# The diachronic semantics of English *again*

Sigrid Beck[1] · Remus Gergel[2]

**Abstract**   This paper explores the diachronic development of the English adverb *again*. A compositional semantic analysis of its grammar at various stages is provided. It is argued that this analysis must consist of a staging of first a lexical and then a structural change, in order to adequately model the sequence of individual developmental steps observed in the historical corpus data, and that it provides an insight into pathways of semantic change in general.

**Keywords**   *Again* · Diachronic semantics

## 1 Introduction

The adverb *again* has seen quite a lot of semantic research (e.g. McCawley 1968; Dowty 1979; Kamp and Rossdeutscher 1994; von Stechow 1996; Jäger and Blutner 2000; Fabricius-Hansen 2001; Beck 2005; Pedersen 2010) because it gives rise to an interesting ambiguity. The sentence in (1) can have the interpretations in (1′a) and (1′b), respectively:

(1)   Leo jumped up again.

(1′)  a.  Leo jumped up, and he had done that before.          *(repetitive)*

       The bell rang, and Leo jumped up. […]
       A knock came on the door, and he jumped up again.

      b.  Leo jumped up, and he had been up before.          *(restitutive/*
                                                             *counterdirectional)*

       Leo slowly sat down in his favourite armchair.
       A knock came on the door, and he jumped up again.

   Another example of the same ambiguity is given in (2).

(2)  Jack buried the necklace again.

(2′)  a.  Jack buried the necklace, and he had done that before     *(repetitive)*
      b.  Jack buried the necklace, and it had been buried before   *(restit./ctrdir.)*

Some analyses propose a lexical source for the ambiguity, according to which *again* itself is ambiguous (prominently, Fabricius-Hansen 2001). Competing analyses propose a structural source: *again* is always repetitive, but can modify different properties of events (prominently, von Stechow 1996).

This paper adds a diachronic perspective to the discussion. We trace the development of *again* from Old English (OE) via Middle English (ME), Early Modern English (EModE), and Late Modern English (LModE) to Present-Day English (PDE), relying on the diachronic findings and analyses of Beck et al. (2009), Gergel (2014), and Gergel and Beck (to appear). We argue that the stages of *again*'s development favour each analysis in turn: the earlier stages require the lexical analysis, and the later stages require the structural analysis.

The transitions between the stages reveal interesting mechanisms of semantic change.

We propose that the following principle, adopted from Beck (2012), may be a facilitating circumstance for language change in semantics:

(3)  *Constant entailments:*
     Variability in the meaning of an expression $\alpha$ between interpretations $\alpha'$ and $\alpha''$ is promoted by the existence of contexts $\phi$ in which an occurrence of $\alpha$ under both interpretations $\alpha'$ and $\alpha''$ leads to the same proposition $\phi'$. (Beck 2012, p. 88)

Thus we see that a compositional semantic analysis of the micro-steps of diachronic development is revealing with respect to the grammatical mechanisms involved.

Section 2 of this paper explains the semantic background against which the diachronic investigation is conducted. The diachronic findings are reported in Sect. 3. Section 4 presents our analysis of the diachronic data. That analysis motivates the discussion of semantic change in Sect. 5. Conclusions are drawn in Sect. 6.

## 2 Semantic background

We present the essential aspects of the lexical ambiguity theory as represented by Fabricius-Hansen (2001) in Sect. 2.1. The basics of the structural theory (following von Stechow 1996) are presented in Sect. 2.2. Section 2.3 discusses some of the evidence that may be brought forth for these competing views, which will be relevant to our diachronic findings. We concentrate on those aspects that play a role in the later discussion and simplify the presentation of previous work accordingly.

### 2.1 Lexical theory

Let us take a closer look at our example (1). Its two interpretations according to the lexical ambiguity theory are paraphrased in (1″).

(1)  Leo jumped up again.

(1″)  a.  (1) presupposes that Leo had jumped up before.
           If that is the case, (1) asserts that Leo jumped up.  *(repetitive)*
       b.  (1) presupposes that Leo had sat down before.
           If that is the case, (1) asserts that Leo jumped up.  *(counterdir.)*

The derivation of the first reading, the repetitive interpretation, is essentially uncontroversial. The adverb *again* indicates that an event of the kind described by the sentence has happened before, as expressed in (4). (Interpretations are presented in the style of Heim and Kratzer (1998); "$e' < e$" stands for "$e'$ occurred before e".) The analysis of the repetitive reading of (1) is sketched in (5) (for simplicity we ignore tense and the functional layer of the clause).

(4)  $[[\text{again}_{rep}]] = \lambda P.\lambda e:\exists e'[e' < e \ \& \ P(e')].P(e)$
     'This has happened before.'

(5)  a.  $[_{VP} [_{VP} \text{Leo jump up}] \ \text{again}_{rep}]$
     b.  $[[ [_{VP} \text{Leo jump up}] ]] = \lambda e.\text{jump\_up}(e)(L)$
     c.  $[[[_{VP} [_{VP} \text{Leo jump up}] \ \text{again}_{rep}] ]] =$
         $\lambda e:\exists e'[e' < e \ \& \ \text{jump\_up}(e')(L)]. \ \text{jump\_up}(e)(L)$

The lexical ambiguity analysis claims that the adverb *again* itself is to be held responsible for the ambiguity. In addition to a repetitive interpretation, the adverb has the interpretation in (6) – the so-called counterdirectional reading. The analysis of the counterdirectional reading of (1) is sketched in (7).

(6)  $[[\text{again}_{ctrdir}]] = \lambda P.\lambda e:\exists e'[e' < e \ \& \ P_c(e')].P(e)$
     'The reverse has happened before.'

(7) a. $[_{VP} [_{VP} \text{Leo jump up}] \text{again}_{ctrdir}]$

   b. $[[ [_{VP} \text{Leo jump up}] ]] = \lambda e.\text{jump\_up}(e)(L)$

   c. $[[[_{VP} [_{VP} \text{Leo jump up}] \text{again}_{ctrdir}] ]] =$
     $\lambda e:\exists e'[e' < e \ \& \ \text{sit\_down}(e')(L)]. \ \text{jump\_up}(e)(L)$

Fabricius-Hansen's analysis assumes that we can find a counterdirectional predicate $P_c$ of the predicate P given in the sentence. For example, the reverse of jumping up could be sitting down, and similarly for pairs of predicates like *rise/fall*, *open/close*, *pick up/put down, enter/leave*, and so on.

It has been argued (Heim 1990; Kamp and Rossdeutscher 1994; Beck 2006) that a refinement ought to be added to this fairly standard analysis. The predecessor event that justifies the use of *again* is not existentially quantified over. Rather, it is referential. This is modelled in the refined analyses below by giving *again* an event as its first argument on both meanings, as shown in (8a) and (9a). In (8b) and (9b), this argument position is filled by the silent event pronoun e'. The content of *again*'s presupposition concerns this free variable. For example in (1'b) above, the relevant earlier event verifying *again*'s presupposition would be the sitting down described in the preceding sentence; see the papers cited above for arguments and discussion. (The informed reader will have noticed that we have dropped from Fabricius-Hansen's lexical entry for *again*$_{ctrdir}$ the requirement that the result of $P_c$ be the prestate of P. We think that the intuition behind this requirement is probably captured – indeed, better captured – by the referential presupposition.)

(8) a. $[[\text{again}_{rep}]] = \lambda e'.\lambda P.\lambda e:e' < e \ \& \ P(e').P(e)$

   b. $[[[_{VP} [_{VP} \text{Leo jump up}] [\text{again}_{rep} e']] ]] =$
     $\lambda e:e' < e \ \& \ \text{jump\_up}(e')(L). \ \text{jump\_up}(e)(L)$

(9) a. $[[\text{again}_{ctrdir}]] = \lambda e'.\lambda P.\lambda e:e' < e \ \& \ P_c(e').P(e)$

   b. $[[[_{VP} [_{VP} \text{Leo jump up}] [\text{again}_{ctrdir} e']] ]] =$
     $\lambda e:e' < e \ \& \ \text{sit\_down}(e')(L). \ \text{jump\_up}(e)(L)$

This refinement will play a role in the diachronic analysis in Sect. 4.

## 2.2 Structural theory

The structural analysis of the ambiguity illustrated by (1) denies that the adverb *again* is ambiguous. According to this analysis, *again* only ever expresses repetition. The two readings of (1) are to be distinguished purely in terms of what is repeated. Corresponding paraphrases are offered below.

(1) Leo jumped up again.

(1‴) a. (1) presupposes that Leo had jumped up before.
     If that is the case, (1) asserts that Leo jumped up. *(repetitive)*

   b. (1) presupposes that Leo had been up before.
     If that is the case, (1) asserts that Leo jumped up. *(restitutive)*

The idea behind this analysis is that the result state of the event described by the sentence is restored. This can be understood as a repetition, provided that we are able to identify a constituent that denotes the result state and which can be modified by $again_{rep}$. Such a constituent can be identified if we understand the predicate to be internally complex. In our example, its composition could be as sketched in (10) below. The VP decomposes into a constituent that denotes an activity, *jump* in the example, and a constituent that denotes the result state, here indicated by the particle *up* (von Stechow 1995; Beck 2005).

(10)   a.   $[_{VP}$ Leo jump $[_{XP}$ $PRO_{Leo}$ up $]]$
      b.   $\lambda e.jump(e)(L)$ & $\exists e'[CAUSE(e')(e)$ & $BECOME(e')(\lambda e''.up(e'')(L))]$
         'Leo's jumping causes Leo to come to be up.'

The derivation of the restitutive reading attaches *again* to the result-state-denoting constituent, while the derivation of the repetitive reading attaches *again* to the VP. This analysis thus requires that there be a result-state-denoting constituent for *again* to modify, else there cannot be a restitutive reading. (We stick to the referential analysis of *again*'s presupposition in these derivations.)

(11)   a.   $[_{VP}$ $[_{VP}$ Leo jump $[_{XP}$ $PRO_{Leo}$ up $]]$ $[again_{rep}$ e*$]]$       *(repetitive)*
      b.   $\lambda e:e* < e$ & $jump(e*)(L)$ & $\exists e'[CAUSE(e')(e*)$ & $BECOME(e')$
         $(\lambda e''.up(e'')(L))]$. $jump(e)(L)$ & $\exists e'[CAUSE(e')(e)$ & $BECOME(e')$
         $(\lambda e''.up(e'')(L))]$
         'Once more, Leo's jumping causes Leo to come to be up.'

(11')   a.   $[_{VP}$ Leo jump $[_{XP}$ $[_{XP}$ $PRO_{Leo}$ up $]$ $[again_{rep}$ e*$]]]$       *(restitutive)*
      b.   $\lambda e:e* < e$ & $up(e*)(L)$.
         $jump(e)(L)$ & $\exists e'[CAUSE(e')(e)$ & $BECOME(e')(\lambda e''.up(e'')(L))]$
         'Leo's jumping causes Leo to once more be up.'

Notice that the terms 'restitutive' and 'counterdirectional' for the reading in question anticipate the two analyses. In order not to prejudge the issue, we will continue to talk somewhat clunkily about the 'restitutive/counterdirectional reading'.

## 2.3 Potential evidence for the two analyses

The truth conditions that the two competing analyses ascribe to the restitutive/counterdirectional reading of data like our example (1) are virtually indistinguishable. The situations described by (1) in which the restitutive/counterdirectional reading is true can be visualized as in (12) according to either theory.

(12)   ·······//////////////------------------------//////////////////////////------------>
           Leo up     |    Leo not up    |    Leo up
             Leo sit down      Leo jump up

If Leo jumped up, and earlier the "opposite" happened (e.g., he sat down), then Leo had to be up in the beginning. Conversely, if Leo jumped up, and he had been up earlier, then in between he had to sit down. Presuppositional and assertional content together with the inferences they support amount to the same set of possible situations in which (1) is true, for both analyses.

Hence it is easier to evaluate and compare the two analyses in terms of the predictions they make with respect to when a restitutive/counterdirectional reading should be available.[1] Let us consider potential arguments for one analysis over the other, beginning with the lexical analysis.

Data that would speak in favour of the lexical analysis would be facts that illustrate that directionality, and not the result state, matters for the availability of the restitutive/counterdirectional reading. Two types of data regarding directionality are discussed in the literature. First, Fabricius-Hansen (2001) argues that the etymology of both English *again* and German *wieder* ('again') shows them to stem from a preposition with the meaning 'against'. This preposition contributes a meaning in terms of direction, as illustrated in (13). Therefore, directionality, or more precisely counterdirectionality, must also be part of the meaning of the adverb *again*, Fabricius-Hansen (2001) argues.

(13)   John swam against the current.
       'John swam in a direction that was the opposite of the direction
       of the current.'

Secondly, notice that for the lexical analysis there is no prerequisite that there be a result state. A directional predicate should suffice for the availability of the restitutive/counterdirectional reading. Fabricius-Hansen proposes degree achievement verbs like *fall, cool* as candidates for such predicates; cf. (14).

(14)   The temperature fell again.
       'The temperature fell, and it had been rising before.'

However, von Stechow (1996) shows that such predicates are compatible with an analysis in terms of a result state if we understand that result state to be comparative in nature.

(15)   a.   The temperature fell.
            'The temperature became lower.'
       b.   The temperature fell again.
            'The temperature became once more lower.'

---

[1] It has been observed (e.g. Fabricius-Hansen 1983; Jäger and Blutner 2000; Klein 2001) that focus on *again* disambiguates in favour of the repetitive reading. Beck (2006) offers an analysis of the focus effect showing that this observation does not favour one theory over the other. We will not be concerned with the focus effect further in this paper because information on focus is not available in our data source, historical written utterances.

So the data discussed in the literature, in our judgement, do not provide a conclusive argument regarding the nature of the predicates required for the restitutive/counterdirectional reading. The historical corpora, however, have helped us find such predicates. We will see in Sect. 3 that the readings available in Middle English (ME) and Early Modern English (EModE) for data like (16) do speak in favour of a counterdirectional analysis. Those readings are not plausibly thought of as restoring a result state, but can easily be seen as a reversal of direction.

(16)  a.  Ron talked again to Harry.
          EModE : 'Ron answered Harry.'
      b.  She wrote again to him.
          EModE:  'She wrote back to him.'

(17)  No change of state in (16a) (activity predicate):
      a.  Ron talked to Harry.
      b.  Ron talked to Harry for an hour / #in an hour.
      c.  Ron was talking to Harry. $\Longrightarrow$ Ron talked to Harry.

(18)  Change of state, but plausible result state not helpful in (16b):
      a.  She wrote to him.
          = Her writing caused a message to him to come into existence.
      b.  She wrote again to him. $\neq$
          Her writing caused a message to him to once more come into existence.

Next, what about arguments for the structural analysis? Von Stechow (1996) presents a famous word order argument in favour of an analysis in terms of syntactic structure. We will not go into this argument here because it does not play a role in our diachronic discussion.[2] Notice, however, that the structural analysis will be favoured by phenomena that show the ambiguity to be sensitive to syntactic structure. Such effects are expected under the structural analysis, which works in terms of adjunction sites for *again*. They are less expected under the lexical analysis, which has conceptual rather than structural prerequisites. We report below an argument from Rapp and von Stechow (1999), extended in Beck (2005), that concerns the syntactic accessibility of the result state for modification by *again*.

---

[2]  An investigation of the word order in examples with *again* in the earlier stages of English might be very interesting. The following fragment illustrates the occurrence of word orders that seem unusual from the perspective of Present-Day English, both in acceptability and in interpretation.

(i)  that lyke as the French King byfore wrote and bosted vn to his mother that he had
     of his awne mynd passed in to Italy, so is it lykly that she shall haue shortly cause to
     **wryte agayn to hym** that it had to be mych bettre and more wisedome for hym to abide
     at home [...] (Thomas More, PCEEC-MORE,313.020.266, 16th c.)
     = 'to write back to him'

We do not include such an investigation in this paper, because so much has changed in the syntax of English during the period of time considered here that this would be a very large and complex enterprise. We leave it for future research. Thanks to Liz Pearce and the audience of the 13th Diachronic Generative Syntax conference for discussion of this point.

Beck (2005) distinguishes three degrees of accessibility – called *visibility* after Rapp and von Stechow – that are relevant for modification by adverbs:

(19)   *The Visibility Parameter for adverbs* (Beck 2005):
      An adverb can modify    (i)    only independent syntactic phrases
                                  (ii)   any phrase with a phonetically overt head
                                  (iii)  any phrase
      The default setting is (i).

To illustrate: both VPs in (20a) below are independent syntactic phrases and should generally be modifiable by adverbs. While the VP in (20b) is an independent syntactic phrase, the category we call XP is not: it is part of a complex predicate – specifically, a verb-particle construction. (See e.g. Elenbaas 2007 for recent discussion of English verb-particle constructions (including a longer diachronic trajectory) and the references cited there; see in particular Snyder 2001, Beck 2005 for our use of the term 'complex predicate'.) Examples of complex predicate constructions are given in (21). Only adverbs with at least setting (ii) should be able to modify the XP representing the result state (underlined in (21)). Finally, (20c) contrasts with (20b) in that the result state of the predicate is not overtly marked at all. Such predicates are analysed in terms of decomposition in von Stechow (1996) and Rapp and von Stechow (1999) (among many others). The AP should be visible only to genuine decomposition adverbs – that is, adverbs with setting (iii). Decomposition is involved in lexical accomplishment predicates like *rise, open, enter, return* (e.g. Dowty 1979; von Stechow 1995, 1996; Beck 2005; cf. also Ramchand 2008 for a recent proposal of an articulate syntactic structure inside VP).

(20)  a.  Leo [$_{VP}$ started to [$_{VP}$ sing the Marseillaise]]
      b.  Leo jumped up.
         Leo [$_{VP}$ jumped [$_{XP}$ _ up ]]
      c.  Leo rose.
         Deep Structure:    Leo [$_{VP}$ $\varnothing_V$ [$_{AP}$ _ risen ]]
         Surface Structure:  Leo [$_{VP}$ [$\varnothing_V$ +risen] [$_{AP}$ _ t ]]

(21)  Complex predicates:
      a.  Joe wiped the table <u>clean</u>.   resultative
      b.  Joe picked <u>up</u> the book.    verb-particle
      c.  Joe gave <u>Bill the book</u>.    double object
      d.  Joe swam <u>to the island</u>.   goal PP

To give an example of the relevance of visibility, consider English *almost* vs. German *fast* ('almost') (the adverb discussed by Rapp and von Stechow 1999). Example (22) below shows that *almost* is a decomposition adverb with setting (iii), because the result-state-modifying reading of *almost* is available for decomposition structures (*close* in the example). German *fast,* on the other hand, has setting (ii): a result-state-modifying reading is possible with complex predicates, as in (23a), but not with decomposition structures, as in (23b). Rapp and von Stechow argue that

German *erneut* ('again') shows a behaviour indicative of setting (i). German *wieder* ('again'), on the other hand, has setting (iii). The fact that the syntactic status of the result-state-denoting expression matters speaks in favour of a structural analysis. Since the prerequisites of the lexical analysis are purely conceptual and do not involve a result state, we would expect no such effects.

(22) Leo almost closed the door.
    ok: 'Leo brought it about that the door was almost closed.'

(23) a.  ...weil   Leo den  Tisch  fast     sauber  gewischt  hat.
       because Leo the   table   almost  clean    wiped     has
       '...because Leo almost wiped the table clean.'
       ok: 'Leo brought it about that the table was almost clean.'
   b.  ...weil   Leo die   Tür     fast      schloss.
       because Leo the   door   almost  closed
       '...because Leo almost closed the door.'
       #: 'Leo brought it about that the door was almost closed.'

We have left out English *again* in our discussion of visibility although it is regarded as a prototypical decomposition adverb, because *again*'s behaviour is precisely the topic of the diachronic study we turn to in the next section.

## 2.4 Section summary

Two competing analyses of the possible uses of PDE *again* (and its crosslinguistic counterparts) exist. The first analysis claims a lexical ambiguity of the adverb, accounting for repetitive and restitutive/counterdirectional uses on the basis of two different meanings of *again*: a repetitive and a counterdirectional lexical meaning. The second analysis argues that *again* is always repetitive. Ambiguities arise because different properties of events can be modified by repetitive *again*. When *again* modifies the result-state-denoting constituent of an accomplishment or achievement predicate, a restitutive/counterdirectional interpretation results. Otherwise the interpretation is repetitive. Facts that speak in favour of the lexical analysis include the etymology of both English *again* and German *wieder* ('again'). Data in favour of the structural analysis include visibility phenomena. Both theories have their intuitive attractions, and good arguments have been brought forth for both. The next two sections will allow us to see that they are not as incompatible as they seem.

## 3 Diachronic development

This section sketches the diachronic development of English *again* that we will formally analyse in Sect. 4. Section 3.1 explains what data we rely on. Sections 3.2 to 3.4 go over the historical periods of Old English (OE) and Middle English (ME), Early Modern English (EModE), and the later stages Late Modern English (LModE)

and Present-Day English (PDE), respectively. We summarize the historical development that emerges from our data in Sect. 3.5.

## 3.1 Empirical basis and methodology

Our empirical basis consists of the diachronic findings reported in Gergel (2014), Gergel and Beck (to appear), and Beck et al. (2009). All three papers report diachronic corpus studies. We evaluated correspondence corpora in the case of the latter two papers, and mixed corpora in the case of Gergel (2014). In each study, occurrences of *again* were identified and classified according to interpretation. An occurrence of *again* was classified as (i) plausibly restitutive/counterdirectional, (ii) plausibly repetitive, or (iii) (when it was not possible to determine the intended interpretation with any certainty) as unclear. An occurrence of *again* is classified as plausibly restitutive/counterdirectional if one of two circumstances applies: the event presupposed on the restitutive/counterdirectional reading is maximally salient, or it is clear from the context that the repetitive presupposition is not true. (24a) illustrates the first case and (24b) the second (examples are from Beck et al.'s 2009 corpus of 19th century letters).

(24) a. … a gleam of affectionate pleasure lighted it up for an instant, and straight it sunk again.                      (Edgeworth)
   • "Sink again" refers back to the immediately preceding lighting up.
b. The first time of going over I shall mark the passages which puzzle me, and then return to them again.                      (Macaulay)
   • Since the speaker goes over the passages for the first time, repetition of "return to them" is impossible.

Examples (24a, b) are good illustrations because the local sentence context establishes the criterion for classifying those occurrences of *again* as restitutive/counterdirectional. The same criteria were applied throughout, taking into account the surrounding text. Where the interpretation could not be identified as repetitive or restitutive/counterdirectional with good confidence, the interpretation of the example was classified as unclear (this occurred in a rather small percentage of the data in all three studies; the text context allowed identification of the intended interpretation quite reliably for the most part).

In Sects. 3.2, 3.3, and 3.4 we present the most important results from the three studies. The results are reported by period, beginning with the oldest period of interest, namely Old English (OE) and its transition to Middle English (ME).

Before we proceed, some general remarks on our methodology:

It is important to keep in mind that the claims we make are based solely on the databases we cover. Thus, when we say that we have no findings of a particular use in a particular period, this only means, of course, that there are no findings in the data we have inspected. This is standard practice in diachronic studies. Such claims cannot be absolute regarding any of the periods discussed. Investigation of a different corpus might produce somewhat divergent evidence regarding a particular use at a particular time. However, despite this caveat it is generally recognized that

corpus studies reveal telling tendencies with respect to diachronic development. We refer the reader to, for example, Pintzuk and Taylor (2008) and McFadden and Alexiadou (2010) for similar methods applied in recent diachronic research on changing word order in the VP and the rise of the *have*-perfect in English, respectively; compare also Kroch (1989, 2001) as well as – *inter alii* – Galves et al. (2005), Speyer (2010), Heycock and Wallenberg (2013), Troberg and Burnett (2014) for further discussion of this methodology applied to studies on a series of phenomena from different languages, which are analysed on the foundation of databases very similar to ours.

To see the relevance of this point for the case at hand, consider the development of English *again* as sketched, e.g., in the *Oxford English Dictionary (OED)*. Contrary to our results below, the recent third edition of the *OED* (September 2012) includes an Old English example which it labels as indicating repetition; cf. (25) below. (The second edition of the *OED* from 1989, took its earliest attestations for repetitive *again* from Middle English, which is in line with our observations; see below.)

(25)  | *Do þine* | *hand on* | *þinne bosum;* | *þa* | *he* | *hi dide on* |
      | Put your | hand into | your bosom | there | he | it put into |

| *his bosum... Þa* | | *cwæð he:* | |
| his bosom | there | said he | |

| *Teoh eft* | *þine* | *hand* | *on* | *þinne bosm.* | *Þa* | **teah** |
| Draw again | your | hand | into | your bosom. | there | drew |

| *he hig* **ongean** | *&* | *brohte hi* | *eft* | *ut* |
| he it **again** | and | brohte hi | again | out. |

(*Old Eng. Hexateuch: Exod.* (Claud.) iv. 6–7)

The Latin Vulgata, of which the text above is a translation, has *retraxit* in the place in which OE has *teah ongean*. Note also that the context does not entail an earlier drawing of the hand. It is very likely that *teah ongean* in fact means 'drew back' here. Thus, according to our criteria, this example would not be classified as plausibly repetitive at all. Rather, it would be plausibly restitutive/counterdirectional (given the immediately preceding 'put into your bosom'). It does not provide evidence for a repetitive reading of *ongean*, 'again'.

There is an important point here, however, that goes beyond the intricacies of this particular translation. Suppose the *OED*'s take on the example in (25) were correct. We cannot – and need not – deny that Old English could have had isolated examples of adverbial, perhaps even repetitive, *again*. The potential for the sequence of changes that *again* underwent at a later date, according to our data, might have been available at an earlier time already. What matters for present purposes is that it is only in later periods, approaching modern times, that repetitive readings gain ground systematically and occur with rising frequency. Only in those later periods can the repetitive use be found reliably in corpus sources (including the corpora we work with). (For comparison: it is similarly conceivable that some instances of *pas* in the famous Jespersen cycle of negation in French could have been interpreted as negatives even before the relevant change becomes systematically visible in corpus

data.) The absolute historical timing of language change is a notoriously difficult issue related to the composition of the database and the actuation problem of change (Weinreich et al. 1968). The timing of transitions might vary regionally, socially, etc. and hence would be identified somewhat differently by different corpora and methods of data collection (a case in point, relating to the classical topic of *do*-support, is Warner 2005, who provides a refined view compared to Ellegård 1953 on the basis of a different, richer database). The *OED* entry on *again* is not based on the same data pool as our paper, hence some differences in absolute timing would be unsurprising.

In light of these properties of historical analysis we wish to emphasize, therefore, that our claims in this paper are not about the absolute timing of changes in the use of *again*, but only about the relative sequence of these developmental changes – which is more stable and a more revealing subject.

A second important methodological point is this: In order to assess the dynamic development of virtually any change, it is crucial to have a clearly quantifiable basis to begin with. Luckily, the 1.5-million-word corpus of Old English which we have used provides such a basis, as do the established parsed corpora for Middle and Early Modern English (see below for details on these corpora). Only systematic, large-scale corpora allow for quantitative analysis; they provide a much sounder empirical basis than any potentially uncontrolled collection of individual examples.

This, then, has been our objective here: modelling the sequence of steps that emerges from a clearly structured data pool. In the methodological tradition that we follow, dictionaries are not included as a direct data source (despite their profound philological merits and also despite recent progress in inclusion of contextualized example uses; cf. e.g. the increase in forms of *again* listed in the *OED* in its 2012 third edition, compared to the second edition).

Finally, for the reader less well versed in diachronic study, let us offer some comments on the corpus background at hand and on our style of presenting data from such historical corpora. The original basis for most of the corpora we have used is the so-called Helsinki corpus, a classical source in English linguistics. Our claims are based in particular on the annotated and syntactically parsed editions of Old, Middle, and Modern English corpora, respectively (compare Taylor et al. 2003; Kroch and Taylor 2000; Kroch et al. 2004, 2010). The major corpora used are: (i) YCOE, the York-Toronto-Helsinki Parsed Corpus of Old English Prose; (ii) PPCME2, the Penn-Helsinki Parsed Corpus of Middle English in its second edition (more specifically, we base our claims on the current third official release of this second edition); (iii) PPCEME, the Penn-Helsinki Parsed Corpus of Early Modern English (in its current, second release); (iv) PPCMBE, the Penn Parsed Corpus of Modern British English (in its current, first release); (v) PCEEC, the Parsed Corpus of Early English Correspondence. For LModE and PDE, we also put together our own corpora; see Beck et al. (2009) for a detailed discussion of those.

We illustrate some notational basics with the examples below:

(26)  Notation used for early English corpus examples
    a. Swa    Thomas to þam timan agean ferde    buton    bletsunga.
       so      Thomas at that  time    back    went    without  blessing
       'So Thomas went back without consecration at that time.'
       (cochronA-10,ChronA_[Plummer]:1070.14.1471, 11th c.;
       transl. Pintzuk 1991, p. 212)
    b. Gif … tu nimst aȝean        more ðanne  ðu him lændest, …
       if      you take again/back    more than    you him lent
       'If you take back more than what you lent him.'
       (CMVICES1,77.892, 13th c.)

Each early English example is presented with a word-for-word gloss, followed by a translation. Where it was available to us, we have used an independent translation, as indicated in (26a). Where this wasn't the case, we are providing our own translation. Underneath the translation, each example is identified by its corpus token ID number. The Appendix provides more explanation regarding this ID number. To illustrate, the notation 'CMVICES1' in (26b) identifies the example as part of a Middle English text called *Vices and Virtues* from the very first part of the Middle English corpus (M1), written around AD 1200. We indicate the century from which the example stems after the corpus ID, for easy orientation.

For the interested reader, the Appendix to this paper lists the spelled-out titles of the source texts from which we cite. In addition to spelling out the text titles, it gives the texts' periods, dates, and authors (where such information was available). The Appendix also provides some more information on the historical periods and the corpora from which the cited texts were taken.

## 3.2 Old English (OE) heritage and Middle English (ME)

Gergel (2014) investigates uses of *again* in earlier stages of English on the basis of the Helsinki-Penn-York corpora of historical English introduced above: the Old English YCOE corpus, the ME corpus PPCEME2, the Early Modern English corpus PPCEME, and the Late Modern English corpus PPCMBE; cf. Taylor et al. (2003), Kroch and Taylor (2000), Kroch et al. (2004, 2010).

The predominant use in the earliest stages of English (studied on the basis of the YCOE corpus) was prepositional, with only very few potentially adverbial uses. The potentially adverbial uses in the corpus can only be described as counterdirectional. This stage did not yield any examples of the repetitive use of the adverb *again*.

Concretely, there are five examples of forms related to *again* that are annotated as adverbial in the 1.5-million-word corpus (compared to 754 occurrences of forms of *again* that are annotated as prepositional in the same corpus). These are given in (27).[3]

---

[3] The search is simple and easy to replicate: find the forms of *again* that are annotated as adverbial. Gergel (2014) includes all forms listed in the *OED* in the search queries. Note, though that even the new, third edition *OED* entry still misses some forms; specifically, 'hyphenated' versions are still missing. Such forms do occur in the corpora (e.g. *a-yen* alongside *ayen*, *a-gain* alongside *again*). To include them, Gergel (2014) ran his search for what is effectively a superset of the *OED* forms. Accidental search results which are not relevant to *again* were manually excluded. For example, a search for forms such as *agen-* brought up the adverb *agendlice* 'properly', which was then excluded from the results. The list of forms searched was as follows (capitalized forms are included due to case sensitivity, special Old English characters include the sign "+" in the corpus notation, i.e. "+g" stands for yogh): aagane|aelaeyn|lagaan| agaen|again*|agan*|agay|agayen*|agayin*|agayn*|ag+an|agel|agean*|lageean|lageen|lagein*|lagen*|lageon| ageylageyen|lageyin|lageyn*|laghan|laghayne|laghene|lagien|lagin|laginn|lagon*|lagyen|lagyn*|la+gala+gain*|la +gan*|la+gayn*|la+g+aien|la+g+ain|la+g+an|la+gela+geain|la+gean*|la+geela+geen*|la+gein*|la+gen*| a+geola+geon*|la+geyn*|la+gien|la+gin|la+gon*|la+gyla+gyan|la+gyn|aien|lai+gein|akayne|lang+an| angean|langen|lan+gean|lan+gen*|la+ten|lawen|layain*|layan*|layayn*|layelayean|layeen*|layein*|layen*|layhe*| azayne|lazeyn|+ageo|gain*|logayn*|logein|lo+gain|lo+gan|lo+gayn*|lo+gelo+gein*|lo+genlo+geyn|logeyne| ondgegn|longain|longan|longaegn|long+agn*|long+an|longea|longeaegn|longeaen|longeagn|longean|longe+agn*| onge+an|longegen|longegn*|longein|longen*|longeyn|lon+gan*|lon+g+an|lon+gean*|lon+gein*|lon+gen|lonn +g+an|lonn+g+ann*|lughin|Aagane|Ael|Aeyn|Agaan|Agaen|Again*|Agan*|Agay|Agayen*|Agayin*|A- gayn*|Ag+an|Agel|Agean*|Ageean|Ageen|Agein*|Agen*|Ageon|Agey|Ageyen|Ageyin|Ageyn*|Aghan| Aghayne|Aghene|Agien|Agin|Aginn|Agon*|Agyen|Agyn*|A+gala+gain*|A+gan*|A+gayn*|A+g+aien| A+g+ain|A+g+an|A+gel|A+geain|A+gean*|A+geel|A+geen*|A+gein*|A+geol|A+geon*|A+geyn*|A +gien|A+gin|A+gon*|A+gyl|A+gyan|A+gyn|Aien|Ai+gein|Akayne|Ang+an|Angean|Angen|An+gean| An+gen*|A+ten|Awen|Ayain*|Ayan*|Ayayn*|Ayel|Ayean|Ayeen*|Ayein*|Ayen*|Ayhe*|Azayne|Azeyn| +Agel|Ogain*|Ogayn*|Ogein|O+gain|O+gan|O+gayn*|O+gel|O+gein*|O+gen|O+geyn|Ogeyne|Ond- gegn|Ongain|Ongan|Ongaegn|Ong+agn*|Ong+an|Ongea|Ongeaegn|Ongeaen|Ongeagn|Ongean|Onge +agn*|Onge+an|Ongegen|Ongegn*|Ongein|Ongen*|Ongeyn|On+gan*|On+g+an|On+gean*|On+gein*| On+gen|Onn+g+an|Onn+g+ann*|Ughin|aa-ganela-ela-eynla-gaanla-gaenla-gain*la-gan*la-gayla- gayen*la-gayin*la-gayn*la-g+anla-gela-gean*la-geeanla-geenla-gein*la-gen*la-geonla-geyla-geyenla-gey- inla-geyn*la-ghanla-ghaynela-ghenela-gienla-ginla-ginnla-gon*la-gyenla-gyn*la--+gala--+gain*la--+gan*la- -+gayn*la--+g+aienla--+g+a-inla--+g+anla--gela--geainla--gean*la--geela--geen*la--gein*la- -+gen*la--+geola--geon*la--+geyn*la--+gienla--+ginla--+gon*la--+gyla--+gyanla--+gynla-ienla-i--+geinla- kayne|lan-g+anlan-geanlan-genla--+geanla--+gen*la--+tenla-wenla-yain*la-yan*la-yayn*la-yela-yeanla- yeen*la-yein*la-yen*la-yhe*la-zaynela-zeynl+a-gelo-gain*lo-gayn*lo-geinlo--+gainlo--+ganlo--+gayn*lo- -+gelo--+gein*lo--+genlo--+geynlo-geynelon-dgegnlon-gainlon-ganlon-gaegnlon-g+agn*lon-g+anlon-geal on-geaegnlon-geaenlon-geagnlon-geanlon-ge+agn*lon-ge+anlon-gegenlon-gegn*lon-geinlon-gen*lon- geynlon--+gan*lon--+g+anlon--+gean*lon--+gein*lon--+genlonn--+g+anlonn--+g+ann*lu-ghin|Aa-gane| A-el|A-eyn|A-gaan|A-gaen|A-gain*|A-gan*|A-gay|A-gayen*|A-gayin*|A-gayn*|A-g+an|A-gel|A-gean*|A- geean|A-geen|A-gein*|A-gen*|A-geon|A-gey|A-geyen|A-geyin|A-geyn*|A-ghan|A-ghayne|A-ghene|A- gien|A-gin|A-ginn|A-gon*|A-gyen|A-gyn*|A--+gal|A--+gain*|A--gan*|A--+gayn*|A--+g+aien|A--+g+ain| A--+g+an|A--gel|A--geain|A--gean*|A--geel|A--geen*|A--gein*|A--geol|A--geon*|A--+geyn*|A- -+gien|A--+gin|A--gon*|A--+gyl|A--+gyan|A--+gyn|A-ien|A-i--+gein|A-kayne|An-g+an|An-gean|An-gen| An--+gean|An--+gen*|A--+ten|A-wen|A-yain*|A-yan*|A-yayn*|A-yel|A-yean|A-yeen*|A-yein*|A-yen*|A- yhe*|A-zayne|A-zeyn|+A-gel|O-gain*|O-gayn*|O-gein|O--+gain|O--+gan|O--+gayn*|O--+gel|O--+gein*|O- -+gen|O--+geyn|O-geyne|Ond-gegn|On-gain|On-gan|On-gaegn|On-g+agn*|On-g+an|On-geal|On-geaegn| On-geaen|On-geagn|On-gean|On-ge+agn*|On-ge+an|On-gegen|On-gegn*|On-gein|On-gen*|On-geyn| On--+gan*|On--+g+an|On--+gean*|On--+gein*|On--+gen|Onn--+g+an|Onn--+g+ann*|U-ghin.

(27) Old English corpus examples of *again* annotated as adverbial:

    a. Swa Thomas to þam timan **agean** ferde buton bletsunga.
        so Thomas at that time back went without blessing
        'So Thomas went back without consecration at that time.'
        (cochronA-10,ChronA_[Plummer]:1070.14.1471; 11th c., transl.
        Pintzuk 1991: 212; cf. also Whitelock et al. 1961, p. 153)

    b. & sæde him þonne æfen bið, uton faran **agen**.
        and said them then/when evening is let-us go again
        '(On that day,) when evening had come, he said to them, "Let us go
        across to the other side."'
        (cowsgosp, Mk_[WSCp]:4.35.2449, 10th c.; translation from '2011
        English Standard Version', via http://thebiblecorner.com/)

    c. & him of scipe gangendum him sona **agen** **arn** an
        and him of ship going him soon against ran a
        man of þam byrgenum on unclænum gaste.
        man of the tomb in unclean ghost
        '(And when Jesus) had stepped out of the boat, immediately there met
        him out of the tombs a man with an unclean spirit.'
        (cowsgosp, Mk_[WSCp]:5.2.2467, 10th c.; translation from '2011 English
        Standard Version' via http://thebiblecorner.com/))

    d. Soðlice manega wæron þe comon & **agen hwyrfdon**
        truly many were that came and against/back turned
        'For many were coming and going, (and they had no leisure even to eat.)'
        (cowsgosp, Mk_[WSCp]:6.31.2614, 10th c.; translation from '2011 English
        Standard Version' via http://thebiblecorner.com/)

    e. ðonne is micel ðearf ðætte se, se ða hatheortnesse ofercuman wielle,
        then is much need that he who that anger overcome will
        ðætte **he hiene ongean** ne hathierte, wærlice hine pynge mid
        that he them against not be.angry cautiously them prick with
        sumum, wordum ðæt he on ðæm ongietan mæge be sumum dæle his
        some words that he in them understand may by some part his
        unðeaw.
        vice
        '[T]hen there is much need for him who wants to overcome the anger not to
        become angry towards them but to cautiously prick them with some words,
        so that he by them may perceive to some extent his vice.'
        (cocura,CP:40.297.3.1955, 9th c.; translation based on Gevaert 2007,
        p. 66)

The Old English examples in (27a, b, d) are close in meaning to the modern *back*.
Regarding (27c), *agén-yrnan* is given in Bosworth and Toller's (1882) dictionary of
Old English as an entry with the meaning 'run against, meet with' (the German
Luther version of the Bible has *entgegen laufen* 'run <u>against</u>' in the same position).
(27e) is a postpositional use of *again* and hence, upon closer inspection, not
adverbial at all. Both the context and the independent translation support solely this

reading (*hiene ongean* = 'against them').[4] In sum, maximally four plausibly adverbial uses occur, and they are all counterdirectional.

This heritage is clearly visible in the early Middle English data studied on the basis of the PPCME2 corpus, i.e. in the subperiods M1 and also M2.[5] Below is an early Middle English example of a prepositional use of *again*.

(28) Preposition *again* (continued in Middle English from Old English):
    þu              strengeluker        stondest **aʒein him**;
    you             more firmly         stand against him
    (CMHALI,138.138, 13<sup>th</sup> c.)

In early Middle English, adverbial uses become more frequent. Two observations hold: (i) these adverbial uses are still much rarer than in later Middle English (the subperiods M3 and M4), and (ii) no clearly repetitive uses are available in the inspected corpus. The table below gives an indication of the interpretive development of adverbial *again* during the ME period (only the adverbial occurrences are counted):

(29) Proportion of counterdirectional/restitutive readings in Middle English

| | | |
|---|---|---|
| Early Middle English (PPCME2, 'permissive' M1): | 48/51 | 94.1% |
| Early Middle English (PPCME2, 'permissive' M2): | 48/53 | 90.6% |
| Average Early Middle English ('permissive' M1/M2): | 96/104 | 92.3% |
| Late Middle English (PPCME2, M3 and M4): | 269/400 | 67.2% |

Some explanation is needed regarding the term 'permissive' in this breakdown: While there is a wealth of adverbial occurrences of *again* from M3/4 onwards, there are few such uses in early ME (M1/2) in the corpora. In order to maximize the pool of data within the defined corpus (PPCME2), Gergel's (2014) searches (for the same large set of forms listed in footnote 3) were run on a maximized set of texts. "Maximization" here relates to selection with respect to manuscript dates. Rather than opting for a conservative delimitation of the corpus periods (i.e. including only 'pure' texts from M1 or M2, whose manuscript date falls exactly into those periods), one can choose to consider a pool of additional texts in the corpus, for which composition date and manuscript date diverge. Such texts are then annotated as being, e. g., from the period M24, which means that the manuscript dates from the period M4, but its composition is assumed by the philological tradition to have occurred in the earlier period M2. To run our searches under the inclusion of such texts thus means following a more permissive criterion: we are searching for adverbial uses of *again* in files the *composition date* of which is M1 or M2,

---

[4] We take postpositional examples to constitute an archaic pattern; the pattern is also attested e. g. in the epic poem of Beowulf, which is known to reflect a particularly old state of the language with respect to syntactic features (cf. Pintzuk and Kroch 1989).

[5] M1 through M4 are shorthands for the standardly used subdivisions of the Middle English period in the Helsinki family of corpora (see "On sub-periodizations in the corpora" in the Appendix). We occasionally refer to the first two subperiods, M1 and M2, as early Middle English, and to the last two, M3 and M4, as late Middle English.

regardless of the manuscript date, which could be later. This approach yields more data (and thus a more reliable corpus result for the less well-represented periods). The strategy maximizes the chances of finding adverbial *again*s. As indicated, the figures in (29) reflect the more permissive criterion for M1 and M2.

Particularly relevant to us is the fact that there were no clear cases of repetitive readings in the maximized data pool. Unlike in later Middle English, where repetitive cases are clearly available, the corpus does not contain any such tokens (that our numbers do not add up to 100% is due to exclusion of unclear cases, not of clearly repetitive ones).

Repetitive readings of *again* do become systematically available during the ME period, after the counterdirectional adverb had developed from an OE preposition. We illustrate this with some examples. (30a, b) are two examples from the M1/M2 periods of ME for counterdirectional *again* (from Gergel 2014). Note that (30b) is clearly counterdirectional and not restitutive: it means that 'he' returned the queen's love.[6]

(30)  Counterdirectional:
    a.  Huanne  he **þerin**   **geþ**:... huan he  **comþ ayen**:...
        when     he therein  goes:.. when he  comes again:..
        '... when he comes back ...'
        (CMAYENBI,56.1024, 14th c.)

    b.  quene               Gwenyvere **had hym**  **in grete**    **favoure** ...
        queen               Gwenyvere had him    in great     favour ...
        and so he **loved**     **the**        **quene agayne** aboven  all
        and so he loved       the         queen again    above    all
        other ladyes dayes of  his lyff,
        other ladies days   of  his life
        '... he returned the queen's love ...'
        (CMMALORY,180.2412, 15th c.)

An early example of clearly repetitive *again* in (31) is from M3 – specifically, from Chaucer's *Astrolabe*:

(31)  Repetitive:
    This zodiak  which that is part of the 8 speer,    **over-kervith**
    this zodic,   which that is part of the 8th sphere,  intersects
    the equinoxial,       and he **overkervith him ageyn** in evene parties;
    the equinoctial     and it intersects   it again in even parts
    'The zodiac, which is that part of the 8th sphere, intersects the equinoctial and intersects it again in equal parts.'
    (CMASTRO,669.C1.168, 14th c.; Translation from J. E. Morrison's edition)

---

[6] Example (30a) is from a lengthy passage arguing against taverns as the school of evil. The passage contrasts the counterdirectional events of going into the tavern and coming back out. A series of ('good') personal properties are then associated to the time when one is just entering the tavern, and contrasting properties to the time when one comes out (essentially, having lost all one's senses).

Late ME still yields counterdirectional *again*. The examples in (32) show that John Paston II (a 15th century speaker; M4) had both interpretations for *again* (examples from Gergel and Beck, to appear).

(32) a. Counterdirectional:
  tyll that the Kyng **goo in-to Walys** an **kome ageyn** […]
  till that the king go into Wales and come again
  'until the king goes into Wales and comes back…'
  (John Paston II, PCEEC-PASTON,I,391.126.3877, 15<sup>th</sup> c.)

 b. Repetitive:
  I woll not fayle to **be there at London ageyn** wyth-inthys vj dayes
  I will not fail to be there at London again within these six days
  'I won't fail to be there in London again within these six days.'
  (John Paston II, PCEEC-PASTON,I,443.137.4269, 15<sup>th</sup> c.)

Late ME in our corpora exhibits a number of uses that could be analysed as either counterdirectional or restitutive. Two such examples are given below.

(33) I sende yow þe obligacion her-wyth acordyng to yowre desyre, and a letter to
  I send you the obligation herewith according to your desure, and a letter to
  Bedyngffelde thankyng hym for yow, and more-ouer letyng hym
  Bedyngfeld thanking him for you, and moreover letting him
  know off myn entent.**Opyn** it and **close it ageyn** iff ye lyst.
  know of my intent. Open it and close it again if you like.
  'I'm sending you the obligation along with this, as you requested, together
  with a letter to Bedyngfeld thanking him on your behalf, and moreover letting
  him know about my intentions. Open it and close it (back) again if you'd like.'
  (John Paston II, PCEEC-PASTON,I,496.156.4835, 15<sup>th</sup> c.)

  Counterdirectional analysis: (You) open it/you close it.
  Restitutive analysis: It was closed and you do something that causes it to be
       once more closed.

(34) Neuerthelesse, iff ye and all my frendys and yowrys in Norffolk might haue
  Nevertheless, if you and all my friends and yours in Norfolk might have
  **lende me** so moche monye, and to haue takyn it vppe in v yere, I suppose
  lent me so much money, and to have taken it up in 5 years, I suppose
  they sholde par auentur    have ben   **payed ageyn**
  they should perhaps     have been  payed again
  in a yere ore ij iff I had solde  any woode.
  in a year or two if I had sold   any wood.
  'Nevertheless, if you and all my friends and yours in Norfolk might have
  lent me so much money, to be taken up for five years, I suppose they
  should possibly have been paid back in a year or two if I had sold any wood.'
  (John Paston II, PCEEC-PASTON,I,467.147.4600, 15<sup>th</sup> c.)

In the late Middle English period, counterdirectional/restitutive *again* was available with complex predicates, as e.g. in (35) and (36), as well as with predicates expressed through lexical accomplishments, as in (37) and (38):

(35)  **Up roos** tho oon of thise olde wise,                          [...]
      up rose then one of these old wise (men)
      And whan this wise man saugh    that hym    wanted    audience,
      and when this wise man saw      that him    lacked    audience
      al shamefast                    he **sette**  **hym**     **doun agayn**.
      all bashfully                   he set      him(REFL)  down again.
      'Then one of these old wise man rose. [...] And when this wise man noticed
      that he lacked an audience, he sat down all bashfully again.'
      (CMCTMELI,219.C2.95, 14th c.)

(36)  and þei **comen aȝen**    vnto Brut.
      and they came agein    to Brut
      'And they returned to Brut.'
      (CMBRUT3,8.183, 14th c.; in an earlier token Brut had sent off his men
      to spy)

(37)  Agayns the seconde  wanhope  he shal  thynke  that as ofte as he **falleth**
      against the second   vain-hope he shall  think   that as often as he falls
      he may **arise**  **agayn** by penitence.
      he may arise    again    by penitence
      'Against the second false belief he shall think that as often as he falls, he
      may arise through penitence.'
      (CMCTPARS,327.C2.1668, 14th c.)

(38)  But whan god all myghty  wole right   als the londes  weren **lost**
      but when God almighty    will  right   as the lands    were  lost
      þorgh synne of   cristene men, so schull  þei ben **wonnen aȝen**
      through sin of   Christian men so shall   they be won     again
      be cristen       men þorgh help of god.
      by Christian     men through help of God
      'But when God Almighty so wishes, just as the lands were lost due to the
      sin of Christians, so shall they be won back again by Christians with the
      help of God.
      (CMMANDEV,52.1273, 15th c.)

In sum, at the end of the ME period, both a counterdirectional and a repetitive adverb *again* exist. The predominant use is the counterdirectional reading. The addition of meanings in *again*'s development so far is sketched in (39).

(39)  preposition ('against')  →  adverb (counterdir.)  →  adverb (repetitive)
      OE                           ME1/2                    ME3/4

## 3.3 Early Modern English (EModE)

The situation does not seem to change qualitatively in Early Modern English (EModE), but it does change in terms of proportions.[7] This can be seen in Gergel's (2014) findings; below is the complete list of quantitative results for all periods studied there:

(40)  Proportion of clear counterdirectional/restitutive readings in mixed corpora:

| | | |
|---|---|---|
| Early Middle English ('permissive' M1/M2): | 96/104 | 92.3% |
| Late Middle English (PPCME2, M3 and M4): | 269/400 | 67.2% |
| Early Modern English (PPCEME, E1–E3): | 321/793 | 40.4% |
| Late Modern English (PPCMBE, 18th and 19th c.): | 106/400 | 26.5% |

Gergel's results confirm the data collected in Gergel and Beck (to appear) and Beck et al. (2009), who put together and studied correspondence corpora for EModE, LModE, and PDE. The table in (41) provides total numbers and percentages of counterdirectional/restitutive readings for John Paston II (a late ME speaker included in the EModE study), for EModE, and for LModE. The table in (42) lists total numbers and percentages for the three subperiods of EModE. It clearly shows a steady decline of counterdirectional/restitutive readings and a corresponding continuous increase of repetitive uses. In the cited papers the statistical significance of this development was calculated by $\chi^2$-test for the periods early ME, late ME, EModE, and LModE and was found to be highly significant.

(41)  Proportion of clear counterdirectional/restitutive readings in correspondence corpora:

| | | |
|---|---|---|
| Paston, John II (15th, M4) | 22/39 | 56.4% |
| EModE | 198/477 | 41.5% |
| LModE | 214/1015 | 21.1% |

(42)  E1  51/116  43.9 %
      E2  73/186  39.2 %
      E3  52/136  38.2 %

It is clear from the data that EModE had both a repetitive and a counterdirectional use of the adverb *again*. Examples from 17th century speaker Dorothy Osborne are given in (43) and (45) below. (44) features another clear counterdirectional use, this one by 16th century speaker Thomas More.

---

[7] We ignore the preposition *again* with meaning 'against' from here on. While the prepositional use is not part of standard Present-Day English, it is not so clear if and when it disappeared. The *OED* (third ed., 2012) notes the use of the preposition *again* as still existent in Present-Day English dialectally:

(i)   I seen this thing comin' *again* me in the hollow o' the road. (1996, S. Moylan *Lang. Kilkenny* i. 15)
(ii)  Monte Carson is gonna be elected the sherrif. Ain't no one runnin' agin him. (1987, W. W. Johnstone *Trail Mountain Man* 55)

(43) Counterdirectional:
Tis like people that **talk** in theire sleep,
nothing interupts them but **talking to them again** [...]
(Dorothy Osborne, PCEEC-OSBORNE,37.017.774, 17th c.)
= to reply to them

(44) Counterdirectional:
that lyke as the French King byfore **wrote** and bosted vn to his mother that
he had of his awne mynd passed in to Italy, so is it lykly that she shall haue
shortly cause to **wryte agayn to hym** that it had to be mych bettre and more
wisedome for hym to abide at home [...]
(Thomas More, PCEEC-MORE,313.020.266, 16th c.)
= 'to write back to him'

(45) Repetitive:
I am in good humor all the day after, for Joy that **I am well againe**.
(Dorothy Osborne, PCEEC-OSBORNE, 26.011.496, 17th c.)

In addition to clearly counterdirectional *again*s like (43) and (44), there are a lot
of examples that can alternatively be analysed in terms of restitution. Illustrating
examples are given in (46)–(63). Examples (46)–(60) include the text context that
motivates their classification as counterdirectional/restitutive. In the examples in
(63) the larger surrounding text also provided such motivation, though it is not
included here; these additional examples are listed here just to provide some further
illustration of the kinds of predicates used with counterdirectional/restitutive *again*.

Complex predicates with counterdirectional/restitutive *again*:

(46) Count Maurice in the mean time attempted Venloo, by surprising a fort
and being **entered** the towne was **beaten out again** with the losse of men.
(John Chamberlain, PCEEC-CHAMBER,I,235.015.624, 16th c.)

Counterdirectional analysis: M enters the town/M goes out of town.
Restitutive analysis: M was outside of town before and the beating causes
M to go once more out of town.

(47) I am gladd to **reade some comfort** in thy letters, yet when I looke backe
vpon my owne condition, I am **struck blancke againe**, seeing my selfe
inviron'd with eyes & eares that seek's my vtter ruine.
(Thomas Knyvett, PCEEC-KNYVETT,161.042.1786, 16/17th c.)

(48) I forboare to send till I had seen my daughter and the chyld, that I might
tell yow a whole tale, which I have done this morning : and for this purpose
**I have sent Tom**, though having but one footman, I could with difficulty
spare him, having none to dress my horse, or to go on arrands, for yow
know my cumpany: therfore **dispatche him from yow back agayn**, as soone
as yow can,[...]
(PCEEC- HOLLES,II,355.097.2674, John Holles 17th c.)

(49) and he that **eates** more then he can disgest, **casts it up agayn** with many groanes (John Holles, PCEEC-HOLLES,II,370.101.2841,17[th] c.)

(50) they staid in expectation of a wind till the second of Nouember **at Rye**; and then had not **sailed** above 4 Leagues before it changed, by w = ch = meanes they were **blowne back again** to Rye
(Anne Conway, PCEEC-CONWAY,493.093.2696, 17th c.)

(51) for thre wer **sent two pryson** about tenne of the clok in the mornyng; and ther was a dissension bytwen the aldermen bycause they wold tel precisely truly whither they **cam owte of pryson again** at oon of the clok in the afternone that same daye or two.
(Stephen Gardiner, PCEEC-GARDIN,154.007.685, 16th c.)

Lexical accomplishment predicates with counterdirectional/restitutive *again*:

(52) And heark you can you tell whither the Gentleman that **Lost** a Cristall boxe y = e = 15 of ebruary in S = nt = Jameses Parke or Olde spring garden has **found it again** or not ?
(Dorothy Osborne, PCEEC-OSBORNE,149.061.3458, 17th c.)

Counterdirectional analysis: He lost it/he found it.
Restitutive analysis: He had it and something happens that causes him to once more have it.

(53) if I **drowne** by the way, this will bee my Last Letter, and like a will. I bequeath all my kindenesse to you in it, with a charge never to bestow it all upon another Mistresse, least my Ghost **rise againe** and haunt you
(Dorothy Osborne, PCEEC-OSBORNE,170.070.3985, 17th c.)

(54) their army once **disbanded**, will never be **raised agayn**
(John Holles, PCEEC-HOLLES,III,402.111.3156,17[th] c.)

(55) I will **goe** this morning to Wansted, to se som horses I have ther, where I wyll tary tyll iij a clok, and than **retorn hether ageyn**,[...]
(Robert Dudley, 16th, c. PCEEC- LEYCEST,8.003.53)

(56) And I assure you yf ye saw these places, with the dysposicion of the people, as I doe, ye wold think, [...] that more money than yet she hath leyd out to be most happely **spent** yf ther were no gage or hope to have yt **payd ageyn**
Robert Dudley, PCEEC-LEYCEST,71.020.705, 16th c.)

(57) [...] **loose** her that advantage which, at that present lett slippe, was not possibly to be **gotten** for her **agayne**.
(Robert Dudley, PCEEC-LEYCEST,98.029.1035, 16th c.)

(58) many thynges ar **owt of my mynde** which I neuer purpose to loke fore ageyne nor thoughe I wolde were never $lyke to **fynde ageyne** <em> while I liue
(Thomas More, PCEEC-MORE,536.037.627, 16th c.)

(59) Sometimes **I would faine hope** that the crosse occurrences of the affaires of you Colledge might dispose you to such a diversion and that then you might take it in this place where you are so much desired, but streight my hopes are **againe destroyed** with the remembrance of your aversenesse to leave your relations and friends in England
(Anne Conway, PCEEC-CONWAY,209.049.1478, 17th c.)

(60) Though wee have procured partly by the meanes of your honours letters the **release** of the mans imprisonment, yet he looketh daily to be **imprisoned agayne**, (Nathaniel Bacon, PCEEC-BACON,III,106.348.6020, 16th c.)

(61) Further examples with restitutive/counterdirectional *again*:
a. nothing can ever perswade mee to **enter the worlde againe** [...]
(Dorothy Osborne, PCEEC-OSBORNE,123.052.2815, 17th c.)
b. but how angry was I to see him **spoile this againe** [...]
(Dorothy Osborne, PCEEC-OSBORNE,144.060.3321, 17th c.)
c. Next week my persecution **begins againe** [...]
(Dorothy Osborne, PCEEC-OSBORNE,OSBORNE,48.022.1045, 17th c.)
d. I **return** Sharples **back again** to yow, to bargain with him as yow can,[...]
(John Holles, PCEEC-HOLLES,I,41.009.193, 17th c.)
e. Well, now I will **returne** a litle **backe again**, to tell you what followed since my former conference with the states
(Robert Dudley, PCEEC-LEYCEST,62.017.571, 16th c.)
f. he is to **begin again**
(John Chamberlain, PCEEC-CHAMBER,II,347.062.2818, 17th c.)
g. for whenne he blewe tomoch, the candel went not oute but **lighted again**
(Stephen Gardiner, PCEEC-GARDIN,216.056.1239, 16th c.)

In (62) below we repeat the complete list of lexical predicates found with counterdirectional/restitutive *again* in the EModE correspondence corpus put together by Gergel and Beck (to appear). The list contains many lexical accomplishment predicates (*enter, forge, imprison, rise,* etc.), but also directional predicates (*answer, hear, talk, write*). The latter require the counterdirectional analysis, while the former are also amenable to an analysis in terms of restitution. In addition to these lexical predicates, the corpus also yielded complex predicates like (46)–(51) above. Those are not listed in (62).

(62) Lexical predicates used with restitutive/counterdirectional *again* (EModE):
*anchor, answer, begin, bring, close, come, commence, confirm, deliver, destroy, dispatch, embrace, enter, find, forge, furnish, get, have, hear, imprison, light, meet, obtain, pay, raise, receive, recover, remember, remit, repay, return, restore, rise, send, spoil, take, talk, win, write*

To sum up, during the EModE period, the repetitive reading becomes the dominant use of *again*, but a counterdirectional reading is still available. Many examples can be analysed as either counterdirectional or restitutive.

## 3.4 Late Modern English (LModE) and Present-Day English (PDE)

Beck et al. (2009) investigate the later periods LModE (specifically, 19th c.) and PDE (after 1990). They observe that the increase in repetitive uses compared to other uses continues. Once more this proved significant by a $\chi^2$-test ($p < .01$):

(63) Proportion of restitutive/counterdirectional readings:

| | | |
|---|---|---|
| LModE | 214/1015 | 21.1% |
| PDE | 133/995 | 12.6% |

Their data reveal no clearly counterdirectional uses of *again* anymore. The non-repetitive uses of *again* that they find can all be analysed in terms of restitution. Some examples are given below (repeated from (24)), followed by the complete list of lexical predicates that occur with restitutive/counterdirectional *again* (from Beck et al. 2009).

(64) a. ... a gleam of affectionate pleasure lighted it up for an instant, and straight it **sunk again**. (Edgeworth, 19th c.)
b. The first time of going over I shall mark the passages which puzzle me, and then **return to them again**. (Macaulay, 19th c.)

(65) Lexical predicates used with restitutive *again* (LModE):
*appear, ascend, awaken, become, change, close, come, convert, cure, descend, disappear, emerge, faint, find, get, go, join, leave, lose, make, mount, open, raise, reach, recommence, recover, retrace, return, revive, rise, rouse, shroud, shut, sink, sprout, start, wake*

(66) Lexical predicates used with restitutive *again* (PDE):
*begin, come, cover, fill, find, grow, open, plant, release, rise, start, wet*
(*start* alone accounts for 13 occurrences, *come* for 6, and *grow* for 5)

We follow Gergel and Beck (to appear) in concluding that counterdirectional *again* is no longer available in LModE and PDE.

Beck et al. (2009) furthermore discover an interesting difference between LModE and PDE, which is revealed in the sheer length of the lists in (65) and (66): LModE had plenty of lexical accomplishment predicates (37 different predicates in (65)), whereas PDE does not (only 12 different predicates in (66)). Instead, most restitutive uses of *again* in PDE occur with complex predicates. Beck et al. argue that PDE is moving from setting (iii) of the visibility parameter to setting (ii). Hence in PDE *again* is no longer a genuine decomposition adverb at all, though it was in LModE. This interpretation matches the results of an informal questionnaire study which revealed differences between predicates like *return* and *come back*. The restitutive/counterdirectional interpretation of *again* is uniformly accepted with the latter but not with the former. The difference between the two virtually synonymous predicates is that *return* involves decomposition and would require setting (iii), while *come back* is a complex predicate, with *back* overtly marking the result state, and needs only setting (ii) for restitutive/counterdirectional *again*. (Compare this mixed result for PDE with the clearly restitutive use of *return* in LModE example (64b) above.)

(67)  a.  % return again     (restitutive)
      b.  come back again   (restitutive)

(68)  a   % connect the parts again   (restitutive)
      b.  put the parts together again   (restitutive)

Schöller's (2013) questionnaire study provides confirmation of these findings. She observes that in PDE repetitive *again* is rated significantly better than restitutive *again* in combination with lexical accomplishment predicates. Interestingly, this is not the case for German *wieder* 'again', for which a parallel questionnaire was run and evaluated. Schöller furthermore notes that counterdirectional uses of *again* tend towards the unacceptable, with a mean rating of 2.52 on a 4-point scale (where 1 is the best and 4 the worst rating). One of her examples is given in (69). This example produced a mean rating of 2.49 and elicited the comment in (69′).

(69)  In a newspaper advert Margarete was looking for a pen pal. A woman answered and sent her a nice letter. Enthusiastically, Margarete wrote to her again.

(69′)  Participant's comment:
       "I write back and not again because I have never written to her."

Thus counterdirectional readings seem no longer available. Regarding visibility, note that decomposition as such is still available in PDE. Both (70a) and (70b) have result-state-modifying readings. The observed change concerns *again*, specifically.

(70)  a.  I almost reached the summit.
      ok: 'I got to a point where I was almost at the summit.'
   b.  Can we open the window for a few minutes?
      ok: 'Can we bring it about that the window is open for a few minutes?'

Hence we conclude (with Beck et al. 2009) that the restitutive/counterdirectional use of *again* is beginning to require a visible result state—that is, *again* in PDE is changing from setting (iii) to setting (ii). Recall that visibility is an argument for the structural analysis. Thus this finding supports the conclusion that for LModE and PDE, the structural analysis of *again* is the right one. Only on a structural view can the difference in requirement regarding the visibility of the result state be accounted for. This is in agreement with the finding that clearly counterdirectional uses no longer occur in the LModE or PDE corpora, and that they are rejected in PDE. Thus there is no argument for the lexical analysis for these later stages of English, and we find an argument for the structural analysis instead.

### 3.5 Section summary

From an OE preposition *again* with the meaning 'against', an adverb *again* developed during the ME period which at first had a counterdirectional interpretation only. Towards the end of the ME period, this adverb increasingly gained a repetitive interpretation, in addition to the counterdirectional meaning. Both meanings persisted in the EModE period, with the repetitive reading making up a larger and larger percentage of the uses of *again*. This development is best modelled by the lexical ambiguity analysis. By the 19th century, the counterdirectional interpretation seems to have been lost; only the repetitive reading of *again* survives. In LModE *again* is a genuine decomposition adverb, and hence we find many examples of restitutive readings with lexical accomplishment predicates. PDE *again* is losing setting (iii) of the visibility parameter and ceases to be a decomposition adverb. Restitutive readings are found predominantly with complex predicates (setting (ii) of the visibility parameter). These later stages are thus best modelled by the structural ambiguity analysis. The diachronic development of the word *again* in the periods under consideration is summarized below (see also Gergel 2014):

(71)  0.  preposition ('against')         OE          →
     1.  preposition +
        adverb (counterdir.)      ME1/2       →
     2.  preposition +
        adverb (counterdir.) +
        adverb (repetitive)      ME3/4, EModE  →
     3.  adverb (repetitive, setting (iii))  LModE      →
     4.  adverb (repetitive, % setting (ii))  PDE

# 4 Compositional analysis of the developmental steps

The overall picture that emerges from the diachronic investigations is fairly clear: from a preposition, a counterdirectional adverb is derived, which then also acquires a repetitive meaning. The counterdirectional meaning is later lost, and only repetitive *again* survives. Thus the lexical and the structural analysis apply at different times in the history of *again*. This implies that different analyses apply to the same example, depending on the stage of the grammar.

This section investigates in detail the different stages of the grammar of *again* and the transitions between them. We ask what precisely the analysis was that applied to the relevant data at a given stage, and how it was possible for speakers to move from one analysis to another. That is, we analyse the micro-steps of diachronic development in the compositional semantics of *again*. In doing so, we follow the research program laid out recently in Eckardt (2011, 2012) to bring together compositional semantic and diachronic analysis. Furthermore, we follow the example of Gergel (2010), who shows (on the basis of the diachronic development of English *rather*) how lexical semantics, syntax, the syntax of Logical Form, and semantic composition need to be looked at together in order to understand what is involved in semantic change. Considering lexical change alone is relatively unrevealing, compared to considering the whole package of all interpretive components working together.

In terms of analysing *again* specifically, we pursue the plot that emerges from the points that Fabricius-Hansen (2001) makes about the development of the word. We want to understand how its different meanings are derived from one another. We concentrate on two developments: first, the development of the counterdirectional adverb from the preposition, and second, the development of the repetitive meaning from the counterdirectional meaning of the adverb. Section 4.1. addresses Q1 below and Sect. 4.2 addresses Q2:

Q1: How does counterdirectional *again* develop from the preposition meaning *against*?

Q2: How does repetitive *again* develop from counterdirectional *again*?

## 4.1 From preposition to counterdirectional adverb

Our starting point is a preposition with the meaning 'against', as used for example in (72). From this preposition the use illustrated in (73) must develop. (74) shows an instance of both uses of *again* co-occurring in an example from late ME.

(72) Stage 0: preposition *against*
John swam against the current.
[[against$_P$]]

(73) Stage 1: counterdirectional adverb *again*
She wrote again (=back) to him.
[[ again$_{\text{ctrdir}}$]]

(74) [...] þe Duchesse off Suffolk and þe Duke of Norffolk concelle
the duchesse of Suffolk and the duke of Norfolk council

jntend verrely thys terme in the begynnyng to comence
intend truly this term in the beginning to commence

**a-geyn** the appelys
again the appeals

**ageyn me** and yow and other off owr seruantys, [...]
against me and you and other of our servants

'[T]he Duchesse of Suffolk and the Duke of Norfolk's council intend indeed at the beginning of this term to start again the appeals against me and you and other of our servants.'
(John Paston II, PCEEC-PASTON,I,442.137.4242, 15$^{\text{th}}$ c.)

Let us start by considering the meaning of the preposition *against*. A first intuition is formulated in (75).

(75) a. John swam against the current.
b. |----------------> the path of John's swimming
<--------------- the path of the current
c. λe. John swims along a path in e
& there is another event of the current following a reverse path

We analyse the prepositional phrase as a path-related VP modifier (e.g. von Stechow 2006). We add type <1> for paths to our ontology (see Cresswell 1978; Krifka 1998; and von Stechow 2006 for a path semantics). The prepositional phrase is thus type $\ll$1,<v,t$\gg$, <1,<v,t$\ggg$ (<v> being the type of eventualities). The intuition from (71) is implemented in the lexical entry in (76).

(76) [[against]] = λx.λR$_{<l,vt>}$.λp.λe.∃e'∃p'∃P[P(e')(x)(p') & reverse(p')(p)
& R(e)(p)]
'x follows a reverse path in another event'
<e, $\ll$1,<v,t$\gg$, <1,<v,t$\ggg$ >

Our example is analysed in (77). We assume that the path and the event argument are bound existentially higher up in the tree.

(77) a. [[against the current] [$\lambda$p $\lambda$e [VP John swim p e]]]     (LF)

b. [[against the current]] =
$\lambda$R$_{<1,vt>}$.$\lambda$p.$\lambda$e.$\exists$e'$\exists$p'$\exists$P[P(e')(the_current)(p') & reverse(p')(p) & R(e)(p)]

c. [[ [$\lambda$p $\lambda$e [VP John swim p e]] ]] =
$\lambda$p.$\lambda$e. [[swim]](p)(e)(John) = $\lambda$p.$\lambda$e. John swim along p in e

d. [[ John swim against the current]] =
$\lambda$p.$\lambda$e.$\exists$e'$\exists$p'$\exists$P[P(e')(the_current)(p') & reverse(p')(p)
& John swim along p in e]

A few more comments: we use 'reverse' as an abbreviation for a path that involves the same locations but in a reverse sequence:

(78) Let a path be a sequence of locations $<l_1,...,l_n>$ for simplicity
(see Cresswell and Krifka for more sophisticated definitions).
A path p is the *reverse* of a path p' (reverse (p')(p)) iff p=$<l_1,...,l_n>$ and
p'=$<l_n,...,l_1>$.

As seen in (77), we give the verb a path argument directly. In this we differ from von Stechow (2006), where the connection between the verb meaning and the prepositional phrase is mediated via the event argument of the verb and the path of the event. This choice is made for simplicity. The derivation in (77) reconstructs the subject into the specifier position of VP, also for convenience. The semantics attributed to 'against the current' is fairly weak in that there has to be another event involving the current and a reverse path. Probably a lot more needs to be said about such prepositional phrases; consider e.g. the data in (79) below. (Interestingly, we were unable to find a detailed discussion of the preposition *against* in the literature. In addition to Cresswell, Krifka, and von Stechow, see also Herweg and Wunderlich 1991 and Higginbotham 1999 for the semantics of prepositions generally—but not of *against*.) We will not go further into prepositional semantics in this paper.

(79) a. The picture was leaning against the wall.
b. I pushed against the door.
c. I decided against participating.

Let us concentrate instead on how an adverbial use might develop from such a preposition. This is easiest to see with directly motion-related uses that, in contrast to the preposition, no longer take a nominal argument. An early example is repeated below.

(80) Huanne  he þerin geþ: ...   huan he comþ ayen:...
     when     he therein goes:...   when he comes again:...
                              (CMAYENBI,56.1024, 14th c.)
     '... when he comes back:...'

We suggest tentatively that an intermediate stage—call it Stage 1a—contained adverbial *again* with a meaning similar to *back*.[8] Here is a proposal regarding its semantics:

(81) a. She walked back.
  b. $\lambda p.\lambda e$: the relevant event preceding e followed a path the reverse of p.
    she walked along p in e

The lexical entry in (82) models this intuition, and (83) provides an analysis of the example.

(82) $[[\text{again}_{\text{back}}]] = \lambda e'.\lambda R_{<1,vt>}.\lambda p.\lambda e:\exists p'\exists P[P(e')(p') \ \& \ \text{reverse}(p')(p)$
  $\& \ e' < e]. \ R(e)(p)$
  'the relevant earlier event followed a reverse path'
  $<v, \ll 1, <v,t \gg, \ll 1, <v,t \ggggg$

(83) a. $[ \ [ \ \lambda p \ \lambda e \ [\text{VP she walk p e}]] \ \text{back} \ e']$  (LF)
  b. $[[\text{back} \ e']] = \lambda R_{<1,vt>}.\lambda p.\lambda e:\exists p'\exists P[P(e')(p') \ \& \ \text{reverse}(p')(p)$
    $\& \ e' < e]. \ R(e)(p)$
  c. $[[[ \ \lambda p \ \lambda e \ [\text{VP she walk p e}]] \ ]] =$
    $\lambda p.\lambda e.[[\text{walk}]](p)(e)(\text{she}) = \lambda p.\lambda e. \ \text{she walked along p in e}$
  d. $[[ \ \text{she walked back} \ ]] =$
    $\lambda p.\lambda e:\exists p'\exists P[P(e')(p') \ \& \ \text{reverse}(p')(p) \ \& \ e' < e]. \ \text{she walked along p in e}$

Compared to the preposition *against*, we see that this adverb differs semantically in three ways:

* the prepositional subject (*the current* in (72)) is replaced by a silent event pronoun e' (as in *dagegen/against that*);
* the information regarding this 'other' event has the status of a presupposition;
* the 'other' event has an earlier temporal location.

We propose that the word *again* acquired the meaning in (82) in addition to the meaning in (76). For that, its semantics had to change in the three respects indicated above. We further suggest that these three changes may be interconnected: a pronominal event argument presupposes an appropriate referent. That is, in order for the pronoun to be appropriate, a suitable event has to be salient as the referent of the event pronoun. Most likely this event is in the past, and so a presuppositional meaning component regarding a specific earlier event comes into being. The other event continues to be an event following a reverse path; this meaning component has been inherited from the preposition and remains stable.

---

[8] An anonymous reviewer points out to us that *back* is first attested in this sense in the 14th century. So at the time in question *back* was not around to compete with *again* developing this meaning.

According to this suggestion, the transition from preposition to adverb could be made by data that combine the preposition with a silent pronoun for a place. Gergel (2014) conjectures that an OE example like (84) (cf. (27b)) could be such a case.

(84) &   sæde  him  þonne  æfen    bið,  uton  **faran agen**.
     and  said  them  when   evening  is    let-us go   again
     'and when evening came, he said to them let us go back/across (to the other side).'
     (cowsgosp,Mk_[WSCp]:4.35.2449, 10th c.)

It seems that such a motion-related counterdirectional adverb was quickly generalized to non-motion contexts. While in ME about 60% of the predicates used with *again* are motion predicates, early ME already has counterdirectional *again* with non-motion predicates. Some examples of a non-motion predicate combined with counterdirectional *again* are given in (85) (from Gergel 2014):

(85) a. Gif …  tu **nimst aȝean**      more ðanne  ðu him **lændest**, …
        if      you take again/back   more than    you him lent
        'If you take back more than what you lent him.'
        (CMVICES1,77.892, 13th c.)

     b. … sir Launcelot  dressed  hys  speare  and brake hit
        Sir Lancelot     dressed  his  spear   and broke it
        uppon  sir Galahad,  and sir Galahad **smote hym  so agayne**
        upon   Sir Galahad,  and Sir Galahad struck him   so again/back
        that he bare      downe  horse and man.
        that he pushed    down horse and man
        'Sir Lancelot dressed his spear and broke it upon Sir Galahad, and Sir Galahad struck him back in such a way that he pushed down horse and man.'
        (CMMALORY,651.4344, 15th c.)

Let us call this Stage 1b. We propose to drop the reference to paths here. Alternatively, one could have assumed, with Krifka (1998), an extended use of the concept of paths that would apply to (85) as well as to (80). We prefer to drop the path argument because in order for repetitive *again* to develop, eventually the semantics must move away from paths anyway. This development, then, completes the change from a path-oriented expression to a temporally oriented expression that was begun in Stage 1a. We give a (simplified) example in (86) and analyse it in (87) and (88). In (88), the relevant earlier event is the one described in the first clause of (85b)—the hitting of Galahad by Lancelot. This plausibly counts as 'the opposite' and is thus an appropriate value for the event pronoun.

(86) a. Galahad hit Lancelot again.
     b. $\lambda e$: the relevant event preceding e was of a nature opposite to e.
        Galahad hit Lancelot in e

(87) $[[\text{again}_{\text{ctrdir}}]] = \lambda e'.\lambda P_{<vt>}.\lambda e:P_c(e') \ \& \ e' < e. \ P(e)$
'the relevant earlier event was of the opposite nature'
$<v, \ll v,t>, <v,t>>>$

(88) a. $[ \ [\lambda e \ [\text{VP Galahad hit Lancelot in } e]] \ \text{again}_{\text{ctrdir}} \ e']$
b. $[[\text{Galahad hit Lancelot again }]] =$
$\lambda e:\text{Lancelot hit Galahad in } e' \ \& \ e' < e. \ \text{Galahad hit Lancelot in } e$

Two connected developments have occurred at this point:

\* the semantics generalizes from reverse paths to reversals in a broader sense;
\* the path argument is dropped from the semantics of *again*.

The semantics in (87) is essentially that of the counterdirectional adverb *again* from the literature (cf. Sect. 2) above. This adverb begins to play a role during the Middle English period.

To sum up, diachronic analysis of the word *again* and its composition in the sentence has revealed individual interrelated steps of semantic change. It is interesting that pronominal reference to an earlier event may have served as the impetus for the development of a meaning component that is a presupposition concerning an earlier event. If this is on the right track, then we see here an instance of context and the semantics/pragmatics interface creating a dynamic momentum for language change (a perspective that fits with general ideas proposed by Eckardt 2006). This, then, is the essential idea behind our answer to the question Q1:

Q1: How does counterdirectional *again* develop from the preposition meaning *against*?

## 4.2 From counterdirectional adverb to repetitive adverb

This subsection addresses the question Q2 below:

Q2: How does repetitive *again* develop from counterdirectional *again*?

First, it is important to note that this development is *prima facie* quite surprising. From the meaning in (89a), the meaning in (89b) develops. But this looks as if the word changes from meaning one thing to meaning quite the opposite. What could motivate or facilitate such a development? As long as we just look at the two lexical entries, it is hard to answer this question.

(89) a. $[[\text{again}_{\text{ctrdir}}]] = \lambda e'.\lambda P.\lambda e:e' < e \ \& \ P_c(e').P(e)$
'the opposite has happened before'
b. $[[\text{again}_{\text{rep}}]] = \lambda e'.\lambda P.\lambda e:e' < e \ \& \ P(e').P(e)$
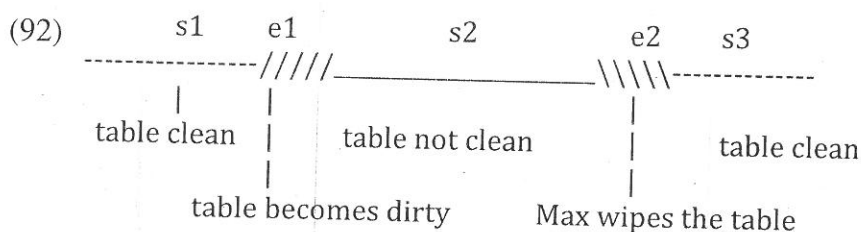'the same has happened before'

Let us now look at situations that verify counterdirectional uses of *again*, starting with the example in (90). (90) is a complex predicate construction—specifically, a resultative—and its analysis in terms of counterdirectionality is sketched in (91).

(90)  Max wiped the table clean again.
      'Max wiped the table clean, and the table had become dirty before.'

(91)  a.  $[_{VP1} [_{VP2} \text{Max wipe } [_{SC} \text{ the table clean}]] [\text{again}_{ctrdir} \ e']]$
      b.  $[[VP2]] = \lambda e.\text{wipe}(e)(\text{Max}) \ \&$
          $\exists e''[\text{CAUSE}(e,e'') \ \& \ \text{BECOME}(e'')(\lambda e^*. \ \text{clean}(e^*)(\text{the\_table})]$
      c.  $[[VP1]] = \lambda e:e' < e \ \& \ \text{the table\_becomes\_dirty}(e').$
          $\text{wipe}(e)(\text{Max}) \ \& \ \exists e''[\text{CAUSE}(e,e'') \ \& \ \text{BECOME}(e'')(\lambda e^*. \ \text{clean}(e^*)$
          $(\text{the\_table})]$
          'Max wiped the table clean, and the table had become dirty before.'

In (92) we illustrate the type of overall situation in which the sentence on this reading is true. Notice that the situation as a whole contains a repetition: there are two states of the table being clean, and this has to be the case for a sequence of <counterdirectional predicate, predicate> to come out true. That is, the prestate of the counterdirectional predicate is the same as the result state of the predicate in the sentence, and so this state has to hold twice in all situations which verify counterdirectional uses of *again*.

(92)
```
       s1      e1            s2            e2     s3
   ----------------/////_____\\\\\--------------
          |       |                        |
   table clean    |    table not clean     |      table clean
          |       |                        |
      table becomes dirty         Max wipes the table
```

We suggest that this state of affairs opens the door to an analysis in terms of repetition. A speaker, or language learner, could analyse (90) with a different adjunction site for *again*. The syntax of the language allows for a structure in which the adverb modifies the result-state-denoting constituent SC 'the table clean' instead of the VP 'Max wipe the table clean', as in (93).

(93)  $[_{VP} \text{Max wipe } [_{SC1} [_{SC2} \text{ the table clean}] [\text{again } e']]]$

The speaker/learner can still derive the appropriate truth conditions for the sentence, however, if, simultaneously, *again* changes its meaning from counterdirectional to repetitive. This analysis is sketched in (94); it gives rise to appropriateness and truth conditions for the sentence that are verified by the same situations (92) as before (if Max wiped the table clean, and the table had been clean earlier, then it must have become dirty in between).

(94) a. $[[\text{again}_{\text{rep}}]] = \lambda e'.\lambda P.\lambda e:e' < e \ \& \ P(e').P(e)$

    b. $[[\text{SC2}]] = \lambda e.\text{clean}(e)(\text{the\_table})$

    c. $[[\text{SC1}]] = \lambda e:e' < e \ \& \ \text{clean}(e')(\text{the\_table}). \ \text{clean}(e)(\text{the\_table})$

    d. $[[\text{VP}]] = \lambda e:e' < e \ \& \ \text{clean}(e')(\text{the\_table}).$
        $\text{wipe}(e)(\text{Max}) \ \& \ \exists e''[\text{CAUSE}(e,e'') \ \& \ \text{BECOME}(e'')(\lambda e^*. \ \text{clean}(e^*)$
        $(\text{the\_table})]$
        'Max wiped the table clean, and the table had been clean before.'

The syntactic ambiguity would thus be a context in which a speaker/learner could reanalyse lexical meaning while keeping the sentence interpretation essentially constant.

We believe it is important that the contexts for this potential reanalysis are numerous and varied (cf. Kroch (1989) for the role of a variety of contexts in grammar change). Resultatives like (90) are fairly rare, but contexts amenable to reanalysis include all complex predicate constructions (i.e. not only resultatives but also verb-particle constructions and goal PP constructions, which are more frequent; recall Sect. 2). Moreover, they also include in particular all lexical accomplishment predicates combined with counterdirectional *again*. The analysis of these uses of *again* is at the heart of our proposal for the development of repetitive from counterdirectional *again*. We suggest that lexical accomplishment predicates combined with counterdirectional *again* were the crucial facilitating context for the development of repetitive *again*.[9]

---

[9] Heidi Quinn and an anonymous reviewer point out to us that it is possible to detect another kind of repetition in some counterdirectional uses, which might also facilitate the development of a repetitive interpretation: in data like (i), there is repetition of the plain verbal content stripped of all the participants in the event ('hit' in the example). This emerges clearly in a Parsonian (Parsons 1990) representation of its semantics, (i.c).

(i)  a.  Galahad hit Lancelot again.
    b.  Lancelot hit Galahad, and then Galahad hit Lancelot.
    c.  $\lambda e: e' < e \ \& \ \text{hit}(e'). \ \text{hit}(e) \ \& \ \text{agent}(e)(G) \ \& \ \text{theme}(e)(L)$

We find this suggestion intuitively very appealing and interesting. It would support our plot of explaining the development of a repetitive adverb from a counterdirectional adverb by adding further contexts that would encourage such a development. It should be noted, though, that the suggestion is not applicable to all counterdirectional uses. Verbs like *fall/rise, leave/return,* etc. are different; the suggestion is most appealing for transitive verbs of the type 'A does something to B'/'B does something to A'. Our main reason for not pursuing this suggestion further, however, is that its implementation would require us to adopt a compositional paradigm in which a Parsonian semantics is mapped directly into the syntax. In other words, there would be a constituent that expresses 'hit(e)', and 'theme(e)(L)' would be syntactically separated from it. We do not want to adopt such a syntax.

Let us review what we know about the analysis of such data, taking (95) (repeated from (61a)) as a concrete example.

(95) Restitutive/counterdirectional *again*:
nothing can ever perswade mee to **enter the worlde againe** [...]
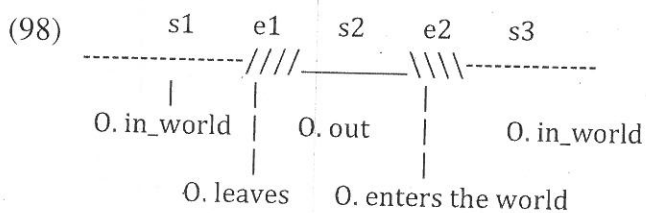(Dorothy Osborne, 17$^{th}$ c.)

The older analysis for this kind of example is the counterdirectional analysis. We know this because there was a phase in ME (M1 and M2) for which repetitive *again* is not yet attested systematically. This analysis is sketched in (96).

(96) Lexical/counterdirectional analysis:
a. [[ PRO$_{Osborne}$ [enter the world]] [again$_{ctrdir}$ e']]
b. $\lambda e: e' < e$ & O. leave_the_world(e'). O. enter_the_world(e)

Further, we know that roughly by LModE, counterdirectional *again* is no longer systematically available. Hence the structural analysis sketched in (97) applies at later stages.

(97) Structural/restitutive analysis:
a. [[ PRO$_{Osborne}$ [∅V [[SC PRO$_{Osborne}$ in the world] [again$_{rep}$ e']]]
b. $\lambda e: e' < e$ & O. in_the_world(e').
O. does something that causes her to come to be in the world in e

Such examples thus were reanalysed from (96) to (97). Notice that this reanalysis follows the same reasoning as that of the resultative example above. The type of overall situation that verifies the sentence stays the same:

(98)
```
        s1    e1    s2    e2    s3
----------------////_____\\\\-------------
        |     |           |
  O. in_world |   O. out   |   O. in_world
        |                  |
      O. leaves    O. enters the world
```

Secondly, the data here once more constitute a case of structural ambiguity. The adverb *again* can be adjoined either to the VP or to the result-state-denoting constituent SC inside the decomposition structure. As the data in (99)–(103) illustrate, there is clear evidence that result states can be modified by different adverbs and adverbial constructions systematically and independently of *again* in late Middle English and Early Modern English. Thus the syntactic reanalysis is plausible here as well. An M3/M4/EModE speaker has all the grammatical knowledge required to employ the restitutive analysis in (97) (cf. also Gergel and Beck (to appear) for this point made for EModE).

(99)      &     for the passynge loue þat he hadde to    hire   whan he saugh   hire   ded
         and   for the passing love that he had towards   her    when he saw     her    dead
         he fell in a rage & oute of his wytt **a gret while**
         he fell in a rage and out of his wits a great while
         (CMMANDEV,59.1451, 15th c.)
         '… he came to be in rage and out of his mind for a long time'

(100)    but ever he folowed hit   more and more tyll God stroke hym **allmoste** blynde.
         but ever he followed it    more and more till   God struck him   almost     blind
         (CMMALORY,660.4644, 15th c.)
         "… God caused him to become almost blind."

(101)    For which the wise man seith, "Fedeth hym that **almoost** dyeth for honger";
         for which the wise man says    feed       him that almost    dies    for hunger
         For which the wise man says, "Feed those who almost starve."
         "feed those who become almost dead for hunger"
         (CMCTPARS,306.C1.752, 14th c.)

(102)    Vppon thys I was commaunded to go forth **for a whyle**
         (Thomas More, PCEEC-MORE,553.042.796, 16th c.)
         '… to bring it about that I am outside for a while.'

(103)    Sir, my lord of Hunsdon hath sent his comandment, uppon his sonn Hobbyes
         informacion, for a bayly of Hersam, who had a book concerning ther own
         lybertyes and myne also, delyvered them by a stuard of myne only **for a tyme**
         to pleasure them […]
         (Robert Dudley, PCEEC-LEYCEST,11.005.86, 16th c.)
         '… brought about by a steward of mine that they have it for a time…'

(104)    Indeed, sweet hart, this busines hath **almost** broake my hart.
         (Thomas Knyvett, PCEEC-KNYVETT,161.042.1784, 16th /17th c.)
         '… this business has caused my heart to be almost broken.'

We suggest that speakers/learners in M3/M4 reanalyse the adjunction site of *again* in (95) to the lower position in the tree. In order to derive appropriate truth conditions for the whole sentence, the lexical meaning of the adverb has to change in tandem with the assumed structure. This is the origin of repetitive *again*. The seemingly strange change in lexical meaning is explained when we look at *again* in its compositional environment.

It is central to our analysis of this diachronic development that speakers keep the overall sentence interpretation constant. Since this requirement has a much broader range of application, well beyond our particular case study of *again*, we will return to it in the general discussion in Sect. 5.

Our proposal has some further consequences regarding *again* and its analysis:

First, in M3/4 and EModE, complex predicates and lexical accomplishment predicates with restitutive/counterdirectional uses of *again* are most likely

vacuously ambiguous, because both analyses are possible and they should exist alongside each other. Earlier uses have the counterdirectional analysis only; later uses have the restitutive analysis only.

Second, the first repetitive *again*s according to our analysis are invisible; they are restitutive *again*s. Later, speakers generalize the use of repetitive *again*: repetitive *again* is beginning to be used with activities and states. That is, it gets adjoined as a modifier outside complex predicate and decomposition structures, and it becomes visible as an unequivocally repetitive adverb.

Third, *again*s with a counterdirectional etymological source should be born as decomposition adverbs crosslinguistically. Looking at their further development, and the development of English after the changes analysed above, this makes it more plausible that an adverb begins with setting (iii) of the visibility parameter and then loses it later on—a development that is also somewhat surprising at first glance.

Fourth, while our analysis gives an interesting and plausible explanation for how the observed change proceeds, there is still a question as to what drives this development. Note that while the syntactic ambiguity exists anyway, the reanalysis comes at the cost of creating a new lexical entry for *again*. One would expect there to be some kind of directive force that compels speakers to expand the lexicon in this way. What could that be? We speculate that once more, the silent event pronoun plays a role. Consider (98) once more. Suppose that a particular eventuality is salient as the value for the event pronoun, and suppose that it is not the change of state e1 of Osborne leaving the world in this example, but the state s1 of Osborne being in the world. If this is the salient value for the pronoun e', that could be the impetus we are looking for. This would mean, basically, that the states in (98) are conceptually more prominent than the transitions (and it is a question for psycholinguistics and cognitive psychology whether this is plausible and how it could be tested). At any rate, our suggestion is that a prominent value for a free variable is an active ingredient in this diachronic change. So once more, the semantics/pragmatics interface is a driving force behind the development we observe (see Traugott and Dasher 2002; Eckardt 2006; Gergel 2009 on the role of the interfaces in semantic change).

Finally, our study makes predictions about other potential candidates among lexical items for semantic evolution akin to that of *again* (and similarly *wieder* in German; cf. Fabricius-Hansen 2001)—from counterdirectional to repetitive—when the conditions are right. Could what happened in the case of *again* (and *wieder*) also occur with semantically similar items, in particular *back*? If *again* was at some point as similar to *back* as we have claimed, should *back* not be a candidate for a similar trajectory, too? The prediction we make is that it does indeed have the main semantic ingredients to be one.

However, as historical linguists are well aware, any such prediction must come with a serious caveat. It raises the so-called actuation problem of language change (Weinreich et al. 1968), i.e. the question why certain changes happen when they happen, and – conversely – why others don't. There is, simply put, no general answer to this question. For comparison, consider questioning the course of Jespersen's cycle in French because some noun meaning 'step' (a random counterpart of Early French *pas*) does not reanalyse to a negative marker in language X, or even later in French. This apparent randomness in where an observed trend is followed and where it isn't has to do partly

with the fact that, typically, a number of factors must add up to produce a systematic change in grammar. For our case study, this means that in addition to the semantic conditions that we have sought to model in our paper, there are additional factors that might enhance, or more often hinder, the development of a new marker. These factors may be narrowly syntactic—in our case, arising from adverbial/particle syntax and its interaction with scopal possibilities. But they may also relate to the "morphological system": is there another adverb alive and functional in the language? If there is, then it could produce a blocking effect—as PDE *again* itself might well do in the case of *back* today. (Note also that at the time when *again* significantly took off as a repetitive, *eft*, the old adverb with similar meanings in Old English, was on the retreat.)

This caveat, part of standard argumentation in historical linguistics, should explain why there is no serious *immediate* expectation for *back* to develop into a repetitive adverb of the same type as *again*. There is, however, one area of language change in which normal conditions can be suspended: language contact. French does not have a productive adverb like *again,* and the prefix *re-*, which can take over some of its functions, is less productive than a freely adjoined adverb. As has widely been documented by now (cf. King 2011 and references cited there), varieties of French that are in contact with English and are in a minority position in the respective communities (both in different parts of Canada and in Louisiana) have imported uses of *back* to French. While some minority Francophone communities have solely imported the counterdirectional meaning, others have developed the repetitive use (examples cited from King 2011, p. 117):

(105)  a.  *J'avons monté back à la messe à 10 heures.*
           We went back up to the mess at 10 o'clock.
       b.  I dit:        "Je vou dirai pas back."
           He says:      "I won't tell you again."

## 5 Semantic change

This section provides conceptual motivation for the idea that constant entailments play a role in semantic language change. The motivation comes from the way language learners acquire information about meaning. The principle that we introduced in Sect. 1, repeated below, summarizes the proposed effect of constant entailments in formal terms.

(3)  *Constant entailments:*
     Variability in the meaning of an expression $\alpha$ between interpretations $\alpha'$ and $\alpha''$ is promoted by the existence of contexts $\phi$ in which an occurrence of $\alpha$ under both interpretations $\alpha'$ and $\alpha''$ leads to the same proposition $\phi'$. (Beck 2012)

Our starting point is the (uncontroversial) idea that language learners match sentences with situations when acquiring meaning (see e.g. Crain and Lillo-Martin 1998). Given a set of pairs of a sentence S and a situation in which the sentence is

true, language learners extract the proposition p expressed by sentence S, i.e. the set of worlds/situations described:

(106)  a.  $<S,s1>$, $<S,s2>$, ...
       b.  $[[S]] = p_{<s,t>}$
              $= \{s: S \text{ is true in } s\}$

Furthermore, learners must deduce the compositional ingredients, e.g. word meaning, from the sentence meanings; for example:

(106′)  a.  $[[ \,[_{s_1} X \, \alpha \, Y \,] \,]] = p$
        b.  $[[ \,[_{s_2} X \, \beta \, Y \,] \,]] = q$
        c.  $[[\alpha]] = \alpha'$, $[[\beta]] = \beta'$

So how can a language learner deduce something different about a compositional ingredient than what the target grammar specifies at the time?

Different analyses can lead to the same sentence meaning; that is, while the mapping from S to p via [[]] remains the same, the way this comes about in the composition may be different. Here is an abstract example:

(107)  Let S be a string $\alpha \, \beta \, \gamma$, and $[[S]] = p$.
       How p is composed depends on
              (i) syntactic structure,
              (ii) the lexicon, and
              (iii) the composition principles used
              (plus pragmatic/contextual information, which we ignore for now).
       There are e.g. possibilities a. and b.:
       a.  $[_s [_X \, \alpha \, \beta] \, \gamma \,]]$
           $[[S]] = [[X]] \oplus [[\gamma]]$
       b.  $[_s \, \alpha \, [_Y \, \beta \, \gamma \,]]$
           $[[S]] = [[\alpha]] \oplus [[Y]]$
       Different choices for $[[\alpha]]$, $[[\beta]]$, $[[\gamma]]$ and $\oplus$ (the composition principle, e.g. function application or predicate modification) could lead to the same proposition $p = [[S]]$.

This is (simplifying somewhat) what happens with *again*:

(108)  S is the string 'verb SC again'.
       a.  $[_s \, [\text{verb SC}] \, \text{again}]$
           $[[S]] = [[\text{again}]] \, ([[\text{verb SC}]])$
       b.  $[_s \, \text{verb} \, [\text{SC again}]$
           $[[S]] = [[\text{verb}]] \, ([[\text{SC again}]])$

$[[S]]$ (or more precisely: $[[S]]$ plus the inferences that $[[S]]$ supports) remains the same despite the different structures and composition in (108a) and (108b) because *again*'s lexical meaning is not the same: it is $[[\text{again}_{\text{ctrdir}}]]$ in (108a), but $[[\text{again}_{\text{rep}}]]$ in (108b) ($\oplus$ is function application in both (108a) and (108b)). This reanalysis by the

learner produces the observed language change. Our proposal is basically that such change is plausible because learners infer the ingredients to the composition from the overall sentence meaning. There is direct evidence for the sentence meaning (the situations described), so that remains stable. But evidence for the way it is composed is indirect. If one component of the grammar offers more than one possibility (here, via syntactic ambiguity), other compositional ingredients become variable. So in our case the context $\phi$ that facilitates variability in the sense of (3) is a syntactically ambiguous context. That ambiguity generally facilitates language change has been recognized e.g. in Stern (1931), Eckardt (2006), Hopper and Traugott (1993), and elsewhere (though there are usually additional factors that are claimed to add to the ambiguity, typically invited inferences in the line of inquiry of the cited authors).[10]

We should point out that there is a certain conceptual similarity between 'constant entailments' and so-called 'bridging contexts' as discussed in the literature on language change (Evans and Wilkins 2000; Heine 2002; Lucas and Willis 2012; cf. also Diewald's 2002 'critical contexts'); but note that the present proposal is not about implicatures, which constitute the centre of attention in most of the literature on language change cited. It can be, and in the case at hand, is, purely semantic.

We suggest that (3) holds generally, and we now present two more possible examples from diachronic linguistics, which so far have not been analysed under the concept of constant entailments.

The first case consists of certain well-known shifts between the perfect and the past tense. We give some minimal background first (simplifying strongly). The perfect can introduce an extended-now (XN) time interval (McCoard 1978; Dowty 1979; von Stechow 1999). A standard LF for the perfect is (109) (note that the perfect is distinct from the viewpoint aspects, i.e. perfective/ imperfective). For the German XN-Perfect, von Stechow (2002) suggests a semantics based on the abutting relation as in (110):

(109)  [$_{TP}$ Tense [$_{PerfP}$ Perfect [$_{AspP}$ Aspect [$_{VP}$ ]]]]

(110)  $\text{Perfect}_{Germ} = \lambda P. \lambda t \exists t' \, t' >< t \, \& \, P(t')]$  (where $><$ is the abutting relation)

The past tense interpretation, on the other hand, requires there to be a relevant time interval preceding the utterance time (UT). This can be implemented, for example, via a pronominal presupposition (Partee 1973; Kratzer 1998).

Although different implementations are available in each case, the crucial point is that while the present perfect and the past are generally (justly) distinguished,

---

[10] We thank an anonymous reviewer for pointing out Stern's work to us. Although we could not identify a notion such as constant entailments in Stern's comprehensive monograph (Stern 1931), his work marks an interesting transition between lexical and compositional semantics (cf. especially Chap. 13, p. 351 ff.). An impediment towards a fuller exploration of the issues – in our view – was the lack of a formal theoretical semantic analysis at the time. This was clearly sensed by the author, who was ahead of his time; cf. his reservations with regard to theoretical consistency in discussing contemporary theories of metaphors (e.g. p. 300). Stern states clearly that the taxonomy set up is empirically motivated (and he notes several overlaps and definitional difficulties himself). Furthermore, he mentions "phrasal meanings", even though he doesn't provide an explicit analysis. Also quite relevantly and lucidly, Stern points out the contemporary difficulties in the interpretation of sentential meanings.

there is often no truth-conditional difference between them. In examples like (111), the present perfect can easily be interpreted as a plain past:

(111)  Peter hat die Kartoffeln geschält.
       Peter has the potatoes peeled
       'Peter (has) peeled the potatoes.'

As von Stechow (2002) puts it: "Many if not most occurrences of the German perfect morphology express a plain PAST tense." There are many contexts in which a sentence can be judged true on either a past or a perfect analysis. The run-time of the potato-peeling event in (111) could be viewed either as part of an XN-interval or as an interval simply located before utterance time; but the overall end result is the same:

(112)  -----/////XXXXX//|        (**XXXXX** =time of relevant potato-peeling event)
        / XN interval/**UT**

We suggest that this type of ambivalence in interpretation is the engine for the transition from the perfect to the past—a tendency which goes beyond the facts observed in colloquial German above (cf., e.g., Bybee et al. 1994).

A second case in which constant entailments play a role is given by the reinterpretation of *never* from a temporal quantifier towards a marker of negation in some standard as well as non-standard varieties of English (cf. Lucas and Willis 2012 for a recent take on an older problem, though once *again* not under the observation of constant entailment). The basic issue is as follows. In sentences such as (113), *never* receives its most intuitive meaning not as a quantificational element over times, but rather as a marker of negation:

(113)  a.  You say he never came home that night?
           (*British National Corpus,* G3E 1607; Lucas and Willis 2012, p. 460)
       b.  417 is never a prime number!

Lucas and Willis (p. 467) claim that a key feature for *never* to function as negation in such sentences is that "(a) there is a temporally restricted 'window of opportunity', given or inferable in context, in which the relevant event could theoretically have taken place at any time but didn't, and (b) that window is closed at the time of utterance."

More importantly, Lucas and Willis suggest that the relevant ambiguous contexts (in their terms: bridging contexts) for the rise of the so-called window-of-opportunity readings look like (114), where both a quantificational and a negation reading are available:

(114)  The mother had the baby on her shoulder for over an hour, but it never burped. (Lucas and Willis 2012, p. 477)

We will not engage in a fuller discussion of such cases here, but they make the same point: that the existence of sentence contexts leading to truth-conditionally

indistinguishable interpretations can be a key and thus far underestimated factor in the semantic change of an expression.

## 6 Conclusion

We have offered a compositional semantic interpretation of the history of the English adverb *again*. The analysis of the development of an adverbial from a prepositional meaning is argued to involve several individual steps triggered by reference to a relevant earlier event. This eliminates the prepositional object and introduces the presupposition about an earlier eventuality. The development of a repetitive reading from a counterdirectional reading is argued to be facilitated by syntactically ambiguous contexts, and possibly also driven by pronominal reference and the salience of a particular referent. The role of the semantics/pragmatics interface (here in terms of salient referents as values for free variables) for change in compositional semantics might be an interesting direction for future work. We argue that change is related to acquisition in terms of the evidence speakers have for meaning. Evidence for sentence meanings is fairly direct, whereas evidence for composition has to be inferred. An ambiguity in one compositional ingredient may lead to reanalysis of others, while sentence meaning is held constant.

## Appendix

### On sub-periodizations in the corpora

The years of the subdivisions in the parsed corpora on which our findings are based (the same as in the Helsinki corpus) are given below:[11]
Subdivision of the Old English period:
**O1**: –850  **O2**: 850–950  **O3**: 950–1050  **O4**: 1050–1150

Subdivision of the Middle English period:
**M1**: 1150–1250  **M2**: 1250–1350  **M3**: 1350–1420  **M4**: 1420–1500

Subdivision of the Early Modern period:
**E1**: 1500–1570  **E2**: 1570–1640  **E3**: 1640–1710

---

[11] Some corpus texts are marked with two numbers, typically when composition and manuscript data diverge. For example, M23 for a text would mean that its composition is regarded to have been undertaken in the period that is given first, i.e. M2, while the relevant manuscript is dated from the latter period, M3. Some issues in connection with such mixed texts in Early Middle English are discussed in Sect. 3.2. For Old English, the subdivisions played no relevant role in our current study with regard to the adverb *again* (due to the scarcity of relevant adverbial data we could find in the YCOE overall, as discussed in the main text).

**Corpus ID**

Remember the notation introduced for the corpus examples in Sect. 3:

(26) Notation used for early English corpus examples:
   a. Swa Thomas to þam timan agean ferde buton bletsunga.
      so    Thomas at that time back went without blessing
      'So Thomas went back without consecration at that time.'
      (cochronA-10,ChronA_[Plummer]:1070.14.1471, 11<sup>th</sup> c.;
      transl. Pintzuk 1991: 212)
   b. Gif … tu nimst aȝean    more ðanne ðu him lændest, …
      if you take again/back more than   you him lent
      'If you take back more than what you lent him,…'
      (CMVICES1,77.892, 13<sup>th</sup> c.)

We add here some more explanation on the token ID. A token is usually a clause, in the segmentation undertaken in the respective corpus, but sometimes it can also include more material. The corpus ID itself typically consists of an identifier of the text and one of the particular place in the textual source from which the token was retrieved. The identifier of the text for Old and Middle English contains a short prefix: thus 'co' at the beginning of an ID, as in (26a), indicates that the text is from the Old English parsed corpus, while the prefix 'CM' indicates that it is from the Middle English parsed corpus, as in (26b).[12] Some texts have additional conventions explained in the corpus documentation to which we refer below; for example, '10-A' in (26a) means that the token is from version A of the chronicle written by a scribe identified as number 10. The number that follows corresponds in this case to the year of the event described, i.e. 1070. (Further numbers are irrelevant for current purposes and not uniform across the corpus IDs, due to the different editions and notations which the corpus texts stem from, each with its own conventions. Interested readers will find all the editions on which the corpora are based in the documentation sites listed below). The next subsection lists the texts that show up in our data collection.

**Key to the source texts cited from the Old and Middle English corpora**

The key to the IDs of the texts cited in the paper from the parsed corpora of historical English is given below. The authors' names are included when they are

---

[12] The notation is commonly used in studies reporting on the parsed corpora of Old and Middle English; we keep it for direct compatibility of referencing corpus data, i.e. a prefix 'co' indicates Old English and 'CM' Middle English provenience. The corpus IDs from the Parsed Corpus of Early English Correspondence (PCEEC; Taylor et al. 2006) do not contain such prefixes. We hence added 'PCEEC' in the relevant cases to clarify their source.

known. For the data from correspondence corpora, the author's name is always known, and we include it with each example.

| Corpus file | Period/ approx. year | Text |
| --- | --- | --- |
| Old English corpus files cited from the YCOE: | | |
| cochronA | O23[13] | *Anglo-Saxon Chronicle A ('Parker'-Chronicle)* |
| cocura | O2 | *Cura Pastoralis: King Alfred's West-Saxon Version of Gregory's Pastoral Care* |
| cowsgosp | O3/c. 990 | *West-Saxon Gospels* |
| Middle English corpus files cited from the PPCME2: | | |
| CMASTRO | M3/a1450 (c1391) | Geoffrey Chaucer's *Treatise on Astrolabe* |
| CMAYENBI | M2/1340 | Dan Michel's *Ayenbite of Inwyt* |
| CMBENRUL | M3/a1425 | *The Northern Prose Rule of St. Benet* |
| CMBRUT | M3/c1400 | *The Brut or The Chronicles of England* |
| CMCAPCHR | M4/a1464 | John Capgrave's *Chronicle* |
| CMCTMELI | M3/c1390 | Geoffrey Chaucer's CT, *The Tale of Melibee* |
| CMCTPARS | M3/c1390 | Geoffrey Chaucer's CT, *The Parson's Tale* |
| CMHALI | M1/c1225 (?c1200) | *Hali Meidhad* (part of the Katherine Group of texts) |
| CMMALORY | M4/a 1470 | Thomas Malory's *Morte Darthur* |
| CMMANDEV | M3/?a1425 (c1400) | *Mandeville's Travels* |
| CMVICES1 | M1/a1225 (c1200) | *Vices and Virtues* |

Further details on the texts from the parsed corpora can be obtained from the following sources: (i) for the Old English corpus: http://www-users.york.ac.uk/lang22/YCOE/info/YcoeTextFile.htm#list; (ii) for Middle English: http://www.ling.upenn.edu/histcorpora/PPCME2-RELEASE-3/info/texts-by-name.html; (iii) for Early Modern English: http://www.ling.upenn.edu/histcorpora/PPCEME-RELEASE-2/philological_info.html; (iv) for Late Modern English: http://www.ling.upenn.edu/histcorpora/PPCMBE-RELEASE-1/; and (v) for the Parsed Corpus of Early English Correspondence http://www-users.york.ac.uk/lang22/PCEEC-manual/. For further background on the Late Modern English correspondence data to which we make reference, we refer directly to Beck et al. (2009) for a detailed exposition of the composition of the database studied and the precise methods used.

---

[13] The chronicles are written over large time spans by various hands (sometimes in different places, sometimes with interruptions), and their overall dating is not directly relevant here. We give the span indicated in the YCOE.

# References

Beck, Sigrid. 2005. There and back again: A semantic analysis. *Journal of Semantics* 22: 3–51.

Beck, Sigrid. 2006. Focus on *again. Linguistics and Philosophy* 29: 277–314.

Beck, Sigrid. 2012. Pluractional comparisons. *Linguistics and Philosophy* 35: 57–110.

Beck, Sigrid, Polina Berezovskaya, and Katja Pflugfelder. 2009. The use of 'again' in 19th-century English versus Present-Day English. *Syntax* 12: 193–214.

Bosworth, Joseph, and Thomas N. Toller (eds.). 1882. *An Anglo-Saxon dictionary: Based on the manuscript collections of the late Joseph Bosworth*. Oxford: Clarendon Press.

Bybee, Joan, Revere Perkins, and William Pagliuca. 1994. *The evolution of grammar: Tense, aspect, and modality in the languages of the world*. Chicago: The University of Chicago Press.

Crain, Stephen, and Diane Lillo-Martin. 1998. *An introduction to linguistic theory and language acquisition*. Oxford: Blackwell.

Cresswell, M. 1978. Prepositions and points of view. *Linguistics and Philosophy* 2: 1–41.

Diewald, Gabriele. 2002. A model for relevant types of contexts in grammaticalization. In *New reflections on grammaticalization*, ed. I. Wischer and G. Diewald, 102–120. Amsterdam: John Benjamins.

Dowty, David. 1979. *Word meaning and Montague Grammar*. Dordrecht: Reidel.

Eckardt, Regine. 2006. *Meaning change in grammaticalization: An enquiry into semantic reanalysis*. Oxford: Oxford University Press.

Eckardt, Regine. 2011. Semantic reanalysis and language change. *Language and Linguistics Compass* 5: 33–46.

Eckardt, Regine. 2012. Grammaticalization and semantic reanalysis. In *Semantics: An international handbook of natural language meaning*, vol. 3, ed. Klaus von Heusinger, Claudia Maienborn, and Paul Portner, 2675–2702. Berlin: Mouton de Gruyter.

Elenbaas, Marion. 2007. The synchronic and diachronic syntax of the English verb-particle combination. Doctoral dissertation, Radboud University Nijmegen (LOT Dissertations 149).

Ellegård, Alvar. 1953. The auxiliary do: The establishment and regulation of its use in English. PhD dissertation, Göteborg University.

Evans, Nicholas, and David Wilkins. 2000. In the mind's ear: The semantic extensions of perception verbs in Australian Languages. *Language* 76: 546–592.

Fabricius-Hansen, Cathrine. 1983. Wieder ein Wieder? Zur Semantik von Wieder. In *Meaning, use and interpretation of language*, ed. R. Baeuerle, C. Schwarze, and A. von Stechow, 97–120. Berlin: Mouton De Gruyter.

Fabricius-Hansen, Cathrine. 2001. *Wi(e)der* and *again(st)*. In *Audiatur Vox Sapientiae: a festschrift for Arnim von Stechow*, ed. Caroline Fery and Wolfgang Sternefeld, 101–130. Berlin: Akademie.

Galves, Charlotte, Helena Britto, and M. Clara Paixão de Sousa. 2005. The change in clitic placement from classical to modern European Portuguese: Results from the Tycho Brahe Corpus. *Journal of Portuguese Linguistics* 4(1): 39–67.

Gergel, Remus. 2009. *Rather*—On a modal cycle. In *Cyclical change*, ed. E. van Gelderen, 243–264. Amsterdam: John Benjamins.

Gergel, Remus. 2010. *From comparisons to preferences: Investigations in modeling variation, change, and continuity at the syntax–semantics interface*. Habilitation: Universität Tübingen.

Gergel, Remus. 2014. On the diachronic trajectory of the adverb *again*: A corpus study at the interface with meaning. Ms., Universität Tübingen.

Gergel, Remus, and Sigrid Beck. (to appear). Early Modern English *again*—A corpus study and semantic analysis. *English Language and Linguistics*.

Gevaert, Caroline. 2007. The history of ANGER: The lexical field of ANGER from Old to Early Modern English. PhD dissertation, Universiteit Leuven.

Heim, Irene. 1990. Presupposition projection. In *Presupposition, lexical meaning and discourse processes* (Workshop Reader), ed. R. van der Sandt. Nijmegen: University of Nijmegen.

Heim, Irene, and Angelika Kratzer. 1998. *Semantics in generative grammar*. Malden, MA: Blackwell.

Heine, Bernd. 2002. On the role of context in grammaticalization. In *New reflections on grammaticalization*, ed. Ilse Wischer and Gabriele Diewald, 83–101. Amsterdam: John Benjamins.

Herweg, Michael, and Dieter Wunderlich. 1991. Lokale und Direktionale. In *Semantik: ein internationales Handbuch der zeitgenössischen Forschung*, ed. Arnim von Stechow and Dieter Wunderlich, 758–785. Berlin: de Gruyter.

Heycock, Caroline, and Joel Wallenberg. 2013. How variational acquisition drives syntactic change. *Journal of Comparative Germanic Linguistics* 16: 127–157.

Higginbotham, James. 1999. Accomplishments. *Proceedings of GLOW in Asia* II: 72–82.

Hopper, Paul, and Elizabeth Traugott. 1993. *Grammaticalization*. Cambridge: Cambridge University Press.

Jäger, Gerhard, and Reinhart Blutner. 2000. Against lexical decomposition in syntax. In *Proceedings of the Israeli Association for Theoretical Linguistics 15*, ed. Adam Wyner, 113–137.

Kamp, Hans, and Antje Rossdeutscher. 1994. Remarks on lexical structure and DRS construction. *Theoretical Linguistics* 20: 97–164.

Klein, Wolfgang. 2001. Time and again. In *Audiatur Vox Sapientiae: a festschrift for Arnim von Stechow*, ed. Caroline Fery and W. Sternefeld, 267–286. Berlin: Akademie.

King, Ruth. 2011. Back to back: The trajectory of an old borrowing. Selected Papers from NWAV 39. University of Pennsylvania Working Papers in Linguistics 17.2: 115–123.

Kratzer, Angelika. 1998. More structural analogies between pronouns and tenses. *Proceedings of SALT* 8, 92–110. Ithaca, NY: CLC Publications.

Krifka, Manfred. 1998. The origins of telicity. In *Events and grammar*, ed. Susan Rothstein, 197–235 Dordrecht: Kluwer.

Kroch, Anthony. 1989. Reflexes of grammar in patterns of language change. *Language Variation and Change* 1: 199–244.

Kroch, Anthony. 2001. Syntactic change. In *The handbook of contemporary syntactic theory*, ed. M. Baltin and C. Collins. Oxford: Blackwell.

Kroch, Anthony, Beatrice Santorini, and Lauren Delfs. 2004. *Penn-Helsinki parsed corpus of Early Modern English*. Pennsylvania: University of Pennsylvania.

Kroch, Anthony, Beatrice Santorini, and Ariel Diertani. 2010. *Penn parsed corpus of Modern British English*. Philadelphia: University of Pennsylvania.

Kroch, Anthony, and Ann Taylor. 2000. *Penn-Helsinki parsed corpus of Middle English*, 2nd ed. Philadelphia: University of Pennsylvania.

Lucas, Christopher, and David Willis. 2012. Never again: The regrammaticalization of *never* as a marker of negation in English. *English Language and Linguistics* 16: 459–485.

McCawley, James. 1968. The role of semantics in a grammar. In *Universals in linguistic theory*, ed. E. Bach and R. Harms, 124–169. New York: Holt, Rinehart and Winston.

McCoard, Robert. 1978. *The English perfect: Tense-choice and pragmatic inferences*. Amsterdam: North-Holland.

McFadden, Thomas, and Artemis Alexiadou. 2010. Perfects, resultatives, and auxiliaries in Earlier English. *Linguistic Inquiry* 41: 389–425.

Parsons, Terry. 1990. *Events in the semantics of English*. Cambridge, MA: MIT Press.

Partee, Barbara. 1973. Some structural analogies between tenses and pronouns in English. *The Journal of Philosophy* 70: 601–609.

Pedersen, W. 2010. Two sources of 'again'-ambiguities: Evidence from degree-achievement predicates. In *Logic, language and meaning: 17th Amsterdam Colloquium, Revised Selected Papers*, ed. M. Aloni et al., 355–363. Berlin: Springer.

Pintzuk, Susan, and Ann Taylor. 2008. The loss of OV order in the history of English. In *The handbook of the history of English*, ed. A. van Kemenade and Bettelou Los. Malden, MA: Wiley-Blackwell.

Pintzuk, Susan, and Anthony Kroch. 1989. The rightward movement of complement and adjuncts in the Old English of Beowulf. *Language Variation and Change* 1: 115–143.

Ramchand, Gillian. 2008. *Verb-meaning and the lexicon*. Cambridge: Cambridge University Press.

Rapp, Irene, and Arnim von Stechow. 1999. *Fast* 'almost' and the Visibility Parameter for functional adverbs. *Journal of Semantics* 16: 149–204.

Schöller, Anthea. 2013. The different readings of 'wieder' and 'again': An experimental investigation. Graduate Thesis, University of Tübingen.

Snyder, William. 2001. On the nature of syntactic variation: Evidence from complex predicates and complex word-formation. *Language* 77: 324–342.

Speyer, Augustin. 2010. *Topicalization and stress clash avoidance in the history of English*. Berlin: de Gruyter.

Stern, Gustaf. 1931. *Meaning and change of meaning with special reference to the English language*. Göteborg: Elander.

Taylor, Ann, Arja Nurmi, Anthony Warner, Susan Pintzuk, and Terttu Nevalainen. 2006. *Parsed corpus of Early English correspondence*. Compiled by the CEEC Project Team. York and Helsinki: University of York and University of Helsinki. Oxford Text Archive.

Traugott, Elizabeth, and Richard Dasher. 2002. *Regularity in semantic change*. Cambridge: Cambridge University Press.

Troberg, Michelle, and Heather Burnett. 2014. Le prédicat résultatif adjectival en français médiéval. *Lingvisticae Investigationes* 37(1): 152–176.

von Stechow, Arnim. 1995. Lexical decomposition in syntax. In *The lexicon in the organization of Language*, ed. U. Egli et al., 81–118. Amsterdam: John Benjamins.

von Stechow, Arnim. 1996. The different readings of *wieder* 'again': A structural account. *Journal of Semantics* 13: 87–138.

von Stechow, Arnim. 1999. Eine erweiterte Extended Now-Theorie für Perfekt und Futur. *Zeitschrift für Literaturwissenschaft und Linguistik* 113: 86–118.

von Stechow, Arnim. 2002. German *seit* 'since' and the ambiguity of the German Perfect. In *More than words: A Festschrift for Dieter Wunderlich*, ed. Ingrid Kaufmann and Barbara Stiebels, 393–432. Berlin: de Gruyter.

von Stechow, Arnim. 2006. Spatial prepositions in interval semantics. Ms., University of Tübingen.

Warner, Anthony. 2005. Why DO dove: Evidence for register variation in Early Modern English negatives. *Language Variation and Change* 17(03): 257–280.

Weinreich, Uriel, William Labov, and Marvin I. Herzog. 1968. *Empirical foundations for a theory of language change*. Austin: University of Texas Press.

Whitelock, Dorothy, David C. Douglas, and Susie I. Tucker (eds.). 1961. *The Anglo-Saxon chronicle: A revised translation*. London: Eyre and Spottiswoode.