

The course of actualization

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Abstract: Actualization is traditionally seen as the process following syntactic reanalysis whereby an item's new syntactic status manifests itself in new syntactic behavior. The process is gradual in that some new uses of the reanalyzed item appear earlier or more readily than others. This paper accounts for the order in which new uses appear during actualization. Five corpus-based case studies are presented involving reanalysis and actualization in different functional domains of grammar. These include the reanalysis of *all but*, *far from* and Dutch *verre van* to adverbial downtoners, and the reanalysis of *fun* and *key* from nouns to adjectives. It is shown that actualization proceeds from one environment to another on the basis of similarity relations between environments. The similarity relations may involve broad syntactic generalizations but also superficial similarities to existing patterns, including even an item's uses prior to reanalysis. Because actualization is guided by local and global analogies to existing uses, one determinant of the course of actualization is the locus of reanalysis, as it defines the first uses of an item under change, on which subsequent uses can be modeled. It also follows that the course of actualization is both item-specific and language-specific. The findings presented challenge the concept of reanalysis, which appears less abrupt than usually assumed. Further, it is argued that the findings fit best with usage-based models of language, which attribute a prominent role to similarity-based organization in grammar, and in which an item's use can be subject to multiple, potentially conflicting generalizations.*

Keywords: actualization, analogy, gradualness, local vs. global generalizations, reanalysis

"Sit wherever you like, dear... *except* there!"

(Hyacinth in *Keeping up appearances*)

1 The problem and its ramifications

As originally defined, actualization is the process that bears out the consequences of a prior reanalysis. Where reanalysis invisibly assigns a new syntactic representation to an existing surface sequence, actualization involves the emergence of overtly new syntactic behavior (Langacker 1977; Timberlake 1977; Lightfoot 1979; Anttila 1989; Kroch 1989; Harris & Campbell 1995; Newmeyer 1998; Andersen 2001; Harris 2003; Hopper & Traugott 2003; Roberts 2007). On this view, reanalysis and actualization are distinct phenomena, but causally connected, as is implied by Langacker's (1977: 58) classical definition of reanalysis:

I will define "reanalysis" as change in the structure of an expression or class of expressions that does not involve any immediate or intrinsic modification of its surface manifestation. Reanalysis may lead to changes at the surface level [...], but these surface changes can be viewed as *the natural and expected result* of functionally prior modifications in rules and underlying representation. [italics added]

However, even if actualization is the result of a prior reanalysis, there is more to actualization than the preceding reanalysis can account for. The specific difficulty with actualization is that the surface level changes following reanalysis take time to manifest themselves, and some more so than others. Timberlake (1977: 141) characterizes actualization as "the *gradual*

mapping out of the consequences of [...] reanalysis [*italics added*]”. Further on he (1977: 153) writes:

It seems that typically the actualization of a reanalysis occurs earlier in some contexts, or for some elements, than others.

As an example of reanalysis and actualization, consider the English preposition *about*, originally meaning 'around', which has been reanalyzed as an approximative adnumeral, used with numeric expressions or units of measurement and meaning 'approximately' (Plank 2004). The use of *about* as preposition is illustrated in (1a): *abuten* here has a straightforward locative meaning and the phrases *abuten þe dier* and *abuten ʒew* function as prepositional phrases. Reanalysis to an approximative adnumeral must have taken place around the beginning of the Middle English period. In (1b) *about* is semantically approximative, but there is no evidence of a change in its underlying syntactic status. That approximative *about* is no longer a preposition only becomes clear in (2a-b). In (2a), *abuton twenti oðer þritti hornblaweres* is the clause subject, while in (2b), *aboute* follows another preposition, *of* (which does not normally precede other prepositions). Neither of these syntactic slots could be occupied by a prepositional phrase.

- (1) a. Alswa ðe lyon ðe gað *abuten* þe dier hem to forswoleʒen, swa deð deuel *abuten* ʒew. (a1225(c1200), MED)

'Just as the lion goes around the animal to swallow it, so does the devil around you.'

- b. Man slóh ðær mycel wæl, *abutan* feower hund manna, oððe fife. (1055, OED)

A major force was slain there, about four or five hundred men.'

- (2) a. Þær mihte wel ben *abuton* twenti oðer þritti hornblaweres. (a1131, MED)
 'There might well have been about twenty or thirty hornblowers.'
- b. he confermed þe worschippyng of holy ymages in a counsaile þat was i-made at Rome of *aboute* a þowsand bisshoppes (a1387, PPCME2)
 'he [pope Gregory III] approved of worshipping holy images in a council of about a thousand bishops that was held at Rome'

As (2a-b) show, the consequence of reanalysis is that phrases with *about* come to function as ordinary noun phrases rather than prepositional phrases, just as *about* ceases to head a prepositional phrase and becomes a modifier within a noun phrase, roughly as follows:

[abuten]_{PREP} [þe dier]_{NP}]_{PP} > [[[abuton]_{APP} twenti oðer þritti]_{NUM} hornblaweres]_{NP}

However, not all the behavior of ordinary noun phrases is taken over with equal ease. Whereas it can occur in argument position early on, as (2a) shows, approximative *about* appears less readily inside prepositional phrases, as in (2b). Supposing the appearance of examples like (2a) and (2b) is the natural consequence of a syntactic reanalysis, there is still an unaccounted for difference in the timing of their appearance or the rate at which they gain acceptance.

This raises a number of interconnected issues. The first, and the one most central here, is what causes actualization to unfold the way it does. If actualization is (for now) seen as a step-wise process, why is it that one step in the process is taken before another, and not the other way around? To cite the example of *about*, what gives the use of approximative *about* with bare argument noun phrases, as in (2a), precedence over its use inside prepositional phrases, as in (2b)?

The general answer to be advanced in this paper is that actualization is strongly guided by appearances. The more familiar or the less conspicuous some innovation looks, the more likely it is to manifest itself. What looks familiar is, in turn, determined by a multiplicity of (possibly superficial) similarity relations that link a reanalyzed item's potential new uses to existing older uses. The relevant older uses include, predictably, the item's use in the locus of reanalysis and any extensions subsequent to reanalysis that have already occurred, but they also include uses of the item that predate reanalysis. The claim that actualization proceeds through similarity-based generalizations gives centre stage to analogy as the main mechanism determining the course of events following reanalysis (Hopper & Traugott 2003). As such, the present account differs from earlier accounts of actualization, specifically Timberlake (1977), Harris & Campbell (1995) and Andersen (2001).

To illustrate, the course of actualization for approximative *about*, as described above, can be tentatively explained by assuming that approximative *about*, deriving historically from a preposition, held on to preposition-like behavior. The pretence of a preposition-like status is conspicuously broken when *about* follows another preposition. In contrast, it can be upheld to some extent, if only superficially, as long as *about* modifies bare argument noun phrases, where the innovation is sometimes only apparent on deeper analysis (e.g. on the surface, *ben abuton* in (2a) above could pass for a familiar sequence of *be* and preposition). It could be a superficial resemblance to the established prepositional use, then, that explains why approximative *about* appears in bare argument noun phrases before it is used in prepositional phrases.

This interpretation of the development of approximative *about* leads directly into a second issue. If approximative *about* can spread by adopting superficially preposition-like behavior, this casts doubt on the abruptness and discreteness of reanalysis. The underlying syntactic shift that occurs in reanalysis is often seen as discrete (e.g. Anttila 1989: 197; Hopper &

Traugott 2003: 46), but if an item's behavior subsequent to reanalysis is codetermined by its behavior on its original analysis, this means that uses before and after reanalysis (which can exist side-by-side once reanalysis has taken place) may remain connected in the eyes of the language user. The potential implications here are clear: the change effected by reanalysis may be less abrupt than is typically assumed. Indeed, the data presented below indicate that reanalysis is certainly in part non-abrupt, as change can modify an item's categorial status and yet fail to sever completely the ties with its historical source (see also De Smet 2010).

This brings the present account in line with recent reinterpretations of the notion of reanalysis. On the one hand, the idea that reanalysis is an abrupt structural change has been challenged, particularly with reference to the role of reanalysis in grammaticalization. While Hopper & Traugott (2003) attribute reanalysis, as traditionally conceived, a central role in grammaticalization processes,¹ others foreground the gradual character of grammaticalization, and either extend this gradualness to reanalysis (Bybee 2010) or deny that grammaticalization involves reanalysis (Haspelmath 1998). The motivation is that structural changes in grammaticalization arise due to frequency increases that gradually alter the mental representation of a given expression, as it is increasingly stored autonomously and accessed holistically, losing its internal constituency as a result. On this view, some reanalyses – if the term is still appropriate – are non-abrupt, which means that an item that is (being) reanalyzed may have an ambivalent structural status. The present approach tends to the same view, albeit with respect to a different domain – analogically-induced recategorization rather than frequency-induced decategorialization and loss of constituency – and on different grounds – viz. the finding that an item's new syntactic behavior can be modeled on its behavior under a different syntactic status.

On the other hand, traditionally conceived reanalysis has been criticized as a mechanism of change on the grounds that it cannot explain how exactly language users home in on the

target of change (Fischer 2007; De Smet 2009). One solution proposed is that reanalysis often hinges on an underlying analogy, since a new structural representation can only be assigned to an existing surface sequence if that representation is already available in the grammar. Linking this view to the present approach, in cases where both actualization and reanalysis are motivated by analogy, the two can be thought of as a single process, with reanalysis as the very first step of actualization (as in Tabor 1994). This fits well with the actualization hypothesis presented here, because reanalysis is certainly the easiest and least conspicuous analogical extension conceivable, given that the resultant surface sequence already exists.

Finally, the problem of actualization raises a third issue. Since actualization is grammatically constrained, explanations of how actualization unfolds are likely to be found in the organization of grammar. Conversely, then, actualization could also shed light on grammatical organization. For instance, the observation that approximative *about*, despite reanalysis, fails for some time to fully realize its generative potential, appearing instead to be constrained by more or less superficial generalizations based on similarity to established usage, is potentially revealing of how linguistic expressions are processed in on-line performance and – assuming that usage reflects grammar – of how they are grammatically represented.

In this respect, the present account builds on and provides support to the conception of grammar developed in the usage-based tradition (Hopper 1987; Langacker 1987; Croft 2001; Bybee & McClelland 2005; Goldberg 2006). The view of actualization as an analogically-driven process matches excellently with the usage-based idea of similarity-based organization of linguistic constructions (Langacker 2000; Ikonen 2005; Bybee 2010: 73). In fact, actualization presents an opportunity to see how an item's representation is reorganized along emergent and potentially conflicting generalizations of various degrees of abstractness. In this process, surface similarities can sometimes overrule more abstract layers of structural organization in determining a new pattern's range of use (as suggested above for approximative

about), indicating that usage is not exclusively guided by ‘deep’ analysis but is sensitive, among other things, to considerations of superficial formal acceptability (Berg 1998; Bybee & McClelland 2005). As such, actualization processes demonstrate that abstract syntactic generalizations alone, such as a reanalyzed item's new word class, do not suffice to predict an item's distribution – sometimes not even in the long run.

In this respect, the (gradually lifted) constraints on items under actualization confirm the view that language-users must have knowledge about the use of an expression that is not directly predictable from maximally abstract syntactic representations (Pawley & Syder 1983), and further shows that such knowledge may be of a probabilistic nature (Bresnan & Ford 2010). Indeed, the whole phenomenon of actualization revolves around the tension between what is possible on the basis of abstract syntactic generalizations and what is probable in actual usage. The present approach aims to account for how this tension plays out over time, showing that the specific synchronic constraints involved make diachronic sense.

The problem of actualization and its wider relevance having been outlined, the remainder of this paper homes in on the problem of actualization. In what follows, Section 2 addresses earlier interpretations of actualization and positions the present approach with respect to them. Section 3, after addressing the practical problems of delineating actualization processes and operationalizing the notion of similarity, presents four case studies on actualization, describing on the basis of historical data the pathways of actualization for different reanalyzed items. Finally, the findings are summarized in Section 4.

2 Theories of actualization

The present section considers earlier explanations of the course of actualization and puts forward an alternative approach to the problem. Earlier discussions of actualization largely resort

to applications of markedness but fail to clearly define the notion or its impact on change (Section 2.1). The alternative approach proposed here is inspired by the recurrent observation that language change is 'sneaky'. By grounding this idea more firmly in a broad understanding of salience and analogy, earlier approaches to actualization can be reinterpreted in a theoretically more explicit and empirically more falsifiable way (Section 2.2).

2.1 Markedness

Timberlake (1977) has been the first to fully recognize the course of actualization as a theoretical problem. The solution he has proposed, which has influenced further thinking on the issue, builds on the notion of markedness. He (1977: 141) writes:

the actualization of change is systematic, in that it is governed by a number of linguistic parameters, which can be formalized as hierarchies. These hierarchies may be different for different changes and may be quite heterogeneous even for a single change, but I will suggest that they all obey one general principle: *a change will be actualized earlier in contexts which are unmarked (or more natural) with respect to the change and later in contexts which are marked (or less natural) with respect to the change.* [italics added]

A recent application of this view is found in Fanego (2004), who discusses the rise of gerund clauses in Early Modern English, after they had been reanalyzed from Middle English nominal constructions. The nominal source construction is illustrated in (3); the clausal target of reanalysis in (4). Fanego shows that gerund clauses long resisted use in environments that explicitly mark their noun phrase status with a determiner. In contrast, where the determiner is

missing gerund clauses appeared early on and grew frequent quickly. Gerund clauses as in (4a), without determiner, therefore appeared earlier than gerund clauses as in (4b-c), with explicit possessive determiner or definite article (indeed, in the latter environment, gerund clauses have subsequently again lost ground).

- (3) Most diseases are healed either by *letting* of blood, by *taking vp* [= 'constriction'] of vaines, by purgation, or else by cauterisation [= 'searing']. (1565, OED)
- (4) a. I haue lost my edifice, by *mistaking* the place, where I erected it. (1598, OED)
- b. As my purpose was also to say something to you concerning my *taking* the Seals from the Chancellor. (1667, OED)
- c. I went to this Newcastle in Staffordshire to see the *makeing* the fine tea-potts cups and saucers of the fine red earth. (c1702, OED)

Fanego (2004a: 38) concludes that “the more noun-phrase-like a sequence was, the slower was it to acquire verbal traits”, and speaks in this respect of a ‘hierarchy of relative nominality’. In other words, a change that implements a verbal structure is most strongly resisted in those environments that show clear non-verbal (i.e. nominal) traits and which are therefore marked with respect to the change.

Notice that for both Timberlake (1977) and Fanego (2004) markedness is defined by the change at hand, so that what is marked with respect to one change may be unmarked with respect to another. With this qualification, Timberlake (1977) ensures applicability of his view to a wide range of actual changes. However, without a clear understanding of what makes an environment 'marked with respect to a change', his view also holds an obvious risk of inviting circular reasoning, attributing unmarked status to whatever environment is affected by change first. Taking approximative *about* once more as an example, how could it be pre-

dicted that use following a preposition is more marked with respect to a change from preposition to adnumeral than use in an argument noun phrase? Clearly, some independent criterion is needed to decide such issues.

Andersen (2001) addresses this problem by treating actualization as running from unmarked to marked environments, with the notion of markedness conforming to Greenberg's (1966) independent definition of the term. It is clear that grammatical changes can reflect markedness relations (e.g. Anderwald 2003), but whether these include the broad variety of actualization processes following reanalysis is doubtful. For example, as shown below (see Section 3.2.1), actualization may affect environments in opposite order in different changes (see also Herrmann 2005 on relative markers).²

A different reinterpretation of Timberlake's (1977) account is given by Harris & Campbell (1995). They take over Timberlake's (1977) explanation of actualization order in terms of markedness but to the markedness principle they add a naturalness principle specifying that changes must create natural classes. This means that the environments over which a new pattern extends must naturally belong together. Speaking of 'rule-extension' rather than actualization, Harris & Campbell (1995: 102) state:

The kind of extension which seems not to exist, but which is logically possible, would generalize to categories that fail to form a natural class with the categories in which the rule applied before extension.

However, Harris & Campbell's (1995) reformulation faces a number of new problems. First, they modify Timberlake's (1977) position in at least one respect but do not address the consequences. Note first that naturalness per se says nothing about the direction of actualization. For example, the range of application of approximative *about* may become more natural

by incorporating both argument noun phrases and prepositional phrases, but which of the two environments *about* will extend to first cannot be foreseen. Implicitly, Harris & Campbell recognize this problem and solve it by invoking an item's use prior to extension ("the categories in which the rule applied before extension"). This implies that one step in the actualization process must build on each previous step, so that the ultimate point of departure for actualization must be the locus of reanalysis. The locus of reanalysis, then, will codetermine the trajectory of change. While a valuable idea (see below), this conflicts with the markedness principle proposed by Timberlake (1977), but Harris & Campbell (1995) do not address this further issue.

Second, the fundamental question of what constitutes a natural class is not answered by Harris & Campbell, whose claim thus suffers from the same interpretative leeway as that in Timberlake (1977). A non-circular definition of what environments naturally belong together is missing. Confusingly, at one point, Harris & Campbell (1995) suggest that the natural classes involved are only the final result of actualization. Writing on the exceptions left by morphological leveling in irregular paradigms, they state that in such cases, "extension has not yet established a natural class as the domain in which the rules apply" but "after the extension the natural class is more complete than it was before" (1995: 106). In the end, this is contradictory, because naturalness cannot account for the ordering of intermediate steps if the only outcome that is natural is the final result of the overall actualization process.

In summary, accounts of actualization order in terms of markedness suffer from definitional vagueness and inaccuracies. Timberlake's (1977) and Harris & Campbell's (1995) notions of markedness and naturalness remain too ad hoc. Andersen (2001) provides independent grounding to his use of the term markedness, but in doing so runs into empirical problems. Harris & Campbell (1995) at least implicitly treat the locus of reanalysis as a determinant of the course of reanalysis, contrary to Timberlake (1977) and Andersen (2001). While this is in

itself a significant refinement (see below), they do not address the implications with respect to the markedness principle, which they also endorse.

2.2 Sneakiness, salience and analogy

Although not fully satisfactory, accounts of actualization in terms of markedness are reminiscent of the recurrent idea that language change has a sneaky quality, as voiced by various authors writing on various types of morphosyntactic change, inside and outside the domain of reanalysis and actualization. While the sneakiness metaphor is not intended to construe changes as goal-oriented, what it captures is the observation that language change often advances most easily where it is least obtrusive, apparently thriving on structural ambiguities and (possibly superficial) resemblances to existing patterns. This view on language change is implied, for instance, in Bybee & Slobin (1982), Aitchison (1991), Plank (2004: 175), Denison (2010), Rosenbach (2010), De Smet (forthc.), or Van de Velde & Van der Horst (forthc.); it is expressed very explicitly with respect to the following two changes discussed by Naro (1981) and Warner (1982).

Naro (1981) describes the replacement of third person plural forms by the singular form in the verbal paradigms of Brazilian Portuguese. He observes that the smaller the contrast between the singular and plural form, the easier it is to substitute one for the other. For example, the singular/plural distinction *come/comem* ('s/he eats/they eat'), where singular and plural are alike anyway, shows much less resistance to the change than the distinction *falou/falaram* ('s/he spoke/they spoke'), where singular and plural are highly distinctive (1981: 76). Naro (1981: 97) concludes:

The change thus sets in at the zero point of surface differentiation between the old and the new systems, and spreads to other points along the path of least surface differentiation.

Warner (1982: 157) describes the extension of English exceptional-case-marking constructions (e.g. *she needs the room to be empty*) to "verbs of knowing, thinking and declaring" (e.g. *we know him to be a thief*). He concludes that the change is inspired by the Latin accusative with infinitive, which has been gradually copied into English in the least obtrusive manner possible. For instance, Warner (1982: 143-4) finds that the exceptional-case-marking construction tended to be more acceptable in Middle English, when, as a result of relativization, the conspicuously new surface sequence of *V NP to VP* did not appear openly, as illustrated in (5):

- (5) *this place which 3e seien to be forsakun, ...* (quoted from Warner 1982: 143)
 'this place which you say to be forsaken'

Having observed a number of such avoidance strategies, he (1982: 157) concludes:

It seems that the Latin accusative and infinitive with such verbs provides English with a 'target' which is normally unacceptable and must therefore be approached obliquely by a series of changes which are 'minimal' or those 'least noticeable'.

Interestingly, Naro (1981) and Warner (1982) both choose to relate their explanations of specific language changes to the general notion of 'salience'. Salient features are those features that draw attention, either because they contrast with their immediate environment, or because

they violate an observer's expectations. Accordingly, innovations with low salience have precedence over highly salient innovations. But what is it that determines salience in grammar? The lowly salient innovations identified by Naro (1981) and Warner (1982) are unobtrusive because of a rough resemblance to established usage, involving, in the case of Naro (1981), an approximate similarity between two forms in a paradigm or, in the case of Warner (1982), a superficial similarity to acceptable clause structures (i.e. independent of proper syntactic parsing). This suggests that low salience correlates with similarity to existing patterns of use.³ Extending this interpretation to the more general process of actualization, it is a small step to seeing actualization as an analogically-driven process (as do Hopper & Traugott 2003), which can be predicted to follow a pathway determined by similarity relations between environments (as demonstrated for collocational preferences by Bybee & Eddington 2006; Torres Cacoullos & Walker 2009; De Smet *forthc.*).

One advantage to understanding actualization in terms of analogy is that it allows a non-teleological, speaker-based interpretation of the apparent sneakiness of change. A change appearing to worm its way into the grammar of a language is epiphenomenal to speakers exploiting the linguistic resources at their disposal within the limits of the conceivable and acceptable as determined by their previous linguistic experience.

Finally, from the interpretation of actualization as analogically-driven a number of predictions follow. First, in actualization a reanalyzed item will extend from one environment to another on the basis of similarity relations between environments. Second, as implied by Harris & Campbell (1995), the locus of reanalysis is likely to be an important determinant of the actualization trajectory. Initially, a reanalyzed item is restricted to use in this environment, so at the onset of actualization, there is only this one use for an innovation to resemble – except when syntactically more superficial similarity relations are resorted to, such as similarities to uses that originate under the item's original syntactic status. Third, it follows that the trajec-

ry of actualization will be both item-specific and language-specific. Within one language, the similarity relations that hold for one item might not hold for another even if they undergo roughly the same change, for example because the loci of reanalysis differ or because the source items offer different uses on which an extension can be modeled. Across languages, some environments are simply more similar to each other in one language than in another. Therefore, actualization will be even more change-specific than on Timberlake's (1977) account and much more so than on Andersen's (2001). Fourth, actualization might proceed more or less easily, depending on the availability of suitable analogical models that can promote new steps in the process – in the extreme case, actualization may fail to run its full potential course.

3 Case studies

In this section, a number of actualization processes are examined in detail, testing and refining the view on actualization proposed above. At least on the traditional view of reanalysis and actualization, each of the developments examined can be characterized in terms of a single reanalysis and subsequent actualization process. A first set of case studies addresses the reanalysis from multi-word sequence to functional item in *all but* and *far from* – with a brief comparison to Dutch *verre van* 'far from' (Section 3.1). A second set of case studies addresses reanalysis from one lexical category to another as found in *fun* and *key*, which have been reanalyzed from nouns to adjectives (Section 3.2).

Before turning to the analysis of the data, there are some practical points that need to be addressed. First, there is the problem of delineating actualization. There is no straightforward way of deciding what constitutes a completed actualization process, or whether a given development is part of this process. However, the set of changes selected for closer examination is

tailored to this problem, in that they all involve an expression or lexical item being enrolled in an existing syntactic category – downtoners for *all but*, *far from* and *verre van*; adjectives for *fun* and *key*. The methodological advantage of this is that the behavior of the target category is reasonably predictable. Within English grammar, we know what kind of behavior a new downtoner or adjective is likely to pick up. It is by comparing an item under actualization to other items of the same class that we can speak of a potential target for actualization, and that variations in the course of actualization become meaningful.

The delineation problem also manifests itself in another respect. It is convenient to think of the changes that make up actualization as steps in a process, and of the course of actualization as a specific sequence of steps, but in one respect the metaphor is somewhat misleading. As the case studies below show, sometimes most of an item's new uses following reanalysis appear more or less simultaneously or, in any case, in too quick a succession to make confident claims about the order of first appearances (which, in such cases, corroborates the idea that actualization captures a set of changes that, at a more abstract level, belong together). Even if the order of first appearances is unclear, however, different uses gain acceptability at a different pace or at different times, as reflected in their usage frequencies. Therefore, steps in the actualization process are not necessarily to be seen as the abrupt introduction of surface innovations, one after the other, but can also manifest themselves as gradual and potentially overlapping probabilistic shifts in the acceptability of an item's various new uses.

Second, there is the issue of how to operationalize similarity. Usage-based models put few restrictions on what kind of similarity-based generalizations can become grammatically represented. Generalizations can range from abstract schemas to fully substantial word combinations (Langacker 1987; Croft 2001; Goldberg 2006; Traugott 2008; Bybee 2010). Moreover, the relevant similarities can be situated at different levels of symbolic representation – formal, semantic, distributional – and the generalizations based on them may overlap or inter-

connect at different points (Seidenberg & Gonnerman 2000; see further Berg 1998; Lamb 1999; Bybee & McClelland 2005).

From a methodological point of view, such potential complexity presents the challenge of justifying each generalization invoked to explain the course of change. The case studies presented below focus on the interplay between abstract syntactic generalizations – e.g. adjective or verb – and very low-level generalizations based either on superficial or on collocational similarities. The abstract syntactic generalizations are more or less uncontested (even if their ontological status remains an open issue).⁴ The low-level generalizations involve, respectively, purely formal resemblances that are not supported by underlying syntactic structure, and distributional overlap in the sets of lexical items that different patterns or environments associate with. As such, these types of similarity are at least straightforwardly recognizable. Formal similarities exist when surface sequences have phonologically identical parts; collocational similarities can be assessed quantitatively. To test the role of similarity-based generalizations in actualization, use is made of a comparative setting that contrasts environments or items expected to react differently to ongoing actualization processes.

Third, it is necessary to briefly consider the data used for the case studies, which come from diverse sources.⁵ For the most part, use has been made of the *Corpus of Historical American English* (COHA), which is presently the largest historical corpus available. With its 400 million words of text, spread more or less evenly over the last twenty decades of American English, COHA is excellently suited for the close study of the kind of minor changes that are of interest here. In fact, the advent of COHA has made it possible to see change unfolding over long time spans with a fineness of detail hitherto unknown. For the following case studies, data has been extracted exhaustively from COHA, using the items under investigation as only search term (e.g. "all but", "fun"), unless stated otherwise. Further, data analysis has been fully manual (i.e. tagging in the corpus has not been relied on), unless stated otherwise. Note,

however, that in light of the size of the corpus and the large numbers of hits, results have been annotated only in as far as this served to establish the sequence of events in actualization. The data from COHA is largely presented in the form of charts, as these are much easier to interpret. The figures on which these charts (and the significance tests in the footnotes) are based are all given in the appendix.

Additional sources have been used to supplement the data from COHA. Among these, the *Corpus of Late Modern English Texts* (CLMETEV) covers British English in three 70-year subperiods from 1710 to 1920, with about 15 million words of text. The very large *Corpus of Contemporary American English* (COCA) covers the last twenty years of American English, with 360 million words of text, containing a 60-million-word spoken component made up of television scripts. COHA and COCA use the same online user interface, which is generally handy but sometimes constraining. Where the constraints were problematic, the *New York Times Annotated Corpus* (NYTAC) has been used as an alternative large corpus of American English, containing over one billion words and consisting of the daily issues of the *New York Times* between 1987 and 2007. Other corpora relied on are mentioned where relevant. A list of all data sources used, with their abbreviations, is given at the end of this text.

3.1 All but *and far from*

All but and *far from* have both been reanalyzed as 'downtoners', joining a class of adverbial elements (e.g. *quite, rather, barely, just*, etc.) that serve to lower the force of the lexical element in their scope (Quirk et al. 1985: 601). On their original analysis, both function as complex prepositions, albeit of slightly different make-up. Their actualization histories show broad similarities but also a number of differences. The following discussion first describes the actualization pathways of downtoners *all but* and *far from* (Section 3.1.1) and then inter-

prets the findings in terms of the actualization hypothesis proposed above, also briefly contrasting the development of *far from* with that of Dutch *verre van* (Section 3.1.2).

3.1.1 Description of actualization pathways

All but originally consisted of the quantifying pronoun *all* and prepositional *but*, together paraphrasable as 'everything except', and was followed by a noun phrase, as in (6a). In this use, *all but* could semantically be reinterpreted as meaning 'almost', as in (6b). The semantic reinterpretation is due, presumably, to a pragmatic implicature that if something is 'everything but not X', it is 'nearly X'. Along with semantic reinterpretation came syntactic reanalysis. *All but* became a downtoner, setting off an actualization process whereby *all but* came to accompany adjectives and verbs, as in (6c-d). This process runs from the beginning of the nineteenth century (just after semantic reinterpretation) to the early twentieth century, after which downtoner *all but* begins to drop out of use again.

- (6) a. Go, my boy, and immitate [sic] him in *all but* his misfortunes (1766, CLMETEV)
- b. Pshaw, pshaw! this is *all but* the whining end of a modern novel. (1773, CLMETEV)
- c. we mean the gradual, and now *all but* complete, withdrawal from the State legislatures of our ablest and best men (1864, COHA)
- d. On the way out, he *all but* knocked over a young woman waiting at the door. (1947, COHA)

Far from starts out as a combination of an adjective and a preposition. The pattern can serve to describe literal spatial relations, denoting physical distance, as in (7a), but early on it

is used also with gerund clauses, as in (7b), where it must be taken to denote metaphorical distance. Since gerunds are nominalizations and could freely occur following prepositions, this use does not yet signal reanalysis, but it probably lies at the basis of the subsequent downtoner use of *far from*, meaning 'not at all', which is attested later on with adjectives and with verb forms other than gerunds, as illustrated in (7c-d). The actualization process again takes place mostly in the nineteenth century.

- (7) a. The kyng..withdrew his hoost bak *far from* the flode side of purpose that his ennemyes shuld suppose he did it of cowardlynes. (c1487, OED)
- 'The king drew his army back far from the river side, on purpose that his enemies would suppose he acted out of cowardice.'
- b. David was so *far from* rejoicing at these news, that..forthwith he rent his clothes. (1547, OED)
- c. our merchant service [...] contained a *far from* insignificant proportion of foreigners (1899-1902, CLMETEV)
- d. he had *far from* made up his mind what to say in this. (1884, COHA)

For *all but*, all combinations are at least marginally attested from fairly early on (in the 1830s at the latest) but they gain acceptability successively. As a downtoner, *all but* initially occurred almost exclusively with predicative adjectives, later it became increasingly acceptable with attributive adjectives as well, then with passive verb forms and active perfect verb forms, then active past verb forms and finally active present verb forms.⁶ The process can be summarized as follows, with the relevant combinations illustrated in (8):

Pred. A > Attr. A > Pass. V / Act. perf. V > Act. past V > Act. pres. V

(8a) (8b) (8c) (8d) (8e) (8f)

- (8) a. amidst perils from which escape was *all but* miraculous (1838, COHA)
- b. The Earl of Bedford shrunk with a feeling of *all but* insurmountable aversion to such an alliance (1865, COHA)
- c. The first formidable backyard gate was *all but* battered down. (1945, COHA)
- d. my foot was already between them -- my blade had *all but* crossed their rapiers (1835, COHA)
- e. He *all but* fell down and knocked his head on the table out of sheer helpless astonishment. (1948, COHA)
- f. We *all but* apprehend, we dimly forebode the truth. (1841, COHA)

A detailed picture of actualization is given in Figures 1 and 2, which show the frequencies in COHA of the different combination types *all but* could enter into. Figure 1 shows the development of *all but* in adjectival contexts from 1810 to 1869, showing clearly the quick rise in frequency for *all but* with predicative adjectives, followed about two decades later by a similar rise in frequency for *all but* with attributive adjectives.⁷

[PLEASE INSERT FIGURE 1 ABOUT HERE]

Figure 2 shows the use of *all but* with verbs from 1820 to 1949. Data points for 1810-1819 are omitted because no instances are attested in COHA. In Figure 2 periods have been collapsed per two to even out the plot lines. Most clearly, *all but* remains marginal with active present tense verbs until the end of the 1930s, after which it suddenly gains in acceptability.⁸ The frequencies for the other three combination types rise earlier and more in tandem, from

the last decades of the nineteenth century onwards. Their rise is not exactly simultaneous, however, as is indicated by the fact that the frequency for *all but* with active past verbs is still on the rise in the 1940s when the curves for *all but* with passive verbs and active perfective verbs have already leveled out.

[PLEASE INSERT FIGURE 2 ABOUT HERE]

That the downtoner use of *all but* gets established more readily with passive and perfective verbs than with past verbs is confirmed by the frequencies of those combination types relative to the overall frequencies of the different verb forms. Taken by themselves, passive and active perfect verb forms are comparatively less common than past verb forms. In COHA, the proportion is roughly 1:1:3.⁹ So while *all but* after 1899 is most frequent with past verb forms in absolute terms, in relative terms the combination with past verbs is only beginning to catch up with the use with passive and perfect verb forms.

Turning to *far from*, a similar actualization pathway is found, except that actualization advances much more hesitantly. Figure 3, based on data from COHA, shows that *far from* put up little resistance to combining with predicative adjectives. The combination was already fairly frequent at the beginning of the nineteenth century, and steadily increased in frequency until its use stabilized around 1880.

[PLEASE INSERT FIGURE 3 ABOUT HERE]

In contrast, Figure 4 shows that with attributive adjectives *far from* only comes into use after 1850, and by the beginning of the twentieth century is still much less frequent than with predicative adjectives (the proportion for the period 1890-1909 being roughly 16:1). Figure 4

also charts the use of *far from* modifying postnominal adjectives, as in (9). The rise and fall of this pattern in nineteenth-century English indicates that it may have been employed to compensate for the low acceptability of *far from* with attributive adjectives. The use with postnominal adjectives makes for an interesting contrast with *all but*, for which no more than three such instances are attested in the period investigated (i.e. 1810-1869), against 23 instances for *far from* over the same period.¹⁰

- (9) Mr. Stewart returned home under the influence of feelings *far from* agreeable
(1836, COHA)

[PLEASE INSERT FIGURE 4 ABOUT HERE]

The use of *far from* with verbs other than gerunds, finally, is extremely infrequent. There are quite a few examples with predicative past participles, but only a handful could pass for genuine passives, as illustrated in (10). Of these, nearly all still allow an adjectival reading, the most probable exception being (10b).

- (10) a. and though Pope's army was defeated, it was *far from* destroyed (1894, COHA)
b. Great Britain, the most conspicuous of the lending nations, shows annually an excess of imports of merchandise over exports, approaching a thousand millions of dollars, and this balance is *far from* rectified by the movement of the precious metals. (1900, COHA)

Use of *far from* with the remainder of verb forms is almost non-existent. For the whole nineteenth century, two examples are attested with a perfect tense and one with a present tense.

The twentieth century appears to bring no change to this situation. The actualization pathway for *far from* can thus be summarized as follows:

Pred. A > Postn. A > Attr. A > V (?)

3.1.2 Interpretation

How can the actualization pathways found for *all but* and *far from* be accounted for? Starting with *all but*, which presents the most complete picture, the course of actualization can be seen to unfold along a series of similarity relations holding between environments.

The downtoner use of *all but* must have arisen with predicative noun phrases, as is supported by a number of early examples of downtoner *all but* in this position, as in (11).¹¹ Of all other environments that can accommodate a downtoner, the one most similar to the locus of reanalysis is predicative adjectives, as the syntactic role of the constituent being modified remains constant (subject complement) and the surface sequence *BE all but* is left unaltered.

(11) They're *all but* a parcel of Pigeons. (1773, CLMETEV)

Once acceptable with predicative adjectives, it is another minimal step to spread to new adjectival contexts, since *all but* now remains within the constructional template of the adjective phrase. At the same time, the use of *all but* with predicative adjectives also facilitates extension to passive verbs, since these, being formed with auxiliary *be* and a past participle of the verb, formally resemble predicative adjective constructions – and are in fact sometimes hard to distinguish from them, as in (12).

- (12) I really have been *all but* disconcerted at the perfect assurance with which I have been addressed (1835, COHA)

Finally, *all but* could spread to other verb forms with greater or lesser ease, depending on their degree of similarity to passive forms. Perfect verb forms most closely resemble passive verb forms in being formed with an auxiliary and a past participle. Past verb forms are non-composite forms but are inflectionally often identical to the past participle. Present tense forms, finally, are the forms most dissimilar from passives, as they are non-composite and nearly always inflectionally distinct from the past participle.

That formal similarity facilitated the extension of *all but* from past participles to past tense forms is supported by the additional finding that *all but* favors past tense verbs whose form is identical to that of the past participle. This is shown in Table 1, which divides the instances of *all but* into two sets, one where *all but* combines with past tense forms identical to the past participle form of the same verb (including all regular *-ed* forms, such as *refused*, *finished* or *disappeared*, but also irregular forms such as *burst*, *thought* or *made*), and one where *all but* combines with past tense forms that differ from the past participle form (such as *saw*, *gave* or *broke*, whose respective past participles are *seen*, *given* and *broken*). When compared to a control sample of past tense forms without *all but*,¹² it is seen that in the first sixty years of its use with past tense forms, between 1830 and 1879, *all but* significantly favors past tense forms identical to the past participle ($p < 0.02$, using a Fischer's exact test). The tendency is confirmed by the data from 1890 to 1949 ($p < 0.02$, using a Fischer's exact test). This is precisely what is expected if the use of *all but* with the past tense was being facilitated by the use of *all but* with formally identical past participles.

[PLEASE INSERT TABLE 1 ABOUT HERE]

Summarizing, *all but* can be seen to spread from one environment to another along a network of similarity relations that hold between those environments. Figure 5 maps the relevant environments in a two-dimensional space in terms of the various similarity relations connecting them, differentiating between more abstract syntactic relations (indicated by full lines) and lower-level formal or collocational relations (indicated by dashed lines). The four syntactic generalizations involved are the copular construction (connecting predicatively used nouns and adjectives), the adjective phrase (connecting attributively and predicatively used adjectives), the verb phrase (connecting all verb forms), and finiteness (connecting active past and present verb phrases). The lower-level generalizations involved are the formal resemblance between passive verb phrases and copular clauses with *be*, the formal resemblance between past participles occurring as predicative adjectives and in composite verb forms, and the formal resemblance between past participles and (most) past tense forms.

[PLEASE INSERT FIGURE 5 ABOUT HERE]

Given the locus of reanalysis, indicated by the grey shaded area, the diagram in Figure 5 can almost exactly predict the actualization trajectory found in the data. There are two minor exceptions. First, Figure 5 cannot predict that *all but* spreads from predicative adjectives to attributive adjectives before it spreads to passive verbs, even though this is clearly what happened (cf. Figures 1 and 2 above). Prediction only fails, however, when it is assumed that all connections have equal weight – i.e. that the syntactic similarity between predicative and attributive adjective phrases has the same weight as the formal similarity between copular clauses and passive clauses. This is probably unrealistic, especially as there is independent evidence that the syntactic behavior of attributive phrases and predicative phrases tends to be

more alike than that of copular clauses and passives.¹³ Second, Figure 5 predicts that *all but* should spread more easily to passive verbs than to active perfect verbs, since passive verbs are more similar to predicative adjectives than perfect verbs. This prediction is not clearly borne out by the historical record, which shows *all but* emerging with passive and active perfect verbs at roughly the same pace. Possibly, a functional effect interferes with similarity effects here, as the semantics of *all but* might be particularly compatible with the resultative meaning of the perfect (as pointed out by an anonymous referee).

A final generalization not represented in Figure 5 is the one that unites all environments as potential sites for downtoner usage. It is worth recalling, in this respect, that the historical record shows *all but* making its first appearance in most environments at roughly the same time (the exception being its use with predicative adjectives, which is clearly ahead in the development). This is best explained by assuming that *all but*, once reanalyzed as a downtoner, becomes susceptible to the global abstract syntactic generalization that governs the behavior of downtoners. Only, that generalization is not strong enough to make *all but* fully acceptable in all syntactic environments at once. Subsequent shifts in the acceptability of different uses are dictated by more local generalizations as depicted in Figure 5. Usage, then, is found to be organized by generalizations of various degrees of abstractness that simultaneously affect the likelihood of particular expressions being formed.

The above explanation extrapolates well to the actualization pathway for *far from*, but with some interesting differences. Use with predicative adjectives is again a logical first step, as it is closest to the locus of reanalysis (a copular construction with a gerundial nominalization as subject complement; cf. (7b) above). In addition, the use of *far from* with predicative adjective was prefigured in semantically and pragmatically equivalent examples such as (13).

- (13) He was young and gay, loved magnificence and the pomp of courts, and was *far from* being insensible of those joys which the conversation of the fair sex affords
(1744, CLMETEV)

The next step in the actualization process of *far from* is the extension from use with predicative adjectives to use with postnominal and attributive adjectives. That *far from* is used with postnominal adjectives first – apparently in compensation of its absence with attributive adjectives – reflects a similarity relation to the original use of *far from*. On its original analysis *far from X* could follow a noun (in which case it functioned as the head of a postmodifying phrase, rather than a modifier), but could never precede one nor could it follow a determiner. This explanation nicely fits the fact that postnominal positions were never exploited in the case of *all but*, which appeared immediately with regular prenominal attributive adjectives. The *all* of *all but*, being a quantifying pronoun in origin and therefore a nominal head, is simply not expected following a noun and would have been no less conspicuous with postnominal adjectives than with attributive adjectives. So what is a problem avoiding strategy for *far from* makes no difference for *all but*.

There is some further evidence that *far from* with attributive adjectives was indeed avoided because of the conspicuous novelty of *far from* immediately following a determiner. When finally used to modify prenominal attributive adjectives, *far from* occurs remarkably often with the second or later adjective in a sequence of conjoined attributive adjectives, as in (14).

- (14) a. The bland, courteous, hut [sic] formal and *far from* forcible face of Lafayette, is strained toward the retreating columns (1854, COHA)
- b. He walked amid the flames with a fearless, yet *far from* defiant air (1855, COHA)

Of the 29 attested examples of *far from* with attributive adjective for the period examined in COHA, 11 are of the type illustrated in (14), which thereby occurs in a proportion of about 1:2. Attributive adjectives do not normally occur so often in conjoined sequences. A rough estimate of the occurrence of attributive adjective sequences in COHA suggests that the expected proportion is about 1:4. More precisely, 100 noun phrases with adjectival premodification were collected from COHA, of which only 18 were found to have more than one premodifying adjective.¹⁴ The comparison with noun phrases containing an attributive adjective modified by *far from* thus yields a significant difference ($p = 0.024$, using a chi-square test). It is further worth noting that, next to the 11 attributive adjective sequences in which *far from* modifies the second or later adjective, the analyzed data from COHA contain just one example in which *far from* modifies the first of a sequence of adjectives, given here as (15).

- (15) his *far from* prominent and somewhat upturned nose was rendered almost insignificant by the prominence of the features above and below it. (1898, COHA)

Again, then, downtoner *far from* is seen to favor positions that conceal its syntactically innovative character, in this case by avoiding immediate consecution of a determiner and *far from* – a sequence that would not be licensed on the old analysis of *far from*.

In conclusion, the actualization pathway found for downtoner *far from* again confirms the actualization hypothesis formulated in Section 2. Figure 6 maps out the relevant similarity relations, with the locus of reanalysis indicated by the grey shaded area.

[PLEASE INSERT FIGURE 6 ABOUT HERE]

Actualization follows the path of maximal familiarity by exploiting similarities of innovative uses to existing patterns in the grammar. In this, actualization is once more found to thrive on superficial analyses of linguistic structure. For example, just as *all but* exploits the purely formal similarity between simple pasts and past participles, *far from* exploits the availability of surface sequences that are acceptable on the old analysis of *far from* (e.g. *far from X* postmodifying a noun). In all, the actualization hypothesis is confirmed in that it gives a consistent and plausible explanation of attested actualization order.

Though not immediately bearing on the question of actualization order, a puzzling problem that remains is the question why *far from* is much less successful as a downtoner than *all but*. The lack of success certainly shows that actualization is not a simple bearing out of the implications of highly abstract syntactic generalizations. At the same time, explanations of what causes the lag in *far from* compared to *all but* are tentative. On the one hand, the extension of *all but* to use with verbs might have been facilitated by interference with its original syntax, which could still lend marginal support to the use of *all but* with composite verb forms (e.g. ignoring semantics, (8d) above could be read as *my blade had all but [it had not] crossed their rapiers*, with *all* as pronominal object of *had* and *but* as coordinating conjunction). For *far from*, by contrast, a similar interference effect is not supported by the pattern's original syntax, so that a potential facilitating factor for the extension to use with verbs is missing.

On the other hand, it is interesting to observe that *far from* is rather commonly found in hybrid uses, showing both features of its old and new analysis (which, incidentally, strongly supports the view that reanalysis is non-abrupt). For example, in *You were not very far from right* (1836, COHA), *far from* modifies a predicative adjective, like a downtoner, while at the same time *far* is treated as an adjective in being intensified by *very*. This shows that the old

analysis of *far from* still exerts a comparatively strong pull on the downtoner uses, which may have hindered actualization.

The ensuing question, of course, is why the original use of *far from* appears to have such a strong grip on the reanalyzed uses. One can only speculate here, but a possible answer is that downtoner *far from* is semantically less distinct from its source use than downtoner *all but*, as the semantic change found in downtoner *far from* is no more than a metaphorical extension from its original spatial meaning and is already well attested on the original syntactic analysis of *far from*. As a result, source use and reanalyzed use are more similar in the case of *far from* than in the case of *all but*. In addition, the original prepositional status of *but* in *all but* may have been somewhat more obscure anyway, making *all but* more prone to decategorialization (as suggested by one referee).

As a postscript to the above analysis, it is worth turning briefly to a cognate of *far from*, the Dutch downtoner *verre van*. Like English *far from*, Dutch *verre van* came to be used with non-finite clauses to express metaphorical distance, as in (16a-b). From there, it developed into a downtoner that could occur with adjectives and finite verbs, as in (16c-d).

(16) a. Het zy *verre van* my dat ick soude roemen anders dan in het kruyce onses Heeren
(1688, WNT)

'It be far from me that I should praise in any other way than by the cross of our
Lord'

b. 't Geen zy voorsloeghen [...] bleek *verre van* hem te bedrukken, ende strekte veel
eer t'zyner verlichting (1642, WNT)

'What they proposed appeared (to be) far from oppressing him and was in fact to
his relief'

- c. Inderdaad, een Amerikaanse parvenu te zijn, met domicilie te Pasadena, lijkt mij *verre van* verwerpelijk (1909, KBHK)
- 'Indeed, being an American upstart, with residence in Pasadena, seems to me far from objectionable.'
- d. Hoewel Zjirinovsky zelf de aanwezigheid van maffiabazen *verre van* schuwt, kon hij de indruk wekken dat [...] (1995, INL-38)
- 'Although Zjirinovsky in fact far from avoids the company of mafia chiefs, he managed to give the impression that ...'.

The trajectory of change resembles that found for *far from*. This is apparent from a comparison between a set of early-twentieth-century examples collected from the online newspaper archive of the *Koninklijke Bibliotheek* (KBHK), representing the period 1900-1939, with a set of late-twentieth-century examples that have been extracted from the 38-million-word newspaper corpus of the *Instituut voor Nederlandse Lexicologie* (INL-38), representing the period 1970-1995. Because the size of the KBHK is unknown, no relative frequencies can be calculated, but Figure 7 shows the proportional distribution of different downtoner uses, along with the absolute number of examples.

[PLEASE INSERT FIGURE 7 ABOUT HERE]

Figure 7 demonstrates that *verre van* was commonly used with predicative adjectives before it started gaining in frequency with attributive adjectives, while continuing to be only marginally used with verbs. In so far as *verre van* matches the development of *far from* (and *all but*), the same explanation for the order of events can be offered.

Interestingly, however, the rise of *verre van* with attributive adjectives is paralleled by an increase in the use of *verre van* with adverbs, as in (17), also shown in Figure 5 above.

- (17) De voorbereiding van de heren verliep *verre van* optimaal. (1994, INL-38)
'The preparation of the men's team proceeded far from optimally'.

No such parallel development is found for English *far from* (or *all but*, for that matter), whose use with adverbs remains only sporadic even after the nineteenth century. An easy explanation suggests itself in terms of surface similarities. While Dutch, like English, has a syntactic distinction between adverbial and adjectival positions, Dutch, unlike English, does not formally mark this distinction on the lexical items filling those positions. While English adverbs differ from their adjectival counterparts in being marked with the suffix *-ly*, Dutch adjectives and adverbs are formally identical. As a result, the extension of *verre van* or *far from* to adverbial contexts has stronger analogical support in Dutch than in English. The grammars of related languages consist of just slightly different networks of potential generalizations, leading to slight differences in the likelihoods of specific targets being selected for analogical extension and resulting in small differences in actualization pathways.

3.2 *Fun and key*

The analysis of *all but*, *far from* and *verre van* in Section 3.1 revealed actualization pathways that are roughly parallel except in the details. Pathways can also diverge, however, as is the case for *fun* and *key*. As observed before (Algeo 1962; Denison 2001), both *fun* and *key* have recently developed adjectival uses next to their nominal use, as a result of reanalysis. The following discussion focuses on two points of interest. First, the reanalyses occurred in different

environments, resulting in orthogonally opposed actualization pathways (Section 3.2.1). Second, the actualization pathways of *fun* and *key* reveal small-scale analogy effects reminiscent of those found for *all but* and *far from*, manifesting themselves at the level of collocational behavior (Section 3.2.2).

3.2.1 The direction of actualization

Fun is originally a mass noun and does not require a determiner. As a result, its use in predicative positions, as in (18a), licenses an adjectival reading and could thus trigger reanalysis. Following reanalysis, *fun* has acquired a number of unambiguously adjectival uses, combining with adjectival modifiers like *very* or *rather*, as in (18b), or being used as an attributive adjective, as in (18c). Most strikingly, *fun* even appears with inflectional degrees of comparison, as illustrated in (18d-e).

- (18) a. "That's not work, that's *fun*," declared Dolly. (1914, COHA)
b. It was *rather* fun playing at being a bachelor again. (1935, COHA)
c. and then slowly he began to realize the *fun* meaning of the thing. (1944, COHA)
d. Besides skiing, it's the *funnest* thing I do (1983, COHA)
e. Learning geography this way "is much *funner*" than having the teacher read it out of a book (1995, COHA)

Figure 8 shows the development of the unambiguously adjectival uses of *fun* in COHA for the period 1910-2009, distinguishing between clear predicative adjective uses (including examples as in (18b-c)) and clear attributive adjective uses (as in (18d)).¹⁵ For each decade, a 500-hit sample has been examined, from which the relative frequency for the different uses has

been estimated. Where Figure 8 collapses two decades, it gives the average estimated relative frequency for those two decades.

[PLEASE INSERT FIGURE 8 ABOUT HERE]

As Figure 8 shows, both attributive and predicative *fun* received a frequency boost after the 1980s, although the abruptness of this development is more pronounced for the attributive than for the predicative uses. Judging from Figure 8, attributive *fun* lagged behind on predicative *fun* until the general frequency boost after the 1980s; after that it became the more frequent of the two. Considering, however, that only a subset of predicative uses can be positively identified as adjectival (the majority being ambiguous and therefore not counted), the head-start of predicative uses is in all likelihood greater than Figure 8 shows.¹⁶

An indication to the same effect comes from the use of the sequence *very fun*, which is unambiguously adjectival both in predicative and in attributive environments. In COCA, especially in the spoken component, *very fun* is fairly frequent, with 106 instances (unclear examples excluded). Of these, 32 are used attributively, as in (19a), against 74 that are used predicatively, as in (19b).

- (19) a. It has been hard but it's been a very *fun* ride. (2003, COCA)
b. the areas won't be *very fun* to visit (2007, COCA)

A random 200-hit sample for the search string *very [j*]* in COCA indicates that *very* is normally about equally common with predicative as with attributive adjectives. Specifically, in 86 of the instances of the 200-hit sample, *very* intensifies an attributive adjective; in 98 instances it occurs with a predicative adjective. This means that *very fun* is less common than

expected in attributive position (the difference with the figures from the 200-hit sample is significant at $p < 0.01$, using a chi-square test). It seems, then, that *very fun* is more acceptable in predicative use than in attributive use, presumably as adjectival *fun* itself is more acceptable in predicative than in attributive position. Since *fun* must have been first reanalyzed in predicative position, this is as expected.

For *key*, the evidence supports a different picture. *Key* has in all likelihood been reanalyzed as an adjective in examples such as (20a). Here, *key* can be read either as a premodifying noun or as a premodifying adjective meaning 'important, decisive'. The adjectival status of *key* manifests itself rather subtly in examples such as (20b), where *key* precedes another attributive adjective. As Denison (2001) points out, the syntax of the English noun phrase does not allow nominal premodifiers before adjectival premodifiers, which implies that *key* before *experimental* is an adjective. However, Denison adds that fixed phrases may upset the syntactic rule, so the evidence is not completely compelling (*experimental observations* in (20b) is certainly a collocation). More convincingly, *key* is unambiguously adjectival in (20c), where it is used with the adjectival modifier *very*. In (20d), *key* is used predicatively and is again unambiguously adjectival – if it were a noun, it would need a determiner in this environment.

- (20) a. The proposed wording of the possible agreement was given to Dr. Adenauer with certain *key* phrases in blank. (1952, COHA)
- b. Therefore, we shall start our description of the behavior of electric charges in motion by summarizing the *key* experimental observations. (1961, COHA)
- c. He alienated a lot of very *key* political players in this town. (1991, COCA)
- d. Her confirmation was *key* because symptoms like the kind I had can be caused by other factors, too (1991, COHA)

Given the locus of reanalysis, we would expect that unambiguously attributive uses of adjectival *key* would manifest themselves before predicative uses. As there are plenty of ambiguous examples but very few unambiguously adjectival uses in attributive environments, the hypothesis is somewhat difficult to test. Even so there are some good indications that it bears out. First, there is the evidence of *key* occurring before premodifying adjectives, as in (20b) above. On the basis of a 500-hit sample per decade over the last sixty years of the COHA corpus, Figure 9 shows the frequency of the pre-adjectival use of *key*, next to the frequency of *key* used as a predicative adjective.

[PLEASE INSERT FIGURE 9 ABOUT HERE]

As pointed out, *key* as pre-adjectival modifier may not be unambiguously adjectival, particularly if the following adjective is part of a fixed phrase. As it is, many examples of pre-adjectival *key* precede institutionalized adjective-noun combinations, such as *first step* in (21a) or *Democratic Congressman* in (21b), but *key* can also precede non-fixed combinations such as *new ministers* in (22a) or *French fortress* in (22b). Importantly, as (22) also demonstrates, the latter type of examples are attested before the rise of predicative *key*, which is shown by Figure 9 above to take place after 1980. The appearance of plausible attributive adjective uses of *key* thus precedes the appearance of predicative *key* (as also proposed by Denison 2001).

- (21) a. it [...] became a *key* first step in the Dillingham family's development of the islands. (1963, COHA)

- b. the son of a *key* Democratic Congressman graduated from college into a \$15,000 public relations job at OEP. (1968, COHA)
- (22) a. On Monday morning last week he [...] nominated two *key* new ministers (1955, COHA)
- b. the *key* French fortress at Louisburg at the mouth of the Saint Lawrence River [...] was to be returned to the enemy (1975, COHA)

Second, there is the evidence of *key* with the exclusively adjectival intensifier *very*. The whole of COHA provides only two examples of *very key* (both attributive), but the sequence is reasonably well attested in COCA, which contains 114 examples, false hits excluded. Of these, 79 have *very key* in attributive position, as in (23a), against 35 in predicative position, as in (23b).

- (23) a. We are totally independent, and that's a *very key* point. (2002, COCA)
- b. Oh, absolutely. Cars are *very key*. (2003, COCA)

Recalling that *very* is about as frequent with predicative as with attributive adjectives (see above), *very key* is less common than expected in predicative position (the difference with the figures from the 200-hit COCA sample already used before is significant at $p < 0.001$, using a chi-square test). The easiest explanation for the discrepancy between attributive and predicative *very key* is that *key* itself is more common as an attributive adjective than as a predicative adjective. Given that the reanalysis of *key* occurred in prenominal contexts and thus first gave rise to attributive uses, this is an expected outcome.

In sum, while some of the evidence is indirect, it consistently points in the expected direction, indicating that the locus of reanalysis is an important determinant of the course of

actualization. Reanalyzed from a noun to an adjective in predicative contexts, adjectival *fun* in its various manifestations gains ground most quickly in predicative uses. Conversely, having been reanalyzed in attributive environments, *key* sees its unambiguously adjectival uses appear most unrestrainedly in attributive contexts. This finding is incompatible with accounts of actualization in terms of markedness, but it is in line with the idea that actualization spreads from one environment to another on the basis of similarity relations to established uses.

3.2.2 Similarity effects on collocational preferences

Apart from determining the broad direction of actualization, similarity also has more subtle effects on the actualization of adjectival *fun* and *key*. Particularly, it is found that actualization exploits existing collocations. New steps in the actualization process are easier to take if the result resembles some established co-occurrence pattern. This is found both for *fun* and for *key*, in different syntactic configurations.

For *fun* this appears most clearly in the means that are resorted to for intensification. In predicative positions, the two most frequent intensifiers that *fun* could in principle rely on are *really* and *very*. The one predominantly chosen, however, is *really*, which makes sense since its use does not give away the exact syntactic status of *fun*. For example, if *fun* in (24a) is an adjective, *really* is part of the adjectival phrase, but if *fun* is a noun, *really* can be taken to modify the whole predicate *was fun*, in analogy to examples like (24b). *Very*, as pointed out in the previous section, is an exclusively adjectival intensifier and unambiguously signals that *fun* must be an adjective.

(24) a. This was really *fun*. I feel frisky and energized. (2006, COHA)

- b. it is really *nonsense* to say that one thing is more beautiful than another (1927, COHA)

In attributive positions the situation is, in theory, different. The adjectival status of *fun* is unambiguous with or without additional intensifier, so a choice for *really* or *fun* would make no difference in this respect. Once again, however, *really* is the intensifier predominantly chosen.

This is apparent from an analysis of data from NYTAC, which has been searched for all occurrences of *really fun* and *very fun*. In predicative positions, where *really fun* is not unambiguously adjectival, *really fun* occurs 172 times in the corpus, against 34 attestations for *very fun*. In attributive positions, *really fun* occurs 42 times, against 15 occurrences of attributive *very fun*. The preference for *really* is thereby slightly weaker in attributive than in predicative environments but still more than obvious. In comparison, consider the expected behavior of *really* and *very* with attributive adjectives. Estimating from a 200-hit random sample from all occurrences of *really* in NYTAC and another one from all occurrences of *very*, the frequency of *very* with attributive adjective in NYTAC is estimated to roughly 3.2 instances per million words, whereas the frequency of *really* with attributive adjective is estimated to only 0.3 instances per million words. In combination with attributive *fun*, then, *really* is about thirty times more frequent than expected when compared to *very*. The data thus indicate that the development of new syntactic behavior – in this case, adjectival intensification – can be facilitated by existing collocational patterns.

The extension of collocational preferences from one environment to another is repeated, though on a smaller scale, with other modifiers co-occurring with *fun*, specifically the modifiers *kind of* and *sort of*. The source of the co-occurrence pattern can again be located in predicative environments, as in (25a), in which *kind of* and *sort of* mask the exact syntactic status of *fun* by supporting both the old nominal and new adjectival reading (compare *this [...] is sort of*

guerrilla rhetoric (1993, COCA) and *I'm sort of scared* (1991, COCA)). Again, the collocational preference appears to be carried over to other environments. Though not particularly frequent as a modifier to attributive *fun* (reflecting a general feature of *kind of* and *sort of*, which are infrequent with attributive adjectives throughout), *kind of* and *sort of* turn up comparatively frequently as modifier to *fun* in other unambiguously adjectival contexts, as in (25b-c). Thus, in NYTAC, *kind of fun* is still as frequent as *very fun* in these more marginal adjectival environments. Again, it can be assumed that the use of *fun* with now unambiguously adjectival modification is facilitated here by the familiarity of the collocational pattern. A pattern that is acceptable on the nominal analysis of *fun* paves the way for an innovative pattern on the adjectival analysis of *fun*.

- (25) a. It would be sort of *fun* -- for you and me -- to go back -- to Texas together (1921, COHA)
- b. it felt kind of *fun* being out there (1998, NYTAC)
- c. Whatever your school dissected, it was always something kind of *fun* (2006, NYTAC)

The role of collocational patterns in facilitating new syntactic behavior is also seen in the development of *key*. In this case, the new syntactic behavior being acquired is use as a predicative adjective; the collocation exploited is again one that belongs to the original nominal use of *key*. Recall that predicative *key* gains drastically in acceptability after the 1980s, according to the COHA-data (see Figure 9 above). Figure 10 shows what this development looks like in COCA but also splits up the uses of *key* as predicative adjectives into two subtypes, one in which *key* is complemented by a prepositional phrase introduced by *to*, as in (26a), and the remainder of predicative uses, as in (26b-c). Counts for Figure 10 have been

conducted on four random 200-hit samples for the search string "[vb*] key" (i.e. *key* preceded by a form of the verb *be*), one for each five-year subperiod in COCA.

- (26) a. Because the band often doesn't have much time to eat, room service is *key* to their survival. (1991, COCA)
- b. Dr. Rosenthal says timing is *key*. (1993, COCA)
- c. But if something should happen to me, it's *key* that you be out of it (1998, COCA)

[PLEASE INSERT FIGURE 10 ABOUT HERE]

As Figure 10 shows, the emergence of predicative *key* went comparatively more quickly in the collocation *BE key to* than for the other uses of predicative *key*, the former gaining its ground more quickly in comparison to the latter and dominating the early use of predicative *key* more strongly than the later use.¹⁷

Two factors could have given *BE key to* its initial advantage. First, in some few early examples, *key to* is fronted to clause-initial position, as illustrated in (27a). Here, it could still pass for a noun, because fronted count nouns in identifying copular clauses can (marginally) occur without determiner, particularly when followed by an elaborate postmodifying prepositional phrase, as in (27b). The syntactically ambiguous pattern in (27a) could facilitate the rise of *BE key to*.

- (27) a. *Key* to California's burgeoning economy is a multimillion-dollar system of dams and reservoirs that channels northern water into the fertile but dry Central Valley and the water-starved cities of the booming south. (1956, COHA)

- b. Best *solution* to the problem of foreign state trading, they say, is to leave American commerce in the hands of individuals (1943, COHA)

Second, the pattern *BE key to* echoes the semantic and collocational behavior of nominal *key*, which strongly collocates with prepositional *to* when used in predicative position, as illustrated in (28a). To show this, the COHA-data from the 1970s – the period just prior to the rise of *BE key to* – has been searched for all occurrences of "[vb*] [at*] key to" (giving all instances with *be* followed by an article and *key to*). Excluding examples where *key* is not used metaphorically, the resultant hits contain 96 instances in which the noun *key* is subject complement in an identifying copular clause. In 87 of these, it is followed by a prepositional phrase with *to* (so with a transitional probability of almost 91%). Where *key* is not followed by a *to*-phrase, the complement is usually implicit in the form of a problem introduced earlier in the discourse, as in (28b). In other words, the innovative *BE key to* closely resembles the well-established pattern *BE a/the key to*, both formally and in terms of discourse function.

- (28) a. Not arms but withdrawal of occupying forces is the *key* to peace. (1970, COHA)
- b. limiting the birth rate was the solution to all the world's ills, and the way to limit it was by the withdrawal of the male organ prior to ejaculation [...]: self-denial was unnecessary, consideration for the opposite sex allimportant [sic]. Chivalry, to Mr. Owen, was the *key*; chivalry, and stern vigilance. (1979, COHA)

Neither explanation excludes the other. Both explanations, however, account for the early prominence of *BE key to* by invoking its similarity to an earlier collocation involving nominal *key*. Again, then, established collocations play a subtle role in paving the way for syntactic innovation, thereby codetermining the pathways of change.

In sum, collocational patterns coined on the original analysis of reanalyzed items have an impact on the course of actualization in favoring syntactically innovative patterns that are (superficially) similar. *Fun* acquires adjectival modification most readily with modifiers like *really*, *kind of*, or *sort of*, with which it could already combine before, in contexts where *fun* is a noun or ambiguous between a noun and an adjective. *Key* appears as a predicative adjective more readily when followed by a prepositional phrase with *to*, echoing earlier uses of nominal *key* that are formally and functionally highly similar. In each case, actualization builds on surface similarities to existing usage, potentially disregarding underlying syntactic differences. The result is that the changes brought by actualization are favored in lexico-grammatical environments that resemble earlier usage contexts, while they proceed more slowly in environments that do not. Synchronic collocational tendencies are thus seen to arise through a reanalyzed item mimicking the syntactic behavior of its source item.

All this speaks in favor of some (perhaps superficial) connection between an item's uses before and after reanalysis. In this respect, there is a final striking observation to make regarding the history of *fun*. Recall that *fun* saw a sudden increase in the acceptability of its adjectival uses after the 1980s, particularly noticeable for its use as an attributive adjective (see Figure 8 above). Remarkably, this frequency boost coincides with an increase in the nominal use of *fun* in COHA. This is demonstrated by Figure 11, showing the frequencies of both unambiguously nominal and ambiguous uses of *fun*, based on the same 500-hit samples as used for Figure 8 above. Especially for the unambiguously nominal uses it is clear that after a 60-year period of stasis, nominal *fun* suddenly grows more frequent after 1989. Why this should be so is hard to explain, but the simultaneity with the developments in adjectival *fun* is striking and corroborates the idea that reanalyzed items maintain ties to their source uses.

[PLEASE INSERT FIGURE 11 ABOUT HERE]

4 Conclusions

The changes discussed all fit the assumption that the constraints guiding actualization are at least in part a function of the resemblance a given innovation bears to existing patterns already licensed by the grammar. It is likely that additional factors can impact on actualization, as they do in other changes. These could include semantic and pragmatic tendencies (García 1999), processing effects (Hawkins 2004), and so on. However, whenever there is a range of environments affected by a change, analogy is likely to be one of the major determinants of the order in which those environments are affected.

The major predictions that follow from this bear out. First, actualization pathways exploit similarities to existing patterns of use, as has been observed in each of the above case studies. The similarities involved range from broad syntactic similarities (e.g. predicative adjectives and attributive adjectives are alike in being adjectives, see the discussion of *all but* and *far from*) to low-level collocational similarities (e.g. between *BE really fun* and *a/the really fun N*). Second, actualization pathways are determined by the locus of reanalysis, as demonstrated particularly for *key* and *fun*, which have been shown to actualize in opposite directions. Third, actualization pathways are item-specific and language-specific, as is demonstrated by the differences between *fun* and *key*, but also more subtly by the differences in the actualization pathways found for *all but*, *far from* and Dutch *verre van*. Fourth, as actualization depends on the availability of suitable analogical models, it might fail, or proceed more hesitantly in one case than in another. The difference between *far from* and Dutch *verre van*, and (more tentatively) that between *far from* and *all but* illustrate this point.

The alternative accounts of actualization, as formulated in Timberlake (1977), Harris & Campbell (1995) or Andersen (2001) cannot satisfactorily explain the actualization pathways

found in the above case studies. Markedness, whether defined independently or with respect to types of change, cannot explain the different directions of actualization in *fun* or *key*. Further, it cannot explain finer effects, such as the compensation strategy temporarily resorted to for *far from* when used with noun-modifying adjectives (in the form of postmodification) but not for *all but*, or small-scale collocational effects as in *fun* and *key*.

The analogical mechanism claimed to direct actualization is not specific to language change but follows directly from how speakers use language. As such, the present account inscribes itself in a tradition of usage-based approaches to grammar and grammatical change, which give centre-stage to similarity-based organization. It thereby keeps to the principled assumption that explanations of language change can only invoke the mechanisms at play in ordinary synchronic language use (Joseph 1992; Fischer 2000: 153).

In this vein, the data presented above cast doubt on the assumption of abrupt category shifts through reanalysis and, with it, on the role and nature of abstract syntactic generalizations. If anything, the case studies show language users to be uncertain about the categorial status of items under actualization. Uses that should be predictable (provided that an item's categorial status is clear) sometimes appear very hesitantly or not at all (as is most clearly the case for *far from*). Hybrid uses are attested (again as in *far from*), and even unambiguously innovative uses are still potentially modeled on or facilitated by uses licensed under an item's original analysis (as in *far from*, *key* and perhaps *all but* and *fun*).

If reanalysis can be gradual in this way, the temporal primacy of reanalysis over actualization is no longer logically necessary, and the process of reanalysis can be reconceived as simply part of actualization (which then becomes something of a misnomer). This reinterpretation removes a teleology otherwise implicit in the traditional concept of reanalysis. Where the traditional view on reanalysis assumes a simple switch from one syntactic status to another, with consequences that are predictable beforehand even though they are not immediately

(or indeed never) borne out in actual usage, the present approach rather suggests that an item adopts new behavior through a cascade of minor shifts in what is conceivable and acceptable, based on sometimes quite short-sighted and ad-hoc evaluations of its resemblance to other items and of the behavior it has engaged in before. In this, the more sweeping syntactic generalizations, involving abstract syntactic categories and structures, are not necessarily good predictors of an item's distributional behavior or even of its development in the long term. Rather, much like the superficial similarities that may supersede them, they come across in actualization as just tentative attempts at grammatical organization – conceivable, but not therefore invariably compelling.

Appendix

The following table contains the figures from COHA on which the main charts in this paper are based. All figures are absolute. The subcorpus size, needed to calculate relative frequencies, is given in millions in the second column. For *fun* and *key*, for which counts are based on 500-hit samples per decade, the total number of hits per decade, needed to estimate absolute frequencies for the whole subcorpus, is also given.

[PLEASE INSERT TABLE 2 ABOUT HERE]

Notes

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1 This position is taken up also by some critics of the notion of grammaticalization, who dismantle grammaticalization into more elementary sub-processes, including reanalysis

(Campbell 2001; Joseph 2004). Reanalysis, as traditionally conceived, also takes a central position in formal approaches to grammaticalization, which tend to equate reanalysis and grammaticalization (Roberts 2007).

- 2 At one point, Andersen (2001: 33-34) recognizes that some changes run in the opposite direction, from marked environments to unmarked. He argues that such changes take place in the "usage rules" rather than the "grammatical system". This solution, however, still cannot explain why very similar changes have different actualization pathways (see Section 3). Further, no clear delineation is offered between "usage rules" and the "grammatical system".
- 3 Rácz (2010), in contrast, proposes that high salience may be triggered by frequency effects. For example, the better a predictor a given expression is of the items that are likely to follow it, the more salient a following item will be that violates those predictions, whereby an expression's value as a predictor is determined by its own frequency and the frequency of its collocates. Some phenomena reported below (particularly the avoidance effects discussed in Section 3.1) could (but need not) be interpreted in this way.
- 4 Two points of debate are of some relevance here. First, the value of word classes, such as adjective or verb, as atomic syntactic primitives has been questioned, even at the level of language-specific grammatical description (Croft 2001). The critique need not affect the discussion below, however, where adjective and verb can be read as shorthands for adjective phrase and verb phrase, which can be seen as constructional templates. Second, there is no general consensus that abstract syntactic categories are emergent similarity-based generalizations (see e.g. Newmeyer 1998). As concerns the argument below, however, the main point is that the members of abstract syntactic categories are similar to one another, which is unproblematic.

- 5 The data used in the present case studies are in each case aggregated over a large number of individual language users and do not show how actualization processes spread through communities of speakers or how they are reflected in the usage of individual language users. A study by Van Goethem (ms.) on French *clé* ('key') in three varieties, however, indicates that a change that is very similar to the development of English *key* discussed here can unfold in virtually the same way in separate regional varieties.
- 6 The use of downtoner *all but* with scope over nouns is not discussed here, because these uses are typically hard to distinguish from the non-reanalyzed uses.
- 7 Relative to the overall frequency of predicative and attributive adjective phrases, the lag in the use of *all but* with attributive adjectives is even more pronounced, as attributive adjectives are generally more frequent than predicative adjectives. This is apparent from a random selection of 100 adjective phrases from the 1840s (based on a list of the 50 least frequent adjectives in the top-100 adjectives for the same period). After excluding false hits, the sample contains 18 predicative adjective phrases as opposed to 66 attributive adjective phrases. The difference with the distribution for adjectives modified by *all but* in the same period is highly significant ($p < 0.001$, using a chi-square test).
- 8 The lag in the use of *all but* with active present tense verbs, as opposed to other verb forms, is also apparent from a comparison to overall frequencies for verb forms in the corpus. For the period 1900-1949 the overall proportion of active present tense forms to active past tense forms in COHA is about 1:3. This appears from a 500-hit random sample for a list of 100 verbs (selected by taking the 100 least frequent verbs of the top 600 for the relevant period), which turns out to contain 49 active present forms and 149 active past forms. Compared to this, the incidence of *all but* with present tense forms is significantly low between 1900 and 1940 ($p < 0.001$, using a chi-square test), but after 1940 the lag is no longer detectable ($p = 0.939$).

- 9 This is an estimate, calculated as follows (and using the same counting criteria as for the combination of *all but* with verb forms). The search string [vvn*]/[vvd*] has been entered in the COHA corpus outputting the 250 first lemmata, ranked by frequency. Of these, a wordlist was created excluding the 50 most frequent lemmata. A new search based on this wordlist was then conducted for the subperiods (1820-1829, 1840-1849 and 1860-1869) from each of which a random 100-hit sample has been analyzed on the distribution of passives, active perfects and active pasts. In total the samples produce 47 passives, 51 active perfects and 161 active past forms. Compared to these figures, active past forms with *all but* are significantly underrepresented in the data from 1820-1869 ($p < 0.001$, using a chi-square test).
- 10 The distributions apparent from Figures 3 and 4 differ considerably from the overall use of predicative, attributive and postnominal adjectives in the nineteenth century. This is apparent from the sample of 100 adjective phrases, collected from the 1840s data, as discussed under footnote 8 above, which, in addition to 66 attributive adjective phrases and 18 predicative adjective phrases, contains only 2 postnominal adjective phrases. In comparison, postnominal adjectives modified by *far from* in the same period are unexpectedly frequent compared to attributive adjectives with *far from* (at $p < 0.001$, using a fisher's exact test). The same obviously goes for the difference in distribution with postnominal and attributive adjectives.
- 11 Present-day data suggest that prepositional *but* might in fact be acceptable with adjectives, e.g. in combinations of *everything/anything but* with an adjective, as in *He refused to be anything but optimistic* (2009, COCA). However, no such examples are found in the historical data, where prepositional *but* (meaning 'except') exclusively takes nominal complements. The only possible locus for reanalysis then is with *all but* preceding a noun.

- 12 The proportion of past tense forms identical to past participle forms to past tense forms different from past participle forms has been estimated by manually collecting the past tense forms within the extended context of the hits for *all but* with past tense (the COHA interface gives some five lines of context for each hit). For 1830-1889, the extended context has been examined for all occurrences of *all but* with an active past tense verb. For 1890-1849, the examples have been sampled at 20%. Only past tense forms of lexical verbs have been counted, thereby excluding auxiliary uses of *have* and *be*, copular *be* and the modal verbs.
- 13 For instance, English has modifying elements such as *pretty* or *very* that are restricted to attributive and predicative adjectives, to the exclusion of passive verbs, but English has no modifying elements that are restricted to passive verbs and predicative adjectives, to the exclusion of attributive adjectives.
- 14 The 100 noun phrases with premodification have been randomly sampled from a search on the 25 least frequent adjectives of the top-100 adjectives in COHA. The top-100 list has been drawn from a search on [j*]; the 100 noun phrases have been collected from a subsequent search for the 25 selected adjectives followed by a noun (using [n*]) in the period 1810-1860.
- 15 Examples involving coordination of *fun* with other adjectives (e.g. *they never will have any nerve or do anything that's [sic] fun or interesting*, 1930, COHA) have also been counted as adjectival. The reason is that while coordination of adjectives and nouns is not strictly impossible, coordination between items of the same word class is far more common.
- 16 Judging from a random sample of adjectives for the period 1970-1989, the expected proportion of attributive contexts to disambiguating predicative contexts is about 10:3. The sample used consists of 200 examples, based on a list of the 25 least frequent grad-

able adjectives from the top-100 most frequent adjectives in the relevant period. It contains 97 attributively used adjectives, and 28 adjectives used predicatively in a disambiguating context (applying the same criteria as for the *fun*-data represented in Figure 8). Based on these figures, the distribution of adjectival *fun* in the same period differs significantly from the expected distribution for gradable adjectives ($p < 0.001$, using a chi-square test).

- 17 Throughout the COCA data, the incidence of prepositional *to*-phrases following predicative *key* is remarkably high. A 100-hit sample from COCA for predicatively used near-synonyms to *key* (viz. *critical, crucial, decisive, essential, fundamental, important, necessary, vital*) shows that a prepositional *to*-phrase functioning as goal-complement to the adjectives occurs only in 7 out of 94 examples. The difference with the data for predicative *key*, containing 286 examples with *to*-phrase on a total of 661, is highly significant ($p < 0.001$, using a chi-square test). In contrast, the use of *for*-phrases following *key* (e.g. *proper storage is key for long-term survival* (2004, COCA)) is more or less as expected with 9 examples in the whole COCA-data, as compared to 5 in the sample with near-synonyms.

Data sources

CLMETEV = *Corpus of Late Modern English Texts (Extended Version)*.

COCA = *Corpus of Contemporary American English*.

COHA = *Corpus of Historical American English*.

INL-38 = *38 Miljoen Woorden Corpus*.

KBHK = *Koninklijke Bibliotheek Historische Kranten*.

MED = *Middle English Dictionary*.

NYTAC = *New York Times Annotated Corpus*.

OED = *Oxford English Dictionary*.

WNT = *Woordenboek der Nederlandsche Taal*.

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