Comparably, a new query of the sBNC for adverbial *over* turned up thirty-eight instances of the string *all over again*. Representative returns are listed in (15):

(15) a. *It's beginning to start all over again.*
b. *You fall in love all over again with exactly the same type of person.*
c. *I said to Sandra, it's Ross all over again, init?*

The collocate verb *start* featured in twenty-two of these thirty-eight instances (58%), suggesting to us that <start (X) all over again> is an entrenched manifestation of the <V (X) all over again> construction—a *collostruction* (to use Stefanowitsch and Greis's (2002) very apt term).

Given the collocational affinity for *over* with *again*, we decided to examine singleton examples of *again* in the sBNC (an item not covered in Rice (1999) for the obvious reason that it has already fully grammaticalized

as an adverbial in English and no longer shares morphological form with its prepositional counterpart, *against*). The most notable finding from our sBNC corpus study was that approximately 11% of all instances of *again* involve what we might call expressive rather than propositional usages (see Traugott 1982). These usages convey an iterative aspect of the speech act, signaling the speaker's return to a previously mentioned or implied topic. We found 211 expressive uses of *again* from the 2000 random hits we were able to download from the on-line corpus. Representative examples are given in (16):

(16) a. *So, again, you might find that…*
b. *That may be inevitable, but again, the more experience you've got…*
c. *It must, again, be a matter of where you go…*
d. *Well, there again, you see, it's you you're talking about...*

In keeping with its status as a fully grammaticalized adverbial particle, synchronically distinct from its prepositional source, *again* displays nearly all the characteristics of full-blown grammaticalization listed in (7), particularly (e) increased fixedness of position (in initial or near-initial position within a clause) and (f) increase in frequency of occurrence and diversity of usage contexts. Unarguably, its function in this usage is one of pragmatic strengthening (d).

5 *Around*

We began this paper with an account of the inactively persistive, passive, or otherwise negative force seemingly contributed by *around* in <sit/stand around and V> constructions. These minor aspectual categories are clearly conveyed by *around* with other collocate verbs as well. Our search of the sBNC returned a variety of posture verb and nonposture verb collocates. Example (17) gives an illustrative sample (note the preponderance of progressive participial forms for the collocate verb), while the full range of lemmatized collocates can be seen in Table 3:

(17) a. *…if you're caught pissing around in the quad*
b. *I was still slobbing around in my dressing gown*
c. *…because I was messing around with the camera*
d. *…when they start mucking around with outside issues*
e. *He's addicted to skiving around not doing very much*
f. *…a drunken undergraduate hanging around in college bars*

With 'translocational' verbs (*go*, *walk,* etc.), the largest group of collocating verbs in the corpus, *around* imparts a sense of undirected motion. However, an equally dense though less frequent set of collocate verbs was also evident in the sBNC, that of useless activity. These blend to form an emergent subclass of goal-less motion, which by inference can be taken to be a type of useless activity. Based on the TAM marking preferences listed in Table 2, we suggest that <Ving around> is emerging as a construction in English, denoting undirected, purposeless activity.

lexical semantics of coverb	*lemmatized examples*
USELESS ACTIVITY	be (76), hang (20), mess (16), play (13), sit (11), fiddle (5), lie/lay (5), muck (3), potter (3), stay (3), fool (2), fuck (2), slob (2), stand (2), wait (2), bitch, faff, fart, fidget, flit, hack, hover, laze, lounge, mull, piss, skive, slob, tinker, twiddle
blend: GOAL-LESS MOTION	wander (11), float (9), roll (6), roam (3), stagger (2), bum, buzz, career, cast, clatter, crash, drift, ferret, grope, limp, nose, poke, scurry, shuffle, slouch, sniff, splash, swan, swerve, swing, swivel, tramp, wobble, wriggle
TRANSLOCATION (PHYSICAL OR PERCEPTUAL)	go (94), walk (38), look (31), turn (28), run (26), move (25), get (21), drive (17), come (14), jump (5), knock (4), rush (4), see (4), ask (3), fly (3), push (3), kick (2), leap (2), search (2), shop (2), swim (2), throw (2), travel (2), circulate, crawl, dash, dig, maneuver, ride, screech, spew, venture, whizz, zoom

Table 3. Collocate verbs from sBNC returns for adverbial *around*

6 Conclusion

Whether any English prepositions have completely grammaticalized as aspect markers and would be recognized as such has not been our focus here. Instead, we have applied corpus techniques to help reveal incipient aspectualization of a set of English prepositions. We used Rice (1999) as a point of departure for the present study. We found some confirmatory evidence for that account, but we also were able to both refine some of those earlier claims and give a sense of the relative fixedness of certain constructions as well as the relative productiveness of certain aspectual usages (through the frequency and diversity of collocate verbs). The larger message is that certain patterns of interaction, such as between aspectualizing preposition and verb, are emergent in nature. Since grammaticalization happens in constructions,

not in isolation, linguists who rely only on introspective and decontextualized or constructed data will likely fail to produce a full and empirically defensible account of a given linguistic phenomenon.

As we stated in Section 2, introspection can only take an analysis so far. As a methodology, it is inherently vulnerable to a morpheme bias whose relative frequency is hard to intuit within full constructions. Introspection can reveal occurrence or nonoccurrence of an item in a construction (in the guise of its acceptability or ungrammaticality), but as our corpus study has demonstrated it is in actual collocations, in the context of real verbs, that we see aspectualization of former locatives. Moreover, corpus searches can yield a measure of collocational strength or the frequency with which certain prepositions and verbs collocate. Through queries of large corpora, substantial returns can allow fine-grained analyses that reveal which meaning components or pragmatic associations are accentuated in which constructional contexts. These associations are what initially trigger the grand march of grammaticalization. Such a strength measure is verifiable (or not) across corpora or speakers. The technique is, thus, more objective and less vulnerable to analytic oversight. While one cannot directly arrive at grammaticality judgments with corpus techniques—what we might want to call the 'boundary' of a linguistic phenomenon—one can achieve something far more compelling, based as it is on a spoken corpus: not where the grammar has been, but where it is going.

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