# High Presuppositions in Change

D i s s e r t a t i o n

zur

Erlangung des akademischen Grades

Doktor der Philosophie

der Philosophischen Fakultät

der Universität des Saarlandes

vorgelegt von

Martin Kopf-Giammanco

Betreuer: Univ.-Prof. Dr. Remus Gergel

Saarbrücken, 2025

| | |
|---|---|
| Dekanin: | Univ.-Prof. Dr. Nine Miedema |
| Berichterstatter/innen: | Univ.-Prof. Dr. Remus Gergel |
| | Univ.-Prof. Dr. Augustin Speyer |
| Tag der letzten Prüfungsleistung: | 14. Mai, 2025 |

# Acknowledgments

I would like to express my sincerest gratitude to my supervisor, Remus Gergel. Without his patience and guidance, I never would have gotten to type these lines of acknowledgment. I would like to thank past and current members of the Joint Research Colloquium of the German and English linguistics departments at Saarland University, in particular, Augustin Speyer and Ingo Reich. Thanks also go to Carrie Ankerstein, Kurt Erbach, and Maike Puhl for showing me how to crunch numbers and letting me bounce things off of them. I am grateful for the 'silent writing' support from Melanie Groh, Marianne Hettrich, and Lisa Schneider. I want to thank my family for everything and my wife, Danielle Kopf-Giammanco, for her support and love. I am indebted to Howard Shore for fellowship on the long road. Last but not least, thanks go to Falkor for being the best emotional support dog one could wish for. I take full ownership of any errors, shortcomings and imperfections in this dissertation.

This work was supported by a DFG grant to Saarland University for the project 'Decomposing Decomposition in Time', PI Prof. Dr. Remus Gergel.

# High Presuppositions in Change

Martin Kopf-Giammanco

Abstract

This dissertation explores the emergence of scalar presuppositions in three *even*-words: The scalar additive focus particles English *even*, and Old English *furðon* ('even'), as well as the scalar additive comparative particle German *noch* ('still'). Through systematic annotation of presuppositions in diachronic corpus data, I argue that these scalar presuppositions are derived from the presuppositional profile of the non-scalar predecessors. I identify the scalar nature of space (*even*, *furðon*) and time (*noch*) as the origins of these scalar presuppositions. I provide an account of presuppositional change without relying on the conventionalization of conversational implicatures.

Based on annotated data from the Early English Books Online corpus (EEBO), I identify scalar particularizer uses of *even* ('all the way') as a relevant reading in the emergence of the scalar additive focus particle. Additionally, I contribute diachronic evidence supporting universal quantification in the ongoing debate on the quantificational strength of *even*'s scalar presupposition.

My systematic description of Old English *furðon* is based on exhaustive annotation of data in the York-Toronto-Helsinki Corpus of Old English Prose (YCOE). Due to the lack of pre-Old English corpus data, I propose three explanations for the emergence of *furðon* from the path-related adverbial *furþum* ('forth'). Proposal #1 is formulated in traditional, implicature based terms. Proposals #2 and #3 argue for source-oriented ('forth from') and goal-oriented ('forth to/towards') uses of *furþum* as the origins of the scalar presupposition of *furðon*. Proposal #2 accounts for the majority of weak uses in the YCOE, while Proposal #3 aligns with common diachronic clines for universal scalar additive particles.

For comparative *noch*, I report on an experimental study confirming its presupposition. By identifying Old High German bridging contexts in the Deutsch Diachron Digital Corpus (DDD), I argue that the temporal continuative *noch*, specifically its temporal scale, is the source of the scalar presupposition of German comparative *noch*. Consequently, I argue that comparative *noch* is not a marginal use and adheres to a uniform approach.

# Contents

# List of Abbreviations

| | |
|---|---|
| ACC | accusative |
| ADJ | adjective, adjectival |
| ADV | adverb, adverbial |
| APO | Avoid Pragmatic Overload |
| ass. | assertion |
| CE | common ground |
| COMP | comparative |
| CONJ | conjunction |
| CQ | current question |
| DAT | dative |
| DE | downward entailing |
| DDD | Deutsch Diachronic Digital Corpus (∼'German Diachronic Digital Corpus') |
| EEBO | Early English Books Online |
| EModE | Early Modern English |
| EXA | exactness |
| FP | focus particle |
| Fr | French |
| *furðon*$_{\text{SAO}}$ | scalar additive operator *furðon* |
| *furþum*$_{\text{ADV}}$ | adverbial *furðon*/*furþum* |
| GEN | genitive |
| Ger | German |
| GIIN | Generalized Invited Inferences |

| | |
|---|---|
| HuDSPa | Human Diachronic Simulation Paradigm |
| IITSC | Invited Inferences Theory of Semantic Change |
| IS | information structure |
| IMP | imperative |
| INT | interjection |
| KON | (German) conjunction |
| KWIC | key word in context |
| LC | list construction |
| LModE | Late Modern English |
| marg | marginal |
| MaxPMoT | Maximize Presupposition Marking Over Time |
| ME | Middle English |
| MH | An Old English Martyrology, ed. G. Herzfeld (EETS), London, 1900. |
| ModE | Modern English |
| NEG | negation |
| NPI | negative polarity item |
| $noch_{\text{ADD}}$ | additive *noch* |
| $noch_{\text{COMP}}$ | comparative *noch* |
| $noch_{\text{MARG}}$ | marginal *noch* |
| $noch_{\text{TEMP}}$ | temporal *noch* |
| NOB | *not only ... but* structure |
| OCR | optical character recognition |
| OE | Old English |
| OG | Old German |
| OHG | Old High German |
| OTA | Oxford Text Archive |
| PDE | Present Day English |
| PDG | Present Day German |

| | |
|---|---|
| PIE | Proto-Indo-European |
| POS | part of speech |
| PPCHE | Penn Parsed Corpora of Historical English |
| PPCME2 | Penn Parsed Corpora of Middle English |
| PREP | preposition, prepositional |
| PSP | presupposition |
| QAC | question answer congruence |
| QUD | question under discussion |
| SAO | scalar additive operator |
| SCA | scalar |
| SFF | 'strong *furðon* first' (cf. WFF) |
| TEMP, temp | temporal |
| TCP | Text Creation Partnership |
| TITUS | Thesaurus Indogermanischer Text- und Sprachmaterialien (∼Thesaurus of Indo-Germanic Text and Lanuage Artifactss) |
| WFF | 'weak *furðon* first' (cf. SFF) |
| YCOE | York Toronto Helsinki Corpus of Old English prose |
| $even_{\text{EXA}}$ | particularizer of exactness *even* |
| $even_{\text{SCA}}$ | scalar particularizer *even* |
| $even_{\text{SAO}}$ | scalar additive operator *even* |

# Chapter 1

# Introduction

This dissertation explores the emergence of scalar presuppositions. I argue that scalar presuppositions originate in the presuppositional profiles of the non-scalar predecessors of the particles under investigation. The focus is on *even*-words and their origins in spatio-temporal properties of their non-scalar predecessor particles: This dissertation presents evidence from the Early English Books Online (EEBO) corpus to show that the scalarity of the Present Day English (PDE) focus particle *even* originates in the non-scalar particularizer *even* focusing the endpoints of paths which come about due to goal PPs. With respect to the Old English (OE) scalar additive operator *furðon* ('*even*'), I argue that its scalarity stems from its interaction with path-based movement events of *furðon*'s non-scalar predecessor, the adverbial *furþum* ('*forth*'). I will present two trajectories in order to bridge the gap between pre-OE lexicographical source and the OE quantitative picture (on the basis of the York-Helsinki-Toronto Corpus of Old English Prose; YCOE). In addition to two path-contributed scalar presuppositions, I will include the German comparative particle *noch*: Like *even* and *furðon*, *noch* comes with a scalar presupposition and has the interpretive effect of placing its argument on the high end of a relevant scale. On the basis of the German Diachronic Digital corpora ('Deutsch Diachron Digital; DDD), I will show that the scalar presupposition of *noch* has its origin in the scalar nature of the temporal continuative *noch*.

The remainder of this introductory chapter is as follows: First, I will introduce the background and motivation for the project in this dissertation. Second, I will move on to provide the road map for the remainder of this dissertation.

## 1.1 Background and Motivation

Grammaticalization has advanced the understanding of semantic change. The foundational notions from the literature on Grammaticalization, most importantly (*semantic*) *reanalysis*, have made their way into research on semantic change specifically (Traugott, 1988). A crucial impetus came with Grice's idea that it is possible for "what starts life [...] as a conversational implicature to become conventionalized" (Grice, 1975, 58). This idea led to productive and successful innovation in the modeling of semantic change (König and Traugott, 1988; König, 1989, 1991; Traugott and Dasher, 2002; Traugott, 2006). Approaches that crystallized around Grice's idea in research on Grammaticalization are, for example, 'Generalized Invited Inferences (GIIN)', and 'Invited Inferences Theory of Semantic Change (IITSC)', etc. The common denominator for these is the notion of a "conventionalization of pragmatic meanings and their reanalysis as semantic meanings" (Traugott and Dasher, 2002; Hopper and Traugott, 2003). In other words, creative or conversational meaning becomes lexicalized in a recruited structure or item. This spurred systematic surveys of typical sources and typical targets for the diachronic paths of focus particles and beyond (König, 1989; Traugott, 2006). With the ensuing 'compositional turn' in the investigation of semantic change, new perspectives and insights became available (Eckardt, 2001, 2006, 2009, 2011, 2012). Compositional semantics, as a framework for looking at semantic change, allows to steer clear of stipulating (often a series of) pragmatic accidents (cf. Eckardt, 2001, 2006; Beck et al., 2009; Gergel, 2009; Eckardt, 2009; Beck, 2012; Beck and Gergel, 2015; Deo, 2015; Gergel and Beck, 2015; Gergel et al., 2016, 2017a,b, i.a.). A domain that has only recently received increased attention is change in presuppositional meaning. Here, the diachronic dimensions of presuppositions are under investigation ('presuppositional clines'): The semantic entries of presupposition triggers are thought to change due to mismatches and infelicities with respect to the relevant contexts as (charitable) hearers update the presuppositional profile of a given trigger; consider e.g. 'Avoid Pragmatic Overload (APO)' as proposed by Eckardt (2009) and a similar hearer-based approach by Schwenter and Waltereit (2010). An important diachronic extension of Heim's (1991) 'Maximize Presupposition' ("Präsupponiere in deinem Beitrag so viel wie

möglich!" (1991, 515)) is Gergel's (2023) 'Maximize Presupposition Marking Over Time (MaxPMoT)'. Thus, small shifts in the meaning of a form take place in contexts that permit 'constant entailments' with respect to the old and new meanings of the form (Beck, 2012, 88; Deo, 2015). Eckardt's (2009) presupposition-based review of Traugott's (2006) treatment of the emergence of the English scalar additive focus particle *even* puts stress on implicature-based accounts of semantic change. In the case of *even*, as a recovery mechanism due to presupposition failure, APO seems more successful in modeling meaning change than the conventionalization of a conversational implicature of counter-expectation/surprise. This is so because APO leaves fewer questions unanswered and is less stipulative with respect to pragmatic accidents and conversational implicatures being available for conventionalization in the first place. However, as of now, the systematic investigation of presuppositional change has a rather short history and the object of investigation is relatively little understood and under-investigated. I will, therefore, provide a systematic and corpus-based investigation of the emergence and diachronic development of presupposition triggers. I will focus on scalar presuppositions and provide a new answer to the question of how the scalar particles *even*, Old English *furðon* ('*even*') and German *noch* ('*still*') develop to assign presuppositions placing their arguments on the high ends of their scales. In light of previous research on grammaticalization, in particular implicature-based accounts (cf. the overview above but especially Traugott, 2006), and more recent research in diachronic semantics, in particular Eckardt's (2009)' APO, *even* is a very prominent candidate in need of a systematic investigation as far at the emergence of its scalar presupposition is concerned. I argue that scalar presuppositions directly derive from the presuppositional profile of their non-scalar predecessors. In my model of semantic change for the relevant particles, their scalar semantics are explained as originating in the scalar properties of the spatio-temporal objects which their non-scalar predecessors operated on.

## 1.2 Empirical domain and road map

In this section, I provide a road map for the main parts of this dissertation. I will discuss the selection of the three particles and how they fit into the larger picture.

I will then touch on the core issues and idiosyncrasies for each particle and the corresponding chapter in turn.

The three items at the center of this dissertation are (i) the Present Day English (PDE) focus particle *even* (Chapter 2), (ii) the Old English (OE) focus particle *furðon* ('even', cf. Ch. 3) and, (iii) the German particle *noch* ('still') in its comparative use ('$noch_{\text{COMP}}$'; Ch. 4). To begin with and connecting back to above, this relatively small group of particles have been recognized in the literature as operators locating their arguments relatively high on a relevant scale (Bierwirth, 1896; Horn, 1969; Anderson, 1972; Jackendoff, 1972; König, 1977; Karttunen and Karttunen, 1977; Karttunen and Peters, 1979; Rooth, 1985, 1992; König, 1989; Kay, 1990; König, 1991; Traugott, 2006; Eckardt, 2009; Beaver and Clark, 2008; Umbach, 2009b,a; Gast and van der Auwera, 2011; Umbach, 2012; Crnič, 2011, 2013; Greenberg, 2015, 2016, 2018, 2019, 2022, and many others). I will show for all three of them, that the scalar presuppositions have their origins in the spatio-temporal properties of the respective non-scalar predecessors. While PDE *even* and OE *furðon* will be shown to derive scalarity from paths, German $noch_{\text{COMP}}$ has its scalar presupposition derived from the scalar properties of Old High German temporal continuative *no(c)h*.

In Chapter 2, I will propose a novel account for the emergence of *even* as a scalar additive operator (SAO; '$even_{\text{SAO}}$'). During the late Middle English/early Early Modern English period, the non-scalar 'exactly'-*even* (a particularizer of exactness, '$even_{\text{EXA}}$') became analyzed as scalar *even* ('$even_{\text{SCA}}$'). The core idea is that $even_{\text{SAO}}$ derives its high-scale semantics from $even_{\text{EXA}}$'s endpoint/goal-orientedness in predicates with bounded directional PPs, which allowed $even_{\text{EXA}}$ to become analyzed as $even_{\text{SCA}}$ (König, 1989, 1991; König and Traugott, 1988; Traugott, 2006; Eckardt, 2009; Eckardt and Speyer, 2016). As a consequence of my proposal, I can make the following contributions to our understanding of *even*: (i) Due to *even* focusing on the endpoints of paths and the resulting entailments of a property holding for intermediate points along the relevant paths, I will argue for *even*'s universal quantificational strength over relevant focus alternatives. I will thus contribute diachronic evidence to the ongoing synchronic debate in the literature and recently taken up by Greenberg (2022) with respect to Kay (1990). Moreover, (ii) my account

places the emergence of scalar additive *even* before Traugott's (2006) account with the earliest unambiguous uses of scalar additive *even* originating from the 1520s.

Connecting to previous accounts (in particular the seminal König (1989), Traugott (2006) and Eckardt (2009)), I will rely on extensive corpus data from the Early English Books Online Corpus (EEBO) and my annotations of it in order to formulate my proposal for *even* and its emergence as a scalar additive focus particle. As far as *even*'s origin in a 'lexical' adverb with the concrete meaning paraphrasable as 'flat, smooth, level' is concerned, I follow the grammaticalization literature (cf. König and Traugott, 1988; Traugott and Dasher, 2002; Eckardt, 2006; Traugott, 2011; van Gelderen, 2014).

The second *even*-word under investigation here is Old English *furðon*, which is, in fact, *even*'s predecessor as a scalar additive focus particle. Considering the extensive literature on focus particles in general, *even* in particular, and related items (e.g. in the typological literature; Gast and van der Auwera (2011)), it is surprising that *furðon* has not, to my knowledge, taken center stage anywhere outside of (etymological) dictionary entries (Stratmann, 1878; Clark Hall, 1916; Partridge, 1966; Klein, 1971; Bosworth-Toller, 2024b,c,a). In Chapter 3, I will address this gap; covering its distribution, its main readings and propose a number of possible trajectories for the emergence of *furðon* as a scalar additive particle. Crucially, like PDE $even_{\text{SAO}}$, the scalar additive particle *furðon* occurs in both a variety of downward entailing (DE) (or scale-reversing) environments and unmarked upward entailing (i.e. scale preserving) contexts. *Furðon* can be considered a 'universal' scalar additive operator ('$furðon_{\text{SAO}}$') on par with PDE $even_{\text{SAO}}$. Notably, *furðon* is not a cognate (or etymon) to *even*. Thus, $furðon_{\text{SAO}}$ extends the peculiarity of English being the only present day Germanic language with such a universal SAO (i.e. *even*) into the earliest recorded stages of Old English. As a brief summary of the main coordinates: (i) *furðon* was used predominantly in association with weak elements under DE-operators and (ii) infrequently in association with strong elements. Furthermore, (iii) out of the majority DE-environments, the majority was brought about by negation rather than non-negation DE-operators. Finally, (iv) all major types of uses of *furðon* remained relatively stable throughout the OE period and (v) the overall frequency of *furðon* diminished drastically over the course of the

available corpus data from the YCOE corpus (Taylor et al., 2003).

As far as *furðon*'s emergence as a SAO is concerned, I will discuss three proposals that can explain the development of *furðon*$_{\text{SAO}}$ and bridge the gap from pre-OE lexicographical literature to the OE corpus data. The first proposal considers the possibility of a GIIN/IITSC-account applying for *furðon*$_{\text{SAO}}$. Proposals #2 and #3 consider in detail the semantics of the non-scalar predecessors of *furðon*$_{\text{SAO}}$: *Furðon* developed from the adverbial/prepositional Proto-Germanic related set of items **fur(a)*$_{\text{adv/prep}}$, **furai*$_{\text{adv}}$, **furþ(a)*$_{\text{adv}}$ (with a shared origin in Proto-Indo-European) that share a (spatial-)directional meaning paraphrasable as 'forth', 'out of', 'in front of', 'before', 'onward', and 'toward'. Crucially, these predecessors had a proximal/source-related and a distal/goal-related use. Proposal #2 takes the proximal/source uses as its point of departure and Proposal #3 the distal/goal oriented uses. Proposal #2 best explains the quantitative picture in the OE corpus data, i.e. 'weak *furðon*' being over-represented next to 'strong *furðon*'. Here, *furðon* emerged as a SAO in association with weak elements in the context of transparent focus constructions (Eckardt, 2009) and then generalized to scale preserving contexts. At the core of this proposal is the idea that in movement events *furðon* specified a relation between the agent and the source in terms of relative spatial proximity. Under negation, this proximity became analyzed as a weak element in a focus construction and, later, *furðon* became analyzed as scalar focus particle. Proposal #3 takes the distal/goal uses as point of departure. Here, the relevant semantic development is modeled similarly to the emergence of *even*$_{\text{SAO}}$: In contexts where the endpoint of an event path is focused all intermediate points leading up to a path are entailed to hold in addition to the endpoint. The text proposition (involving the endpoint) is stronger than any alternatives (generated from intermediate points on the path) due to entailment. In accordance with MaxPMoT (Gergel, 2023), *furðon* takes on the task of assigning the presupposition that, among all relevant alternatives, the text proposition is strongest. Under this proposal, *furðon*$_{\text{SAO}}$ generalizes from strong to weak uses. In conclusion, my proposal is for *furðon* to get its scalar presupposition from the paths *furðon*'s 'forth'-predecessor interacted with.

The third *even*-word under investigation here is the German comparative *noch* ('*noch*$_{\text{COMP}}$'). The emergence of *noch*$_{\text{COMP}}$ complements *furðon* and *even* in my in-

vestigation of high-scale presuppositions: Not only does comparative *noch* assign a presupposition placing its argument relatively high on a relevant scale—the scale being contributed by the underlying scale of comparison—but it extends the validity of my argument beyond paths as origins of scalar presuppositions: I will show comparative *noch* to have its origins in temporal continuative *noch* and the scalar nature of time. Furthermore, there are interesting effects in connection with *sogar*, as well as for the pair *still-even* (cf. discussion below). A further point as to why comparative *noch* is an interesting candidate for inclusion here is that—unlike *even* and *furðon*—*noch* will not be analyzed as a (conventionally) associating with focus here (Umbach, 2009b; Beck, 2020). Thus, *noch* provides support for my claim outside the realm of scalar focus particles as the arguments *noch* place on the end of relevant scales are of a different nature than the propositions *even* and *furðon* operate on.

There are two major methodological components in Chapter 4 on $noch_{\text{COMP}}$. First, I will report on an experimental study geared towards a better understanding of the presuppositions of Present Day German (PDG) comparative *noch*; in particular, the goal here is to test which account makes the right predictions: Umbach (2009b) anaphor-based norm-relatedness or e.g. Hofstetter's (2013) presupposition that the standard term of comparison exceeds a contextually given standard. The results seem to be in favor of Umbach's (2009b) norm-relatedness. Second, I will present corpus data that sees $noch_{\text{COMP}}$ emerging as a scalar particle during Old High German in a process of reanalysis of canonical temporal continuative *no(c)h* (Beck, 2016c, 2020). Moreover, I will show that Beck's (2020) goal for a uniform semantics for all uses of *noch* can be achieved for comparative uses, in particular when departing from the view that comparative *noch* is a type of marginal use.

Another important reason to include comparative *noch* and in particular its scalar presupposition is that $noch_{\text{COMP}}$ has been said to be equivalent to $even_{\text{SAO}}$—and *even*-words more generally. Ippolito (2007, 23; fn. 37) proposes to view comparative uses of *noch*/*still* as scalar uses because *still*/*noch* parallels the contribution of *even* in comparatives.[1] She bases her argument on data like (1):

[1] As a side note, the main motivation for Ippolito's (2007) argument in favor of *noch*/*still*'s scalarity seems to be to argue against it being considered a type of marginal use—a point I fully agree with as will become clear below.

(1) a. Ann has a house. Mary has an even bigger house.
b. Ann has a house. Mary has a bigger house still.
(adapted from Ippolito, 2007, p. 23, fn. 37, her (iii-a), (iv-a))

According to Ippolito, both (1-a) (with *even*) and (1-b) (with *noch*, 'still') require that Ann's house is relatively big, i.e. that Ann's house exceeds a contextual standard. Umbach takes a different route and refutes the idea that *still*/*noch* is scalar (in terms of probability) and that the contribution parallels that of *even*. In Chapter 4, I will develop a clearer picture of $noch_{\text{COMP}}$'s contributions, how the inference that Ann's house is big comes about in (1-a), and how comparative *noch*/*still* is different from *even*—not least because they can co-occur together in sentences.

Connecting back to the question under discussion that motivates and underlies this dissertation—*How do scalar presuppositions come about?* I will show that the scalar presuppositions of *even*, *furðon*, and *noch* (i.e. 'new meanings') are derived from the spatio-temporal properties of respective non-scalar predecessors ('old meanings') and the contexts they occurred in. I will do so on the basis of detailed and extensive corpus work with three different corpora (EEBO, YCOE, DDD), from two different West Germanic languages (English and German) and different historical eras (Early Modern English, Old English, and Old High German). The main advantage of my approach is that (further) mysteries associated with semantic change can be lifted—especially for *even* (cf. also Eckardt, 2009). In conclusion, in contrast to previous approaches, which stipulated conversational implicatures of counter-expectation/surprise (Traugott, 2006), I argue that presuppositional change can be traced more directly: The spatio-temporal presuppositional profiles of older meanings—together with the contexts in which older meaning start undergoing semantic change—are the sources for the scalar presuppositions after the respective semantic shifts.

# Chapter 2

# Scalar additive *even* emerges

This chapter pursues three main goals: First, in line with the agenda of this dissertation, I want to answer the question how *even* as a scalar additive focus particle came to place its sister proposition on the high end of its scale—relative to the relevant lower focus alternatives. Second, I want to give a detailed account of the development of *even* from an adverb of manner to scalar additive operator (SAO, $even_{\text{SAO}}$). Due to new diachronic evidence from the Early English Books Online corpus, my argument will differ from previous accounts on the rise of $even_{\text{SAO}}$ in a number of key points. Third, I will contribute diachronic evidence to the ongoing synchronic debate as to whether $even_{\text{SAO}}$'s scalar presupposition is based on universal or existential quantification. My argument will be in favor of universal quantification.

To begin, I want to take a brief look at the history of *even*: The earliest stages in the development of *even*, from an adverb of manner, and comparison/similarity, need to be reconstructed based on the plausible discrete diachronic shifts and with a strong reliance on previous discussions, most notably Traugott (2006).

The core idea of my proposal is that the focus particle $even_{\text{SAO}}$ inherited its 'high-end' semantics from the role that its non-scalar predecessor, a particularizer of exactness ('exactly-*even*', '$even_{\text{EXA}}$'), played in event structure and information structure. When $even_{\text{EXA}}$ occurred in telic predicates, it predominantly focused elements constituting or coinciding with the endpoints of the relevant events; this is what I call 'endpoint orientedness'. This endpoint orientedness expanded to the endpoints of paths contributed by the aspectual properties of directional prepositions with bounded reference. At this stage, *even* can be described as a scalar

particularizer ('$even_{\text{SCA}}$') that can particularize the far end of paths provided by the relevant predicates/events. The argument for universal quantification in $even_{\text{SAO}}$'s scalar presupposition will be made on the basis of this path-related $even_{\text{SCA}}$ and the requirement that all subpaths which are part of the 'main path' are included in the event and entailed by the predicate.

The structure of this chapter is as follows: In Section 2.1, I will introduce the semantics and distribution of *even* to form the basis for the diachronic discussion below. For Section 2.2, I will give an introduction to the wider landscape of (scalar additive) focus particles and their historical dimensions, and will then summarize earlier discussions and proposals on the (early) history and development of $even_{\text{SAO}}$. In Section 2.3, I will introduce my approach to classifying and annotating the information structural phenomena entailed by the focus particle *even* in diachronic data. Moreover, I will introduce the Early English Books Online corpus ('EEBO'; Oxford Text Archive (2015)) as the empirical basis for my proposal—a relatively rich but nonetheless imperfect resource. This database contains the earliest attested unambiguous uses of $even_{\text{SAO}}$ and shows them as originating from as early as the 1520s. This is somewhat sooner (ca. 60 years) than what previous investigations have suggested for *even* associating with strong elements ('strong' uses) and considerably sooner (ca. 150 years) than *even* associating with weak elements in a downward-entailing environment (König and Traugott, 1988; König, 1989, 1991; Traugott and Dasher, 2002; Traugott, 2006; Gast and van der Auwera, 2011; Eckardt, 2009). In Section 2.4, I will introduce the main readings relevant for my proposal for *even*'s semantic change. This section will include a brief methodological note on the challenges associated with the process of annotating focus particles in diachronic data and how I addressed them for the purpose of this study. Section 2.5 will tie everything together with my proposal for the development of *even* from an adverb of manner to the $even_{\text{SAO}}$ available in Present Day English (PDE). The path of semantic change will be oriented along an exhaustive investigation of *even*-data during the first 60 years of the EEBO and plausibly trace the rise $even_{\text{SAO}}$ along a number of sub-stages. Finally, the main insights gained in this chapter will be reviewed and summarized in a concluding section (Section 2.6, p. 83).

## 2.1 *Even* – a brief summary

In this section, I set out to give a brief description of the major coordinates of Present Day English (PDE) $even_{\text{SAO}}$ with respect to its semantics (cf. 2.1.1, below), its typological status as a universal scalar additive particle (Section 2.1.1.3, p. 17) and its distributional properties (Section 2.1.2, p. 21).

### 2.1.1 Summary of the meaning of *even*

The discussion on the semantics of *even* is organized in three parts. First, I will introduce *even* and the import of its scalar presupposition. Second, I will introduce the debate on *even*'s quantificational strength over focus alternatives (Section 2.1.1.2, p. 13). Third, I will contextualize the semantics of *even* from a typological perspective (Section 2.1.1.3, p. 17).

#### 2.1.1.1 *Even* as a scalar particle

In this section I will give a brief overview of the semantics of $even_{\text{SAO}}$. This breakdown comes with a certain bias for the scalar component of the meaning of $even_{\text{SAO}}$. On the one hand, this is because the scalar meaning has been widely considered the main contribution of $even_{\text{SAO}}$. On the other hand, building on the diachronic evidence in support of the main goal of this dissertation (emergence of scalar presuppositions, cf. introductory remarks above), I want to set the stage for my contribution to the debate on existential vs. universal quantification over scalar alternatives. There is a vast amount of literature on $even_{\text{SAO}}$. The goal is to cover $even_{\text{SAO}}$'s semantics to the extent necessary for the discussion in this chapter and, at the same time, synthesize as much as possible from previous accounts into this section. I will treat $even_{\text{SAO}}$ as taking two arguments:

1. The proposition it occurs in, also called 'prejacent' or 'text proposition' or more descriptively *even*'s 'sister proposition', in short 'p'.

2. The set of propositions q that are elements of the set of focus alternatives C; also called (set of) 'context propositions'. They arise as the alternative(/focus)

semantic value of an in-situ approach to the representation of focus meaning (cf. Rooth, 1985, 1992; Krifka, 2008; Beaver and Clark, 2008; Beck, 2016b).

*Even* is said to presuppose a relation between the prejacent and the set of focus alternatives to the effect that the prejacent p ranks above any alternative q in the set of alternatives C on a scale of strength. Strength is a notion based on logical entailment and, as a consequence, informativeness:

(1) A proposition a is stronger than a proposition b iff a entails b.

Turning to the example in (2), with *Joe drinking 10 cups* entailing *Joe drinking 9 or fewer cups*, (2-b) is stronger than any q in (2-c). The other side of the same coin is informativeness: A proposition "*p* is more informative than *q* iff *p* entails *q*" (Kay, 1990); thus, the prejacent in (2-b) is also said to be more informative than any alternative q in C, i.e. (2-c).

(2) a. Joe drank even ten$_{\text{F}}$ cups.
b. p = *Joe drank 10 cups*
c. C = {*Joe drank 9 cups*, *Joe drank 8 cups*, *Joe drank 7 cups*, ... }

The notions '(un)likelihood(/-ness)', 'expectation', and 'surprise' have been put to service to describe the nature of a scale lacking overtly accessible logical entailments. Crnič (2011) bases his alignment of likelihood and entailment in (3) on probability theory:

(3) Scalarity and entailment
If a proposition p entails a proposition q, q cannot be less likely than p.
(Crnič, 2011, his (11))

Thus, with respect to (2), the prejacent in (2-b) is the *strongest*, *most informative* and *least likely* proposition next to any of the alternatives in (2-c). In an example like (4), it is not immediately clear how to yield an entailment relation between the prejacent and the alternative propositions:

(4) a. Even Joe$_{\text{F}}$ drank tea.

b. p = *Joe drank tea*

c. C = {*Ann drank tea*, *Bill drank tea*, Caesar drank tea, ... }

In these cases specifically, scholars have relied on the *(un)likelihood* notion and stated that *Joe* is the least likely (or least expected/most surprising) candidate to drink tea based on some relevant contextual information (e.g. maybe it is known to the interlocutors that Joe prefers coffee/doesn't like tea/has a heart condition and should avoid caffeine). The most straightforward way of modeling the scalar relation between the prejacent and relevant alternatives is by stating "q $<_c$ p" (or equally "p $>_c$ q")—'p is stronger than q based on some contextually informed scale'. The discussion of the nature of semantics of *even* and its scalar presupposition has a long tradition in the semantics literature; to name a few, cf. Fillmore (1965); Horn (1969); Anderson (1972); Jackendoff (1972); Karttunen and Peters (1979); Rooth (1985, 1992); Kay (1990); Beaver and Clark (2008); Gast and van der Auwera (2011); Crnič (2011, 2013); Greenberg (2015, 2016, 2022). I will continue the discussion of the scalar semantics of *even* in the next section with special attention to its quantificational strength over alternatives.

#### 2.1.1.2 *Even* and quantificational strength

In this section, I will continue the debate on *even*'s scalar meaning component and, moreover, turn to the debate on the quantificational strength *even* exerts over alternative propositions. Fillmore (1965) discusses the scalar component of $even_{\text{SAO}}$ in terms of entailment (in a wider, early discussion of entailment rules in the context of a critical review of Katz and Fodor's (1963) feature based semantic theory). Horn (1969)—though, as far the explicit discussion is concerned, focused mainly on *only* and *even*'s additive meaning component—suggests that *even* is included by extension in *only*'s scalar treatment and, thus, treats *even* from an early presuppositional perspective. Pointing to Fillmore (1965), Horn vaguely mentions that his presupposition account of the semantics of *even* should extend to the *scalar* component of *even*—but does not include any discussion. Further, Horn sums up that "even [...] asserts what only presupposes and presupposes the negation of what only asserts" (Horn, 1969, 106). Kay (1990) disagrees with Horn's assertion and points out that according to it, $even_{\text{SAO}}$ would focus on the wrong end of the scale and presuppose

that anything stronger rather than anything weaker than the text proposition holds. It is important to note that Horn (1969) based his analysis for *even*$_{\text{SAO}}$ on universal quantification ("anything stronger")—like many other seminal contributions to the understanding of *even* (Karttunen and Peters, 1979; Rooth, 1985, 1992). Kay (1990) called into question the idea that *even*'s scalar presupposition is based on universal quantification. He based his argument for modeling the meaning of *even*$_{\text{SAO}}$ around existential quantification on the data in (5) and (6):

(5) Not only did Mary win her first round match, she **even** made it to the [semi-finals]$_{\text{F}}$.

(6) The administration was so bewildered that they **even** had [lieutenant colonels]$_{\text{F}}$ making major policy decisions.

(Kay (1990, 90), his (82)-(83); Greenberg's (2022) emph. and F-marking)

Kay's argument hinges on there being (covert) alternatives stronger than the prejacents: For (5), this stronger alternative is *the finals*, for (6) it is military ranks below lieutenant colonels (e.g. majors, captains, sergeant, ...) whose involvement in policy decision making would be bewildering beyond that of lieutenant colonels. Kay concludes that these stronger alternatives are, in fact, part of the set of alternatives *even* takes as one of its two arguments. As a consequence, the semantics of *even*$_{\text{SAO}}$ must be such that there is a possibility for alternatives q stronger than p. In other words, Kay (1990) advocates for an escape hatch for context propositions that are (i) part of the alternative semantic value of a sentence, (ii) are on the same relevant scale as the prejacent and other (weaker) alternatives but (iii) need to be excluded from "q $<_{\text{c}}$ p". In essence, (7) reflects Kay's claim concerning the semantics of *even*$_{\text{SAO}}$ (ignoring variable assignment). In particular, the underlined part:

(7) $[\![\text{even}_{\text{SAO}/\exists}]\!]^{\text{c}} = \lambda\text{C}.\lambda\text{p}.\underline{\exists\text{q} \in \text{C}[\ \text{q} <_{\text{c}} \text{p}\ ]}$

This approach was adopted by later treatments, e.g. with Crnič (2011) a relatively recent, rather thorough, single-publication discussion. However, it was also reviewed critically by Greenberg (2016, 2022), who argue that the 'endpoint alternatives' are not part of the set of alternatives C. Greenberg (2022) argues that the stronger *the*

*finals* in (5) and the lower military ranks in (6) are less salient than the overtly uttered sentences. She introduces the data in (8) to support her point:

(8) a. A: How many papers have your faculty members written during the last three years?
B: Let's see: Ann wrote 4 papers, Sam wrote 3, Henry wrote 5, Tom wrote 7, Ted wrote 6, Ian wrote 10, and Bill (#**even**) wrote $[8]_{F}$.

b. Two years ago John won the bronze medal. Last year he won gold, and this year he (#**even**) won $[\text{silver}]_{F}$.

c. Two weeks ago I managed to interview the minister's assistant, last week I interviewed the prime minister, and this week I (#**even**) interviewed the $[\text{minister}]_{F}$.

(8)' a. {Bill wrote 4 papers, Bill wrote 3 papers, Bill wrote 5 papers, Bill wrote 7 papers, Bill wrote 6 papers, Bill wrote 10 papers, Bill wrote 8 papers}

b. {John won bronze, John won gold, John won silver}

c. {I managed to interview the assistant of the minister, I managed to interview the prime minister, I managed to interview the minister}

(Greenberg, 2016, 2022)

The important observations with respect to (8) and (8)' are that in each set of alternatives, there is at least one alternative weaker than p (underlined). Crucially, there are also alternatives stronger than p (*10 papers*, *gold*, *the prime minister*)—which makes *even* infelicitous in (8). If Kay's (1990) prediction was right, then it should not be a problem to go on record about a stronger alternative being in the context since—according to Kay—the presupposition is that the prejacent p be stronger than some (but not all) alternative propositions. Greenberg presents a similar type of evidence with the minimal pair in (9). For both (9-a) and (9-b), the proposition is *this year he won silver*. In the first context, *even* is infelicitous while *even* is felicitous in the second context. The crucial difference between the two linguistic contexts is that in (9-a) the stronger *gold (medal)* is overt while this is not the case for (9-b):

(9) a. Two years ago Bill won the bronze medal. Last year he won gold and

this year he (#**even**) won [silver]$_{\text{F}}$.

b. Last year Bill won the bronze medal. This year he **even** won [silver]$_{\text{F}}$.

In summary, Greenberg (2016)'s response to Kay (1990) and, in particular, the data in (5) and (6) is that the stronger alternatives Kay has in mind are not part of the set of alternatives C—they can be "pruned" off (Greenberg, 2022, 430). The conclusion for Greenberg (2022) is that *even*'s scalar presupposition is based on universal quantification. All (relevant) propositions the prejacent is put in relation to are to be weaker than the prejacent. There is no 'escape hatch' to permit stronger alternatives into the set of alternatives and, at the same time, exclude them from scalar comparison. As a result, the semantics of *even* should appear as (10) (rather than (7)):

(10) $[\![\text{even}_{\text{SAO}/\forall}]\!]^{\text{c}} = \lambda\text{C}.\lambda\text{p}.\underline{\forall\text{q} \in \text{C}[\ \text{p} \neq \text{q} \rightarrow \text{q} <_{\text{c}} \text{p}\ ]}$

While Greenberg's (2022) evidence and reasoning are convincing, it should be noted that she is uniquely motivated in not just treating *only* and *even* 'together', as has been traditionally the case in the information structure and focus/focus association literature. In fact, she is proposing to tie these two particles up in a system of scalar antonymy. It is also important to note that the majority of scholarship that has contributed to the understanding on *even* (etc.) have 'built in' some sort of restriction on the domain of quantification along the lines of '(contextually) relevant', 'under consideration' (e.g. Karttunen and Peters, 1979; Crnič, 2011), 'QUD/Current Question-related/relevant' (Beaver and Clark, 2008; Gast and van der Auwera, 2011; Greenberg, 2022). It could be argued that those accounts that preceded Kay (1990) were in fact sensitive to Kay's and Greenberg's debate: In the data that Kay introduced as problematic, the covert *the finals* and lower military ranks might simply be '(contextually) irrelevant' or 'not under consideration'—much like, in the example data (2-a) (repeated here as (11)), any amount of cups higher than ten is not under consideration:

(11) Joe drank **even** ten$_{\text{F}}$ cups

I will argue in support of universal quantification from a diachronic perspective.

The motivation to continue the debate lies in the idea that *even* and *only* (as well as other cross-linguistic correlates) have been argued to be or behave like quantifiers, i.e. they come with explicit or implicit domain restrictions like 'proper quantifiers'. Depending on the theory of focus interpretation, i.e. in movement theories in particular, focus particles have been observed to behave like more canonical quantifiers in some respects (e.g. Kratzer (1991, 826), von Stechow (1991, 808)). Taking the quantificational properties of $even_{\text{SAO}}$ as uncontroversial and evident, an examination of its quantificational strength should be pursued. In this chapter, I will address this point in particular—along with the other goals of this chapter as stated above. As far as the discussion of data is concerned, I will assume universal quantification throughout and deliver my empirical evidence and discussion in favor of universal quantification when it is due in the plot for the diachronic development of *even*.

#### 2.1.1.3 *Even* in the typology of scalar additive operators

In this section, I will cover *even* from a typological point of view. For ease of exposition, German will serve as a stand-in for Germanic languages, which all have multiple scalar additive operators, while English can make do with just one—the universal scalar additive particle *even*. The basic observations regarding the semantics of *even* and the underlying scales in Section 2.1.1.1 shall be the point of departure here. Building on the observations for scales in particular, I will turn to scale-reversal for a moment. Scale-reversing operators reverse scales (Heim and Kratzer, 1998; Giannakidou, 2007):

(12) a. Joe lives in New York City.
b. Joe lives in the USA.

(13) a. Joe does not live in New York City.
b. Joe does not live in the USA.

(12-a) is more informative than (12-b): Not only do we learn that Joe lives in the USA but we also learn which US-city Joe lives in. (12-b) is less informative: We only learn that Joe lives in the USA but we are not of which city, (12-a) entails (12-b). More generally, there is an entailment relation from the specific expression (12-a) (in predicate position) "up" to the more general expression. However, introducing

negation as in (13), reverses the scale. The entailment holds in the opposite direction: (13-b) entails (13-a). From (13-a), we cannot infer anything about the status of (13-b)—there are hundreds of other places in the USA Joe might live in—making (13-a) true and (13-b) false. Again more generally, here an entailment from the general term "down" to the more specific term holds. This last descriptive point is why negation and other operators with similar effects are also called downward entailing operators.

In all of the *even*-examples in Section 2.1.1.1, we saw *even* associating with strong elements that entail their weaker alternatives on some scale. However, *even* can also associate with weak elements—across the scale-reversing, i.e. downward-entailing, operator that is negation; cf. (14) (especially in comparison to (2), p. 12)[1]:

(14) a. Joe did not **even** drink one$_{\text{F}}$ cup.
b. p = *Joe did not drink 1 cup*
c. C = { *Joe did not drink 2 cups*, *Joe did not drink 3 cups*, *Joe did not drink 4 cups*, ... }

The behavior of *even* with respect to scale reversal is different from, for instance, German (and all other present day Germanic languages) which has separate particles. In scale-preserving contexts (i.e. contexts without DE operators), German employs *sogar* and under clause-mate negation, German has *(nicht) einmal*, (15-a) vs. (15-b):

(15) a. Sepp hat **sogar** zehn$_{\text{F}}$ Tassen getrunken.
Joe has even ten cups drunk
*Joe drank even ten cups.*
b. Sepp hat **nicht einmal** eine$_{\text{F}}$ Tasse getrunken.
Joe has not even one Tasse drunk
*Joe did not even drink one cup.*

Furthermore, in contexts where scale reversal arises not due to clause-mate negation but e.g. due to NPI-licensing attitude verb *regret* (in German *bedauern*), German

[1] For a complementary discussion of infelicity arising due to association with a weak element in absence of a scale-reversing operator around the very similar Old English *furðon*, see Chapter 3, Section 3.2, p. 89ff.

has yet another scalar additive operator with *auch nur*, cf. (16-a) vs. (16-b).

(16) a. George regrets that he **even** [got out of bed]$_{F}$.

b. Georg bedauert, dass er **auch nur** [aufgestanden ist]$_{F}$.
George regrets that he also only up.got is
*George regrets that he even got out of bed.*

Based on Gast and van der Auwera (2011), Crnič (2011) defines three classes of SAOs. *Even* as a universal SAO is a representative of one of those classes as it can associate with both strong and weak elements, the latter across both negative and non-negative DE operators. In contrast to earlier, lexical accounts, (e.g. Giannakidou, 2007), Crnič assumes a 'structural approach'. In preliminary terms, the weak reading comes about due to *even* taking wide scope above any DE-operator, which, in turn, scopes above the weak element under focus. With more detail, *even*$_{\text{SAO}}$ is morphologically complex, consisting of [EVEN] and [SOLO]. Moreover, *even* consists of a scale itself, cf. (17). First, consider the presuppositions in (18) and (19):

(17) ⟨[EVEN] , [EVEN] [SOLO]⟩

(18) Crnič's (2011) EVEN:
$[\![\text{EVEN}]\!]^{g,c}(C, p, w)$ is defined only if $\exists q \in C[p >_c q]$.
If defined, $[\![\text{even}]\!]^{g,c}(C, p, w) = 1$ iff $p(w) = 1$

(19) Crnič's (2011) SOLO:
$[\![\text{SOLO}]\!]^{g,c}(C, p, w)$ is defined only if $\forall q \in C[q \neq p \rightarrow q >_c p]$.
If defined, $[\![\text{solo}]\!]^{g,c}(C, p, w) = 1$ iff $p(w) = 1$

'EVEN' in (18) corresponds to the default scalar presupposition of *even*$_{\text{SAO}}$ associating with a strong element (assuming the presuppositions are satisfied)—with the difference that here I follow Crnič in assuming existential quantification over alternatives. (19) amounts to the presupposition that the text proposition p is weaker than all propositions q in the set of focus alternatives C.

(20) a. John read ten$_{F}$ books.

b. [even $C_2$] [John read ten$_{F}$ books]

(21) a. I doubt that you read even one$_{F}$ book.

b. [even $C_1$] [I doubt that [ ~~[even $C_1$]~~ [solo $C_0$] you read one$_F$ book]]

With respect to (20), the two configurations on the scale in (17) compete for insertion. The Maximize Presupposition Principle (Heim, 1991, 515) governs insertion of either [EVEN] or [EVEN] [SOLO]. The option that can encode more information as presuppositions, and still have all those presuppositions satisfied, will be inserted. The 'strong option' is (18) (EVEN). Its presupposition ranks lower (presupposes 'less') than the combination of EVEN and SOLO, i.e. (18) *and* (19). Checking if [EVEN] [SOLO] can be inserted (due to Maximize Presupposition) leads to presupposition failure since the conditions for SOLO cannot be met: John's reading fewer books than ten books is entailed by the prejacent. Therefore [EVEN] [SOLO] is out. [EVEN] on the other hands fits; the relevant conditions can be met. It has the maximum of satisfiable presuppositions. In (21), we have the reverse picture: The presuppositions of both [EVEN] and [EVEN] [SOLO] are satisfiable. However, due to Maximize Presupposition, [EVEN] [SOLO] is inserted (Crnič, 2011).

The resulting correspondences between 'SAO-morphemes' and SAO operators is given in (22). *Even* and French (Fr) *même* can show up as [EVEN]—(22-a). *Even*, *so much as*, Fr *même*, can show up as [EVEN][SOLO]—(22-b). Additionally, weak SAOs that occur only under negation have an uninterpretable negative feature that needs to be checked against negation when tested for insertion: [EVEN] [SOLO] $_{[uNEG]}$ competes with [EVEN][SOLO]. See Crnič (2011, p. 129ff) for more details.

(22) a. EVEN — *even*, Fr *même*, Ger *sogar*

b. [EVEN] [SOLO] — *even*, *so much as*, Fr *même*, Ger *auch nur*

c. [EVEN] [SOLO] $_{[uNEG]}$ — Ger *(nicht) einmal*, Slo. *niti*

As a consequence for the above classification, Crnič, on the basis of Gast and van der Auwera (2011), formulates two implication relationships:

(23) Implicational relation for strong scalar particles

There is a scalar particle that is only strong in the language

⇒ There is a scalar particles [sic!] that is only weak in the language

(Crnič, 2011, p. 21, his (28))

(24) Implicational relation for weak scalar particles

There is a scalar particle that may only be weak and that only occurs in the immediate scope of negation in the language ⇒ No other weak scalar particle that may only be weak occurs in the immediate scope of negation in the language

(Crnič, 2011, p. 22, his (29))

Crnič (2011) points to Gast and van der Auwera's (2011) typological investigation who surveyed 40 European languages and distinguished five types of scalar additive operators. In Gast and van der Auwera's (2011) terms, "if an SAO can be used in scale-preserving contexts [...] and in nonnegative scale-reversing contexts [...], it can also be used in negative scale-reversing contexts" (Gast and van der Auwera, 2011, 25).

In conclusion, $even_{\text{SAO}}$ is 'exceptional' in that English is the only present day Germanic language that has a scalar additive operator which can perform double duty and put up both [EVEN] and [EVEN] [SOLO] to compete for insertion.

### 2.1.2 Distribution of *even*

In this section, I will briefly examine the distributional properties of the scalar additive particle *even*. While the syntactic distribution of focus particles (such as *even*) does correlate with the location of focal stress (cf. König, 1989), there is some flexibility, and as a consequence they can occur at quite some distance to the constituent they associate with. As an example, compare König's (1989) observations in (25) next to the more flexible alternatives in (25)':

(25) a. Even FRED has bought some books.
b. Fred has even BOUGHT some books.
c. Fred has bought even SOME BOOKS.
d. Fred has bought SOME BOOKS, even.

(25)' a. FRED even has bought some books.
b. Fred (even) has BOUGHT some books (even).
c. Fred has (even) bought SOME BOOKS.

Further, consider Jackendoff's (1972) observations and his discussion of *even*'s 'range' in which its associated focus can be located in. The point here is that when *even* occurs to the left of the VP and under S(/IP/TP) (sometimes referred to as the 'auxiliary'), *even* can be associated with a focus anywhere in the sentence:

(26) a. JOHN even gave his daughter a new bicycle.
b. John even GAVE his daughter a new bicycle.
c. John even gave HIS daughter a new bicycle.
d. John even gave his DAUGHTER a new bicycle.
e. John even gave his daughter a NEW bicycle.
f. John even gave his daughter a new BICYCLE.

*Even* occurring anywhere else in the surface structure is more restricted as far as its range for association with focus is concerned: *even* associates with foci in NPs it is adjacent to. Thus the 'range' Jackendoff introduces, in essence, amounts to a c-command restriction for association with focus by *even* ((26)–(29) are taken and adapted from Jackendoff (1972)):

(27) a. Even JOHN gave his daughter a new bicycle.
b. *Even John GAVE
c. * HIS
d. * DAUGHTER
e. * NEW
f. * BICYCLE

(28) a. *JOHN gave even his daughter a new bicycle.
b. * GAVE
c. HIS
d. DAUGHTER
e. * NEW
f. * BICYCLE

(29) a. *JOHN gave his daughter even a new bicycle.
b. * GAVE
c. * HIS

d. * DAUGHTER

e. NEW

f. BICYCLE

(30) *JOHN only gave his daughter a new bicycle.

For completeness' sake: Regarding *even* 'in the auxiliary' while associating with a focus located in the subject, there is a restriction on the number of auxiliary verbs that can precede *even*:

(31) a. JOHN will even give his daughter a new bicycle.
b. JOHN will even have given his daughter a new bicycle.
c. *?JOHN will have even given his daughter a new bicycle.

Moreover, *even* is more flexible than *only* since it can associate with a focus in the subject (or parts of it) while following the subject. The examples in (32) are adapted from (Karttunen and Peters, 1979, 82; Ch. II, fn 4):

(32) a. ?JOHN's father only came (≠ only JOHN's father came)
b. JOHN's father even came (= even JOHN's father came)

With the crucial exception of (26-a), in all of (26)–(29) *only* can be substituted for *even*.[2]

[2] Rooth (1985) tries to tie the restriction of *only* to quantifier scope with examples like (i):

(i) a. Some students will even answer the LAST question
b. Every student will only answer the FIRST question

In (i-a), *even* can take wide scope with respect to the subject quantified NP *some students*, (i-a) is true in the following situation: There are three questions (q1, q2, q3) and students can pick exactly one for their assignments; q1 is picked and answered, q2 is answered, q3 is picked an answered. In this scenario the sets of students answering the respective questions q1, q2, and q3 form disjoint sets. The crucial question is whether *only* in (i-b) can have wide scope with respect to *every student*. The narrow scope reading holds in situations where all students did not make it beyond the first question, i.e. nobody answered more than one question and they all answered the first question. On the wide scope reading of *only*, there are situations where students answered other questions, in addition to the first question. Rooth reports mixed results regarding the availability of this reading. Crucially, if the wide-scope reading of *only* was unavailable across the board, the

## 2.2 Previous accounts on the history of *even*

In discussing previous accounts on the history of $even_{\text{SAO}}$, I will structure this section along the seminal contributions from previous scholars. I will begin with König's (1989) comprehensive discussion of "typical sources" and "typical targets" for the development of focus particles in general. Next, I will turn to Traugott's (2006, 346ff) proposal for *even* (and *barely*) and scalar focus particles in general. Both of these approaches to tracing semantic change are based on the notion of 'Generalized Invited Inferences' (GIIN) (sometimes 'generalized implicatures'). The assumption of the GIIN approach is that particles (with their old meanings, $word_{old}$) occur in contexts inviting inferences ('conversational implicatures') which are absorbed/lexicalized to become part of the new lexical meaning of $word_{new}$ (König (1989, 327), Traugott and Dasher (2002, 34), König and Traugott (1988, 117), Traugott (2006), Hopper and Traugott (2003, 81ff)). This approach—and the account for specifically *even*—has received a significant update with Eckardt's (2009) introduction of the notion 'Avoid Pragmatic Overload' (APO). At the core of APO is the idea that hearers/readers ('charitably') adapt their lexicon to the effect of encoding presuppositional meaning due to presuppositions of an expression under a conservative interpretation being 'too hard to swallow', i.e. constituting pragmatic overload.

### 2.2.1 König (1989)

The earliest systematic description of fundamental observations in the development of focus particles at large is König (1989, 1991). König identifies "typical sources" for broad classes of focus particles (i.e. the corresponding "typical targets"). Grammaticalization is the basic type of semantic change a large number of focus particles underwent. According to it, concrete meanings were bleached and developed "from a less to a more grammatical unit" (König, 1989, 326). For $even_{\text{SAO}}$, this meant a departure from encoding flatness/smoothness and a loss of its manner feature. Not all hallmarks of grammaticalization apply in the *even*-case. Phonological attrition as observed for German *nur* (from OHG *ni uuarí*, 'not' + 'was/were/would be'; cf. also Eckardt and Speyer (2016)) does not apply for *even*. Similarly König (1989) attests

patterns observed by Jackendoff could be explained by principles governing quantifier scope.

the same for loss of syntagmatic and paradigmatic variability (Eckardt, 2012). In essence, König (1989) suggests to analyze (the development of) "certain aspects of the meaning of focus particles" as "conventionalisation of originally conversational implicatures" (p. 327). Crucially, König (1989) tied the origin of the notion of 'surprise' or (counter-)expectation that $even_{\text{SAO}}$ can express (cf. Section 2.1.1) to conversational implicatures. König lays out his proposal with the data in (33) and (34), below. Data like in (33) is the point of departure and *even* here can be paraphrased as 'exactly' and was frequently used to express identity between entities (König, 1989, 1991):

(33) The one that you gaze on so. – Even she I meane.
(Shakespeare, *Shrew* I.ii) (ca. 1590; cited in König, 1989, his (23))

The need for such an assertion is given in situations where this identity is surprising and unexpected, e.g. in situations where two propositions "do not normally go together" (König, 1989, 328). A prime example (in PDE) for such a situation is given in (34-a) where, again, we have a non-scalar use of *even* and, as König notes, still has the 'exactly'-meaning. However, this use "would also be enriched by a conversational implicature (+› 'the coincidence is an unlikely and remarkable one')" (p. 328) which would then be conventionalized into the semantics in $even_{\text{SAO}}$ resulting in (34-b):

(34) a. Even as it admits of serious pollution problems, East Germany is substituting cheap brown coal for imported oil.
b. John works even on Sundays.
(König, 1989, his (24))

### 2.2.2 Traugott's (2006) proposal for the semantic development of scalar focus modifiers

Traugott (2006) characterizes uses such as (33) and (34-a) from above as 'particularizer' uses and includes them in a set of pre-ModE polysemies. I will sketch Traugott's three-stage account next because, in some (but not all) respects, her plot can be confirmed by my proposal below. As König, Traugott bases her (2006) discussion of *even*'s development towards a scalar additive operator on the conventionalization of

conversational implicatures(/'invited inferences').

#### 2.2.2.1 Stage I

There are three senses of *even* available from the Old English period. These are labeled (i) through (iii) below: The first, (i) 'evenly, smoothly' is an adverb of manner. Traugott notes that while 'smooth' is a gradable concept and, thus, incorporates scalar meaning, this use mostly has a concrete, lexical meaning and answers a question as to 'how' rather than to 'what extent'.

(35) Do past or cleye ther-upon al aboute as ytold bi-fore, caste Scaldynge
Put paste or mud thereon all-around as said before cast scalding
hote hony **euene** ther-upon.
hot honey evenly thereon
(c.1450 *Horses*, p. 113 [Helsinki])

(Traugott, 2006, her (12))

The second reading, (ii) 'similarly', "involves comparison, either of appearances as in [(36)], or of parts, as in [(37)]" (Traugott, 2006, 346):

(36) þer wende of him a lem þat toward þe norþdrou.
There came from it (comet) a light that toward the north turned
**Euene** as it were a launce red & cler inou.
Like as it was a lance red and bright enough
(c.1325 *Robert of Gloucester*, p. 751 [Helsinki])

(Traugott, 2006, her (14))

(37) We shullen parten vs bitwen alle myne londes **euen** atwo.
We shall divide us between all my lands evenly in:two
'We shall divide the land in two equally between us'
(c.1300 *King Alexander*, p. 1, 217 [Helsinki])

(Traugott, 2006, her (13))

(iii) 'Particularizer': Traugott describes particularizer *even* as syntactically different from the other two uses as it functions as "a modifying constituent of a phrase" (Traugott, 2006, 346). In (38-a) God is addressing Noah, asking him to build an ark; God specifies that 30 cubits of height is a "precise point of expectation" (Trau-

gott, 2006, 346f). In (38-b) Noah confirms that he met this expectation and the measurement:

(38) a. Of lennth thi ship be Thre hundreth cubettys, warn I the; Of heght **euen** thirte; Of fyfty als in brede.
Of length thy ship should:be three hundred cubits, warn I thee; Of height exactly thirty; of fifty also in breadth
(c.1500 Towneley Plays, p. 17 [Helsinki])

b. The heght is **euen** thyrty Cubettys full strenght.
The height is exactly thirty cubits full strength.
(Ibid. p. 21 [Helsinki])

(Traugott, 2006, her (15))

Traugott reports that particularizer *even* frequently occurs with prepositional phrases of time and place "at which" and with prepositional phrases of time and place "from or to which (e.g. *even unto death*)" (p. 347). As a type of focus modifier, particularizer *even* excludes alternative heights of less or more (also alternative times before and after the focused(/particularized) time and alternative places around/before & after a particularized location). In the latter case, i.e. "from or to which", the focus on the endpoint entails points along the path to the relevant endpoint:

(39) a. Amides the torte slit the skyn **euene** doun to the erthe til the slitte come to the hole flesche & then clanse it well that is redi rotun.
In:the:middle:of the abscess slit the skin all:the:way down to the earth till the slit come to the whole flesh and then cleanse it well that is already rotten
(c.1450 *Horses*, p. 115 [Helsinki])

b. His man carried it after hym *even* to the Sterre chamber and soddenly his man sterted away and tooke a boote
'His man carried it (the money) after him right up to the Star Chamber, and suddenly ran away and took a boat'
(c.1585 William Fleetwood, line 1796 [Ceecs, Original 2])

(Traugott, 2006, her (16); her emphases)

To sum up, Traugott observes that in one use of particularizer *even* the alternatives are rejected, cf. (38), and in another use the alternatives are entailed, cf. (39). While she takes this entailment as evidence that alternatives are available in the first place she does not offer an explanation for this significant difference in behavior. I will return to this point in my proposal below and suggest an 'exactness'-particularizer ('$even_{\text{EXA}}$'; cf. Eckardt (2009)) and a 'scalar-particularizer' ('$even_{\text{SCA}}$') as two separate stages of *even*'s development; $even_{\text{EXA}}$ and $even_{\text{SCA}}$ differ with respect to this pattern of rejecting vs. entailing alternatives (next to a number of other critical points).

Traugott (2006) hypothesizes that these three senses developed (pre-OE) in the order (i)→(ii)→(iii) on the basis of cognitive moves (of pragmatic derivation):

> Smoothness (meaning (i)) implies similarity and uniformity across a surface that is accessible to sight or touch. Similarity in size or shape (meaning (ii)) implies uniformity/equivalence of extent when division of a single thing into a number of parts is at issue [(37)], or at least partial equivalence when two or more things are compared [(36)]; in neither case is smoothness implied. The particularizer meaning (iii) presupposes that two items can be assessed as equal, whether it is height of a building and a specific measure [(38)] or extent of a cut and healthy flesh [(39-a)]. (Traugott, 2006, 347f)

Moreover, Traugott observes that (iii)-*even* is more abstract and less literal than meanings (i) and (ii). Further, at the beginning of the 16$^{\text{th}}$ century, the particularizer meaning is on the rise in general and it frequently occurs "in the context of counter-expectation" (Traugott, 2006, 348), e.g. (40):

(40) The king's highness himself, that hath bine so many waies my singuler good Lord and gracious soueraigne ... even att my very first cominge into his noble service ... vouchsafing to admit me and to offices of greate creditt and worshippe most liberally advanced me.
'The king's highness himself ... that has loved and trusted me so dearly, from my very first coming into his noble service ... deigning to admit me and most liberally promoted me'
(1556 Roper, *Life of More*, p. 90 [Helsinki])

(Traugott, 2006, her (17))

In (38) to (40), *even* "modifies overtly quantified contexts of measure, distance, and time; these imply scales or sets (all the way down, not part-way down; first meeting, not second or third). In [(40)] it modifies a PP that includes *very*, a degree modifier that at that time was still largely used in the sense now reserved for *truly*, i.e. in delimited contexts." (Traugott, 2006, 348) Traugott attests "a strong sense of particularizing harmony between *even*, *very*, and *first*. Especially interesting is [(41)], in which *evene* modifies *veray* and the latter modifies the gradable, not bounded adjective *glade*:" (ibid.)

(41) when I remembre your ffavour and your sadde loffynge delynge to me wardes, ffor south ye make me **evene** veray glade and joyus in my hart: and on the tothersyde agayn whanne I remembre ...
'When I remember your beauty and sober loving behavior toward me, truly you make me really very glad and joyous in my heart, and on the other hand again, when I remember ...'
(1476 Private Letters of John Shillingford, II,7 [Helsinki])

(Traugott, 2006, her (18))

#### 2.2.2.2 Stage II. Particularizing focus modifier:

Stage-II-*Even* is characterized by Traugott (2006) the following way: In and of itself *even* does not invoke a scale—its focus does that. At the beginning of the 16$^{th}$ century, it "begins to appear in contexts where the head is neither delimited as a measure nor maximally modalized. Although in [(42)] *even* modifies a unique referent (Christ, in this case the speaker), this referent is not conceptually part of a natural set (of numbers, of epistemic attitudes, etc.)" (Traugott, 2006, 349).

(42) [The disciples speak] Is not this he that sate and begged? Some sayde: this is he. Other sayd: he is lyke him. But he him selfe sayde: I am **even** he.
'Is not this the man that sat and begged? Some said: This is he. Others said: He is like him. But he himself said, I am indeed he'
(1534 Tyndale, New Testament, IX, i [Helsinki])

(Traugott, 2006, her (19))

In (42), *even* has become a particularizing focus modifier. The *even*-sentence in (42), can be translated as 'I am precisely he'—but the context of counter-expectation does not exclude a modal meaning like 'truly, really'. Hypothesis for transition from (40) and (41) (*first coming*, *very glade*; 'stage I') to (42) (stage II): "the restriction that the focus be explicitly a member of a set is relaxed, and now *even* serves to invoke the set by itself. *Even* seems to have absorbed the pragmatics of scalarity" (Traugott, 2006, 349).

#### 2.2.2.3 Stage III. Additive scalar focus modifier:

According to Traugott, *even* as a "modern scalar focus modifier with additive meaning" (p. 349) first shows up in the new context 'list construction', for instance with the construction *and/but even*, which "serves to highlight (focus) the added constituent; it is used to imply that what follows is to be taken not as just equal to its conjunct but as the entity that completes the list and is its most valued member for the purposes at hand. In other words, the scale is now ordered:" (Traugott, 2006)

(43) It is a lamentable case to see how the deuill has bewitched thousands at this day to run after him: and **euen** to offer sacrifice vnto him. (1593 *Witches*, B2R [Helsinki])

(Traugott, 2006, her (20))

(44) caused me, nether arrogantly nor comtemptuouslye, but **even** merely ['without qualification'] and faythfull, to doe hir majesty the best servyce. (1586 Robert Dudley, line 3640 [Ceecs, Leyceste])

(Traugott, 2006, her (21))

From these first unambiguous instances of $even_{\text{SAO}}$ (in the late 16$^{\text{th}}$ century) onward, by the end of the 17$^{\text{th}}$ century, *even* became generalized to non-list-construction contexts. At this stage, according to Traugott, *even* had absorbed the pragmatics of counter expectation. Presumably the idea here being that *even* does not rely on list-construction contexts in which the prejacent ranks as the highest alternative but it can now do this on its own.

Based on Traugott's observations, it is around this time that *even* lost its "limiting particularizer meaning". Moreover, *even* takes on new focus values (in addition to the ones discussed above) which amounts to the implicature that the prejacent is "unexpected or increasingly improbably on some scale projected by the speaker" (Traugott, 2006, p. 350):

(45) and was upon the way incountred and intertained in all places with such a concourse ('assembly') of people, with soe lively representations of love, joy and hope, that it far exceeded her expectatione. The people of all sorts (**even** such whose fortunes were unlike either to bee amended or impaired by change) went many myles out of the City to see her. (1627 Annals of Elizabeth, p. 6 [Helsinki]).

(Traugott, 2006, her (22))

The older meanings from Stage I (now lost) were replaced in EModE:

(46) Manner adverb 'smoothly' (35) was replaced by *evenly*.
Manner adverb 'equally' (37), (36) was replaced by *equally*, *similarly*.
Particularizer (38) - (42) was replaced by *exactly*, *precisely*.

Traugott does not go into detail with respect to the type of *even*'s scalarity at stage II. In particular the point of *even* having absorbed the pragmatics of scalarity and, thus, constituting a scalar particle but the scale not being ordered yet—this is not the case until stage III—is somewhat unclear. Traugott's intended message here seems to be that *even* required contexts of counter-expectation to contribute the ordering for the scalarity of *even* at stage II.

The main idea behind Traugott's (2006) analysis is that "pragmatic implicatures", i.e. implicatures arising in context, are "crucial for interpreting how each new meaning comes into being" (p. 354). In brief, Traugott's proposal contains the following shifts:

1. At stage I, Traugott notes three ingredients as an input to semantic change: *1a.* *even*, *1b.* focus, and *1c.* contextual counter-expectation. The 'output', stage II, is the focus particle *even*, which can generate sets of alternatives

by itself and has "absorbed scalarity"—but continues to require contexts of counter-expectation.

2. From Stage II to Stage III, the input ingredients are *2a.* the focus particle *even* (output from stage II), *2b.* contextual counter-expectation, and *2c.* contextual list-construction. The output, stage III, is *3a.* scalar additive focus modifier *even*. The additivity is owing to the list-construction where the *even*-prejacent holds in addition to the context-provided list of alternatives.

3. In another instance of diachronic change, subsumed 'within' Traugott's stage III, the input ingredients are *3a.* additive scalar focus modifier *even* and *3b.* contextual list-construction (which is tacitly assumed to carry counter-expectation). In a process of generalization to non-list-construction contexts, the output is *4a* *even* as an additive scalar focus modifier—now able to contribute a scale of counter-expectation without relying on list construction or other types of counter-expectation.

In response to Traugott's implicature-based account, Eckardt (2009) voices reservations. She points out that neither (41) nor (42) are in line with Traugott's proposals that later meanings formed on the basis of an older meaning plus an implicature. For instance, if we take stage-I particularizer *even* to express exactness ('exactly') and take a property *P*, then *exactly P* ought to come with the implicature *most surprisingly P* which is then to be generalized, or in Traugott's terms 'absorbed', into the scalar (additive) operator. However, as Eckardt notes, both (41) and (42) do not seem to come with such an implicature. I will come back to Eckardt's (2009) take on *even* and her notion of exactness below as it ties in with my proposal for the development of $even_{\text{SAO}}$.

## 2.3 Methodology & Empirical basis

In this section I will introduce the methods and the empirical basis of the corpus study underlying this chapter. In Section 2.3.1, I will introduce my approach to classifying and annotating occurrences of *even* in diachronic data. Since historical corpora do not straightforwardly allow access to intonation patterns, the main

idea here is to introduce the principles that guided my annotations with respect to identifying the relevant focused constituents. In Section 2.3.2 I will introduce the empirical basis for my corpus study. I will introduce the main features of the Early English Books Online collection and my efforts in mining this corpus for occurrences of *even*. I will also provide on overview of how I classified and reduced the initial list of hits down to the core data for my claim.

### 2.3.1 Annotating focus in historical data

In this section, I outline my approach to annotating *even* as a focus particle. First off, my approach to information structure and focus is fairly uncontroversial: Focus generates alternatives. Focus particles relate the text proposition to alternative propositions. The annotational task of classifying focus particles depends on identifying the focus domain hosting the focus e.g. *even* associates with. In the absence of a record of natural stress patterns in historical stages of any language, likely foci and focus domains have to be inferred from the context for each occurrence of *even*. My approach relies on selecting the material minimally required to form the relevant alternatives addressing the question under discussion in the context (Schwarzschild, 1999; Roberts, 2012; Büring, 2007; Beaver and Clark, 2008; Büring, 2016). Before turning to attested diachronic data, I will illustrate with a PDE toy example with *even* (derived from similar examples in the literature on focus and focus particles). Considering (47) in isolation, it is impossible to identify the focus *even* associates with (cf. overview of *even*'s syntactic distribution in Section 2.1.2, p. 21).

(47) John even invited Sue.

In PDE, the position *even* has in (47) is the most flexible in terms of association with focus. All configurations in (48) are possible[3]:

(48) a. [$_{F}$ John ] even invited Sue
b. John even invited [$_{F}$ Sue ]
c. John even [$_{F}$ invited Sue ]
d. John even [$_{F}$ invited ] Sue

[3] In fact, even focus on *even* is conceivably possible; *John even$_{F}$ invited Sue.*

Beginning with (48-a), as I have mentioned above, *even* might follow a focus-bearing subject (unlike *only*, which is more restricted in this regard (cf. Anderson, 1972; Jackendoff, 1972; Karttunen and Peters, 1979, i.a.). Furthermore, there are the options in (48-b)–(48-d). If the context preceding (47) ponders what John contributed in preparation for an upcoming party, for instance by means of (49), then annotating the focus as indicated in (48-b) is not sufficient.

(49) What did John contribute (in preparation for the party this weekend)?

The focus alternatives generated from (48-b) are of the form *John invited x*—all individuals that John invited are contrasted with Sue. However, in order to answer the question in (49), the focus needs to be as in (48-c). This is so because in response to (49) not only *Sue* is discourse New but the entire predicate *invited Sue*. Similarly, if the prior context explored the relation between John and Sue (*what did John do to/with Sue?*), (48-c) over-generates alternatives. What is needed, is (48-d)—the minimal focus domain necessary to generate alternatives that answer the question, *what did John do to/with Sue*.

I will base my annotations on givenness ('Given') and newness ('New'), with the underlying assumption being that Given elements are unaccented and will be unfocused, and New elements carry focus and, in PDE, can be accented, i.e. can receive pitch accent. An example for the impact deaccenting can have is (50). Deaccenting of *the shed* forces its interpretation as referring to John's old cottage, that is Given. With the accent on *shed* (i.e. *SHED* in (50-a)), the object NP refers to a New structure on the property that has not been introduced:

(50) (John has an old cottage.)

a. Last summer he renovated the SHED.

b. Last summer he RENovated the shed.

(taken and adapted from Umbach, 2004, her (2))

Not having access to prosodic contours in diachronic data, requires at times to develop in-depth familiarity with the context in order to disambiguate the referent of e.g. *the shed*.

Turning back to the Given/New distinction, I will pick up on the Givenness-notion as introduced by Schwarzschild (1999) and their notion of entailment-based Givenness. The core idea is the following: Whatever is entailed by the context is Given; whatever is not entailed is New. Entailment is a proposition-dependent relation. However, not all relevant types of meaning are propositional. The common nouns *squirrel* and *rodent* are in a hyperonymous relation. For entailment to come about, these common nouns need to be embedded in propositions, cf. the informal example in (51). Thus, in order to make non-propositional meanings accessible to entailment, Schwarzschild relies on the type-shifting operation existential closure. The underlying intuition is to provide e.g. a property with a variable to form a proposition and to existentially bind (close) the variable, cf. (51-d).

(51) a. squirrel $\Rightarrow^{?}$ rodent ("$\Rightarrow$" stands for 'entails')
b. the squirrel lost its nut $\Rightarrow$ the rodent lost its nut
c. there is a squirrel (in the tree) $\Rightarrow$ there is a rodent (in the tree)
d. $\exists$x.x is a squirrel $\Rightarrow$ $\exists$x.x is a rodent

(52) An utterance U is *GIVEN* iff it has a salient antecedent A and A entails U, modulo $\exists$-type shifting.
(taken and adapted from Schwarzschild, 1999, his (18))

A question that arises is what should be considered prior context/discourse on the basis of which to form entailments for any particular utterance. Common ground being commonly considered the set of propositions that interlocutors accept as true (Stalnaker, 1973; Krifka, 2008), Büring (2007) points to the example in (53). Here neither A nor B have to be committed to *there are extraterrestrials* being true—the sole mentioning of *extraterrestrial* by A is enough to make it Given for B's turn:

(53) A: Did you ever see an extraterrestrial?
B: I don't think there ARE extraterrestrials.

Givenness in this sense extends to hyperonymy which is why the notion goes beyond the (stricter) requirement of literal repetition of previously uttered constituents. In the following example, it is enough to have a hypernym to provide the relevant

existential closure:

(54) a. (I want to learn the violin,) because I LIKE string instruments.
(Büring, 2007, his (7))

b. ∃x.x is a violin ⇒ ∃x.x is a string instrument

Coming back to the interplay between focus, deaccenting and givenness, the assumption is that whatever is deaccented is Given and accented material is focused. However, Krifka points out that Given constituents can in fact carry an accent as is the case with accented pronouns, *Mary only saw [HIM]*$_{\mathrm{F}}$ (Krifka, 2008, 263). Similarly, Büring (2016) points out that contrastive topics (i.e. Given content) is a focus configuration.

Roberts (2012) introduces and characterizes questions under discussion in analogy to games—consisting of goals, rules, moves, and overarching strategies. I will distill down to the core ideas behind the concept I am after in this section: At any point in a discourse, the goal is finding an answer to a 'sub-question' of the larger question *what is the world like*. Any such question is a set of possible answers, i.e. alternatives (Hamblin (1973) for an extension of Montague (1973) to questions). These alternatives are 'proffered'.[4] When finding an answer to a proffered question is accepted as the current goal/topic of discussion/discourse, then this question is the 'immediate question under discussion' (abbreviated as 'question under discussion' or simply 'QUD'). Assertions—potentially succeeding and addressing a QUD—can be thought of as a choice for one out of a set of alternatives. Coherent discourse (adhering to the Gricean maxim of Relevance) is clear as to the set of alternatives "a given assertion selects among" (Roberts, 2012, 6)—the set needs to be clear and based on the current QUD. In other words, with a given assertion being one among a set of alternatives, coherent discourse is transparent as to what those alternatives are.

Based on context and the proposition expressed by an assertion—in tandem with what can be gleaned from Givenness—it can be inferred what the common ground is

[4] Proffered content is in contrast to presupposed content: Any contribution to the discourse can consist of *presupposed* and *proffered content*—with the latter being said to be a cover term for asserted content of assertions as well as non-presupposed content of questions and commands.

at a given point in a text, and what the relevant alternatives at this point might be. Further, with the benefit of hindsight (based on historical and philological scholarship, etc.), we can infer the wider communicative goal of the overwhelming majority of surviving texts. For the purposes of this chapter on *even*$_{\text{SAO}}$ (and Chapter 3 on *furðon*$_{\text{SAO}}$), what is important for me are the concepts QUD, and Givenness. My argument and my annotational approach do not depend on a robust theory for the restriction of focus marking. For example, Schwarzschild's (1999) AvoidF is a mechanism to keep F-marking minimal. It checks possible focus markings against each other, a rule that blocks F-marking beyond what's necessary handles the minimizing of the focus domain (Büring, 2007; Schwarzschild, 1999).

Roberts (2012) assumes Information Structure to be a universal. The way prosody realizes focus in English can be reasonably assumed to be language specific. Further, "we might expect that other languages would use very different means to achieve some of the same ends or would use similar means to encode other kinds of information" (Roberts, 2012, p. 3). While Roberts's statement is true, it should not discourage work relying on Information Structure subcomponents that can be considered without direct access to the prosodic fabric of a language stage. Despite lacking access to the prosody of earlier stages of English and to the rules that govern ModE, ME, or OE accenting and deaccenting, and having access only to the written record, it can be assumed that Givenness is a universal: Taking the denotation of an expression $E$ as Given due its entailment via existential closure of expression $E$'s previous mentioning yields the minimal focus scope/marking, which, in turn allows to formulate a set of alternative propositions corresponding to the current question under discussion.

The annotational realities of working with natural language in diachronic corpora make it necessary to consider contexts wider then the immediately preceding utterance/corpus token. As a consequence, a question under discussion such as (49) (above) might be complemented by more context in order to restrict the focus domain to match (48-b) (for instance, *Everybody invited someone—what about John? What did John contribute?* which amounts to, *Who did John invite?*).

### 2.3.2 Empirical basis – Early English Books Online

This section introduces the Early English Books Online (EEBO) collection as the empirical basis for my proposal. I am relying on the freely available version provided the Oxford Text Archive (OTA) produced by the Text Creating Partnership (TCP) consisting of the Universities of Michigan and Oxford and the publisher ProQuest (Oxford Text Archive, 2015; ProQuest, 2015). The EEBO covers the period from 1470-1700 CE ('Phase 1') and contains 755M words in 25,368 texts. By comparison, Traugott's (2006) database amounts to 11.35M words (for a—by and large—similar time span). Gast and van der Auwera (2011) seem to have expanded Traugott's data with the works of select writers and the King James Bible. By another comparison, the Penn-Helsinki Parsed Corpus of Early Modern English ('PPCEME') covers a similar period (1500–1730) and consists of 1.7M words (Kroch et al., 2004). In short, the major advantage of the EEBO is its size. However, the EEBO has a number of flaws. While, according the OTA, written works were selected from a wide variety of subject areas in order to represent the print record of their time (provided they were listed in the *New Cambridge Bibliography of English Literature*, cf. Watson (1971, 1974)), the EEBO's exact status in terms of representativeness is unclear. A similar uncertainty holds for balancing (in terms of genre, prose vs. poetry, gender, etc.). Moreover, the EEBO is heavily skewed towards the later decades a 54.7% of data is from the 1650s or later, meaning more than half the data originates from the last 50 years of its 230-year time span; cf. Fig. 2.1, below. The latter point is owing to the basic motivation behind compiling the EEBO, which was to aim for exhaustiveness and, thus, digitize and include (the first edition of) every relevant monographic book published between 1473 and 1700 CE. The digitization was carried out by so-called "keying-companies" (Oxford Text Archive, 2015) based on image scans of the original publications. Thus, there are virtually no OCR errors. However, the scans (available at ProQuest) are at times ridden with imperfections which carry over into the digitized data. The lemmatisation is heavily flawed which leads to a high number of false positives in querying the data.

I downloaded the EEBO in its entirety and queried it with a Python-based script. My queries, based on the lemmas "even", "euen", and "eyen", yielded 418,218 hits

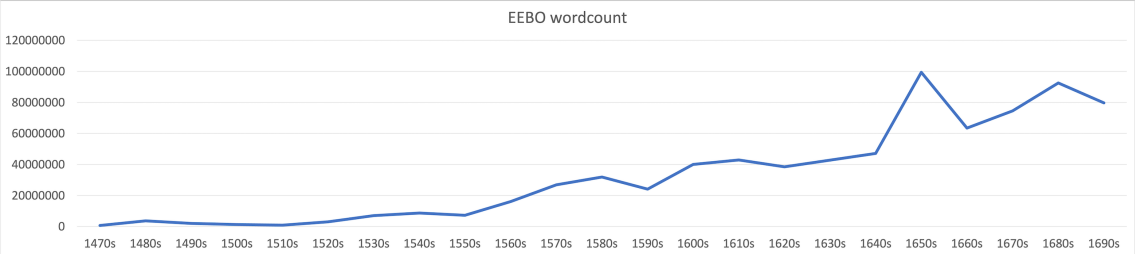



Figure 2.1: EEBO wordcounts per decade

for the entire EEBO resulting in a relative frequency of 0.054%.[5] The latter two were included for good measure because the lemma "even" produces a high number of false hits for the forms *euen* and *eyen* (with varying meanings e.g. 'evening', 'eyes') and it stands to reason to assume that the same mismatch applies vice versa, i.e. that we can find true positives for *even* by using the character forms "euen" and "eyen". The search hits for the period before 1530 CE amount to 2,891, cf. Table 2.1 (p. 40).

These 2,891 search hits from the pre-1530 subperiod were manually reviewed and annotated. 1,842 search hits turned out to be false hits upon manual review (predominantly Early Mod.E. forms of PDE *eyes* and *evening*). Another twelve occurrences were considered '*unclear*' (two of which were embedded in stretches of Latin discourse and thus invalid). This left 1,037 adjectival and adverbial uses of *even*, cf. Table 2.2:

| true/false | nr. | comment(s) |
|---|---|---|
| unclear | 12 | (unclear uses; false hits surrounded by Latin text) |
| false hits | 1,842 | nouns, verbs (e.g. PDE 'evening', 'eye(s)', 'to eye') |
| true hits | 1,037 | adj. & adv. uses *even* (0.008% frequency) |
| total | 2,891 | |

Table 2.2: Review of pre-1530 hits

The set of 1,037 valid search hits from Table 2.2 for occurrences of the lemma *even* 1,037 consisted of the following subsets of data; cf. Table 2.3, below, for an overview.

[5] For reproducibility: The OTA-version of EEBO contains smaller amounts of data in later periods (i.e. outside its 1470-1700-CE main period) which amount to a word count of 10.6M for the time span 1700–1810. These data are not reported here, nor are they included in Table 2.1.

| decade | wordcount | hitcount | frequency |
|---|---|---|---|
| 1470 | 744,025 | 261 | 0,0351% |
| 1480 | 3,973,250 | 936 | 0,0236% |
| 1490 | 2,097,505 | 554 | 0,0264% |
| 1500 | 1,360,112 | 365 | 0,0268% |
| 1510 | 984,956 | 317 | 0,0322% |
| 1520 | 3,229,922 | 458 | 0,0141% |
| 1530 | 7,376,013 | 5,093 | 0,0690% |
| 1540 | 8,840,571 | 7,711 | 0,0872% |
| 1550 | 7,324,570 | 4,257 | 0,0581% |
| 1560 | 16,230,718 | 12,185 | 0,0751% |
| 1570 | 27,137,098 | 17,240 | 0,0635% |
| 1580 | 32,135,114 | 21,385 | 0,0665% |
| 1590 | 26,119,769 | 16,069 | 0,0615% |
| 1600 | 39,509,897 | 26,695 | 0,0673% |
| 1610 | 42,132,325 | 26,872 | 0,0638% |
| 1620 | 38,779,994 | 22,272 | 0,0600% |
| 1630 | 43,038,838 | 26,689 | 0,0620% |
| 1640 | 47,998,293 | 27,784 | 0,0579% |
| 1650 | 99,611,489 | 53,691 | 0,0539% |
| 1660 | 63,823,325 | 33,902 | 0,0531% |
| 1670 | 74,639,708 | 35,495 | 0,0476% |
| 1680 | 93,279,041 | 42,832 | 0,0459% |
| 1690 | 79,613,539 | 39,012 | 0,0490% |
| total | 759,980,072 | 418,218 | 0,0557% |

Table 2.1: Search hits and frequencies for lemmas *even*, *euen*, *eyen*

254 hits occurring in poetic contexts were excluded.

A further set of valid search hits that were excluded are 180 'duplicate-uses', i.e. occurrences originating from (stretches of) texts that occurred more than once in the EEBO corpus.[6] These duplicates have been identified based on (*i*) memory and recall during my manual review and (*ii*) sorting and matching similar contexts for the keyword in context ('KWIC'). Whenever duplicates were identified, the older sources remained in the pool of valid data over the other, younger sources (given they differed with respect to the year of production as provided by the OTA-provided metadata).

The remaining 'unique-&-prose' occurrences of *even* from between 1470 and 1530 were classified as either adjectival or adverbial uses, resulting in 253 and 350 occurrences, respectively:

| | nr. | comment(s) |
|---|---|---|
| poetry | 254 | excluded; metre and rhyme interfering |
| duplicate texts | 180 | excluded; later duplicates |
| adjectival uses | 253 | e.g. ∼PDE 'flat', 'level', 'equal' |
| adverbial uses | 350 | e.g. ∼PDE 'equally', 'evenly', 'even' |
| total | 1,037 | (0.008 frequency in 1470–1530) |

Table 2.3: Composition of pre-1530 hits for *even*

Both the 253 adjectival uses and the 350 adverbial uses were annotated in detail. Among the adjectival uses, the majority of occurrences (i.e. 142 out of 253), are instances of the collocation *even Christian* ('fellow Christian'). For the remaining 111 adjectival uses of *even* in the pre-1530 EEBO data, the meanings range from properties of concrete physical reality expressing flatness, straightness, and equality to more abstract properties such as uniformity, equality of type or by certain standards (e.g. morality, likeness with God).

The 350 adverbial uses of pre-1530 *even* in the EEBO were classified into those uses that arguably associate with focus and those uses expressing similarity and/or

[6] Note, however, that these duplicates do factor in the relative frequency of 0.008% in the EEBO pre-1530 (cf. Table 2.2).

comparison (cf. Traugott's example data (35)–(36), p. 26). The latter type of adverbs is excluded from the current discussion. The remaining 144 focus particle uses of *even* will receive most of the attention in this chapter and in following sections. This absolute frequency of 144 occurrences amounts to a relative frequency in the first 60 years the EEBO of 0.0012%. This is (expectedly) considerably lower than the 0.065-% frequency of all FP-labeled uses of *even* in the Late Modern English PPCMBE data (Kroch et al., 2016).

## 2.4 Main readings of early *even*

In this section, I will introduce the early main readings of *even*. This is to gain an overview of the major meanings in the following proposal for the diachronic cline of *even*. The three relevant uses are:

(i) Particularizer of exactness ('$even_{\text{EXA}}$'; 'exactly'-*even*; (particularizer of exact hit); paraphrasable as e.g. 'exactly'),

(ii) Scalar particularizer ('$even_{\text{SCA}}$'; (particularizer of 'extremal hit'), w/o additive component; paraphrasable as 'all the way/as far as'),

(iii) Scalar additive operator; ('$even_{\text{SAO}}$'; PDE scalar additive focus particle *even*).

### 2.4.1 (i) Particularizer of exactness ($even_{\text{exa}}$)

Following Traugott (2006), as well as Eckardt (2009) and Eckardt and Speyer (2016), I refer this use of *even* as 'exactly-*even*', 'particularizer of exactness' or the shorthand '$even_{\text{EXA}}$'. According to Nevalainen (1994), particularizers specify and identify the focus value under discussion. I am drawing from Eckardt and Speyer's (2016) terminology in characterizing e.g. *even* in (55)–(56) as a particularizer of 'exact hit'. As mentioned above, Eckardt (2009) has a direct, *even*-related response to Traugott's (2006) GIIN account that introduces 'presuppositions of exactness'. I will go into detail with respect to Eckardt (2009) in Section 2.5.3.

Valid paraphrases for this particularizer of exactness are *exactly*, *right*, and *(out) of all things/days/options*. This kind of *even* interacts with focus to the extent that it picks the prejacent out of a set of alternatives and excludes all alternatives. In

(55), *even* focuses on the middle of the altar and any locations to the left and right are denied:

(55) For it appertains that so precious a sacrament be worthily & clenely made after he draws him self **even** in the midst of the alter [...]

(1483, de Voragine & Caxton, 'Legenda aurea sanctorum'; A14559.689321)

From 1477 CE, we find the earliest example in the EEBO data of *even* associating with focus, consider (56). In this case the focus alternatives are generated as locations that are alternatives to *by/next to Jason*, i.e. anywhere in the vicinity inside the room of the tower mentioned. The context does not warrant a restriction on the focus alternatives along the lines of 'proximities to individuals other than Jason' since it seems Myrro and Jason are alone in the tower room. Not the evil king Eson (i.e. a person) but 'dame fortune' brought them into the room whose window the archer Patroclus expected them to show up in. Any alternatives further away from Jason are excluded.

(56) patroclus the Just archier losed an arowe upon the noble lady the
Patroclus the precise archer released an arrow upon the noble lady the
Queen Myrro / ye so Right that he smote and pierced her in her
Queen Myrro INT so exactly that he hit and pierced her in her
throat in such wise that she fill doun dede **even** by the noble preu Iason
throat in such wise that she fell down dead even by the noble prew Jason
'*Queen Myrro collapsed dead right next to Jason*'

(1477, Le Fèvre & Caxton, 'Jason et Medée'; A68341.93629)

In (57), *even* focuses *there*, which refers to a time/point in the sermon recounted in this context. The alternatives excluded are times (or locations) before or after *there*:

(57) the priest with Joined hands sayth / Memento domine famulorum & c. / the which memento is princypally ordained for them that are passed out of this world / and for that **even** there the priest rests and hath a general memory for deed folk

(1483, de Voragine & Caxton, 'Legenda aurea sanctorum'; A14559.692981)

In (58), *even* particularizes *none* ('noon'; the time of day when the sun is in its zenith) and excludes all times earlier and later than noon. It could be argued that an interpretation of *even* in an (strict) 'exact(ly)' sense is not viable, as (in some uses) *about* expresses approximation rather than exactness. However, a particularizing reading along the lines of ModE *right around noon* seems viable if the particularized time is not taken to be the point marking the zenith in an astronomical sense but rather the time span that is 'around' said zenith.

(58) Now [...] speak we of sir Launcelott du lake that lyeth under the Appyl
now speak we of Sir Lancelot du Lac that lies under the apple
Tree slepynge / **euen** about the none there come by him four quenes of
tree sleeping even about the noon there came by him four queens of
great estate
great estate

(1485, Malory, Thomas, 'Le morte d'arthur'; A21703.82653)

In (59), we have another quote of *even* functioning as a particularizer of exactness. The context is about King Antiochus IV desecrating the Jewish temple in Jerusalem. He sacrifices pigs, splashes the interior with their blood and pork broth, steals various items (e.g. the Eternal Light) and finally positions an image of Zeus (highest deity of Hellenistic religion and mythology) in the temple. Given that the domain of relevant locations includes all the locations 'in the temple', the asserted location *in the temple* cannot be approximated in the 'exact(ly)'-sense. Instead, this use of *even* particularizes the identity of the location where Antiochus had put up Zeus' image and the location that is 'in the temple':

(59) Antyochus [...] set Jupiter olimpicus [i.e. Zeus'] image **euen** in the temple
Antiochus set Olympian Jupiter image even in the temple
[...]

(1482, Higden, Trevisa, & Caxton, 'Prolicionycion'; A03319.160671)

### 2.4.2 (ii) Scalar particularizer (*even*$_{\text{sca}}$)

This kind of *even* focuses the far point of a scale. In delineation to and analogy with particularizers of exact hit, this type of use of *even* may be referred to as a 'particularizer of extremal/distant hit'. I will refer to this type of *even* as "scalar *even*" and

"scalar particularizer/even", in short '*even*$_{\text{SCA}}$'. I will always insert "(A/a)dditive" when discussing the scalar *additive* reading (PDE '*even*$_{\text{SAO}}$').

In (60), the extremal/distant point *death* is focused. This distant point is located at the endpoint of a temporal scale expressed by the directional preposition with bounded references *unto (death)*. This kind of *even* is scalar. It requires that there be some scale on which the focus element marks a furthest/extremal/most distant point. The relevant scale is frequently provided by prepositional phrases. (60) is originally from a talk by Traugott and cited in Eckardt (2009). The data from (61) onward is EEBO data:

(60) but sayde, he had rather be sycke **even** vnto death then he wold breake his espousals.
*'But said he would rather be sick even unto death than break his vows.'*
(1449 Latimer, Sermons: 36; after Traugott 2001: 11;
adapted from Eckardt (2009, p. 31, her (26))

In (61), there is a temporal use of the bounded preposition *to*, the endpoint is *the life's end*. As in (60), (61) features a stative predicate.

(61) But our pitefull & merciful lord knowing the weakness of mans nature, he wylled remedy of penance to be ready for each **even** to the lives end.
(1526, Erasmus & Hervet, 'Misericordia Sermon'; A00356.24344)

The predicates in (62) and (63) are both accomplishment predicates based on motion verbs. In (62) the most distant point that is particularized is Sir Melligrance's gate and the relevant scale is spatial distance aligned with the path to said endpoint which is again brought about by the bounded directional preposition *unto*. In (63), the endpoint is marked by arguably the most private location of a tent and thus the most distant point on a path that leads from outside a tent to the inside of a tent (Zwarts, 2005; von Stechow, 2006a; Kracht, 2021).

(62) thene I charge the said sir launcelot that thou drive me and
then I charge you [the carter] said Sir Lancelot that you drive me and
this chariot **euen** unto sir Melliagaunce yate
this chariot even unto Sir Melligrance's gate

(1485, Malory, Thomas, 'Le morte d'arthur'; A21703.348240)

(63) [S]ir launcelot ran in to the pauelione and rasshed **even** in to the warm
Sir Lancelot ran into the tent and dashed even into the warm bed
bed

(1485, Malory, Thomas, 'Le morte d'arthur'; A21703.265377)

### 2.4.3 (iii) Scalar additive focus particle *even*

The earliest uses of *even* that allow to be unambiguously identified as a scalar additive operator ($even_{\text{SAO}}$) occur in so-called 'list-construction contexts' (LC). The *not-only-but* (NOB) collocation allows to overtly create such an LC context. NOB uses 'go on-record' regarding weaker alternatives holding in addition to the prejacent and regarding the prejacent completing, or topping off, the set of weaker alternatives. As an example, consider (64). Different ways in which individuals 'are without understanding' are provided as alternatives. The two alternatives given are *(to be without understanding) in god's word* and *in worldly matters*:

(64) Ye have not only robbed them of there land / auctorite / honour and
you have not only robbed them of their land authority honor and
due obedience which ye owe unto them / but also of there wits / so that
due obedience which you owe to them but also of their wits so that
they are **not** with out vnderstondinge in Gods word **only but even** in
the are not without understanding in god's word only but even in
worldly matters that pertain unto their offices [...]
worldly matters that pertain to their offices

(1528, William Tyndale, 'Obedience of a Christian Man'; A14136.47328)

Consider the following examples (65) through (67)—all originating from William Tyndale (with English being the language of composition). As above, for all these examples the 'exclusive implication' (Roberts, 2006) is negated and thus the prejacent—as the (pragmatically) stronger alternative can complement the list of alternatives.

(65) The ypocrites with worldly preachinge have **not** gotten the praise **only** / **but even** the possessions also and the dominion and rule of the whole world

(1528, William Tyndale, 'Obedience of a Christian Man'; A14136.3256)

(66) Whom they have robed ( I speak **not** of worldly things **only** ) **but even**
whom they have robbed I speak not of worldly things only but even
of their very natural wits :
of their very natural wits

(1528, Tyndale, 'Obedience'; A14136.87015)

(67) Our ypocrites rob **not** the wedowes **only** : **but** knight / squire / lord
our hypocrites rob not the widows only but knight squire lord
duke king & ; Emperor and **euen** ye whole world under the same
duke king and emperor and even the whole world under the same
colour
color
'*Our hypocrites harm not only the widows but the knight, the squire, the lord, the duke, the kings, and the emperor and even the whole world with their hypocrisy*'

(1528, Tyndale, 'Obedience'; A14136.45741)

Other LC-examples that do not follow the *not-only-and/but* pattern include the following three data points:

(68) Bemynded as Christ was which being in the shappe of God / equal unto
be minded as Christ was which being in the shape of god equal to
God and **even** very God / [...] hyd it
god and even truely/very god hid it
(1528, Tyndale, 'Fayth the mother of all good workes'; A14144.9928)

(69) they [the Roman Catholic clergy] have set up frauncheses in all towns and villages for whosoever robs / morthereth or sleyeth them [the lay] / and even for traitors unto the kynges person also

(1528, Tyndale, 'Obedience'; A14136.85702)

(70) For as a man fealeth god to him self / so is he to his neyghboure I know
For as a man feels god to himself so is he to his neighbor I know
by mine own experience that all flesh is in bondage under sin and can not
by my own experience that all flesh is in bondage under sin and cannot
but sin / therefore am I merciful and desire God to loose the bonds of
but sin therefore am I merciful and desire god to loosen the bondy of
sin **even** in mine enemy
sin even in my enemy
'*Just as a man feels God's love towards himself, so he should also feel love towards his neighbor. I know from my own experience that all people are*

*enslaved to sin and cannot help but sin. Therefore, I am merciful and desire God to release even my enemies from the bondage of sin.*'

(1528, Tyndale, 'Fayth the mother of all good workes iustifieth'; A14144.15390)

These unambiguous uses of $even_{\text{SAO}}$ are first attested in the 1520s. I will propose a plausible path of semantic change for the development of $even_{\text{SAO}}$ based on the data available. To this end, I will rely on the EEBO between 1470 and 1530 and the smaller semantics shifts reflected in those data.

### 2.4.4 Annotating and classifying focus particles in diachronic data

In this section, I will introduce the basic approach to generating semantic annotations on diachronic data. I then move on to noting the particular difficulties for focus particles in order to justify the course of action in this dissertation.

Diachronic linguistics faces the problem of lack of negative evidence. We cannot experimentally tap into past speakers' grammars to elicit acceptability judgments and have the hope to be able to gauge the limits of grammaticality. What is available is the occurrences of the target items and the contexts for these occurrences. The contextual facts allow to infer what conditions (presuppositions) the target item puts on the context. Having the benefit of access to both conservative and innovative grammars (with respect to *even*, its semantics of e.g. a scalar particularizer *and* a scalar additive operator) allows to be sensitive to uses (i.e. target item in combination with linguistic context) that permit multiple interpretations, e.g. a conservative *and* an innovative interpretation. It is not only tempting to recognize multiple possible and plausibly applicable readings but, in fact, necessary to do so. Such uses promote linguistic variation under the 'Constant Entailments' paradigm (Beck, 2012, 88) and make for critical contexts/bridging contexts between older and newer (e.g. $even_{\text{SCA}}$ and $even_{\text{SAO}}$) interpretations.

The annotations that form the basis for the following discussion are attempting to address this issue. Consequently, in some cases, *even*s that are annotated as scalar particularizers have additionally been annotated as a scalar-additive particle. At the same time, all uses of *even* that allow a scalar additive interpretation, are

also tagged 'extremal' (i.e. scalar-only and not necessarily additive) owing to the fact that the prejacent is the strongest/most distant out of all relevant alternatives. In some cases it is possible to get an ambiguity for particularizer of exact hit, scalar particularizer, and a scalar additive reading, as in (71). For context, the writer, Tyndale, spends the entire paragraph prior to (71) setting up the parallelogram Good Christian : Good Fruit & Bad Christian : Bad Fruit.

(71) Of this god's spirit / and his fruits / have our holy hypocrites not once
of this god's spirit and his fruits have our holy hypocrites not once
known / nether yet tasted howe sweet they are / though they fain many
known neither yet tasted how sweet they are though they feign many
good works of there own ymaginacion to be instified with all / in which is
good works of their own imagination to be justified withal in which is
not one croine of true faith / or spiritual love / or of inward joy peace
not one grain of true faith or spiritual love or of inward joy peace
and quietness of conscience / for as much as they have not the word of
and quietness of conscience forasmuch as they have not the word of
God for them / that such werkes please God / but they are **even** the
god for them that such works please god but they are even the
roten fruits of a roten tree
rotten fruits of a rotten tree
'*... but they are even the rotten fruits of a rotten tree.*'

(, 1526, 'Tyndale'; Preface vn to the pistle off Paul to the Romayns)A14132.6648

On an exactness reading (cf. section 2.4.1), *even* in (71) focuses the characterization of the hypocrites. Tyndale observes the analogy between 'good deeds as a consequence of god's true spirit' and '(good) fruit brought forth on a tree' and contrasts that with the analogy from "the hypocrites" and their 'evil doings' to rotten fruit. On this reading, *even* focuses the entire NP *they are rotten fruit of a rotten tree* and any alternatives that are generated are excluded.

On a scalar-particularizer reading (cf. section 2.4.2), *even* in (71) modifies its associate NP by picking out the extremal alternative ('rotten fruit') and excluding any weaker alternatives. The relevant weaker alternatives constitute the hypocrites being equated to trees (rather than the fruit they bear) as is the case for the "good Christians"—their actions and deeds are considered the good fruit brought about by them obeying God and acting in line with God's spirit. In this interpretation the hypocrites are essentially dehumanized and equated to bad actions rather than bad

actors—a conclusion in line with Tyndale's agenda and argument.

On a scalar-additive reading (cf. sections 2.4.3 and 2.1), the strongest alternative *the hypocrites are rotten fruit* holds in addition to the weaker alternative *the hypocrites are the rotten tree*, i.e. the "system" that brings forth fruit in the first place.

Threefold ambiguities, as displayed by (71), are infrequent. I will not go as far into depth for all of the EEBO diachronic data. This discussion is intended to showcase the challenges in disambiguating readings of *even* in face of the interpretive possibilities based on (i) the particular context of a data point, (ii) a bias for the possible readings annotators are aware of and (iii) the access to later stages of the semantics of *even* that have not come about yet. As a consequence of this last point, early uses of *even* as a particularizer in some cases allow modern scalar additive readings. This is the case for data like (62) (p. 46; *you drive me and this chariot even unto Sir Melligrance's gate*) where—on an SAO interpretation—all weaker alternatives are entailed by the strongest alternative since traveling to the endpoint of a path requires traveling through all the points along the path that lead up to, and fall short of, the endpoint. 111 out of 144 particularizer uses can be disambiguated, with the vast majority of the remaining 33 ambiguous cases being ambiguous between an SAO reading and a scalar particularizer reading. One of the few examples that are ambiguous between an exactness reading and an SAO reading is (72):

(72) For a christen mans health and salvation is with in him: **even** in his
for a christian man's health and salvation is within him even in his
mouth. Romans X.
mouth romans 10
'*For a christian man's health and salvation is with him: "Even in his mouth" (Romans 10)*'

(1528, Tyndale, 'Obedience'; A14136.61710)

In (72), Tyndale cites from Romans 10:8: Only the *even* and the adjacent PP (*even in his mouth*) are a quote from this bible verse. On an exactness reading, all alternatives are excluded, which fits the wider Tyndale context in the sense that he argues Christians should not have to pilgrimage in order to have their sins forgiven, and they should not have to pay indulgences in exchange for salvation.

This argument is followed by (72). The interpretive effect amounts to the argument 'salvation lies not in pilgrimaging or indulgences but exclusively in one's mouth'. On this reading, *salvation is with him* and *[salvation] is in his mouth* are coreferential to the same state of affairs. Additionally, (72) allows the scalar additive reading in which *salvation is with him* and *[salvation] is in his mouth* are not coreferential but instead form a scale. As a result, the stronger alternative focused by *even* can hold in addition to the weaker *salvation is with him*. It is important to note that the context in Romans 10:8 is not directly about "salvation" being said to be "in his mouth" but "the word" and "the word of faith" (cf. e.g. from the King James Bible *But what saith it? The word is nigh thee, even in thy mouth, and in thy heart: that is, the word of faith, which we preach*) (*KJV* Romans 10, 1987).

As far as the classification and annotation of the data is concerned, the cases that are ambiguous between a scalar (extremal) and scalar-additive reading received both labels. Moreover, uses of *even* that allow both the exactness and scalar interpretations also received both labels. I will point this fact out when necessary or relevant during the ensuing discussion.

Beyond the classification of uses of *even* based on its readings, I annotated these uses as to (*i*) telicity, (*ii*) predicate type, (*iii*) 'argument involvement' (internal/external/frame) of the element focused, (*iv*; for prepositions of space/time) stative-locative/dynamic-directional(+bounded/unbounded), and (*v*) −/+ endpoint-/resultative-orientedness (Vendler, 1957; Dowty, 1979, 1986; Krifka, 1998; Kennedy and McNally, 2005; Maienborn and Schäfer, 2011; Maienborn, 2011). I will go into more detail regarding these markers and their relevance in the following section on $even_{\text{SAO}}$'s diachronic development.

## 2.5 The development of $even_{\text{SAO}}$

In this section I will discuss the developmental path that lead to the emergence of $even_{\text{SAO}}$. In line with the goals laid out above, I will answer the question as to how $even_{\text{SAO}}$ ended up assigning a presupposition that ranks its sister proposition on the high end and its alternatives on the lower parts of a relevant scale.

The core idea of my argument is that $even_{\text{SAO}}$'s focusing the high ends of scales is

due to its particularizer predecessors' propensity to focus elements coinciding with the natural endpoints of events. In other words, $even_{\text{SAO}}$ owes its scalar meaning component to the event structure(s) its (non-)scalar particularizer predecessors occurred in. The secondary goal of this chapter is to contribute to the debate on whether the scalar presupposition of $even_{\text{SAO}}$ is based on existential or universal quantification. I will argue—at least for the early stages of $even_{\text{SAO}}$—that the presupposition is based on universal quantification as it is derived from the quantification over *all* the subpaths of the path along which an event unfolds.

This section has three parts. First, in section 2.5.1, I will start out with a brief recap of *even*'s history before Early Modern English, i.e. before the coverage by the EEBO corpus. Following Traugott's (2006) plot and plausible suggestions here—while fleshing them out with my own observations—the endpoint of this part of the plot is $even_{\text{EXA}}$. Second, I will turn to early particularizer uses without discriminating between $even_{\text{EXA}}$ and $even_{\text{SCA}}$. The goal is to provide an overview of the phrasal categories and predicate/event types *even* associates with in the relevant early EEBO data. In the third part, section 2.5.3, I will discuss *even*'s development from 'exactly'-*even* to scalar *even*, i.e. from $even_{\text{EXA}}$ to $even_{\text{SCA}}$. In contrast to the first part, I can base my proposal on EEBO-corpus data marking the major waypoints along the trajectory of semantic change. This exploration will be the most extensive since this particular part of my proposal requires the most reviewing of the diachronic data, as well as its discussion as evidence for my proposal. The fourth and final part (Section 2.5.4, p. 75) will cover the semantics change from $even_{\text{SCA}}$ to $even_{\text{SAO}}$ in relatively brief manner as the relevant semantic shifts are relatively minor.

Before moving on, this important note is in order: Given the earliest unambiguous uses of $even_{\text{SAO}}$ are attested in corpus data from the 1520s, the task at hand is to trace this development based on the corpus data that is currently available, i.e. the first six decades covered by the EEBO, starting at 1470 CE (up until and including the 1520s). Crucially, it is possible that the relevant semantic shifts extend further back than 1470 CE. This date is the cut-off since, as of yet, no corpus provides a volume of data similar to and preceding the EEBO. On the one hand, given the historical context and advances in information technology—most signifi-

cantly the introduction of printing in England by William Caxton—1470 is not a random pick by the EEBO editors. On the other hand, it stands to reason to assume that a machine-searchable corpus paralleling the extent of EEBO and preceding it diachronically will remain a desideratum for some time. Should such a high-volume corpus become a reality, this proposal will have to be amended. Further, it is conceivable that the relevant semantic changes have taken place at different times, regions, or registers than is reflected in the linguistic artifacts that make up the EEBO (or any other) corpus.

### 2.5.1 Pre-particularizer *even*

As has previously been observed, various of the concrete, lexical senses as well as the particularizer reading have been available since the earliest recorded period of English, i.e. Old English (OED, 2023a; Traugott, 2006; Gast and van der Auwera, 2011). Therefore, the development from adverb of manner to the particularizer reading has to be reconstructed and hypothesized. I follow the broad-strokes account by Traugott (2006) who states that $even_{\text{SAO}}$ started out as an adverb of manner expressing 'evenly/smoothly' which developed into the adverb with the meaning 'similarly', which, in turn, developed into the particularizer *even*.

During the first 60 years covered by the EEBO data, various lexical adverbial (and adjectival) uses are available. In addition to the aforementioned 'evenly/smooth', *even* was used with the meanings 'straight', 'flat', and 'level'—all expressing concrete, physical properties.

Most of these meanings arguably describe a property applying to a single entity ('a straight pipe', 'a flat surface', 'level ground'). In order for a pipe to be straight, all points along the length of the pipe need to form a line (in the sense that this line projects as a single point onto some plane intersecting with the line). An even (=flat) surface requires that all points on this surface form a plane (to the effect that all points project as a line on some other plane that intersects with the plane defined by the points forming the surface). This is restricted to some contextually given level of 'granularity' or 'resolution': What can be considered 'even/flat' enough for a human's bipedal locomotion might not be 'flat/even' enough for a hamster's means of locomotion.

The 'level'-reading, while similar to the flatness notion, has an additional sense in which it compares the height of two distinct entities—a sense that is reconcilable with the data for early *even*. In other words, on this reading *even* presupposes and compares two entities or points of measurement on a vertical scale (passing through a center of gravity), similar to, but not necessary limited to, height.

In a later sense, the restriction to this physical, vertical scale seems to have been relaxed via metaphorical reanalysis and *even* was then able to express comparison on other, more abstract scales.[7] This is the polysemy Traugott refers to as *even* meaning 'similarity', i.e. sense 'Stage I-(ii)', cf. Section 2.2.2.1 and Traugott (2006). On a more nuanced level, this type of *even* expresses meanings such as 'equality' and 'likeness'. On this reading, two entities are compared on a more abstract scale, e.g. degrees of divinity, similarity in manner. From here, another hypothesized step on the grammaticalization cline is the relaxation of the restriction that entities of the same logical type are under comparison. Instead, e.g. distance traveled by an entity and the location of the entity after completing the traveling can be under comparison. Under this reading, *even* particularizes a point/measure on a scale, locations along a path, or a direction in space. It is presumably here, at the latest, that *even* has the 'exactness' sense and that *even* is a "word of exactness" as briefly discussed by Eckardt and Speyer (2016) (although they do not offer specifics regarding the conventionalization of focus association for words of exactness). However, the assumption seems to be that the pragmatics of the exactness notion independently bring about focus and alternatives—with the QUD targeting the degree to which a point of measure/direction is achieved. An initially free/indirect association with focus comes conventionalized as direct association with focus. *Even* now conventionally associates with focus to the effect that any alternatives to the prejacent (which constitutes a match) are excluded. The restriction that there be an overt standard term of comparison needed to be relaxed in order for *even* to partic-

[7] The early EEBO data features adjectival uses that have undergone semantic bleaching to some extent, i.e. they have lost the physical-dimensionality feature and, rather, express a more abstract sense of 'same-level/peerhood' as in e.g. *my even Christians* (modernized spelling) ∼ 'my fellow Christians'. It is unclear, whether an analogous earlier adjectival use had a part to play in the grammaticalization of adverbial *even* but it stands to reason to assume that to some extent, adjectival and adverbial uses underwent semantic bleaching in tandem.

ularize the focused element (next to excluded alternatives) without requiring some other element to compare to. To sum up, at first, *even* "innocently" operates on (focus) alternatives (i.e. picks one and rejects the others). This association becomes conventionalized—picking one and rejecting other alternatives has become *even*'s main task.

### 2.5.2 Particularizer *even*: Distribution and predicate types, pre-/post-1500

In order to introduce a diachronic dimension into the relevant data, I have split my data into two portions: The earlier portion is pre-1500/15$^{\text{th}}$-century data (i.e. EEBO data from 1470–1499 CE), the second and later portion I will call post-1500/16$^{\text{th}}$-cent. data (i.e. data from 1500–1529 CE).

I will start off with a look at *even*'s distribution in terms of associated constituents or, in other words, what *even* is focusing, cf. Table 2.4 (p. 56) for the following observations[8]:

- More than two thirds of pre-1500 *even*s occur with prepositional phrases, all of which are headed by prepositions of time and space. This portion of PP-focusing *even*s decreases to 38.4% in the later period.
- The second-most frequent type of pre-1500 *even*-data are various measure phrases, which decrease in the post-1500 data with only one data point available in my data set.
- The third type of early *even*-data are definite descriptions (going beyond measure phrases). This particular type of data becomes more frequent in the second period, increasing to a portion of over 25% and thus amounting to the second most frequent type of data in this later period.
- Modification of adverbs (mostly of time and space) rises from 6.9% pre-1500 to 15.1% post-1500.

[8] A note on presentation in Table 2.4: Each subset of data is headed by a percentage, indicating relative frequency with respect to pre- and post-1500 data, respectively, as well as followed by a ratio in real numbers. For instance, cf. Table 2.4, top row, left column, there are 40 *even*s with PPs among the 58 pre-1500 data points which makes for 68.9% out of all 58 pre-1500 data.

- Pre-1500 *even* focuses the adjective of direction *contrary* (ModE 'opposite') in different contexts amounting to ca. 5%—a type of data which is entirely absent from the data for the post-1500 period.

- Finally, there is a relatively low number of instances in both pre- and post-1500 data of *even* with an attachment site higher than a V'/VP, in which case it is not entirely clear what part of a VP is being focused and what kinds of alternatives are being generated from to the focus.

| | pre-1500 (i.e. 1470–1499 CE) | post-1500 (i.e. 1500–1529 CE) |
|---|---|---|
| PPs | **68.9%** – exclusively prepositions of space/time; (40/58) | **38.4%** – 64.6% Ps of space/time, 36.4% other; (33/86) |
| measure phrase (in NPs) | **8.6%** – *30*, *six*, and *half*; (5/58) | **1.2%** – *one*; (1/86) |
| def. description ("other NPs") | **6.9%** – *the first number, the king, ...*; (4/58) | **25.6%** – *the gift of god, the bitter death, the rotten fruit, the same ..., the very ...*, 5x *even ... sel{f/ves}*; (22/86) |
| adverbs | **6.9%** – 2x *there*, *together*, and $as_{\text{temp}}$; (4/58) | **15.1%** – *here, there, now then, just (above), right (at)*; (13/86) |
| adjectives | **5.2%** – 3x *contrary unto*; (3/58) | none |
| attached higher than V'/VP | **3.4%** – *have gone*, *even teach ... -self*; (2/58) | **9.3%** – 4x *even to VERB*, 4x *even VERB*; (4/86) |

Table 2.4: Distribution of early focus particle *even*

Orthogonal to the distribution of *even* along phrasal categories (Table 2.4), there is the following distribution of *even* in terms of predicate types and event structure; cf. Table (p. 57), based on the annotation along the following annotational decisions in *a.*)–*c.*):

*a.*) Does *even* occur with telic vs. atelic predicates (Vendler, 1957; Dowty, 1979, 1986)?

'± telic', cf. Table 2.5, line *a.*)

*b.*) If *even* occurs with telic predicates, classify whether the focused element *even* is associating with is event-internal or not (i.e. event-external or frame adverbials) (Maienborn and Schäfer, 2011).

'± internal', cf. line *b.*)

*c.*) If 'event-internal', then note whether the focused element constitutes or coincides with the endpoint of the relevant event.

'± endpoint', cf. line *c.*)

| # of *even*s | pre-1500 | | | post-1500 | | |
|---|---|---|---|---|---|---|
| | 60 | | | 86 | | |
| *a.*) ± telic | 36 + | | 24 − | 36 + | | 50 − |
| *b.*) ± internal | 26 + | 10 − | | 17 + | 19 − | |
| *c.*) ± endpoint | 22 + | 4 − | | 5 + | 14 − | |

Table 2.5: Distribution of *even* with respect to predicate & event structure

### 2.5.3 From particularizer of exactness to scalar *even*

In this section I will detail my argument for the diachronic change *even* underwent from a particularizer of exact hit to scalar *even*, meaning from $even_{\text{EXA}}$ to $even_{\text{SCA}}$. Section 2.5.3.1 details the overall proposal of semantic change while Section 2.5.3.2 goes into detail regarding the quantitative support in the corpus data. The core idea here is that $even_{\text{EXA}}$'s focusing the natural endpoints of events, and this endpoint coinciding with the endpoint of the path of the event is the origin of $even_{\text{SCA}}$. The underlying observations and basic outline for my proposal are:

1. Early uses of 'exactly'-*even* frequently focus a location/direction/time of an eventuality or participant of an eventuality.

2. Specifically in telic predicates, with $even_{\text{EXA}}$ modifying an event-internal element, the focused element (e.g. a location/time) of $even_{\text{EXA}}$ frequently coincides

with the endpoint of the relevant events or final parts of an event ('endpoint orientedness') (Krifka, 1998).

3. Up until this point in the development, $even_{\text{EXA}}$ adheres to the presuppositions Eckardt (2009) formulated for this *even*'s underlying notion of exactness.

4. The 'exactness'-presupposition comes in conflict with the context in uses where the focused element marks the polar end of a contextually salient scale/topology. Such uses are not widespread but make for a plausible bridging context coercing an interpretation deviating from a standard 'exactly'-reading.

5. Finally, and specifically with telic predicates, when *even* particularizes (event-internally modifying) PPs headed by bounded directional prepositions, charitable hearers adapt their lexicons to account for scalar *even*.

The first part (Sec. 2.5.3.1), presents my proposal for modeling the semantic change from $even_{\text{EXA}}$ to $even_{\text{SCA}}$ along the relevant diachronic data. The second part, connects my proposal to the quantitative picture of early *even* data in the EEBO.

#### 2.5.3.1 Modeling the semantic change from 'exactly'-*even* to scalar *even*:

I begin with uses of *even* as particularizer of exact hit (or '$even_{\text{EXA}}$'). I will then turn to uses of *even* as scalar particularizer (or '$even_{\text{SCA}}$'). Particularizers specify and identify the focus value under discussion (Nevalainen, 1994; Traugott, 2006). With particularizers of 'exact hit' (Eckardt, 2009; Eckardt and Speyer, 2016), focus alternatives 'less or more' are excluded. In a phrase like e.g. *exactly(/even$_{\text{EXA}}$) 12 eggs*, all numbers of eggs less or more than 12 are rejected. Moreover, in a phrase like *the king sat exactly(/even$_{\text{EXA}}$) in the middle* other possibilities further to the left/right are excluded. Eckardt models these semantics of $even_{\text{EXA}}$ with her (2009) notion of exactness. Importantly, Eckardt formulates these conditions for particularizer *even* and in direct response to Traugott (2006), cf. the core ideas in (73). Moreover, Eckardt (2009) explains under what conditions the 'exactly'-notion cannot apply, cf. (74).

(73) Assuming a property P, then "'exactly, just, precisely *P*' presupposes"

(i) "a topology of approximating $P$-hood (canonically illustrated by numbers and scales like 'roughly 20 years old' — 'exactly 20 years old')"

(ii) "approximation from more than one direction"

(Eckardt, 2009, 29)

(74) "The notion of 'exactness' is inapplicable"

(i) "when a property $P$ can not be approximated (*#be roughly/exactly pregnant*)"

(ii) "when a property $P$ is inherently vague itself (*# be roughly/exactly angry*)"

(iii) "when a property $P$ is the polar end of a scale"

(Eckardt, 2009, 29)

Beyond the scale in (73) (based on age in years), Eckardt does not go into detail as to what constitutes, defines, or provides a topology. With respect to (74-iii), an example for clarification is that *the cup is exactly full* is odd while *the cup is exactly half-way/50%* or *three quarters/75% full* is good. Eckardt sums up: "This was the state of English *even* when the scalar particle started to develop" (2009, 30).

In atelic predicates, *even* particularizes the location(/direction/orientation) of eventualities, cf. (75), where any focus alternatives generated from locations other than the 'center' are denied:

(75) Bellefrontes image [...] hinge in the air with no post no piler bynethe
Bellefrontes Image hangs in the air with no post nor pillar beneath
under set / no hold with cheyne above but adamant stones that were
under set nor support with chain above but adamant stones that were
in the vawte and in the Arches about drowhe even the iron
in the vault and in the arches about drawn straight the iron
eueryche to his side so that the iron image might not dounward no
every which to his side so that the iron image might not downward nor
upward no toward neither side but hinge always **even** a mydde
upward nor toward either side but hangs always even amid
'*Bellefrontes Image hangs in mid-air without any support below or above. The only thing that holds it in place are adamant stones that are set into the vault and the arches around it. These stones are so strong that they pull the iron image straight in all directions, so that the iron image cannot move*

*up or down, or towards either side but stays exactly in the center.*'

(1482, Higden, Trevisa, & Caxton, 'Prolicionycion'; A03319.39619)

Here, Eckardt's topology is adhered to by at least the points spanning from one side to the other side of the room the statue in question is suspended in. Arguably, the various points in space surrounding the position of the statue part of the locations making up the topology.

Looking at pre-1500 *even*s with atelic predicates, the overwhelming majority of *even*s with atelic predicates involve *even* particularizing locations and directions/orientations (e.g. where an activity is taking place; with respect to states, where an argument/event-participant is located). More than half of these *even*s (15/24) occur with PPs. In the following one outlier, an endpoint of a spatial extent in a stative predicate is particularized. In (76) both an exactness reading ('exactly') and a scalar reading ('all the way') are available:

(76) And son after one of them that so sought [for the body of Saint Edward]
And soon after one of them that so sought
saw a great light in a desolate place of the wode in liknes of a pyler of
saw a great light in a desolate place of the wood in likeness of a pillar of
fire stratchyng fro heuen **even** unto the grave
fire stretching from heaven even unto the grave
(1483, de Voragine & Caxton, 'Legenda aurea sanctorum'; A14559.293817)

While a case could be made that the *stretching*-eventuality in (76) is an accomplishment predicate (with telicity) rather than a state, it is more interesting to turn to the pre-1500 *even*s occurring with telic predicates.[9]

Turning to **telic** predicates, specifically again pre-1500 data for now: 10 of the 36 pre-1500 'telic *even*s' associate with event-external elements. They particularize locations and times for events to take place in/at (Maienborn, 2011; Maienborn and Schäfer, 2011). As an example, consider (77):

(77) Tristam smote down three Knights **even** in the sight of sir Palomydes
Tristan struck down three knights even in the sight of Sir Palomydes

[9] It should be noted that post-1500 *even*s occur with atelic predicates <u>*and*</u> a scalar reading, which is due to the scalar/end-point oriented reading have been established by then. In particular, $even_{\text{SAO}}$, once available, can rank a prejacent generated from an atelic predicate to weaker alternatives, cf. discussion in Section 2.5.4.

'*Tristan struck down three knights right in front of Sir Palomydes.*'

(1485, Malory, Thomas, 'Le morte d'arthur'; A21703.244306)

The following discussion is on the remaining 26 uses of the pre-1500 uses that occur in telic predicates while particularizing event-internal elements. With an eye on the big picture first, These 26 *even*s split into 22 *even*s focusing the endpoint of an event and 4 *even*s not (directly) focusing the endpoint of the relevant event (table 2.5, line *c*). For instance, consider (78) (= (55), repeated from above) where *even* focuses the goal of the drawing(/pulling)-event. The prejacent (*He draws himself to the middle of the altar*) holds, while any focus alternatives (e.g. *he draws himself (somewhat) to the right/left of the center, he draws himself to the left/right end of the altar*) do not hold/are rejected by $even_{\text{EXA}}$.

(78) For it appertains that so precious a sacrament be worthily & clenely made after he draws him self **even** in the midst of the alter [...]

(1483, de Voragine & Caxton, 'Legenda aurea sanctorum'; A14559.689321)

In accordance with Eckardt's (2009) presuppositions of exactness, cf. (73), *even* particularizes a point on a topology provided by the width (or length) of the altar here. The endpoint of the relevant event (*the preacher pulling himself to the center of the altar*) frequently marks/coincides with this *even*-particularized point (event-internally, not event-external-/frame modification; Vendler (1957); Dowty (1979, 1986); Krifka (1998); Maienborn and Schäfer (2011); Maienborn (2011) and above, Sec. 2.5.2), cf. (78).

Alternatively, in some cases, the resultative coincides with the denotation of the focused constituent, cf. (79) (=(56), repeated from above), where the focused location *by the noble prew Jason* is coreferential with the endpoint of the resultative *falling-down-(dead)* event:

(79) patroclus the Just archier losed an arowe upon the noble lady the Queen
Patroclus the just archer shot an arrow upon the noble lady the Queen
Myrro / ye so Right that he smote and pierced her in her throat in
Myrro INT so exactly that he hit and pierced her in her throat in
such wise that she fill doun dede **even** by the noble preu Iason
such wise that she fell down dead even by the noble prew Jason
(1477, Le Fèvre & Caxton, 'Jason et Medée'; A68341.93629)

The following are a few more examples for this type of *even*-data, i.e. the 26 pre-1500 CE uses of *even* that occur with telic predicates where *even* focuses an event-internal element while (in loose terms) marking the endpoint of the relevant event. All these examples, (78)–(83), are exclusively sampled from the set of 15 uses of *even*s that are particularizers of exact hit. I will turn to the remaining 11 scalar uses below (with (84)ff, p. 64).

(80) For all his parties that mete him if they be taken to gidder make
for all his parts that constitute him if they are taken together make
**euen** vi. As one ii, iii make **euen** vi
even six because one, two, three makes even six
(1493, Parker, 'Dives and pauper 1493; adapted.'; A08936.86899&A08936.86906)

(81) Antyochus [...] set Jupiter olimpicus image **even** in the temple [...]
Antiochus set Olympian Jupiter/Zeus image even in the temple
(1482, Higden, Trevisa, & Caxton, 'Prolicionycion'; A03319.160671)

(82) And also somme of the crysten men the day tofore the bataylle did do
And also some of the christian men the day before the battle did do
amend and [...] their harnoys and set their tents nigh a river named
mend and [repair?] their armor and set their tent near a river named
[...] and pyght there their spears **even** in the place where as the
[Loire?] and put there their spear right in the place where the
bodies of saint faconde and saint premyt if rested where after was
bodies of Saint Facond and Saint Premyt are rested where after was
made a church deuotely founded
made a church devotedly founded
'*And some of the Christian men the day before the battle mended and repaired their armor and set up their tents near a river named Loire, and pitched their spears there, right in the place where the bodies of Saint Faconde and Saint Premyt rested, where later a church was devoutly founded.*'
(1485, , 'Prynce Charles the grete kynge of Frauuce'; A18452.73756)

(83) [T]he moan goth oftymes when she is between us and the Son
[T]he moon goes often times when she is between us and the Sun
sometime above and otherwhyle bynethe [...] But when she passyth in
sometimes above and other while beneath but when she passes in
the right lygne **even** between us & the son / than takes the moan fro
the right line even between us and the Sun then takes the Moon from
us the light
us the light

'*The Moon often travels between us and the Sun, sometimes higher, sometimes lower. … But when it passes through the straight line that's exactly between us and the Sun, the Moon blocks the light from the Sun.*'

(1481, , 'Myrrour of the worlde'; A68843.42894)

In (80) and (81), *even* particularizes the resultative of the relevant events ('one, two and three makes six'; 'set/put a statue in the temple'). In (82), the element particularized (location of the saints' graves) coincides with the endpoint of the relevant event ('pitch spears'). The example in (83) is a case where the motion behind the 'passing'-event continues beyond the completion of the pass, while the passing itself has reached an endpoint. Here again, *even* is not directly particularizing the resultative *through (the straight line)* but an attribute of the element marking the endpoint.

To summarize this data, $even_{\text{EXA}}$ particularizes a point on a topology as (or overlapping with) the endpoint of an event. Crucially, any path along which a relevant event unfolds and the presupposed topology are two independent conceptual lengths/extents. Thinking of a topology as a path-like object, e.g. spanning from one side of the alter to the other (see (78)), the situation can be thought of as two independent paths being involved: One path for the event (the 'event path') and another path along which a particular point is particularized by $even_{\text{EXA}}$ and which is potentially orthogonal to the event path.

This last point is in contrast to the next type of data, i.e. scalar uses of the particularizer *even* (or '$even_{\text{SCA}}$'). Of the remaining eleven 'event-internal and telic' pre-1500 data, all *even*s result in $even_{\text{SCA}}$ uses. They exclusively focus on constituents denoting the endpoints of the relevant events. It is these uses and contexts that are the earliest data reconcilable with a PDE scalar additive use of *even*. Consider examples (84)–(88):

(84) And when king Arthur it wist he was glad y now & ; went ayens
and when king Arthur it heard he was glad to know and went against
hem and hem resceyned with mochel honour so that though
him [his nephew] and him received with much honor so that though
ii hostess hem assembled & ; token her way **even** to nihol that
two hosts him assembled and made their way even to Nicol that
Cheldrik had besieged but nougt yet taken
Cheldric has besieged but not yet taken

'*And when King Arthur heard [that reinforcement was on its way] he was relieved and met his nephew and received him with great honor and that although two armies had assembled and they traveled all the way to Nicol.*'

(1480, Caxton, 'Cronicles of Englond'; A23587.31934)

(85) Sir said launcelot it is not good that ye goo to nigh them
sir said Lancelot it is not good that you go too near them
[the forest where opponents are hiding] [...] ye put your self in great
you put yourself in great
Jeopardy / As for that said the king we will take the adventure / Right
jeopardy as for that said the kight we will take the adventure right
so anon the King rode **even** to her
so soon the king rode even to her [Queen Iseult]
(1485, Malory, Thomas, 'Le morte d'arthur'; A21703.241688)

(86) [Sir Pellinore] hath a do with a knight of yours that hyght Egglame
[Sir Pellinore] has a dealing with a knight of yours that named Egglame
& they have fouten to gyder / but at the last Egglame fled and else he
and they have fought together but at the last Egglame fled and else he
had ben dede & he hath chased him **even** to Carlyon
had been dead and he has chased him even to Carlyon
'*Sir Pellinore has business with a knight of yours named Egglame, and they have fought together, but at last Egglame fled, or he would have been dead, and he has chased him all the way to Carlyon.*'

(1485, Malory, Thomas, 'Le morte d'arthur'; A21703.31912)

(87) thene I charge the said sir launcelot that thou drive me and
then I charge you [the carter] said Sir Lancelot that you drive me and
this chariot **even** unto sir Melliagaunce yate
this chariot even unto Sir Melligrance gate
(1485, Malory, Thomas, 'Le morte d'arthur'; A21703.348240)

(88) [S]ir launcelot ran in to the pauelione and rasshed **even** in to the warm
Sir Lancelot ran into the tent and dashed even into the warm
bed
bed
(1485, Malory, Thomas, 'Le morte d'arthur'; A21703.265377)

In (84), *even* focuses the goal of Arthur's and his nephew's journey, the (likely fictional) town Nicol. In (85) *even* particularizes the goal of Arthur's riding, Queen Iseult. In (86) the town Carlyon, in (87) Sir Melligrance's gate, and in (88) the

bed (inside a tent) are particularized—all as goals and endpoints of their respective motion-verb based events.

To sum up, $even_{\text{SCA}}$ is first attested in contexts where *even* focuses, on the one hand, the endpoints of the relevant events, and, on the other hand, these event-endpoints arise as a result of the telicity introduced by directional prepositions with bounded reference (Zwarts, 2005), i.e. goal PPs. As far as the 'exactly'-reading and prepositions of time/space are concerned, the following sums up the overall picture: When particularizing *even* occurs with stative/locative prepositions as in (55), (56), and (58), *even* tends to result in an 'exactly'-reading. When particularizing *even* occurs with bounded prepositions, *even* results in scalar readings (Zwarts (cf. 2005); von Stechow (cf. 2006a); Kracht (cf. 2021, for the semantics of prepositions); see also Talmy (1978, 627f) for an earlier discussion of the notions Figure & Ground).

As mentioned, Traugott does not discriminate between 'exactly'-*even* and scalar *even*. Eckardt observes that some of Traugott's data adhere to an 'exactly' semantics (e.g. *euen* (=exactly) *thyrty/three hundreth cubettys*). However, some data, such as Traugott's (89) (=(39-b), repeated from above) constitute a problem:

(89) His man carried it after hym *even* to the Sterre chamber and soddenly his man sterted away and tooke a boote
'His man carried it (the money) after him right up to the Star Chamber, and suddenly ran away and took a boat'
(c.1585 William Fleetwood, line 1796 [Ceecs, Original 2])
(Traugott, 2006, her (16-b), her emphasis)

Eckardt refers to *even* data such as (89) as "pragmatic accidents" and points to presupposition failure resulting from sticking with an 'exactly'-interpretation for *even* in contexts such as (89)[10].

For modeling the semantic chance *even* underwent, Eckardt's (2009) notion of exactness and the corresponding presuppositions serve as a point of departure (90) (=(73)):

[10] This particular type of presupposition failure is only one problem next to e.g. the implicature problem of Traugott's account mentioned in section 2.2.2, above

(90) Assuming a property P, then "'exactly, just, precisely *P*' presupposes"

(i) "a topology of approximating *P*-hood (canonically illustrated by numbers and scales like 'roughly 20 years old' — 'exactly 20 years old')"

(ii) "approximation from more than one direction"

(Eckardt, 2009, 29)

Recall that Eckardt observes a number of criteria that are in conflict with $even_{\text{EXA}}$'s presuppositions. Most relevant to the current discussion is the condition that $even_{\text{EXA}}$ not particularize a polar end of a scale; consider the examples in (91). For all the minimal pairs, the respective members that have *exactly* modify the polar end of the relevant scales are infelicitous. The members with *exactly* targeting a proportional measure on that same scales are good:

(91) a. #The glass is exactly full.

b. The glass is exactly 3/4 full.

c. #Robin filled the beer glass exactly full/all the way.

d. Robin filled the beer glass exactly 75%.

e. #Frodo has made it exactly to Mordor.

f. Frodo has made it exactly halfway to Mordor.

Building on Eckardt (2009), in the following I will formulate the definedness conditions for $even_{\text{EXA}}$ are. Consider (92) and the corresponding diagram in (93) as the minimal working example:

I will fashion Eckardt's topology as path-like objects: A path is a semantic object that describes a spatial extent in a world. A path has a start point, p(0), and an endpoint, p(1), as well as intermediate points, p(i), cf. Zwarts (2005). Paths extend the relevant ontology of semantic types to include the type of paths: <l>. See also von Stechow (2006a) who discusses the notion of subpaths (where any path p consists of its subpaths; p' $\subseteq$ p). For my purposes it is sufficient to note that they have a start and an endpoint as well as intermediate points, which, for convenience, I occasionally refer to as subpaths.[11] Thus, start, end, and intermediate points are locations along

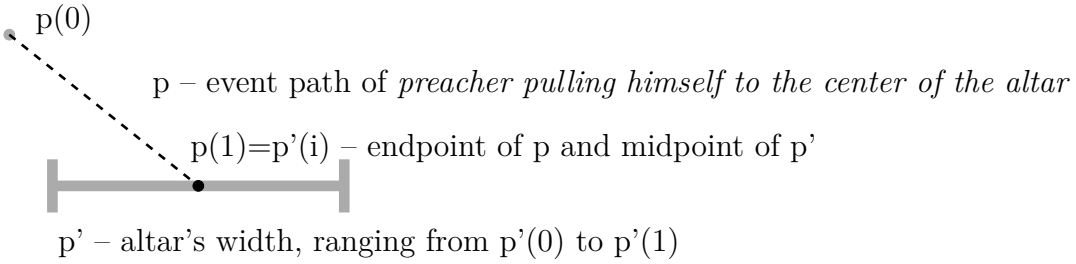
[11] To focus on the plot of my argument, I remain vague as to the exact nature of intermediate points and subpaths. I will not go into detail regarding inner workings of paths, discreteness, their

a path and subpaths can, but do not have to, be points; points/locations can be thought of as subpaths with no extent. Note that the discussion here has a bias for telic predicates in that it assumes the path p for the event the proposition describes—a move which can be easily remedied, should it become necessary.

(92) he draws him self ***even*****$_{\textbf{exa}}$** in the midst of the alter

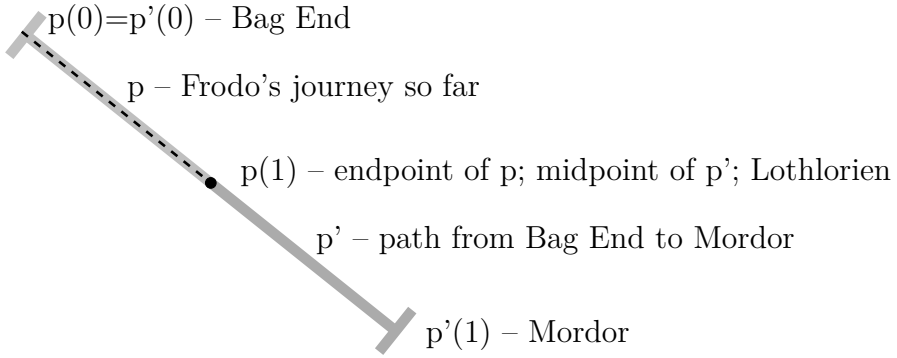
(1483, de Voragine & Caxton, Legenda; cf. (78), p. 61)

(93)




The 'event path' p and the 'topology path' p' intersect: The endpoint of p, p(1), occupies the same location as a some point along p'. Crucially, drawing on Eckardt's (2009) presuppositions of exactness, the definedness condition is that the point of intersection is not a polar end of p', i.e. $\neg($ p(1)=p'(0) $\vee$ p(1)=p'(1) $)$. Moreover, the paths do not overlap except for at p(1), i.e. $\forall$p'(i)$\subseteq$p'[ p'(i)$\neq$p(1) $\rightarrow$ p'(i) $\not\subseteq$ p]. This last point might be too strong a condition since, as (91-f) suggests, some overlap is acceptable and in fact necessary. The event path p, ranging from Bag End to Lothlorien overlaps with the topology path p' ranging from Bag End to Mordor (/Mount Doom); consider (94) for a schematic overview:

(94)




Thus, allowing for some overlap between p and p', I argue the relevant condition to be that at least some intermediate points along the relevant p' are, at the same

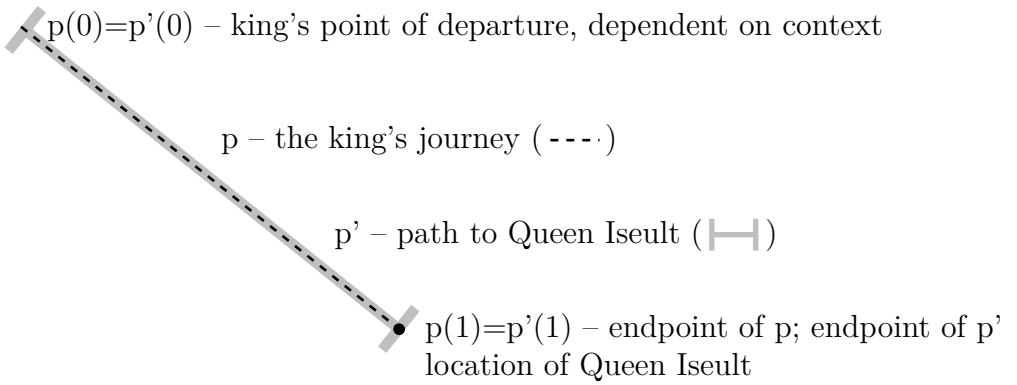
algebraic and mereological properties; (cf. Zwarts, 2005; von Stechow, 2006a; Kracht, 2021, for detailed discussions).

time, subpaths to the event path p, i.e. ∃p'(i)[ p'(i) ⊈ p].

Next, I will turn to scalar *even* (*even*$_{\text{SCA}}$), which, as mentioned before, can be paraphrased as 'all the way'. For *even*$_{\text{SCA}}$, e.g. in (95) (adapted from (85), above), the definedness condition are eased up in contrast to *even*$_{\text{EXA}}$. The point on the relevant topology p', at which (the endpoint of the event path) p(1) falls is a polar end of p', i.e. p(1)[12]. The condition that p and p' not overlap is lifted.

(95) the king rode ***even*$_{\text{sca}}$** to [Queen Iseult]
(1485, Malory, Le morte d'arthur; cf. (85), p. 64)

(96)




The following semantic shifts need to take place in order to get from the presuppositions of *even*$_{\text{EXA}}$ to *even*$_{\text{SCA}}$—or from (93)/(94) to (96): The event-endpoint orientedness of *even*$_{\text{EXA}}$ is extended to polar ends of a topology, which should be in violation of Eckardt's exactness presuppositions. This meaning change can be explained by cooperation by charitable hearers (who update their lexicon; Eckardt (2009)) and with Constant Entailments for contexts inviting variation in the interpretive options (Beck, 2012, 88). To illustrate, in the data in (97) and (98) below, there is a certain degree of friction between *even*$_{\text{EXA}}$/$_{\text{SCA}}$'s presuppositions and the contexts, cf. (97):

(97) Moyses spoke / And our lord answered him / Our lord descended upon
Moses spoke and our lord answered him our lord descended upon
the top of the mount of synay **even** on the top of hit
the top of the mountain of Sinai even on the top of it
(1483, de Voragine & Caxton, 'Legenda aurea sanctorum'; A14559.104022)

Touching down on Mount Sinai while descending from heaven, one cannot descend any further than that. While the path of the event ranges from Heaven to the

[12] The opposite end of p', p'(0), is in principle an option, too.

surface of Mount Sinai, the relevant topology is the topography of Mount Sinai. This topography, however, has internal structure and the top of Mount Sinai is not a mere proportional measure but otherwise equal location on the topology. While not necessarily constituting a polar end of a topology, it is the highest point and, thus, the extreme point along the vertical dimension of the topography/topology—one cannot get any higher than the tip of Mount Sinai (∼ vertical polar end) but the summit can be approached from varying directions, i.e. the alternative locations, are projected from horizontal variation in the path of descent.

Turning to (98), here the topology is provided by the length(s) of the monster's three tongues, respectively. There is no event path proper since the resultative 'cut off' does not come with a path and, moreover, is an achievement verb. (98) is of the type of data with telic verbs whose result state overlaps with the particularized location. This can be taken as indication that *even* in (98) is an instance of $even_{\text{EXA}}$. Reaching and aiming to cut a monster's three tongues off, one cannot cut them off any closer than by the snout (—it might be too dangerous to reach all the way to the back of the oral cavity). Therefore, while the topology spans from the tongues' tips to the tongues' root(s), the length that can be cut off by sword is limited, i.e. by where the 'snout/nozzle' is, *as nigh as they might be*.

(98) he hauced his sword & ; discharged hit upon the dragon where
he [Jason] lifted his sword and discharged it upon the dragon where
he thought his head was & ; smote so well the monstre that he cut of
he thought his head was and struck so well the monster that he cut off
his three tongues **even** by the mosel as nigh as they might be
his three tongues even by the muzzle as close as they might be
(1477, Le Fèvre & Caxton, 'Jason et Medée'; A68341.66348)

Note, that the alternatives—generated from alternative locations to *by the snout* at which to cut off the tongues—are not entailed. However, what is entailed are any parts of the three tongues leading up to the point of where the injury happens to take place of them being removed (in contrast to (97)). In this regard, this *even* behaves more like a $even_{\text{SCA}}$ than $even_{\text{EXA}}$.

For both (97) and (98), the endpoints of the relevant events coincide with particularized locations that are located at salient/extreme points of a topology arising from the 'periphery of the events' rather than from a path laid out by a bounded directional preposition.

Data like (97) and (98) seem like ideal candidates for charitable hearers—in essence through an instance of coercion—to become permissible for $even_{\text{EXA}}$ particularizing polar or extremal ends of some contextually given topology/path/scale. As a consequence, they have an easier time adapting their lexicon to the effect of including scalar *even* once they encounter *even* occurring with bounded directional prepositions rather than static/locative ones (Eckardt, 2009; Beck, 2012; Beck and Gergel, 2015; Gergel and Beck, 2015).

In the context of Beck's (2012) constant entailments paradigm, both examples feature a context permitting two different interpretations with both interpretations allowing for the same, i.e. 'constant', entailments. For the monster's-tongues example, on the *exactly* reading, *even* particularizes a location along the tongue(s). On the scalar reading, *even* particularizes the furthest point at which it is possible to cut off the tongues—the relevant topology is limited to *by the snout*[13]—and all relevant points along the tongue are removed. For the Mount Sinai example: On the *exactly* reading, the *descending*-event path ends on the surface of Mount Sinai, with the particular location—the top—being focused by $even_{\text{EXA}}$. The scalar reading comes about due to the ambiguity arising from the salience of the peak of Mount Sinai, which allows the peak to be taken as the polar point of a relevant topology.

Coming back to the bigger picture and summing up the shifts from $even_{\text{EXA}}$ to $even_{\text{SCA}}$: Eckardt's (2009) exactness-presupposition is eased. Scalar *even*, as in (89) (p. 65), as well as in the EEBO data (84)–(88) (p. 64) introduced above, no longer requires that the focus value under discussion be approachable from multiple directions and, thus, effectively licenses particularizing *even* to focus the polar end of a topology. This topology is provided by a path ranging from the starting point to the endpoint (i.e. from p(0) to p(1) in Zwarts's (2005)'s terms)—the latter of which being introduced by bounded directional prepositions and provided by the P-complement. Once *even* occurs with PPs headed by bounded directional prepositions, it is on charitable hearers to respond by adjusting their lexicon: *even* interacting with the aspectual properties contributed by bounded prepositions and focusing on the bounds of telic predicates became analyzed as encoding a scalar presupposition. 'Exactly'-*even*'s event endpoints correspond to scalar *even*'s end-

[13] For all we know about the anatomy of monsters, the tongues might simply end *by the mosel*.

points. Extending this informal analogy, 'exactly'-*even*'s topology corresponds to scalar *even*'s preposition-based paths. For the sake of ease of exposition, assuming $even_{\text{EXA}}$'s topology to have 'survived', then, for $even_{\text{SCA}}$, it can be thought of as overlapping with and, further, being absorbed by the event path—notice the overlap of (- - -) and (⊢⊣) in (96). The crucial consequence for $even_{\text{SCA}}$ is that, in contrast to $even_{\text{EXA}}$, any alternative points leading up to the particularized endpoint of the event are not rejected. In essence, at the end of this shift in meaning, *even* is a scalar particularizer (paraphrasable roughly as 'all the way') that focuses on the endpoints of events marked by bounded directional prepositions (goal PPs).

Eckardt (2009) suspected that 'exactly'-*even* in pragmatic accidents such as (89) is bound to have led to a scalar (additive) interpretation. The observation that particularizing *even* occurring in contexts such as (89) results in a scalar reading nicely confirms Eckardt's suspicion.

As a preliminary conclusion, at the beginning of the semantic change from 'exactly'-*even* to scalar *even* is the penchant to particularize the endpoint of events. The endpoint orientedness of *even* with respect to events was extended to focusing the endpoints of the paths along which events take place (Traugott, 2011).

#### 2.5.3.2 Discussion of quantitative aspects of early *even* data

Above, I argued that the origin for *even*'s later scalar presupposition lies in the context of telic predicates, with 'exactly'-*even* focusing a point on Eckardt's topology and this point frequently coinciding with the telic event's endpoint/'final parts' (Krifka, 1998; Maienborn, 2011). Initially, the particular location of the focused event endpoint along Eckardt's topology was irrelevant/orthogonal as long as the presuppositions were satisfied.

Most of the pre-1500 data adheres to the presuppositions Eckardt suggests for 'exactly'-*even*. As introduced above, 'atelic *even*s' mostly particularize locations and directions/orientations, i.e. where an activity is taking place or, with respect to statives, where an argument/event-participant is located. In telic contexts, *even* behaves similarly in the sense that rather than particularizing the subject/agent in the relevant event, it particularizes the location/goal of a telic event. My proposal is based on the idea that $even_{\text{SCA}}$ developed specifically with telic predicates. However,

notice that *even*$_{\text{SCA}}$ is available as early as 1480 CE—practically from the onset of the EEBO data. Therefore, I will next turn to a quantitative corpus evidence in support of my proposal.

In order to argue against a possible null hypothesis claiming that the relative frequencies of 'exactly'-*even* and scalar *even* are facts in an orthogonal status quo and unrelated to the development of *even*$_{\text{SAO}}$, I will show that scalar *even* is on the rise. As a heuristic, I want to introduce the relative frequency of static/locative prepositions vs. dynamic/directional prepositions. More specifically, I will look at the frequency of instances where *even* modifies and associates with a PP headed by static or dynamic prepositions of time or space. Crucially, the aspectual properties of these two different classes of prepositions impact the type of event structural building blocks *even* can particularize when it focuses on PPs headed by one or the other. I limit this overview to prepositional phrases because they are the critical contexts for early scalar uses. Moreover, in face of a higher variability in the distribution of *even* in terms of the phrasal categories it modifies as well as predicate types scalar (additive) *even* occurs with post-1500, prepositional phrases provide a relatively clear-cut empirical domain.

Zwarts (2005) discusses stative/locative and directional/dynamic prepositions. Stative/locative prepositions (e.g. *in*, *at*, *on*, etc.) tell the hearer where something is. Directional/dynamic prepositions (*to*, *towards*, *into*, *onto*, etc.) tell where something is going. The two latter come in two aspectual variants: Unbounded directional prepositions (*towards*) and bounded directional prepositions (*to*, 'goal PPs', cf. Beck and Snyder (2001)). Zwarts's discussion of bounded directional PPs and their aspectual properties is mostly focused on (manner of) motion verbs with PP complements. For my current purposes, it is important to note that particularizing *even* focusing on PPs headed by static Ps tend to result in an 'exactly'-reading and, PPs headed by bounded directional PPs tend to result in a scalar interpretation. Therefore, in the following overview (Table 2.6), I will include bounded directional prepositions (e.g. *to*, *into*) and exclude the very small number of unbounded directional prepositions (e.g. *toward*) (Zwarts, 2005).[14] Moreover, I limit the data to only

[14] It seems *even* particularizing a PP headed by an unbounded directional preposition, as in e.g. (i), behaves more like 'exactly'-*even* modifying an adjective of direction such as *opposite*.

include prepositions of time and space.[15] There are a number of different ways of selecting data for this view, each with its own advantages and disadvantages. Table 2.6 shows the following data selections: Looking at all occurrences of *even* associating with PPs of space or time without any further sub-setting, ('[no restriction]', in green font) gives 39 pre-1500 *even*s and 22 post-1500 *even*s. Including only those instances where the focused PP in question adverbially modifies event-internally (Maienborn and Schäfer, 2011) (in red font) allows for better comparability on the one hand but reduces available data, on the other hand. Filtering the data further and including only those instances where *even* focuses event-internal PPs in telic events (blue), reduces the data to less than half of the original amount on the one hand but, on the other hand, makes for better comparability. The main take-away from Table 2.6 is the following: Across all levels of data selection for this comparison, association with PPs headed by static prepositions is more frequent in the earlier period while association with bounded directional prepositions is less frequent. For the later period, the reverse picture is the case: Association with PPs headed by bounded directional prepositions is more frequent. I performed separate applications of the $\chi^2$ Test of Independence for all three modes of data selection. Regardless of the mode of selection, the test confirms that there is a significant relationship between the two variables *time* (with levels '15$^{\text{th}}$-c.' and '16$^{\text{th}}$-c.') and *P-type* (levels 'static' and 'bounded-directional'); cf. bottom row in 2.6 for the detailed reports.

(i) Alex swam towards the island. (Zwarts, 2005, his (11b))

(ii) Alex swam even towards the island.
Alex swam exactly/straight/directly towards the island

(iii) One time she was round / another time half / and after horned / and so went and
one time she was round another time half and after horned and so went and
became such as noman might see her / And after she appeared horned and syth half as
became such as nobody might see he and after she appeared horned and since half as
she had ben to fore / and also round and full / Than knew they well by their
she had been before and also round and full then knew they well by their
entendement that she approached the son till she was **even** ayenst him
reasoning that she approached the Sun till she was exactly/directly opposite him
'*... Then they reasoned that she was approaching the sun until she was directly opposite it.*'
(1481, Vincent of Beauvais and Caxton, 'Myrrour of the worlde'; A68843.6209)

[15] Note that in the pre-1500 data all *even*-associating PPs are headed exclusively by prepositions of time and space.

| Context | event-int.+telic | | event-internal | | [no restriction] | |
|---|---|---|---|---|---|---|
| time: / P-type | 15th-c. | 16th-c. | 15th-c. | 16th-c. | 15th-c. | 16th-c. |
| | % (#) | % (#) | % (#) | % (#) | % (#) | % (#) |
| static | **57.9** (11) | 14.3 (1) | **65.6** (21) | 33.3 (6) | **71.8** (28) | 45.5 (10) |
| bound.-dir. | 42.1 (8) | **85.7** (6) | 34.4 (11) | **66.7** (12) | 28.2 (11) | **54.5** (12) |
| | $\chi^2(1, N=26)=3.91$, $p=.0478$ | | $\chi^2(1, N=50)=4.84$, $p=.0278$ | | $\chi^2(1, N=61)=4.15$, $p=.0415$ | |

Table 2.6: Particularizer *even* associating w/ PPs headed by static vs. bounded-directional Ps (i.e. *even* [$_{P_{space/time}}$ ... ])

Note, in some cases of modification of a PP headed by static prepositions, the 'exactly'-reading can be blocked by the endpoint of the event being located in a contextually given 'extremal' point or polar end; as mentioned for instance in *he cut of his three tongues even by the mosel*, (98), and *our lord descended upon the top of the mountain*, (97), above, p. 69. In (98), *even* focuses the location where—along the spatial extent mapped to the length of the three tongues—the cutting-event affected the object of the cutting event. In particular, this location marks an extremal point along the relevant scale. Feasibly, it is not possible to sever more of a monster's tongue(s) than what is possible to remove by cutting it off by the snout. The data in Table 2.6 can be considered a reliable heuristic for confirming an increase of scalar *even*s over the course of the two major subperiods pre-1500 CE and post-1500 CE. If data selection is tweaked to compare prepositions directly *resulting* in 'exactly' vs. scalar interpretations, the bigger picture is not affected to an extent warranting another table nearly identical to and confirming Table 2.6. Such an approach would add a layer of potential erroneous interpretation and a relative straight-forward comparison of locative vs. directional prepositions seems a more promising perspective for a robust overview.

In conclusion, the quantitative picture seems to be in line with the above proposal modeling the semantic change of $even_{\text{EXA}}$ to $even_{\text{SCA}}$. In the following section, I will introduce my model for the final semantic shift from $even_{\text{SCA}}$ to $even_{\text{SAO}}$.

### 2.5.4 From scalar *even* to scalar additive *even*

In this section I will cover the semantic change from $even_{\text{SCA}}$ to $even_{\text{SAO}}$. The earliest data consistent with a modern SAO interpretation is, as mentioned, $even_{\text{SCA}}$-data. The first unambiguous $even_{\text{SAO}}$ in the EEBO data can be seen in the 'not-only-but' (NOB) constructions in the 1520s. In the first part, Section 2.5.4.1, I will discuss my proposal for modeling this semantic change. I will point out the evidence in support of universal quantification over the focus alternatives arising. In other words, addressing one of the mains goals for this chapter as laid out above, I will contribute to the debate between Kay (1990), as well as other less engaged contributions Crnič (2011), and Greenberg (2016, 2022) on whether $even_{\text{SAO}}$'s scalar presupposition is based on existential or universal quantification. In the second part, Section 2.5.4.2 (P. 79), I will cover the continued trajectory of $even_{\text{SAO}}$ with respect to scalar readings becoming more widely available as *even*'s domain restricted to path-based alternatives generate on is eased to other domains.

#### 2.5.4.1 Modeling the semantic change from 'scalar'-*even* to Modern English scalar additive *even*

In this section, I will examine the remaining semantic shift in order to get from $even_{\text{SCA}}$ to $even_{\text{SAO}}$. The type of data I will begin this section with is where I left off above as far as linguistic evidence is concerned: $Even_{\text{SCA}}$ occurring with telic predicates and focusing on PPs headed by bounded directional prepositions. For convenience, I repeat (95) from above as (99):

(99) the king rode ***even*$_{\textbf{sca}}$** to [Queen Iseult]

(1485, Malory, Le morte d'arthur; cf. (85), p. 64)

In such scalar uses (as introduced before, e.g. 2.4.3), $even_{\text{SCA}}$ focuses the endpoint of a path arising from a directional bounded preposition (i.e. goal-PPs). This path is aligned with the extent along which the relevant event plays out.

Connecting back to Eckardt (2009) for a moment, instead of $even_{\text{EXA}}$ particularizing a location on a topology—and relating it to other locations—with $even_{\text{SCA}}$ focus alternatives can now be generated based on the endpoints of any subpaths

leading up to, but falling short of, the endpoint of that path which is described by the prejacent (Krifka, 1998; Zwarts, 2005; von Stechow, 2006a). For the following discussion, I am turning to a toy examples. It helps to imagine the following scenario: My dog escaped and I went looking for him. Coming back home with the dog, I report:

(100) Falkor ran (all the way) [to the river]$_{\text{F}}$

Relevant alternatives to the focused *the river* are places other than the river ('destinations/attractors/ground'): For example, *the park*, *the butcher's*, etc. However and more importantly, alternatives also include places that fall short of the distance to the river: *front porch*, *halfway to the river*, *3/4 to the river*, *almost to the river*. For instance, the question in (101-a) has the alternatives in (101-b):

(101) a. Where did Falkor go?

b. {Falkor went to $x \mid x \in D_l$}
= {Falkor went to THE RIVER, Falkor went to THE PARK, Falkor went to THE BUTCHER'S, ... }

For the sake of simplicity, *the river* can be assumed to be the only relevant final destination for Falkor. Thus, the relevant alternatives to the location *the river* are generated from locations falling short of the final destination. See the slightly different question under discussion and adjusted alternatives in (101′)[16]:

[16] The locations along the way to a destination are asked for with (i-a)—but (i-b) seems to be insufficient to capture this. (i-c) appears to be a better option, with an implicit destination referred to by locative *there*:

(i) a. How far did Falkor go/make it?

b. ?{Falkor went $x \mid x \in D_l$}
={Falkor went A LITTLE WAYS, Falkor went HALFWAY, Falkor went ALL THE WAY, ...}

c. {Falkor went $x$ there $\mid x \in D_l$}

Given the need for a destination for locations marked by a measure phrase or a proportion towards a destination, it seems we end up with nested sets of alternatives, or sets of sets of alternatives: This situation can be captured with (a version of) what Krifka (2008) sums up as *Delimitation*.

(101′) a. Where/how far did Falkor go?

b. {Falkor ran to $x \mid x \in D_l$}

{F. ran a little ways to the river, F. ran halfway to the river, F. ran all the way to the river}

Crafting a toy example with $even_{\text{SCA}}$ along those lines results in (102). The prejacent p is in (103-a) and the set of alternatives in (103-b). On the conservative interpretation,—with the discussion in the previous Section 2.5.3.1 in mind—$even_{\text{SCA}}$ focuses of on the polar end of the relevant topology contributed by the route to the river:

(102) Falkor ran ***even*$_{\textbf{sca}}$** [to the river]$_{\text{F}}$

(103) a. p = Falkor ran to the river

b. C = {Falkor ran a little ways toward towards the river, Falkor made it halfway to the river, Falkor made it 3/4 of the way to the river, Falkor made it almost to the river}

The relevant presupposition in (100) is that for all intermediate points p(i) that are not identical to the endpoint p(1) of the event path, the event that holds for the entire event path also holds for the intermediate points p(i): Falkor needs to travel through all the locations on the route to the river in order to get to the river—the same goes for (102).[17]

As mentioned, $even_{\text{SCA}}$ is the earliest type of data that is consistent with and permits a Modern/Present Day English $even_{\text{SAO}}$ interpretation. Accordingly, it is

(ii) [Falkor ran $even_{\text{SCA}}$ (/all the way) to [the river]$_{\text{F}}$]$_{\text{Alt}}$ =
{ {Falkor ran x to y | x ∈ { a little way, 50%, almost, all the way, ... } | y ∈ { THE RIVER, THE PARK, THE BUTCHER'S, ... } } =
{ {F. ran a little ways to the r., F. ran halfway to the r., F. ran all the way to the r.},
{F. ran a little ways to the p., F. ran halfway to the p., F. ran all the way to the p.},
{F. ran a little ways to the b., F. ran halfway to the b., F. ran all the way to the b.} }

[17] As mentioned previously, the precise semantics and nature of paths and whether they consist of intermediate points or subpaths is inconsequential. Regardless of how paths are modeled, traveling to the endpoint p(1) of a path p entails that the trajector travels either (*i.*) through all intermediate points p(i) or (*ii.*) through all subpaths of p.

possible to formulate *even*'s contribution in contexts after which (102) is fashioned as in the following (104) (cf. Crnič, 2013; Greenberg, 2022). Thus, contexts that have $even_{\text{SCA}}$ modify a goal PP headed by directional bounded preposition *to* constitute prime examples for a context inviting constant entailments: Under both the conservative and the innovative interpretation, the alternatives—that the subject (*Falkor* in the toy example) traveled through all the subpaths that constitute the event path in order to reach the destination, *the river*—are entailed as weaker alternatives. The strongest proposition is the prejacent. On an intuitive/conceptual level, this is the stronger alternative since Falkor had to travel the farthest in order to arrive at his destination. From a semantic point of view, the prejacent is the most informative (cf. "$<$" in (104), indicating 'more informative/stronger than') true alternative among all relevant alternatives answering the question *Where did Falkor go?*—it entails all propositions corresponding to Falkor having traveled a shorter distance.

(104) **Definedness condition for $\boldsymbol{even_{\text{sao}}}$** with respect to to (102):
$[\![(102)]\!]^{c}$ is only defined iff $\forall$q $\in$ (103-b): q $\neq$ (103-a) $\rightarrow$ q $<$ (103-a)
(cf. Crnič, 2013; Greenberg, 2022)

Connecting back to the debate on quantificational strength regarding $even_{\text{SAO}}$'s scalar presupposition, the basis for my argument has been developed over the course of the above discussion. My proposal, in favor of universal quantification, rests on the $even_{\text{SAO}}$ being derived from the $even_{\text{SCA}}$. The relevant fact here is that a trajector/figure needs to travel through all intermediate locations on its way to a goal in order to arrive at the relevant endpoint. In reference to the concerns Kay (1990) stated: It is immaterial whether beyond a landmark, after traveling to it, more roads could be traveled, these locations are irrelevant (see discussion in 2.1.1 for more background and details).

In conclusion, during the semantic shift from $even_{\text{SCA}}$ to $even_{\text{SAO}}$, the presuppositional content of *even* is adjusted once again. Entailment and the resulting strength become encoded as *even*'s modern scalar presupposition. Again, this can be modeled with reliance on the charitable hearer in Eckardt's (2009) 'Avoid Pragmatic Overload' principle as well as Gergel's (2023) MaxPMoT (cf. also Heim's (1991)

'maximize presupposition'). In other words, $even_{\text{SAO}}$ absorbs scalarity (König, 1989; Traugott, 2006)—importantly, scalarity based on the universal quantification over subpaths/intermediate points p(i) which a trajector (*Falkor*) has to travel through in order to reach a goal landmark (*the river*) (Zwarts, 2005; von Stechow, 2006a; Krifka, 1998; Kracht, 2021). At first, on the innovative interpretation *even* has a domain restriction to paths. This restriction is eased and other, non-path based alternatives can go into the set of alternatives C. I will discuss this last point further in the next section.

#### 2.5.4.2 Discussion of further development—additivity and scalarity

In this section, I want to briefly discuss $even_{\text{SAO}}$'s further development, in particular with respect to extending its semantics to domains other than paths—a move that is crucial along the way to the unambiguous NOB-uses introduced at the top of this chapter.

In an event like (99) (i.e. *the king rides to Queen Iseult*) where the endpoint of the relevant path is reached, it is entailed that all intermediate points, i.e. subpaths along the way to the endpoint, are reached and traveled to in addition to the endpoint. In keeping with Eckardt's (2009) *Avoid Pragmatic Overload*, my arguments rests on charitable hearers adapting their lexicon entries for $even_{\text{SCA}}$ to the point where the entailed alternatives are encoded as the additive presupposition of the particle in order to keep interpretive effort minimal. In other words, the additive presupposition of scalar *even* comes about as a direct consequence of the scalar presupposition. This did not necessarily occur instantaneously along with the absorption of scalarity since—as we will see in a bit, NOB contexts sometimes occurred with an *even*.

Stepping back to consider the bigger picture, $even_{\text{SAO}}$ developed from $even_{\text{EXA}}$ via $even_{\text{SCA}}$ and this development can be traced based on the aspectual properties of prepositional phrases. Pre-1500, the overwhelming majority of scalar *even*s occurred with bounded directional prepositions in telic predicates. The post-1500 picture is a bit more varied: $Even_{\text{SAO}}$ now associates with NPs, AdvPs, VPs and PPs. While the earliest scalar uses in the pre-1500 data *permit* an SAO interpretation, a portion of post-1500 scalar uses seem to be best analyzed with an SAO interpretation. These are uses where $even_{\text{SAO}}$ seems to have generalized away from path-based to non-path

and also to more pragmatic scales. Such cases can lead to presupposition failure both on a $even_{\text{SCA}}$ reading (due to the lack of a path for an 'all-the-way' interpretation) and on an 'exactly'-reading (due to the lack of an obvious 'Eckardt'-topology for accommodating the 'exact' point/degree of the property in question).

Consider (105)–(108) (partly repeated from above) as examples. In (105), on an SAO interpretation, there is the set of focus alternatives {*Christ is in the shape of god*, *Christ is equal to god*} next to which the prejacent *Christ is very/truly God* is the strongest alternative[18]. Considering $even_{\text{EXA}}$ and $even_{\text{SCA}}$: On an 'exactly' reading for (105) it is rather difficult to accommodate a topology on which 'being God' could be approached from multiple directions. At the same time, a set of focus alternatives is overtly stated as holding. The strength the prejacent displays over these alternatives is of a pragmatic nature rather than one of semantic entailment we get from a path-based predicate.

In the remaining examples below, from (69) onward, the situation is similar. Note, (105) (as well as (108)) is stative which makes a path related interpretation unlikely. In (106) and (107), the constituent *even* focuses is not feasibly part of an path-based event, which makes it difficult to consider them instance of $even_{\text{SCA}}$, nor is there a plausible topology which allows for multiple directions from which to approach the relevant property. Again, the $even_{\text{SAO}}$ seems the most likely.

(105) Bemynded as Christ was which being in the shappe of God / equal unto
be minded as Christ was which being in the shape of god equal to
God and **even** very God / [...] hyd it
god and even truly/very god hid it
(1528, Tyndale, 'Fayth the mother of all good workes'; A14144.9928)

(106) they [the Roman Catholic clergy] have set up frauncheses in all towns and villages for whosoever robs / morthereth or sleyeth them [the lay] / and **even** for traitors unto the kynges person also

(1528, Tyndale, 'Obedience'; A14136.85702)

(107) For as a man fealeth god to him self / so is he to his neyghboure I know
For as a man feels god to himself so is he to his neighbor I know

[18] I am ignoring the uncertainty with respect to *very* as the distinction between *very*'s modal interpretation 'truly' and its intensifier meaning has no bearing for this point.

by mine own experience that all flesh is in bondage under sin and
by my own experience that all flesh is in bondage under sin and
can not but sin / therefore am I merciful and desire God to loose the
cannot but sin therefore am I merciful and desire god to loosen the
bonds of sin **even** in mine enemy
bondy of sin even in my enemy
'*Just as a man feels God's love towards himself, so he should also feel love towards his neighbor. I know from my own experience that all people are enslaved to sin and cannot help but sin. Therefore, I am merciful and desire God to release even my enemies from the bondage of sin.*'

(1528, Tyndale, 'Fayth the mother of all good workes iustifieth'; A14144.15390)

(108) Heeds and governers are ordened off God and are **even** the gift of God

(1528, Tyndale, 'Obedience'; A14136.24414)

Closing with an instance of $even_{\text{SAO}}$ in a NOB context and connecting back to the note on the additive presupposition from a moment ago, consider (109):

(109) The ypocrites with worldly preachinge have **not** gotten the praise **only** / **but even** the possessions also and the dominion and rule of the whole world

(1528, William Tyndale, 'Obedience of a Christian Man'; A14136.3256)

In (109), Tyndale seems to 'bring in' the additivity the particle *also* affords in support of $even_{\text{SAO}}$—despite using $even_{\text{SAO}}$ in NOB constructions a number of attested times without *also* (cf. (64)ff, p. 46, above).[19] Krifka (2008) notes that both additive and scalar focus particles do not impact truth conditions, i.e. the output common ground, but their "focus information [...] restricts the input CG" (Krifka, 2008, 253). Further, Krifka (2008) characterizes additive particles as impacting Common Ground management rather than Common Ground content as "they indicate that a proposition with an alternative to the item in focus had been expressed before or is part of the CG." It is conceivable, therefore, that in the example in (109), *even* and *also* 'target' the same alternatives at different levels: The alternative *the hypocrites receive the praise* presupposed by *also* is indeed expressed by the

[19] *Not-only-but* constructions are attested as the (early) 14$^{\text{th}}$ century CE (OED, 2024f).

NOB construction. At the level of CG management, the *also* is making sure this proposition is in the CG, i.e. the input CG for the *even* utterance *[the hypocrites have gotten] the possessions [...] of the whole world. Even*, at this stage, might not have extended its use to assigning the same additive presupposition at the level of CG but still had its additive presupposition rather as a semantic consequence of its scalar presupposition.[20] This view is by no means in conflict with the idea that $even_{\text{SAO}}$ is first ambiguously attested on NOB contest (with or without a 'supportive' also). NOB contexts trivially satisfy *even*'s additive presupposition and, moreover, do not require an *also* in order to accept the current utterance (i.e. in the '*but*-clause') in a NOB construction as the attested following data show:

(110) a. My gold is youres.. And **nat oonly** my gold **but** my chaffare.
my gold is your's and not only my gold but my goods
'Not only my gold is your's but (also) my trading goods.'

(G. Chaucer, Shipman's Tale (Hengwrt MS.) l. 285; c1405/c1390)

b. **Nott oonli**.. medful, **butt** moost medeful.
not only.. meritorious but most meritorious
'Not only commendable but highly/very commendable.'

(J. Wyclif, Select English Works (1871) vol. III. 511; ?c1430/(?1382))

c. Leofric was not merely Lord of Bourne, but Earl of Mercia.

(C. Kingsley, Hereward the Wake vol. I. Prel. 21; 1866)

(all from OED, 2024a)

What the examples in (110) further show is that they are—from a PDE perspective—consistent with $even_{\text{SAO}}$. Particularly (110-b) might favored *even* over the 'mere additive' *also* as the the *but*-proposition does not only hold in addition to its (overt) *not-only* alternative but, in fact, entails the weaker alternative on an overtly available scale.

[20] It is worth noting that, if this observation holds up to scrutiny of future research, then this is a semantic presupposition moving towards pragmatic exploitation rather than the reverse which Krifka (2008, 255) attests for additive particles. However, Krifka does not explicitly go into the diachronic development of additive particles.

## 2.6 Conclusion and Outlook

Based on the first 60 years covered by the EEBO corpus, I am able to plausibly trace the emergence of *even* as a scalar additive operator and identify the origin of its high-end semantics. The trajectory of diachronic change I propose can be plausibly traced along discrete instances of semantic change between old meanings and new meanings based on the core data involved in the development of $even_{\text{SAO}}$. My account incorporates crucial observations from previous accounts Traugott (2006); Eckardt (2009). The EEBO corpus, due to its sheer size allows to date the rise of $even_{\text{SAO}}$ before what Traugott's (2006) plot would have. Moreover, in addition to the linguistic evidence in the EEBO corpus, by splitting the relevant first six decades into two subperiods, I can quantitatively support my proposal by tracking directional vs. stative prepositions diachronically.

The proposal I argue for is based on more tangible linguistic and corpus evidence than previous accounts have offered which posed new meanings to arise from the conventionalization of implicatures König (1989, 1991); König and Traugott (1988); Traugott and Dasher (2002); Traugott (2006, 2011). As an example, I do not have to rely on the hard-to-discern notion of (contexts of) counter-expectation. Instead, I can point to entailment patterns as a source of semantic/pragmatic strength. Implicatures might still play a role in the semantics of $even_{\text{SAO}}$ and possibly throughout its history. However, as far as its emergence as a SAO is concerned, I am able to trace the development of $even_{\text{SAO}}$ based on the distribution of early uses of *even* in terms of co-occurrence with particular phrasal categories, occurrence in particular types of eventualities, as well as the aspectual restrictions various classes of prepositions come with. Moreover, due to an exhaustive look at the data, I can exclude alternative proposals more reliably than a selective investigation of data would allow.

I this chapter I have shown that the origin of the scalar presupposition of $even_{\text{SAO}}$ lies in the endpoint-orientedness of non-scalar $even_{\text{EXA}}$ in telic predicates. This endpoint-orientedness generalized to focusing the endpoints of paths introduced by bounded prepositions which contribute a path ranging from a starting point, p(0), to an endpoint, p(1). Further, the focus on the endpoint of telic predicates was encoded as a scalar presupposition. As a reminder, a paraphrase for this scalar

*even* is 'all the way (to the endpoint p(1))'. The additive presupposition $even_{\text{SAO}}$ is a conventionalization from the entailment of traveling through all the intermediate subpaths on the way to p(1). In other words, the additive presupposition of $even_{\text{SAO}}$ is a consequence of the scalar presupposition. The fact that the endpoint p(1) is the hardest point to travel to along the relevant path corresponds to the prejacent being the strongest focus alternative next to the weaker focus alternatives (Eckardt, 2009).

Connecting back to the semantics of the adverb of manner, $even_{\text{SAO}}$'s origin, and to Traugott, she proposed that the adverb of manner (similar to PDE's *evenly*) has inherent comparative properties—a semantics canonically associated with scalarity. For Traugott (2006) this leap from the scalarity of the manner adverb to the scalarity of $even_{\text{SAO}}$ seems quite direct, "As in semantic change in general, the semantic properties of the source correlate directly with the later scalar meaning" (2006, 345). In the spirit of and picking up some of Eckardt's (2009) criticisms of Traugott's account, I relied on plausible presuppositions and their satisfaction in the context (in tandem with an exhaustive annotation of predicate and event types) in order to arrive at the following conclusion: There does seem to be a correlation between $even_{\text{SAO}}$'s scalarity and the scalarity of earlier versions of *even*. However, by no means, does there have to be a direct correlation. Instead, a number of plausible turns along a winding path lead to the scalar presupposition which forms the core of the semantics of $even_{\text{SAO}}$: $Even_{\text{SAO}}$ derived its high-end semantics from focusing on the endpoints of paths.

Coming back to the typological discussion in Section 2.1.1.3, none of the typological generalizations Gast and van der Auwera (2011) and Crnič (2011) formulate speak against the developmental path sketched above. Gast and van der Auwera (2011) note that the English weak SAO *so much as* has been available as a SAO for "more than 500 years" and that "*so much as* is considerably older than [SAO] *even*" (Gast and van der Auwera, 2011, 34). In Gast and van der Auwera's (2011) brief diachronic account, weak SAO *so much as* plays an import role as it is said to reinforce weak readings of *even*. The issue for my account is that I date $even_{\text{SAO}}$ emergence roughly 100 years before Traugott (2006) and Gast and van der Auwera (2011). It is not clear whether Crnič's (23) (=(111)) holds for the earliest period of

*even*$_{\text{SAO}}$'s emergence.

(111) Implicational relation for strong scalar particles
There is a scalar particle that is only strong in the language
⇒ There is a scalar particles [sic!] that is only weak in the language
(Crnič, 2011, his (28))

A possible conclusion is that *even* developed into a universal scalar additive operator precisely because there was a lexical gap to fill.

Data which might have helped facilitate *even* generalizing to association with weak elements is data like (112). Here the pragmatics of the context ('youth and young age' as experienced and lived-through ages for senior individuals) are somewhat counter the semantic strength (via entailment) (*Having studied Moses since childhood* is the strongest proposition generated by *Since what age(s) have the Jews studied Moses?*)

(112) We keep the letters which are written from our frynde : We kiss them / and ere them about with us : We read them over twyse or thryse : And how many thousands are there among the Christen which are extemed of great litterature / And yet have not once in their lyv [...]s Read ove [...] [...]he Gosple [...] and Epistles of the Apostle [...]: Mahumete [...] adherentes are all well instruct in their own sect / And the Iewes unto this day **even** from their tender age study diligently their Moses /

(1529, Erasmus & Roy, 'Studye of scripture'; A00378.4975)

It could be argued that *even* associates with the PP *unto this day*. However, the question under discussion is how devout members of non-Christian denominations are at utterance time (i.e. in 1529). Thus, focus can be assumed to be on the PP *from their young age*: The *even* quantifies over (propositions based on) the times in a life span of the lives of individuals of Jewish faith rather than over historical times (from pre-exodus *unto this day*).

The earliest unambiguous uses of 'weak *even*' (in the EEBO data) are attested in the 1530s, cf. (113).

(113) First it is no point neither of lightness / neither of credulite to give credence to those things : which things : it hath by so many arguments and evident tokens ben declared : to come not from men : but from god : Paule sayth : that he would not give credence : no not **even** to an Aungell if he did teach any thing dissonaunt or dysagreynge from the Gospelle of Christ :

(1534, Erasmus, 'Exposytion of the Commune Creed'; A00387.15385)

Notice that in (113) there is mismatch between the pragmatic ordering in the hierarchy of beings that have authority in the interpretation of divine law: On the one hand, (outside of God) angels are the strongest alternatives, i.e. the most authoritative entities. On the other hand, when it comes to the ordering in the context and ordering of alternative propositions, *Paul trusts an angel* is the weakest alternative. For instance, it is entailed by stronger alternatives (*If Paul trusts lay people, then Paul trusts an angel*). Due to scale reversal as a consequence negation, *Paul does not trust an angel*$_{\mathrm{F}}$*[...]* is the strongest possible proposition and any weaker alternatives are entailed by it: {Paul does not trust x | x is a relevant entity}.

It is important to note that the 1530s-data in the EEBO has not been exhaustively annotated due to the large volume of available data (cf. Tab. 2.1, Section 2.3.2). However, with targeted searches for *even* various 'suspect DE-operators' (negation, lexical items like *doubt*, *regret*, and quantifiers) I was able to identify e.g. (113).

As far as future directions on the empirical side are concerned, the EEBO features poetic texts that contain uses of *even*; the question arising, following Traugott (2006), is whether poetic meter can be put to service and provide insights into stress pattern for focus related uses of early *even* and derive clues as intonational prominence of informational units in *even*-sentences/utterances. Further, the exhaustive annotation of *even* ought to be extended to all occurrences of *even*, in particular also all adverbial uses, in the PPCHE suite of corpora. This will shed more systematic light on *even*'s status as a focus particle. In particular the development of *even* next to the development of result state denoting elements, especially goal PPs, promise to reveal further support for my argument.

# Chapter 3

# Old English scalar additive *furðon*

## 3.1 Introduction

In this chapter, I will introduce the Old English focus particle *furðon*, its distribution, its various uses and—to the extent possible and feasible with the available data—its diachronic development. As far I have been able to confirm in the relevant literature, *furðon* has not been systematically described in terms of its semantics as a scalar additive operator. OE *furðon* is the predecessor to PDE *even*. As discussed in Chapter 2, the versatility of *even* has been noted as exceptional among Germanic languages. No other (present-day) Germanic language has a universal scalar additive operator (SAO) (e.g. König, 1991; Crnič, 2011; Gast and van der Auwera, 2011). English's exceptionalism with respect to scalar additive focus particles predates the emergence of the SAO focus particle *even* ('$even_{\text{SAO}}$'): Like Modern English $even_{\text{SAO}}$, Old English *furðon* functions as a universal scalar additive operator. In other words, *furðon* can occur both with a 'strong' interpretation and a 'weak' interpretation in associating either with strong elements or, across downward entailing operators, with weak elements, respectively (cf. Section 2.1.1, for details with respect to *even*). Furthermore, the DE-operators which weak uses of *furðon* occur with are both clause-mate negation and non-negation DE-operators.

In accordance with my research question in this dissertation, I will focus on an examination of $furðon_{\text{SAO}}$'s scalar presupposition and its origins in the presuppositional profile of its non-scalar predecessor *furþum*. Given that (i) *furðon* is fully established as a scalar additive particle in the OE corpus data, and (ii) aside

from the etymological evidence there is no systematic pre-OE database, there are several options in terms of reconstructing a diachronic path for the development of *furðon*$_{\text{SAO}}$. I will discuss three proposals that can explain the emergence of *furðon*$_{\text{SAO}}$ and bridge the gap between lexicographical sources and the OE corpus data. The first, 'Proposal #1', will be a traditional GIIN-account. I will go into more detail with respect to Proposals #2 and #3. Among these two competing accounts, I will argue for Proposal #2 as it best explains *furðon*'s penchant for associating with weak elements throughout the OE period despite the fact that Proposal #3 follows a typologically more common and expected trajectory and also parallels *even*$_{\text{SAO}}$'s emergence to some extent.

The structure of this chapter is as follows: Section 3.2 introduces the basic semantics assumed here for *furðon* as a scalar additive focus operator. Section 3.3 (p. 93) introduces the empirical basis for this discussion, i.e. the data that were extracted from both the YCOE and the PPCME2. Additionally, I will detail the process of mining for attested data of *furðon* in Middle and Early Modern English. I will close this section with an overview of the quantitative diachronic picture. In Section 3.4 (p. 98), I will briefly touch on the challenges involved in researching phenomena related to information structure and the particle *furðon*. By and large, my approach here mirrors the notions put in place with respect to *even* in Chapter 2. In Section 3.5 (p. 102), I will introduce *furðon* by means of select historical data, attempting to be comprehensive with respect to *furðon*'s versatility but not exhaustive with respect to the available data. As a preliminary overview, I will start off with *furðon* in scale-preserving contexts, then move on to *furðon* with clause-mate negation before ending on DE-operators other than negation. In Section 3.6 (p. 120) I will synthesize the observations of the prior parts of this chapter into three proposals for the reconstruction of the emergence on *furðon*$_{\text{SAO}}$.

Since *even* receives considerable attention (from a diachronic semantics point of view) in Chapter 2 of this dissertation, but also because *even* is arguably the most researched scalar additive focus particle in the study of language, I will draw comparisons between *furðon*'s and *even*'s properties throughout the discussion of *furðon*.

## 3.2 Semantics of *furðon*

In its simplest—but not its most-frequent—uses, in associating with a strong element and in absence of any intervening downward entailing operators, *furðon* assigns the scalar presupposition in (1):

(1) $[\![ \textit{furðon} ]\!]^{g,c}$ (C, p, w) is defined only if $\forall q \in C[p \neq q \rightarrow p <_c q]$

*Furðon* relates the prejacent ('p'), i.e. the sister proposition at LF, to a set of contextually relevant alternatives (a set of propositions, 'q ∈ C'). Further, with respect to a world w, the relation needs to be such that the prejacent ranks higher on a scale of strength or informativeness (also 'unlikelihood') than all relevant focus alternatives (represented as 'p $<_c$ q' which reads as 'p is less likely/stronger than q on a relevant contextually given scale'). Note that in accordance with the notion of semantic strength as the basis of a relevant scale, the prejacent entails the alternative(s); see Chapter 2, Section 2.1 (p. 11), for a more detailed discussion of scalar strength and entailment (cf. also e.g. Crnič, 2011; Gast and van der Auwera, 2011). Further, see, the debate between Kay (1990) and Greenberg (2016, 2022) on existential vs. universal quantification in the scalar presupposition of *even*, and Section 2.1.1 for my argument in favor of universal quantification. The relevant focus alternatives are generated based on the alternatives triggered by the focused constituent ("focus semantic value") and built up compositionally and parallel to the composition of the sentence proposition based on the ordinary semantic values of the involved constituents (Rooth, 1985; Kratzer, 1991; Rooth, 1992; Krifka, 2008; Crnič, 2011; Beck, 2016b). Thus, *furðon* has two arguments: prejacent, i.e. the proposition *furðon*'s sister at LF, which it scopes over, and the set of alternative propositions C (consisting of the alternative propositions q). As an example consider (2)[1]:

(2) Æfter þæm gefeohte wæron Romane swa swiðe forþohte, þætte Celius
after the battle were Romans so strong distrusted that Celius
Metellus, þe þa heora consul wæs, ge ealle heora senatus, hæfdon
Metellus who then their consul was and all their senate had

[1] Note, for simplicity, we will largely ignore the semantics of modality in our discussion of *furðon* and assume *furðon* scopes above modal verbs.

geþoht þæt hie sceoldon Romeburg forlætan, ge **furþum** ealle Italiam.
decided that they should Rome.city let.go and furþum all of.Italy

'*After this battle, the Romans were so dismayed that Caelius Metellus, who was their consul, and all their senate, had decided that they should abandon the city of Rome, even all of Italy.*'

(O2/p1, Orosius, 'coorosiu.o2'; coorosiu,Or_4:9.101.21.2092)

(3) a. The Romans abandon [all of Italy]$_{F}$.
b. p = the Romans abandon all of Italy
c. C = {the Romans abandon Italy, the Romans abandon the southern half of Italy, the Romans abandon the main city of Italy}

The prejacent (3-a) entails the one weaker focus alternative that is overtly in the immediately preceding context *...abandon Rome (the city)*—and a member in the set of alternatives in (3-c). *Abandoning all of Italy* is stronger (more informative/less likely) than *leaving (the city) Rome*. Notice that, while it is conceivable the Romans had contemplated abandoning wider orbits of their dominion than all of Italy, these alternatives, ever stronger than the prejacent, are 'not relevant' or under discussion here. A speaker could, of course, go on record and add ever stronger alternatives to expand the bounds of what is under discussion, (cf. Beaver and Clark, 2008, 71f). The example in (2) is exceptional in its transparency of the entailment patterns arising due the quantified NP in focus. In most cases, the focused element does not straight forwardly invite such clear entailment patterns. I will discuss more data of this kind, i.e. *furðon* associating with strong elements in scale-preserving contexts below, in section 3.5.1.

Similar observations have been made for the meaning of *even* (Horn, 1969; Anderson, 1972; Jackendoff, 1972; Fillmore, 1965; Rooth, 1985; Kay, 1990; Crnič, 2011, 2013; Greenberg, 2016, 2022, a.o.). A prediction of these semantics is that *even* associating with weak elements without any intervening scale-reversing operators results in pragmatically odd data. As Crnič discusses, if *even* associates with a weak element, the scalar presupposition is unsatisfiable; consider (4) as an example:

(4) a. John read even all$_{F}$ books.

b. #John read even one$_F$ book.

c. John did not read even one$_F$ book.

Analogously to (2), the prejacent in (4-a) entails all weaker alternatives: {*John read most books, John some books, John read (exactly) one book*}. However, in (4-b) the prejacent is entailed by the alternatives. In other words, the prejacent is weaker than the alternatives. As a consequence (4-b) is pragmatically deviant. See Crnič (2011) for a detailed discussion of this point. Note, if we insert a downward entailing (or 'downward monotone' ) operator as in (4-c), the prejacent *John did not read one book* ranks strong (i.e. high) on the relevant scale and the focus alternatives are entailed by it (for a more thorough discussion of SAOs and scale-reversal see also Chapter 2, Section 2.1.1, p. 11ff). Next to clause-mate negation there are a number of scale-reversing downward entailing operators. I will discuss those *furðon* occurs with below (in Section 3.5.2, p. 110).

Diachronic natural language data does not come with negative evidence as to pragmatic deviance/oddness of corpus tokens. However, we can see the prediction for *even* associating with weak elements across DE operators being acceptable borne out for *furðon* in the OE data. When *furðon* associates with weak elements it does so across various downward entailing operators—most prominently negation. Consider (5) as an example. The context is the story about Moses leading the People of Israel out of slavery and captivity in Ancient Egypt. As Moses parted the Red Sea for his people to pass through, in (5) he allows the chasm in the sea to close again[2]:

(5) & he ahefde up his hand, & seo sæ sloh togædere & ahwylfde
and he lifted up his hand and the sea hit together and overwhelmed
Pharaones cratu, & adrencte hine sylfne & eal his folc, þæt ðær
Pharao.GEN cart and drowned him self and all his people that there
ne wearð **furðon** an to lafe þe lif gebyrede.
not was furðon one to leftover the life regarding
'*And he lifted up his hand, and the sea came crashing together, and it overwhelmed Pharaoh's chariot, and drowned him and all his people, so that there was not even one alive.*'

(O3/p3, Ælfric's Heptateuch, 'cootest.o3'; cootest,Exod:14.27.2960)

[2] While I try to avoid artificial focus marking on historical data, I chose to underline the weak element in this in order to offer some basic orientation to the reader.

In (5), *furðon* associates with the quantifier *an* ('one'). In its default semantics, ignoring negation for the sake of argument, *furðon* could be taken to attach to the (putative) prejacent *one was left alive*, cf. (6). As indicated, this proposition turns out to be entailed by the (stronger) focus alternatives and, as a consequence, the scalar presupposition is not satisfiable, cf. the adapted (6-c)[3]:

(6) Dær wearð furðon $an_F$ to lafe þe lif gebyrede ('Even $one_F$ was left alive')

a. p = one was left alive

b. C = { n were left alive | n ∈ ℕ } =
{one was left alive, two were left alive, three were left alive, ...}

c. ∀q ∈ C: q → p (results in infelicitousness)

On the other hand, analyzing *furðon* as moving at LF and taking wide scope with respect to a DE-operator (i.e. above negation), results in the scalar presupposition coming out as felicitous: If it is true that *it is not the case one individual survived*, then it is entailed that *it is not the case two or more individuals survived*, cf. (7-c):

(7) Dær ne wearð furðon $an_F$ to lafe þe lif gebyrede ('Not even $one_F$ was left alive')

a. p = not one was left alive

[3] This is so for the context in (5) where it can be inferred that the restrictor for the quantifier has an antecedent in Pharaoh's troops and similar plausible contexts. Arguably, a different interpretation where *one* is a strong element/alternative could be coerced (but is not the reading we are after here). In such a case the alternatives that are to be weaker than the text proposition generated from *one* seems to be such that they generated not from ℕ but smaller units/fractions. This seems to indicate a 'rich' structure for the scale along with alternatives are ordered.

(i) Summing up our friends' contributions to our potluck:

a. A: Adam brought no bagels.
B: Ben brought zero sodas.

b. #C: Charlie brought even one loaf of bread.

(ii) a. A: Adam brought 2 slices of bread.
B: Ben brought 1 slice of bread.

b. ?C: Charlie brought even one loaf of bread.

b. $C = \{$ not n were left alive $\mid n \in \mathbb{N} \} =$
{not one was left alive, not two were left alive, not three were left alive, ...}

c. $\forall q \in C$: $p \rightarrow q$ (results in felicitousness)

Crnič (2011) calls this move "rescue by movement". Various approaches for *even* have been proposed, e.g. Anderson (1972); Karttunen and Peters (1979); Kay (1990) have argued for a structural approach, i.e. a movement approach much like Crnič's (modulo his extension on morphological complexity). The other side of the divide is the lexical ambiguity approach with Rooth (1985) proposing an NPI version of *even* ('*even* $_{\text{NPI}}$')—at least for a subset of uses where *even*'s distribution seems to suggest that it is barred from moving at LF. Coming back to *furðon*, I will follow the by and large uncontroversial view (Crnič, 2011, 2013; Beck, 2016b; Greenberg, 2016, 2022) that both *even* and *furðon* take sentence wide scope. This allows them to scope above any DE operators and, thus, can assign a uniform scalar presupposition regardless of intervening downward monotone operators and, as a consequence, have a sister proposition that ranks higher than any relevant (as 'in-situ' generated) alternatives on a contextually given scale of strength.

## 3.3 Available data, forms and frequencies

In this section, I will discuss the available data. I will begin with forms of *furðon*, and then go into measures undertaken to maximize the data for the investigation ahead. I will provide a note on my periodization of the available data. For practical reasons, I will deviate from the canonical o1–o4/m1–m4 labels found in the YCOE/Penn corpora. I will close the section with a brief quantitative overview.

There are numerous different spelling variants of *furðon*. For convenience in this discussion, I take *furðon* as the 'default variant'. This is due to *furðon* occurring in the YCOE data—relatively speaking—most frequently as "fur+don"[4] (Taylor et al., 2003). However, since it represents only about a third of the entire data, "fur+don" cannot be seen as canonical (in the sense that the absolute majority of occurrences

[4] By convention, the character combinations "+t" and "+d" represent the Old English characters 'þ' and 'ð', respectively. Similarly, "+g" and "+a" represent the yogh and æ, respectively.

have this form and the remainder of the data representing minor variants). The lists in (8) and (9) provide the forms of *furðon* found in YCOE and PPCME2 (Kroch et al., 2000), respectively, including and sorted by their respective absolute frequencies in descending order:

(8) Forms of *furðon* in YCOE:
fur+don (72), fur+dum (70), fur+ton (24), fur+tum (19), fur+dun (4), fur+dan (3), fur+tan (2), for+den (1), for+don (1), for+dum (1), fur+dom (1)

(9) Forms of *furðon* in PPCME2:
forr+tenn (4), for+den (3), for+de (2), for+t+an (1), for+ton (1), forthon (1)

According to the available documentation for both the YCOE and PPCME2, *furðon* is annotated and part-of-speech (POS) tagged as 'FP' ('focus particle') which allows for extraction with relative ease[5]. However, in order to capture any potentially mislabeled occurrences of *furðon* and, more importantly, in order to find related form-meaning pairs, I extended my automated search to adverbs (i.e. the POS-tag 'ADV' in both YCOE and PPCME2) starting with the character 'f' and manually skimmed through the search hits. In addition to the 206 'FP'-labeled hits, I found an additional four candidates for uses of *furðon* from Middle English (all spelled *forr+tenn*). The manual mining approach did not yield any additional hits in the Old English data. Overall, by relying on the FP-label and the manual approach, I was able to identify 210 occurrences of *furðon*, 198 of these were found in the York-Toronto-Helsinki Parsed Corpus of Old English Prose (YCOE, 1.5M words; Taylor et al., 2003). The remaining 12 are from the Penn-Helsinki Parsed Corpus of Middle English, 2nd edition (PPCME2, 1.2M words; Kroch et al., 2000). There are no OE data available for the o1 subperiod (with the corpus texts available from o1 amounting to only roughly 2 thousand words). Eleven of the ME data are from the earliest subperiod M(x)1 (manuscript date 1150-1250 CE). One potential outlier originates from the M4 subperiod (MS date 1420-1500 CE; *Caxton's History*

[5] The default search software for querying the YCOE and any corpus in the suite Penn-Parsed-Corpora-of-Historical English is CorpusSearch. I used my own Python-based script as is allows me to extract the search hits in more convenient forms of e.g. spreadsheets and aligned with relevant metadata.

*of Reynard the Fox*).

In search for more data from (late) Middle English (and potentially Early Modern English), I queried the EEBO data in its entirety for occurrences of the lemma *furðon* with a number of spelling variants and other 'likely suspects' as search terms. These variants were partly informed by the OED entry for *forthe* (i.e. the OED's headword for *furðon*; OED, 2023c), and by previous data work and plausible spellings. The following forms were queried (with the number of hits they yielded in parentheses): *forðe* (0), *forrthenn* (0), *forrþenn* (0), *forthan* (1), *forthe* (95), *forthen* (6), *forthon* (100), *forþan* (0), *forþon* (0), *furdan* (0), *furdon* (2; instances of a proper name), *furthon* (0). The 100 occurrences of *forthon* function mostly as a temporal aspectual adverb, with an meaning paraphrasable as (PDE) 'forth', 'onward'. Frequently *forthon* occurs in the phrase 'from now/hence/than/then(ce)/that time forthon' (OED, 2024d). The form 'forthe' occurs 95 times in the EEBO, and mostly as a spatial adverb (like PDE 'forth', 'forward')—frequently modifying the verbs *go*, *cast*, *bring*, *stretch*, and *set* (OED, 2024d). The form 'forthen' yielded six search hits, mostly representing the causative conjunction with the headword form *for-thon* in the OED (OED, 2024b) (PDE 'because', 'for that reason'). In addition to these targeted searches, I queried the first sixty years of the EEBO with the following regular expression for matches with the EEBO-provided lemmas (and no further restriction on e.g. part-of-speech tags, etc.). This resulted in 812 hits.

(10)
```
furdon_regex = "^f[ou]r1,2[dtðþ]h?[aeou]m{0,1}n{0,2}$"
re.match(furdon_regex, eebo_lemma)
```

Together with the targeted searches for the entire corpus and excluding a number of overlapping hits among the output for these two strategies, I was able to manually skim 1,216 search hits for instances of *furðon*. No definitive uses of *furðon* (the scalar additive operator) were found. However, the outlier from M4 (cf. above) was complemented with a number of uses from the same text—originating from parts of 'Reynard the Fox', which had not made it into the sample annotated in the PPCME2). Further attempts at finding instances of *furðon* were informed by the late attested examples in OED (2023c), e.g. (11) dating from around 1200–1275:

(11) Al þat is on liue nis me swa dure. swa me is þin an lime forðe min
all that is in live not.is me so dear so me is your one limb before my
ahȝene lif.
own life
All that is in life is not [half] so dear to me as is to my thy sole limb, 'before mine own life'!"

(Laȝamon, Brut (Caligula MS.), l. 1504), OED date "c1275 (?a1200)"; paraphrase from Madden (1847, 127f))

Unfortunately, I was unable to verify (11). Searches in Layamon's Brut beyond this form did not yield any search hits (not counting two instances of *forde* as in *in ane brade forde*, PDE 'ford, passage, crossing').[6]

In order to spread the available diachronic data for *furðon* more evenly, I introduced an idiosyncratic periodization deviant from the canonical YCOE/PPCHE periods. To begin, consider Table 3.1 for an overview of the subperiods in the two corpora YCOE and PPCME2, respectively:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| o1 | –850 | o2 | 850–950 | o3 | 950–1050 | o4 | 1050–1150 |
| m1 | 1150–1250 | m2 | 1250–1350 | m3 | 1350-1420 | m4 | 1420–1500 |

Table 3.1: Main subperiods PPCME2 & YCOE

The label "o1" refers to the first Old English subperiod, "m3" refers to the third Middle English subperiod. The 'simple' periods in Table 3.1 reflect the cases in which date of composition and manuscript date coincide. For any given corpus text, should the composition date and the manuscript date diverge, this will be reflected in the period label 'o23'. Thus, the composition date is o2 period and the manuscript date is o3. In case the composition date is unknown and only the manuscript date is known (say o3), the corpus compilers established the convention to label such cases as 'ox3'.

By default, the periodization of corpus texts in the YCOE (as in Tab. 3.1) is based on the so-called Helsinki periods (in reference to the home institution of the YCOE during its early iterations/versions). Not all corpus texts have an o1-

[6] For completeness' sake, a search in Chaucer's Canterbury tales did not yield any instances of *furðon*$_{\text{SAO}}$.

o4 period label associated with them. However, the majority of corpus texts are independently associated with a manuscript date which, according to the YCOE documentation (Taylor et al., 2003) are based on Ker (1957). Supplementing the default (Helsinki) periodization with 'Ker manuscript dates' and ignoring the composition dates, it is possible to fill in gaps in the standard YCOE periods (i.e. Helsinki periods). This approach provides the following picture with respect to *furðon*-hits in the YCOE and PPCME2 corpora:

| | o1 | o2 | o3 | o4 |
|---|---|---|---|---|
| # *furðon* | 0 | 86 | 89 | 23 |
| word count | 2,006 | 521,674 | 792,163 | 134,533 |
| | m1 | m2 | m3 | m4 |
| # *furðon* | 11 | 0 | 0 | 1 |
| word count | 284,345 | 146,575 | 491,413 | 272,030 |

Table 3.2: Frequency *furðon* across & word counts by PPCME2 & YCOE subperiods

Only selecting the relevant time spans and rearranging the sizes of the subperiods allows to establish a better distribution of occurrences of *furðon* across subperiods. Table 3.3 shows the resulting subperiods, 'p1' through 'p4', their respective time spans, the number of hits for each of 'my subperiods', and the respective relative frequency within subperiods p1–p4:

| period & time | p1 pre-950 | p2 951–1020 | p3 1021–1090 | p4 1091–1200 |
|---|---|---|---|---|
| # *furðon* | 50 | 81 | 48 | 30 |
| word count | 154,743 | 663,553 | 522,350 | 273,591 |
| % frequency | 0.0323 | 0.0122 | 0.0092 | 0.0076 |

Table 3.3: # and % frequencies of *furðon*, in corpus data, cf. Figure 3.1

For completeness' sake, a note on the Middle English portion of the p4-data is in order: The relative frequency is based on the word counts for the entire m(x)1-data. A fair restriction to get a more accurate relative frequency could be to only include the word counts of those corpus files that share the 'dialect-region feature' with those files that yield any hits for *furðon* in the first place. In other words, the relative

frequency would be calculated not relative to the entirety of the Middle English corpus data, but relative to the corpus data stemming from the region where the item of interest has been attested. However, the two dialect regions yielding any *furðon* for the m(x)1 subperiod are West Midlands and East Midlands. These two regions also make up the vast majority of m(x)1 data, with the sole exception being the Kentish Homilies ('cmkentho-m1') containing a negligible 4,287 words, which would adjust the relative frequency for p4 from 0.0076 to 0.0077. Finally, find a graphic representation for the decreasing relative frequency of *furðon* in Figure 3.1 (corresponding to the bottom line in Table 3.3):

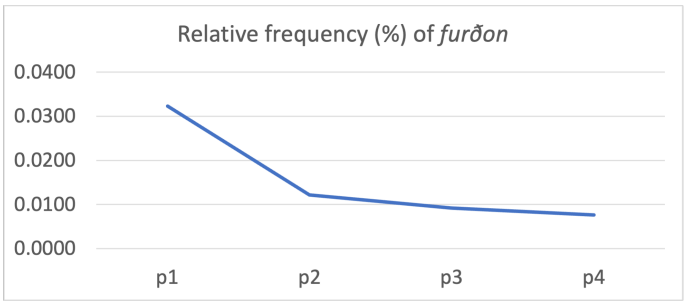



Figure 3.1: Frequency of *furðon*, overall in corpus data, cf. Tab. 3.3

## 3.4 Annotation of focus and focus particles in Old English Corpus Data

In this section, I briefly touch on my approach to annotating *furðon* as a focus particle. While this will be a chance to introduce some attested *furðon*-data, a more thorough discussion will be provided further below in Section 3.5. As with $even_{\text{SAO}}$ (Ch. 2, p. 9ff), the foundational problem in annotating and classifying $furðon_{\text{SAO}}$ is that we do not have a record of natural Old English stress patterns. As a consequence, I depended on the material in the context in order to infer likely foci and focus domains. Since the approach for selecting the contextual material minimally required to form the relevant focus alternatives is parallel to that for *even*, I want to refer the reader to Section 2.3.1 (p. 33ff) in Ch. 2, above.

For the current discussion of *furðon*, I will pick up with the observation that *even* is relatively flexible in associating with various constituents and repeat examples (12) and (13) from Ch. 2. For the sentence in (12), all configurations of association with

focus in (13) are possible:

(12) John even invited Sue.

(13) a. [$_F$ John ] even invited Sue
b. John even invited [$_F$ Sue ]
c. John even [$_F$ invited Sue ]
d. John even [$_F$ invited ] Sue

The number of available configurations is more limited in different distributions, e.g. *even* preceding the subject blocks association with a focus in the VP (in Present Day English). Similarly, *even*'s surface position indicating it occurring in the VP blocks association with a focus on the subject (in active voice structures).[7]

(14) a. *Even John [$_F$ invited **Sue** ]
b. [$_F$ **John** ] invited even Sue

*Furðon* cannot be assumed to adhere to the same constraints as *even*. It is necessary to not exclude any possible association patterns based on the distribution of *furðon*: In (15) *furðon* associates with a focus on the verb *beþencean* (underlined) ('imagine/consider') across the subject[8]:

(15) Petrus cwæð, þis is swiðe wundorlic þing & þearle to wafienne, ac
Peter said this is very wonderful thing and severe to behold but
þis þæt her gecweden is, þæt beforan his eagan swylce under anum
this that here spoken is that before his eyes such under one
sunnanleoman eall middaneard wære gegaderod & to him gelæded, swa
sunbeam all the.world were gathered and to him brought like
ic næfre ær ne gemunde, ]–[ ne **furðon** ic beþencean ne
I never before not understood ]–[ nor furðon I consider/imagine not
cann, hwylcere endebyrdnysse hit beon mæge, þæt fram anum
can which order/degree/magnitude hit be can that by one

[7] The complete picture of *even*'s distribution is a bit more intricate. Jackendoff (1972) shows that *even* can occur below an auxiliary and association with the subject is nonetheless possible, cf. discussion above in Section 2.1.2, p. 21.

[8] When required for clarity, I will include the character string "]–[" in my glossed corpus examples, in order to indicate a transition between corpus tokens, i.e. multiple corpus tokens are concatenated in order to e.g. provide more context. In such cases, the corpus ID provided is based on the corpus token that contains the focus particle.

men si gesewen eall middaneard.
man be seen all the.world
'*And I cannot even imagine what magnificence it requires for the whole world to be seen by one man.*'

(O2/p3, Gregory's Dialogues, 'cogregdH.o23';
cogregdH,GD_2_[H]:35.172.18.1629)

Note that it is possible that the focus is on *endebyrdnysse* ('order, degree, magnitude, power?') in the embedded object clause. Consider (16) for another example, where *furðon* associates with a focus on the subject $nan_{\text{NEG+Q}\hat{}\text{N}}$ ('not one') out of a position to the right of the finite verb:

(16) & efne on þa gelicnesse swa he þone deoful of stowa
and equal in the likeness as he the devil of.DAT place.GEN
gehwylcre geflymde þær he þonne wæs, swa ða fugelas sona ealle
every.DAT drove.away where he then was so the birds soon all
ætsomne on weg gewiton, þæt heora nan ætstod **furðun**
together departed that they.GEN not.one stood furðun
behindan.
behind
'*And just in the same way that he drove the devil from every place where he was then, so the birds all flew away together, so that none of them remained behind.*'

(O3/p2, Vercelli Homilies, 'coverhom';
coverhom,LS_17.2_[MartinVerc_18]:238.2386)

Occurrences like (15) and (16) are the exception. In the majority of cases (i.e. 128/204), *furðon* is adjacent to its focus and the focus can be identified in a relatively straight forward manner, cf. (17), where the *furðon*-proposition can be reconstructed as *Furðon the worms [are created by wisdom]*:

(17) Ealle þa gesceafta gesewenlice on worulde & þa ungesewenlican on
all the beings visible on world and the invisible in
þam uppheofone þe ænige wununge habbað, ge **furðon** þa wurmas,
the heaven that any existence have and furðon the worms
ealle hi synd gesceapene þurh þone soðan Wisdom, þe is Word
all they are created through the true wisdom that is word
gehaten on þisum godspelle;
called in this gospel

> '*All the beings visible in the world and the invisible in the heaven that have any existence, and/also even the worms, they all are created through true wisdom, called word in this gospel.*'
> (O3/p2, Ælfric's Hom. Suppl., 'coaelhom.o3'; coaelhom,ÆHom_1:171.102)

Here, next to the weaker alternatives all visible, and invisible, things, 'worms/insects/bugs' is the unlikeliest alternative to be predicated with *is created by [divine] wisdom*. A further aspect that can inform the identification of the focus in a *furðon* sentence is the pre-existing syntactic parse (as per the annotations in the YCOE/Penn corpora). In (18), i.e. the syntactic parse for (16) (and an excerpt from the text's .psd-file), *furðon* is located at the same hierarchical level as the finite verb *ætstod* ('stayed') and the adverbial *behindan* ('behind'). Thus, the structural annotation remains uncommitted as to *furðon*'s association with focus. However, in (19)—the parse for (17)—*furðon* is placed inside the noun phrase constituent:

(18)
```
[...]
  (IP-SUB (NP-NOM (NP-GEN (PRO^G heora))
                  (NEG+Q^N nan))
          (VBDI +atstod)
          (FP fur+dun)                    <----
          (ADVP-LOC (ADV^L behindan))))
(.  .))  (ID coverhom,LS_17.2_[MartinVerc_18]:238.2386))
```

(19)
```
(IP-MAT (NP-NOM-LFD (NP-NOM (Q^N Ealle) (D^N +ta) (N^N gesceafta) (ADJ^N gesewenlice)
                            (PP (P on)
                                (NP (N worulde))))
                    (CONJP (CONJ &)
                    [...]
                    (, ,)
                    (CONJP (CONJ ge)
                           (NP-NOM (FP fur+don) (D^N +ta) (N^N wurmas))))    <----
        (, ,)
        (NP-NOM-RSP (Q^N ealle) (PRO^N hi))
        (BEPI synd)
        (VBN^N gesceapene)
        (PP (P +turh)
            (NP-ACC (D^A +tone) (ADJ^A so+dan) (N^A Wisdom)
                    [...]
(.  ;)) (ID coaelhom,+AHom_1:171.102))
```

In (19), the structural position of *furðon* under the conjunction phrase, and having the NP *+ta wurmas* as its domain, is straightforward. However, out of 103 cases that were annotated as *furðon* c-commanding (only) an NP, only 26 are annotated

as part of their NP constituents as in (19). The remaining 77 (out the mentioned 103) *furðon*s, are located immediately under a clausal node. Owing to the flat hierarchical structure of the YCOE and PPCHE corpora, *furðon* is on the same hierarchical level as other adverbials, arguments, modals verbs, verbs, etc. Focus association can thus not be inferred from the syntactic annotation. As valuable a resource the structural parse is, the effectiveness of the semantic annotation depends on the context. Consequently, my approach is in the spirit of corpus studies such as Beck et al. (2009); Beck and Gergel (2015); Gergel and Beck (2015); Gergel et al. (2016).

## 3.5 Introducing *furðon*

In this section, I will systematically introduce attested uses of *furðon* with their relevant contexts. For this discussion, I assume the semantics introduced above, in section 3.2. I will begin with *furðon* occurring without downward entailing operators, i.e. *furðon* associating with strong elements in scale-preserving environments. It will then move on to *furðon* associating with weak elements—across downward entailing ('scale-reversing') operators. Here, I will first cover *furðon* with clausemate negation before moving on to other downward entailing operators. Within the respective (sub)sections, the structure will be aligned along the various types of focused constituents and adjacency. On the one hand, this structure is informed by the discussion on $even_{\text{SAO}}$ (cf, Ch. 2; directional PPs being a crucial type of focus in its development). On the other hand, taking note of *furðon*'s adjacency to its foci is informed by the literature on focus, association with focus, as well as theoretical positions (movement vs. in-situ approaches) and developments in this field.

### 3.5.1 *Furðon* in scale-preserving environments

Only 30 (≈15%) of all available instances of the focus particle *furðon* occur in default scale-preserving environments. As a shorthand—without suggesting a separate lexical entry and analogously to *even*—I will refer to this use as 'strong *furðon*'. In terms of distribution, strong *furðon* occurs both adjacent to the NP-/PP-constituents it focuses and non-adjacent, i.e. somewhere detached from its focus. There are 24 of

the former type; 21 of which are NP-adjacent and three are PP-adjacent (with the latter two consisting of a prepositional object/argument and of two adverbial PPs). 22 out of these 24 *furðon*s are preceded by an Old English *ge* (labeled as either, twelve times, `CONJ`, 'conjunction', or, ten times, `INTJ`, 'interjection'); One out of these 24 *furðon*s is preceded by the Old English conjunction *and* (PDE 'and').

In the following, I will introduce the major distribution patterns and in doing so discuss the most representative uses of strong *furðon*. I begin with *furðon* adjacent to and associating with verbal argument constituents. A parallel concern will be *furðon*'s co-occurrence with *ge*.[9] I will close this section with a brief discussion of a small number of non-argument-associating *furðon*s (in non-DE contexts), which make for a rather heterogeneous set of data, both from a diachronic and from a semantic point of view.

In (20), we have *furðon* focusing the subject. The alternatives are generated from a focus on the NP *an yfel man*:

(20) Forðæm symle bioð þa goodan & þa yflan ungeþwere betwuh
Because always are the good and the evil in.disagreement between
him, ge eac hwilum þa yflan bioð ungerade betwuh him selfum.
them yea also on.occasion the evil are at.odds between them selves
ge **forðum** an yfel man bið simle ungeþwære him
and man be always in.disagreement him self because.of.the.fact that
selfum, forðæm þe he wat þæt he untela deð, &
he knows that he ill does and turns.towards for.him of.those
wenð him þara leana, & nyle þeah þæs geswican [...]
rewards and not.wished then of.that to.cease
'*Because the good and the wicked are always at odds, and sometimes also the wicked fall out among themselves. Yeah, even a wicked individual is always in conflict with themselves, for he knows that he does wrong, and knows what reward to look for, but will not cease from it ....*'

(O2/p1, Boethius, Consolation, 'coboeth.o2'; coboeth,Bo:39.134.28.2668)

There is no entailment relation between the prejacent and the weaker alternatives. The scale is pragmatic in nature: For the constituent parts of a single person (i.e. conflict *within* a person) to be in conflict with one another is more unlikely than the constituent parts of a group of individuals to be in conflict (i.e. the individuals

[9] NB: With (2) (p. 90) we have already examined one such piece of data.

with one another). This scale is overtly available in the context and structured along said weaker alternatives: From the most likely alternative (a set of people which is comprised of the set of good people and the set of wicked people is likeliest to have conflict among themselves) to a somewhat less likely mid-point (set of wicked people have conflict among themselves) to the already-mentioned prejacent in (20). The scalar presupposition is satisfied in the context. Note, that the presence of the weaker alternatives also satisfies the additive presupposition component.

Among a few more interesting examples is the following (21):

(21) & eft he het ofslean ealle þa wisestan witan Romana, ge
and then he commanded to.slay all the wisest minds of.Romans yea
**furðon his agene modor, & his agene broðor;**
furðon **his own mother and his own brother**
'*And then he commanded to kill the wisest minds of Rome, yeah, even his own mother and his own brother.*'

(O2/p1, Boethius, Consolation, 'coboeth.o2'; coboeth,Bo:16.39.21.718)

Here, the focus domain consists of two coordinated noun phrases. The context is about the emperor Nero's breakdown and ensuing destruction of Rome and its people. There is a pragmatic scale with the closest relatives making for the most unlikely alternative next to weaker focus alternatives—with the wisest minds of Rome being overtly named as weaker focus alternatives. Thus, again, both the scalar and additive presuppositions are overtly satisfied in the context. It is important to note, this piece of data provides supporting evidence against an (outdated) view originating from a 'pre-LF era' of semantic theory building. The claim was that focus particles move to their focused constituent in deep structure (then taken to be the level of semantic interpretation). Consider cases where there are multiple foci as for example in Rooth's (22) (his 12):

(22) John only introduced BILL to SUE

The arguments against movement of the focus particle is that if *only* moved to the constituents bearing the focus *only* associates with, then, in a multiple-focus configuration, the particle cannot possibly attach to both constituents. This view is attributed to the unpublished manuscript Fischer (1968) cited in Anderson (1972)

and Rooth (1985).

For completeness' sake, (23) shows the only data for *and* (instead of *ge*) preceding *furðon*. It behaves parallel to the above types of data in that the focus alternatives formed on the basis of the focused object NP are weaker than the prejacent. Again, both the scalar and the existential presuppositions are satisfied in the context.

(23) God ælmihtig beswingð swiðe mildheortlice ælcne sunu þe he
God almighty beats very kindly each son that he
underfehð. and **furðon** his ancennedan sunu urne hælend Crist þe
got and furðon his only.begotten son our savior Christ that
gehyrsum wæs his fæder swa þæt he swingla forbær þeah ðe he
obedient was his father so that he whippings endured though there he
unsynnig wære.
innocent was
'*The almighty God kindly punishes every child he ever had and even his only begotten child the savior Christ who was so devout to his father that he endured whippings despite being innocent.*'

(O3/p2, Ælfric's Cath. Homs. I, 'cocathom1.o3'; cocathom1,ÆCHom_I,_17_[App]:538.106.3266)

The only use of *furðon* of this type (i.e. the particle being adjacent to its focused NP-/PP-constituent) that is not preceded by a *ge* or *and* is in (24):

(24) Ac sy a on þære þigene forhefednes, þæt he him læsse nime
But be always in the drinking restraint that they them less take
þænne hine lyste, forðy win gedeþ, þæt **furðon** witan oft misfoþ
than them lusts because wine makes that furðon mind often errs
and fram rihtum geleafan bugan.
and from right direction turns
'*But there shall be moderation in wine drinking, so that one does not consume more than necessary when one wishes to have wine, because wine confuses the mind and distracts from true faith.*'

(O3/p3, Benedictine Rule, 'cobenrul.o3'; cobenrul,BenR:40.65.2.796)

In (24), *furðon*'s is contribution is not immediately transparent. On a scalar-additive reading, compatible with the context in which the negative impacts of alcohol on human cognition are mentioned (additive presupposition), the prejacent needs to be the proposition *wine makes the mind err so much that a monk's faith is at risk*. This is the only prejacent that can be formed based on the available material that

is stronger than any propositions already in context. They all pertain to 'being inebriated' but none as strong—particularly from a Benedictine abbot's/monk's point of view—as being led astray and loosing one's faith. Alternatively, *furðon* in (24) has to be considered a (non-scalar) particularizer, i.e. a focus particle that picks out a familiar referent in the context and particularizes the focus under discussion, an event of being deceived (*beswicene*) by wine is mentioned in context, cf. also Sections 2.2.2.2 and 2.5.3 on early *even*.

There are six uses of *furðon* where the particle is not adjacent to an argument-NP/PP (in non-DE environments). Only one of these immediately follows the conjunction *ge*. At the same time it precedes an adjunct CP[10], (25):

(25) & we leornodon eac þæt hwilum geberede swiðe ungewunelic &
and we learned also that sometimes happens very uncustomary and
ungecyndelic yfel, þæt ða bearn getreowedon betwuh him &
unnatural evil that the children confide between themselves and
sieredon ymbe þone fæder. ge **furðon** þæt wyrse wæs, we
plot about the father yea furðon [CP-FRL-ADT what worse was ] we
geheordon geo geara on ealdum spellum þæt sum sunu ofsloge his fæder;
heard of old in old speech that some son slayed his father
'*We have heard that sometimes children band together and conspire against their father. And, what is even worse, we heard in an old story how a son slew his father.*'

(O2/p1, Boethius, Consolation, 'coboeth.o2'; coboeth,Bo:31.70.24.1312)

Here, the focused element is the comparative predicative adjective *wyrse*. The local context is about the possible negative effects of becoming parents. The possibility for the mother to die during child birth is the relevant problem under discussion. In the first sentence of (25) a relatively mild misbehavior of the children is mentioned. In the *furðon*-sentence, the more extreme crime of children murdering their parent is introduced. (25) is from Boethius' Consolation of Philosophy (coboeth.o2), a text from the O2 subperiod (and p1 among my adjusted periods), i.e. among the earliest available data.

There are two more uses of strong *furðon*s from O2 (p1). Both are from *Bald's Leechbook* (in colaece.o2) and both deviate in their semantics from the canonical

[10] "CP-FRL-ADT" is the (combined) label for 'complementizer phrase, free relative clause, adjunct' in the YCOE.

scalar additive uses of OE *furðon*. They seem to have a particularizing function rather than a scalar-additive function, cf. (26):

(26) 'Þonne þu ongite þæt þæt geswel hnescige & swiþrige Þonne hrin
when you perceive that the swelling softens and weakens then strike
ðu him mid þy snid isene & snið lythwon & listum þæt þæt
you it with your cutting iron and cut a.little and carefully that the
blod mæge ut **furþum** þylæs þider in yfel pohha gesige.
blood can out furþum until thither in evil pouch sinks
'*When you see that the swelling subsides and weakens, then pierce it with an iron lancet and carefully cut a little bit so that the blood can come out easily, right until the evil blister subsides.*'
(O2/p1, Bald's Leechbook, 'colaece.o2'; colaece,Lch_II_[2]:22.2.4.2463)

There is no scale of unlikelihood on which the point at which a blister drains during treatment is a strong alternative (26), the scalar presupposition is not satisfied. Nor are there any alternatives in the context or inferable from the context that would satisfy the additive presupposition component that the canonical uses of *furðon* come with.

Similarly, in (27), *furðon* particularizes the level of a liquid in a vessel such that it fully covers the spices also contained in the vessel:

(27) Wyrc gode eagsealfe, nim celeþonian & bisceopwyrt, wermod,
make good eye.salve take celandine and verbena, vermouth,
wudu merce, wudu bindes leaf, do ealra emfela, cnuwa wel, do
wormwood woodbine leaves do all.GEN evenly.much pound well put
on hunig & on win & on æren fæt oððe on cyperen, do twæde
in honey and in wine and in brass vessel or in copper put two
þæs wines & þriddan dæl þæs huniges, do þæt se
of.the wine.GEN and third part of.the honey make.it.so that the
wæta mæge **furþum** ofer yrnan þa wyrta,
liquid can furþum over flow the herbs
'*How to make a good eye salve: Take celandine and verbena, vermouth, wormwood saniculum woodbine leaves in even parts and pound well. Add honey and wine. In a brass or copper container add two parts wine and one part honey such that the liquid covers the herbs.*'
(O2/p1, Bald's Leechbook, 'colaece.o2'; colaece,Lch_II_[3]:2.1.3.3535)

A scale along the degree to which the solids in the container are submerged in liquid could be accommodated. On such a scale, the point at which all the spices are fully

submerged makes for the strongest alternative since it entails all weaker alternatives. However, the context is that of a recipe and relatively accurate measurements can be expected. It seems more probable that *furðon* is indeed particularizing this point of measurement, i.e. along the lines of 'pour the liquid into the container so that it covers the spices, not less, not more'.

The other three *furðon*s of this type (upward entailing environment, non-adjacent to focus (argument) NP/PP) are a bit more in line with the canonical semantics of *furðon*. They are all from the Middle English corpus PPCME2, with two from the conservative (for a ME corpus) texts *Trinity Homilies* and the *Ormulum* and a third instance of *furðon* originating from the M4 period, occurring in *Caxton's History of Reynard the Fox*. Since this is the historically latest piece of data and, thus, the more interesting one, I will skip ahead and ignore the earlier two:

(28) I am **forthon** so olde / That I wolde fayn remembre my sowle
I am forthon so old that I would gladly remember my soul
'*I am even so old, that I would gladly remember my soul.*'

(M4/px, Caxton's History of Reynard the Fox, 'cmreynar-m4';
CMREYNAR-M4,11.169)

*Furðon* (POS-tagged 'FP') in (28) is an outlier. There are no other instances of *furðon/forthon* with a scalar additive reading available during the M2 and M3 subperiod, cf. discussion above in section 3.3. Importantly, this text was translated by William Caxton from (Middle) Dutch into English. The glossary in the (1970) edition of the text that was used as the basis for the PPCME2 annotations, lists and paraphrases this occurrence of *forthon* as 'moreover' (Blake, 1970, p. 151; w/ *forthon* on p. 11/l. 24). It should be noted that there are five uses of the adverb *forthon* in Caxton's 'History of Reynard the Fox' and only one has ended up in the sample used for the PPCME2. Four out of those five occurrences are listed in Blake's glossary.[11] As far as (28) is concerned, both, the interpretations for *moreover* (an additive marker) and *furðon* (a scalar additive marker), are coherent with the contextual facts. It cannot be conclusively decided as to whether the *forthon* in (28) is an ambiguity (due to a polysemy) or a homonymy. The remaining three paraphrases

[11] The full list with page and line numbers is "**forthon** *adv.* moreover [p.]11/[l.]24; henceforth 28/6; thenceforth 35/19, ∼ *to* (*prep., phr.*) until 51/3" (Blake, 1970, 151), and 111/34.

for Blake's glossary entry for (the adverb) *forthon* are *henceforth*, *thenceforth*, and *until*.

The context for (28) is that the troublemaker Reynard (the Fox) approached the character Sir Chauntecleer and claims to have become a hermit/recluse and has suffered penance to clear himself of his prior sins. Of course, this is a ruse with the goal to trick people into lowering their guard. Moreover, in (28), Reynard claims that he has become old and needs to abstain from crime as he is worried about the fate of his soul (trying to avoid ending up in purgatory).

*Furðon* in (28) is compatible with a scalar additive interpretation: There is a two-item list of reasons as to why Reynard does not pose a threat any longer: On the one hand, he is repenting—for the sake of repenting because he regrets his previous actions. On the other hand, he is concerned about his soul's fate after death. There is no (obvious) entailment relationship between the two alternatives. A pragmatic scale can be structured along the idea that if an individual improves theirs ways and repents for the sake of their soul's welfare in the afterlife, then necessarily they have to repent in (their 'pre-death') life for the sake of repenting. As far as strength/unlikelihood goes, the latter, *furðon*'s prejacent is the more unlikely, stronger alternative. Another possible scale aligns with a temporal scale: In this interpretation *furðon* focuses on the degree to which Reynard has aged and matured. The weaker alternative on this scale is the degree of maturation—and with the passage of time necessarily aging—Reynard achieved with becoming a recluse and committing himself to a life of faith. Finally, in accordance with Blake's position, the *forthon* in (28) is consistent with an additive interpretation ('moreover', 'additionally', 'also', 'further').

To summarize, the majority of "non-DE" *furðon* (24 out of 30/80%), occur adjacent to a NP/PP-constituent. In all but one case they are preceded by *ge* (n=22) or *and* (n=1). Among the six occurrences of *furðon* which are not adjacent to a NP-/PP-constituent and which originate from the YCOE corpus (excluding the late OE/earlier ME texts), there is only one 'SAO-*furðon* proper', which is adjacent to its focus domain that is an adjunct CP constituent (cf. (25)). The remaining two early uses of "non-DE-non-adjacent" are particularizing particles rather than scalar additive operators. Given such a small sub-set (n=30) of data, the following

observations can only be made tentatively: The major conclusion to be drawn from the distributional properties of *non-DE furðon* is that it preferred to occur adjacent to its focus domain. In most cases the focus was introduced with conjunctive *ge* (or highlighted with interjective *ge*) and the underlying focus alternative appended to a list of (at least one) weaker alternatives which satisfy both the additive and the scalar presuppositions of *furðon*.

### 3.5.2 *Furðon* in downward-entailing environments

The data I introduced in this section is *furðon* associating with weak elements across downward-entailing (DE, i.e scale-reversing) operators ('weak *furðon*s', 'DE-*furðon*s'). This makes for 85% of all *furðon* and, therefore, is the complement set to the 15% of strong *furðon* from the previous section. Out of all these DE-environments, roughly 85%, in turn, come about due to clause mate negation. The remaining 15% (n=25) come about due to other DE operators. I will begin this section with a discussion of *furðon* with clause-mate negation and cover the basic distributional patterns. The second part will be devoted to *furðon* in other downward-entailing contexts, which represent a considerably smaller set of data, but are much more insightful from a typological perspective.

To note the major coordinates of weak *furðon*, like strong *furðon*s, the majority of weak *furðon*s whose focus domain is a verbal argument occur adjacent to that constituent (mostly NP, some PP)—i.e. 87 out of 94 (≈92.5%). Unlike strong *furðon*s, weak *furðon*s are less frequently preceded by a conjunctive element (cf. '*ge*'): Only in 46% of cases is *furðon* preceded by *ne* (x73), *or* (x5), *and* (x2). There are no instances of *ge* preceding weak *furðon*. Moreover, the split between argument-associating (53%), and non-argument associating (39%) *furðon*s is not as clear cut as for *furðon* in non-DE contexts, where all argument-associating *furðon*s co-occurred with (next to exclusively) *ge*.

#### 3.5.2.1 *Furðon* with clause-mate negation

The frequency of this use of *furðon* taking surface scope adjacent to its focus domain when focusing verbal arguments is 80/85 (≈94%) and on par with that for the superset of all DE-*furðon*s. After we introduce the basic distributional patterns of

those 85 argument-associating *furðon*s, we turn to 65 *furðon*s that associate with non-argument constituents: 13 (20%) of these are adjacent to their focus domain—all adverbial PPs. The remaining 52 (80%) are non adjacent to non-argument foci.

In (29), the subject is focused. The prejacent *a sparrow falls to the ground* is the likeliest of events in face of all possible things happening without God's explicit command:

(29) and elles hit beon ne mihte, eallswa he sylf on his godspelle sæið þæt
and else it be not could just.as he self in his gospel said that
**furðon** an spearwa on gryn ne mæg befeallan forutan his
furðon a sparrow on ground not can fall prior his
foresceawunge.
foresight
'*And it could not have been otherwise, just as he himself said in his gospel that not even a sparrow may fall to the ground without his foreknowledge.*'
(O4/p3, Anglo-Saxon Chronicle D, 'cochronD';
cochronD,ChronD_[Classen-Harm]:1067.26.2280)

In (30), *furðon* focuses on a (dative) object:

(30) God nolde cyðan nanum his gecorenum ne **furðon** his englum
God NEG.wanted tell any his chosen nor furðon his angels
ðone endenextan dæg þyssere worulde.
the last day of-this world
'*God did not want to tell any of his chosen ones, nor even his angels when the time of judgment would come.*'
(O3/p2, Ælfric's Cath. Homs. I, 'cocathom1.o3';
cocathom1,ÆCHom_I,_17_[App]:539.127.3275)

God's angels knowing the date of doomsday (prejacent w/o negation) is the likeliest/weakest alternative among all alternatives: Out of all imaginable beings, the angels are the most likely candidates to be entrusted with this information. In turn, if normal people are to know when doomsday will take place, we can plausibly infer that the angels are privy to the same information. Having established that *God's angels know the time of doomsday* being the weakest relevant alternative, the discussion can be expanded to include negation. Due to negation, this scale is reversed with respect to the likelihood of the propositions generated based on these alternatives: God's angles *not* knowing the date of doomsday is the strongest of the relevant

alternatives. Wide-scope *furðon* can now relate this prejacent to alternatives—and presuppose that it ranks higher relative to the more likely alternatives, i.e. { *people in the world don't know when doomsday is* < *souls in heaven don't know when doomsday is* < *god's angels don't know when doomsday is* }[12].

Arguably, on a movement theory of focus, (29) and (30) are cases in which *furðon* is able to form a constituent with its NP focus domain (Karttunen and Peters, 1979; Rooth, 1985; von Stechow, 1991). No focus movement of the focused constituent to a position adjacent to the focus particle is necessary. In addition, there are 6 PP objects (for the verbs *gebiddan* ('to pray'), *sprecan* ('speak', x2)—cf. (31), *willan* ('to want'), *ferde* ('go/walk/travel', x2)). In summary, these 109 uses of *furðon* occur adjacent to the verbal arguments; for convenience in the current discussion I will refer to these as 'argument-adjacent *furðon*'.

In order to keep the current chapter focused, I will limit the further discussion to only three more *furðon*s: One argument-adjacent *furðon* with a (directional/goal-oriented) PP-argument, cf. (31) immediately below; one *furðon* with a non-argument PP, i.e. adverbial PPs (headed by a static P), cf. (32); and one of somewhat unclear status in terms of locational contribution (static/directional), cf. (33).

(31) He nolde næfre lyffettan ne mid olecunge spræcan ne
he NEG.wanted never flatter nor with greasy-tongue speak not
**furðon** to þam casere, swa swa his geferan dydon, swa swa he on
furðon to **the emperor** so as his comrades did just as he on
þam ylcan gereorde geswutelode mid dæde.
that same feast declared with [a] deed/act
'*He would never flatter nor speak with flattery, not even to the emperor, as his companions did; even as he in the same feast manifested by an act of his.*'
(O3/p2, Ælfric's Lives of St.'s, 'coaelive.o3';
coaelive,ÆLS_[Martin]:626.6372)

(32) is a representative example for 19 instances of *furðon* adjacent to adverbial PPs; with (32), in particular occurring with a directional PP:

(32) And þes earma smið openlice geseah þa hellican wita and þa
and the poor smith openly saw the hellish punishment and the
hetelan deofla, þyder þe he, ungesælig, him sylf toweard wæs,
hostile devils thither where he unfortunate him self upcoming was

[12] As before, "<" stands for a "stronger/more informative/unlikelier than" relation.

æfre to wunigenne on witum mid him for his yfelnysse and orwennysse,
ever to dwell in torment with him for his evilness and despair
for þan ðe he nolde **furðon** on his ende gecyrran.
for that that he not-wanted furðon at his end convert
'*The smith saw hell where he was going to spend eternity because even at his end he did not want to turn to God.*'

(O3/p2, Ælfric's Hom. Suppl., 'coaelhom.o3';
coaelhom,ÆHom_20:236.3075)

As seems to be the case with PDE *even*, *furðon* does not split a prepositional phrase between the P-head and its complement. In the data available, when the focus is (part of) a NP that is complement to the prepositional head, *furðon* always c-commands the entire PP rather than just the NP.

It is not always entirely clear whether a particular PP is an adverbial adjunct (as in (32)) or is selected for by the verb. Consider (33) as an example:

(33) Ne mæg se deofol mannum derian butan Godes ðafunge, ne heora
not might the devil men injure without God's permission nor their
ðincg amyrran, þonne he ne moste faran **furðon** on þa swin,
things destroy because.of he not can go furðon in the swine
butan him geðafode þæs se hælend.
without him permitted.VBD that the savior
'*The devil cannot hurt men without God's permission, nor mar their property, since he could not go even into the swine, unless the Savior permitted him.*'

(O3/p2, Ælfric's Lives of St.'s, 'coaelive.o3';
coaelive,ÆLS_[Auguries]:196.3619)

Here it is unclear whether the PP *on þa swin* is to be interpreted as the goal or as the location of the verb *faran*. Since the question whether the devil is allowed in the presence of pigs is at issue (rather than moving/traveling-to(wards)-pigs/entering a herd of swine), I take the OE preposition *on* to have a static rather than a directional reading.

#### 3.5.2.2 *Furðon* in non-clausal-negation DE environments

In this section, I will discuss the various uses of *furðon* in the remaining, that is non-clausal-negation, DE environments. These remaining downward entailing

environments come about due to:

- the quantifier *feawa* ('few'; x1),
- protasis of *gif*-clauses, (i.e. PDE *if*; x2),
- wh-clauses (with OE *þonne/ðonne/þa/ða*, 'when'; *haær*, 'where'; *hwæðer*, 'whether'; x10),
- prepositions *ær* ('before'; x3) and *butan* ('without'; x1),
- comparative construction *ma þonne* ('more than'; x1),
- *un*-prefix to adjective (x1),
- negation in embedding clause (x4), and
- 2 instances of *furðon* and negation in *gif/if*-protases.

This makes for 25 such *furðon*s in total.[13] As mentioned previously, the remaining 150 *furðon*s occur with clause mate negation. It is in this section that (finally) the most interesting data that allow to recognize *furðon* as a universal scalar additive operator will be covered. As a reminder, German for example has a division of labor among particles such as *sogar*, *(nicht) einmal*, and (non-clause-mate negation, DE environments) *auch nur*. The English operator *even* can 'perform' all these duties and, therefore, has been recognized as unique, i.e. the only *universal* scalar additive particle among the present day Germanic languages. The following data (with the corresponding discussion) is the empirical underpinning to classify *furðon* as a universal scalar additive operator. In order to limit the scale and scope of this section, I have limited the following discussion to as few and representative examples as possible and necessary.

### Quantifier *feowa* (OE 'few')

*Furðon* in (34) is in the surface scope of the downward monotone quantifier *feowa* ('few'). The relative clause ("$[_{\text{CP}_1}$ ]" below) in which both *furðon* and the focused

[13] In the corpora queried (YCOE, PPCME2), no instances of *furðon* associating with a focus across any other DE-operators have been found, e.g. any quantifiers other than *feowa* (which is a right downward entailing quantifier) or definite plurals.

weak element (*an ærendgewrit*, 'one message') are located is extraposed out of the subject NP:

(34) Swæ clæne hio wæs oðfeallenu on Angelcynne ðæt swiðe feawa
So thorough it was ceased in England [$_{CP}$ that [$_{NP}$ very few
wæron behionan Humbre ðe hiora ðeninga cuðen
$t_1$ ] were on.this.side of.the.Humber [$_{CP_1}$ that their service could
understondan on Englisc, oððe **furðum** an ærendgewrit of
understand in English or furðum one.NUM message from
Lædene on Englisc areccan;
Latin in English translate ] ]
'*So thoroughly had it (learning) ceased in England that there were very few on this side of the Humber who could understand their prayers in English, or even translate a single letter from Latin into English.*'
(O2/p2, Pref. to Cura Pastoralis, 'coprefcura.o2';
coprefcura,CPLetWærf:13.5)

### *If*-clauses (conditionals)

In these types of data, *furðon* associates with weak elements in *if*-clauses: In (35) this is *his reafes* ('his garment'):

(35) Soðlice heo cwæð, gif ic **furþon** his reafes æthrine ic beo hal.
truly she said if I furþon his garment touch I am whole
'*For she said, "If I touch even his garment, I will be healed."*'
(O3/p3, West-Saxon Gospels, 'cowsgosp.o3';
cowsgosp,Mk_[WSCp]:5.28.2518)

The context for (35) is a story of a woman who had been suffering for twelve years from wounds that would not heal. In an attempt to alleviate her suffering, she approached Jesus from behind in a crowd and touched (the hems of) his robes. On the one end of the scale of relevant alternatives, there is 'touching of robes without Jesus knowing' versus 'being expressedly and intentionally healed by Jesus' on the other end. As far as the consequence—in this scenario but also with respect to the consequent in (35)—of being healed from whatever ailment is concerned, a plausible inference is that in all situations in which touching the Savior's clothes suffices, his full attention also suffices. This entailment is asymmetric: If Jesus's full attention heals, there is no guarantee that touching his clothes heals. There are

other, clearer examples where for example a weak quantified NP such as *ænne man* ('one man/person') is focused (e.g. cocathom1,ÆCHom_I,_3:203.144.588).

### Factual conditionals; *ða/+da, ðonne/+donne* ('when')

The context for (36) is the story about Orpheus and Eurydice:

(36) ða he **furðum** on ðæt leoht com, ða beseah he hine underbæc
when he furðum to that light came then looked he him.self backwards
wið ðæs wifes;
for the woman
'*When Orpheus made it even to light, he turned around to Eurydike.*'

(O2/p1, Boethius, Consolation, 'coboeth.o2'; coboeth,Bo:35.103.12.2004)

The Greek gods permitted Orpheus to lead his partner Eurydice out of the underworld and to bring her back to the world of the living, i.e. back to life. However, the permission was granted on the condition that, during the journey back, Orpheus would not turn around to look at her. As the tragedy goes, Orpheus became impatient over the course of the trek and wanted to make sure it was Eurydice following him out of the underworld and the gods had in fact released her. Once he turned to face her to confirm her identity, Orpheus lost Eurydice again and for good. The prejacent *when he came to the light, he looked around* is stronger than the alternatives (that are in the wider context), i.e. {when he came to the gate, he looked around, when he walked through the gate, he looked around, when both he and Eurydice walked through the gate, he looked around}.

### Comparative construction

In (37), the scale reversal comes about due to a comparative: *I have read more of scripture than I can remember* is stronger (and entails) than *I have read more of scripture than I can tell*—while in upward entailing environments *telling about what one reads* entails *remembering what one reads*:

(37) and ic hæbbe me sælf gesegen on hæalgum bocum gewriten ma þonne
and I have my self seen in holy books written more than
ic areccam mage, oððe **furðum gemunan** mage.
I tell can or furðum **remember** can

'*and I myself have seen written in holy books more than I can tell, or even remember.*'

(O4/p4, St Augustine's Soliloquies, 'cosolilo'; cosolilo,Solil_3:66.26.927)

**Negation in matrix clause**

In the two following data, *furðon* has to scope out of its clause and above the negation in the embedding/matrix clause:

(38) Ne nan ne gedyrstlæce, þæt he ænig þing syndries hæbbe oðþe
nor no.one not dare that he any thing separate have or
**furðon þæt word gecweþe**, þæt he agen hæbbe.
furðon **that word speak** that he property has
'*No one should dare to have anything private, or even speak of owning property.*'

(O3/p3, Benedictine Rule, 'cobenrul.o3'; cobenrul,BenR:33.57.7.704)

**Prepositions *ær* ('before') and *butan* ('without')**

Here, I will limit the discussion to show only (39) (with *ær*), where *furðon* associates with weak elements in the scope of the DE-operator preposition *ær* ('before'). *Furðon* is also in the preposition's surface scope. The prejacent (reconstructed as *before our deeds are thought by us, God knows about them*) is ranked as stronger (and entailing) weaker proposition that are overtly in the context (*before our deeds become reality*), cf. (39):

(39) He gesihð eall ure weorc ge good ge yfel, ær hi gewordene sien,
he sees all our works both good and evil before they become are
oððe **furðum** geþoht;
or furðum thought
'*He knows about all our actions, both good and evil, before we do them or even think of them.*'

(O2/p1, Boethius, Consolation, 'coboeth.o2'; coboeth,Bo:41.145.13.2894)

**Other forms and contexts of negation**

Negation as *un-* prefix to adjective:

(40) Be ðys ilcan cwæð Salomon to iongum monnum: ðu gionga, bio
about that same said Salomon to young men you youngins be
ðe uniðe to clipianne & to læranne, ge **furðum** ðina agna
there uneasy to address and to teach, yea furðum your.GEN own
spræca,
speech
'*You young people be uneasy/careful in speaking and teaching, yeah, even your own speech/language.*'

(O2/p2, Cura Pastoralis, 'cocura.o2'; cocura,CP:49.385.9.2603)

VP-Stripping/bare subject (not headed by auxiliary):

(41) elles ic ne dorste on his andweardnysse sprecan: ne **furþon** ure ealdor.
else I not dared in his presence speak not furþon our master
'*From the time that his apostle Bartholomew came to us, I am tormented with burning chains and, therefore, I speak what he commands me. Other than that, I do not dare speak in his presence, nor even our master, the devil, dare to do so.*'

(O3/p2, Ælfric's Cath. Homs. I, 'cocathom1.o3';
cocathom1,ÆCHom_I,_31:443.134.6188)

**Challenging data—possible particularizer *furðon***

The following two examples are a bit more challenging. They do not behave like other 'standard' uses of *furðon*. There are a number of interpretive avenues and I will cover a number of relevant options. Consider the data in (42)[14] and (43):

(42) Þonne sio sealf gesoden sie **furþum** nim þonne sealtes þry men,
When the salve cooked is furþum take then salt.GEN three measures

'*When the salve is boiled, then take three measures of salt.*'

(O2/p1, Bald's Leechbook, 'colaece.o2'; colaece,Lch_II_[1]:50.2.2.1669)

(43) Wiþ inwunde magan nim gate meoluc þonne hio **furþum** amolcen
With hurting stomach take goat milk as/when it furþum curdled
sie,
is

[14] For (42), according to the syntactic annotation, *furðon* is part of the *gesoden*/'boiled' clause.

'*For stomach wound pain, take goat milk when it is curdled.*'

(O2/p1, Bald's Leechbook, 'colaece.o2'; colaece,Lch_II_[2]:9.1.1.2252)

The first option is that (42) and (43) are in fact standard uses of *furðon*. If this is so, then the semantics are as in previous examples: The property of 'being boiled/cooked' is a weak element next to the stronger alternatives 'cooking/boiling/simmering for a while'. Due to the scale reversal of the factual conditional (*Þonne*, 'when' and here also 'as soon as'), an early point in time at which to add salt to the concoction is stronger than a later time in the cooking/boiling/simmering process. In other words, on such a reading *furðon* associates with a weak element across a scale-reversing operator; it paraphrases as German *auch nur* ('so much as', lit. 'also only'): "When the lotion is even (=as much as) cooked/boiled, you add salt." However, this is a somewhat peculiar instruction in a recipe, especially since *sie gesoden* 'be cooked/boiled' is not to be plausibly taken as gradable property (neither is *sie amolcen*, 'be curdled' in (43)). From a PDE perspective one would—at least for (42)—expect progressive aspect (which during the O2 period appears to have not grammaticalized in its PDE form of course). The idea is that something like PDE 'as soon as the lotion is boiling/cooking, add salt' would be expected; 'as soon as the lotion is cooked/boiled, add salt' seems underspecified as it is not clear whether the person following the recipe is to add salt as soon as the lotion is cooking, or whether there is some leeway and the salt can be added considerably later, e.g. when the lotion has cooled down—since it still has the property of having been boiled/cooked (at some point).

A second option is to interpret *furðon* here as a particularizer of exactness. However, a similar problem arises: Due to the ungradable nature of the properties 'be boiled' and 'be curdled', relevant alternatives to reject are difficult to plausibly generate given the context is instructions from a recipe. In such a context, one would expect discrete stages during the execution of the 'program', which need to hold at their relevant times in order for the recipe to work. Thus, *furðon* cannot be interpreted as rejecting the alternative to the (putatively) particularized property 'be boiled/cooked', i.e. 'be (not yet) boiled/cooked', since this would be incoherent with what speakers know about recipes and how boiling ingredients works. As an example, it would be plausible to particularize e.g. the point milk starts boiling as

stages/points in time before/after can be rejected.

Another way of looking at *furðon* in these two uses is to consider them as archaic uses and, as such, as glimpses into earlier stages of *furðon*, i.e. into its pre-SAO origins. Under such a view, the above contexts make for 'open/favorable contexts' permitting "Constant Entailments" under both a conservative and an innovative interpretation (Beck, 2012). Crucially, under the conservative interpretation, *furðon* could be reasonably reconstructed to function to particularize a projected endpoint of an event. Under such a reading, the *boiling/cooking* in (42) and the *curdling* (43)—in contrast to the above argument—need to be interpreted as telic degree predicates ('accomplishment', (cf. Dowty, 1979)) and *furðon* focuses on the culmination, i.e. the endpoint of the boiling or curdling process (Maienborn, 2011; Kennedy, 2012). Importantly, such a reading would be compatible with the pragmatics of the recipe context. In conclusion, the contexts above allow for both a conservative and an innovative interpretation. Therefore, these contexts constitute 'Constant-Entailments-context'—permitting both old and new interpretations. A path-based origin for the semantics of *furðon* seems particularly plausible given its etymology as a directional adverb (OED, 2023c, 2024c; Bosworth-Toller, 2024b,a).

## 3.6 Diachronic discussion

In this section, I will discuss possible trajectories for the emergence of *furðon*$_{\text{SAO}}$ with particular attention to its scalar presupposition. I will first turn to etymological and historical dictionaries to condense the lexicographical discussions and notes regarding the origin of *furðon*. Second, I will discuss three proposals that are able to explain the emergence of *furðon*$_{\text{SAO}}$. Each represents an attempt in bridging the empirical gap between etymological evidence and the Old English corpus data introduced in the previous section. As a consequence, these proposals are fundamentally reconstructive in nature. Finally, I will close the diachronic debate with a number of typological notes.

### 3.6.1 Etymological evidence pre-OE

In the following, I will draw from various historical and etymological dictionaries. The goal is to identify likely candidates for the origin of *furþum*$_{\text{SAO}}$. I will begin with OE dictionaries and then move on to etymological literature in order reach beyond the OE period.

**Origins of *furðon*, (Old) English etymological dictionaries:** *Furðon* has its origins in a spatial adverb. Bosworth and Toller (1848, 349), with the entry for the headword *furþum* (*adv.*; paraphrases 'also', 'even', 'indeed', 'at first'), point to the adjective *furþum-lic*. This adjective, *furþum-lic* (with the paraphrase 'luxurious', 'indulgent'), is suggested to be derived from the adverb *furþ* (=*forþ*; 'forth', 'onwards') plus a dative suffix *-um* to form *furþum* (=*forþum*) whose paraphrase is given as "*dat. to onwards, excessive ?*" (Bosworth and Toller, 1848, 320ff, 349f). The relation to a dative suffix is underlined by Bosworth and Toller elsewhere, e.g. entry for *furþan* (*adv.*, p. 349), and *forþon*, (repetition and "v[ide] *furþum*" (p. 323, ibid.). The forms *forðan, forþan* do not have an entry in Bosworth and Toller (1848)[15]. The paraphrases Bosworth and Toller (1848) list for the entry for *forþ* include "FORTH, *thence*, *hence*, *forwards*, *onwards*, *henceforth*, *further*, *still*". After a number of references, the entry closes with the reference "v. forþon = furþum, *dat. of an old adj. forþ, furþum-lîc*" (Bosworth and Toller, 1848, 320).[16]

Clark Hall (1916, Anglo-Saxon dictionary) follows Bosworth and Toller in taking *furðum* as the default variant; various other spellings refer to the main entry: "**forðon** (*MH*) = furðum" and "**forðum** = furðum" (p. 117), "**furðan**, furðon = furðum" (p. 124). With the main entry as "**furðum** (-an,-on) adv. *even, exactly, quite, already, just as, at first*, Bl, Mt; AO, CP: further, previously. syððan f. just as soon as. ['*forthen*']" (Clark Hall, 1916, p. 125) Stratmann (1878, Dictionary of Old English) has this entry for "***furþen***, A.Sax. furðon, furðum, *primo, quidem:* 'þer ne môt beon furþan ôn stef ofer itel' [≈'There not might be *furðon* a stove over the fire'] [...]" (p. 233).

[15] The two entries for the form *for-ðam* are for the causative conjunction and adverb, respectively; 'for that reason, because', (Bosworth and Toller, 1848, 320f).

[16] Bosworth and Toller (1848, 320) make reference to *forþ* (*prep.*) with the paraphrases *out of, forth* and the note "used in composition".

Holthausen (1974, p. 119; Altenglisches Etymologisches Wörterbuch) provides the following German entry[17]: "**furðum** 'eben, genau, ganz; schon, zuerst; weiter, früher', ais. ∼'früher', zu forð"—unfortunately without any further details. It is noteworthy that Holthausen offers the German particularizer *eben* but not the German scalar additive particle *sogar* (or *auch nur*, (nicht) einmal). Moreover, Holthausen (1974, p. 119) suggests in this entry that *furþum* developed to *forð*, which, in turn, developed to *fort* (cf. Holthausen, 1974, p. 113) with the meaning of German *bis* (PDE 'until'). As other paraphrases for *forð* Holthausen (1974) offers *von dannen, von hinnen*, which have a source-oriented meaning, as well as other, temporal-continuative German adverbials.

For completeness' sake: Stratmann (1867, Dictionary of Old English) (cf. reference to Stratmann (1878) above), (Tiefenbach, 2010, Altsächsisches Handwörterbuch/Concise Old Saxon Dictionary) do not have entries for (forms of) *furðon*. Stratmann and Bradley (1891, p. 366) (Middle English dictionary) lists *furþen* with the paraphrase 'in the first place' and gives *furðon* and *furðum* as OE forms.

**Pre-OE; (Proto-)Germanic, Gothic:** In turn, the OE adverb *forþ* is derived from the Germanic (reconstructed) **forþ-/*forþ* (OED, 2023c) and represented in Gothic (Goth.)[18] as *faur* (OED, 2024c). According to the Gothic Etymological Dictionary, Gothic *faur* (adv/prep 'in front of') is related to OE/OS prep. *for* (ModE 'in front of') and Proto-Indo-European (PIE) *pṛ-* ('forward') (df. (Lehmann, 1986, 110) and discussion below). For *faura* (adv/prep 'in front (of)'), Lehmann (1986, 110f) points to OE *fore* (prep 'in front of', 'before'). The indices for Goth. *faur*, *faura*, etc. as well as OE forþ (p. 480), *for(d/ð)*, *forðian* (p. 549), and *furh* (p. 550) in Orel (2003) point to the following related Proto-Germanic entries:

(44) a. **fur(a)* – "prep., adv.: Goth *faur* 'in front of, before', [...] OE *fór* id. [i.e. also 'in front of, before']" (p. 119),

b. **furai* – adv.: Goth *faura* 'ahead, before, in front of', OE *fóre* 'before,

[17] Translation of Holthausen (1974, p. 119)'s entry: "**furðum** 'eben [∼'exact(ly)'], genau [∼'exact(ly)'], ganz [∼'full(ly)/whole']; schon [∼'already'], zuerst [∼'first']; weiter[∼'further'], früher[∼'earlier']', ais. ∼'früher'[∼'earlier'], zu forð[∼'to forð']" ; "ais." = Old Islandic.

[18] Although based on the only representative of the now-extinct East Germanic branch, the discussion of Gothic is interesting as Gothic constitutes the historically most recent record of Germanic data.

aforetime"' (p. 119),

c. **furþ(a)* – "adv.: OE forð 'forth, forwards', [...] OS forth id., [...] cf. also Goth faurþis 'earlier, beforehand'."[19] (p. 121).

(Orel, 2003)

For completeness' sake and very briefly, "nearby likely candidates" for cognates/etymons include the following:

(45) a. **furxaz* – adj.: does not have references to OE or Gothic (p. 120),

b. **furnaz* – adj.: related to 'old', e.g. "OS adv. *forn* 'previously"', cf. also prior entry for *furna-mannz* (p. 120),

c. **furistaz* – num., OE *fyrest*, OS *fyrest*; "Superlative formation based on **fur(a)*", (Orel, 2003, p. 120) (p. 121).

(Orel, 2003)

Finally, as far as the wider 'Germanic landscape' is concerned, Torp and Falk (1909) (Wortschatz der Germanischen Spracheinheit; ∼'lexicon of Germanic') have entries for the following headwords: *fura, fur* (p. 231; related to Goth. faúra), *furî* (p. 231; 'pre-', 'for'), *furþa* (p. 232; 'forth'), and *furþera* (p. 232; 'before/fore')).

Coming back to PIE *pr̥-*, Pokorny (1989, p. 813) points to Walde (1973, p. 34) who list their entry for the *furðon*-ancestor ***pr̥-*** as a sub-entry to "3. per-" (p. 29); i.e.: "**E**. ***pr̥-*** 'hervor'"—with the Present Day German paraphrase, the directional adverb *hervor*, requiring the presence of a (possibly covert) SOURCE for a physical movement. Walde (1973) mentions an association with Gothic *faúr* (cf. 'Corrigenda' in volume 3 for spelling *faùr* vs. *faúr*). Further, a number of Germanic derivations are listed, e.g. Old Saxon/Old Frisian *forth, ford*, Anglo-Saxon *forþ* ('forth, forward'); Old Icelandic *forða*/Anglo-Saxon *geforþian* ('bring forth'); comparative **furþera-* as in adv. Old Saxon *furþor, furdor*, Anglo-Saxon *furþer* ('further/farther', German 'weiter'). Mann (1987) ('An Indo-European Comparative Dictionary') lists "proti (proti, protiō) 'forward, toward, against'" which developed into "OE forþ" (p. 995) and cites Walde (1973, p. 38).

Among other etymological dictionaries I consulted, Klein (1971, Comprehensive

[19] "OS" is short for Old Saxon.

Etymological Dictionary), Partridge (1966, Origins. Short Etymological Dictionary) do not have an entries for (forms of) *furðon*[20].

Turning to other historical stages of a number of Germanic languages and skimming the relevant lexicographical literature for an item related to *furðon*—with a scalar additive use—has so far remained unsuccessful. However, the respective languages do have, to varying degrees, related directional adverbs: Köbler's (1982) Low-German Present-Day-German dictionary contains Old Low German *forth* with the translations *vorwärts* (E. 'forward'), *hervor* (E. 'forth'), 'fort' (E. 'forth', 'away'), *fortan* (E. 'continued', 'further (on)'), *weiter* (E. 'farther'); and crucially *sofort* (E. 'immmediately', 'right now')—which is an interesting diachronic tangent as *sofort* can be argued to function as a particularizer over times (a proposition containing *sofort* holds for the immediate future) but nonetheless. While the 'sofort-use' of Low German's *forth* is quite different from *furðon*'s SAO reading, it can be view as testament to the potential for particles derived from *forth* to develop into particularizers/focus particles. Boutkan and Siebinga (2005) have entries for *for-*, and *forth*—both without a use related to *furðon*. For Old Norse (Köbler, 1986), I found the particles *forðum* ('früher'; PDE 'earlier')[21], various entries with the form *fyr* ('vor', PDE 'before/in front of'; 'für', PDE 'for'), and most importantly the comparative *firr* ('weiter', PDE 'further/farther'; 'ferner', PDE 'additionally, moreover'). The latter, *firr*, seems to have an additive use with 'ferner'. Unfortunately, de Vries (1961) ('Old Norse etymological dictionary') does not confirm any relevant etymologies. Beyond the entries marginally related to *furðon* noted above, there is no indication that any of the older stages of the Germanic languages had an SAO related to *furðon*.

As an interim conclusion, the lexicographical literature seems to agree for *furðon* to have its origin in a *forth*-adverbial. Going by the forms that are included in the relevant entries in Orel (2003), the common thread seems to be the paraphrases 'forth', 'forward', 'in front of'. Note also that the superlative form (45-c) (cf. ModE *first*) does not seem to be a match with *furðon* due to the superlative morphology. Going by the **fur* root as suggested by Orel (2003) and picking up the idea that

[20] Heidermanns (1993) ('Germanische Primäradjective', ∼'Germanic primary adjectives') does not contain a clue for the origin of *furðon*.

[21] German translations by Köbler (1986); English paraphrases provided by me.

the *-um* ending is due to a dative morphology (Bosworth and Toller, 1848, 320), I take the form *furþum* as original form of *furðon*. I follow this convention in the discussion below: For pre-SAO uses of the particle, I will use the form *furþum*. As far as the semantics of *furðon*'s predecessor is concerned there are two types of uses: On the one hand, there are 'proximal' or 'SOURCE uses' such as for PDG *hervor* in (46) where what is under discussion is the SOURCE of a movement:

(46) Der Bär kroch aus seiner Höhle hervor.
the bear crawled out of.his cave forth
'*The bear crawled forth from/out of its cave.*'

On the other hand, there are 'distal/GOAL uses' as in (47) where the goal of a movement is under discussion.

(47) Richard went forth to the river.

With the availability of these two uses, two separate trajectories for the emergence of *furðon* as a SAO open up: In a nutshell, taking proximal uses as the point of departure, *furðon*$_{\text{SAO}}$ emerges in a transparent focus construction under negation and maximizes its presupposition by taking on the duties of a covert/tacit *even*. As far as the presuppositional profile of *furþum* is concerned, it requires a SOURCE and a path of movement. Under negation, the path traveled from a source constitutes a weak element in the relevant focus construction (cf. Section 3.6.2 for a more detailed discussion). I call this proposal 'weak *furðon* first' (WFF). An alternative proposal taking distal uses as the point of departure, has *furðon*$_{\text{SAO}}$ arise similarly to *even*. I call this proposal 'strong *furðon* first' (SFF). Both of these (competing) proposals will be fleshed out and discussed in more detail in the next section.

### 3.6.2 The emergence of scalar additive *furðon*

In this section, I will discuss three proposals that can explain the emergence of *furðon*$_{\text{SAO}}$ and its scalar presupposition, Proposals #1 through #3. With Proposal #1, I will begin with briefly touching on an obvious candidate based on conventionalization of pragmatic inferences ('Generalized Invited INferences', 'GIIN'). The two further proposals, #2 and #3, are motivated by the attempt to reconcile the

above etymological evidence and the OE linguistic evidence. The first and favored Proposal #2—I will call it the 'weak-*furðon*-first' proposal (WFF)—is motivated by two factors: On the one hand, there is the requirement of a SOURCE in uses of *furþum* (PDE '*forth*'). On the other hand, this proposal tries to account for the high ratio of weak *furðon*s in the OE data. This proposal for the emergence of *furðon*$_{\text{SAO}}$ will receive the most attention in this Section. The final proposal (#3), I will also call the 'strong-*furðon*-first' proposal (SFF). It is geared to more directly connect the OE data back to the distal uses (or 'forward-extendedness') of *furðon*$_{\text{SAO}}$'s predecessors. As this proposal is rather similar to the discussion for *even* (Chapter 2), I will formulate it in broad strokes. Overall, these two latter proposals are more thoroughly worked out based on presupposition satisfaction in tandem with the pragmatics of the surrounding contexts.

**Proposal #1 – Conventionalized Implicatures**

One plausible developmental path starts with the idea that some eventuality e takes place relative to a point of reference y. This can come about by adverbial modification (e.g. **furai*$_{\text{adv}}$, (44-b); **furþ(a)*$_{\text{adv}}$, (44-c)), or with a prepositional head (**fur(a)*$_{\text{adv/prep}}$, (44-a)) for the constituent denoting/referring to y. The contribution of *furþum* is such that the relation is specified as (at least part of) the eventuality 'being-in-front/before/ahead-of' y. The denotation of y could be an entity or a location (of an entity; moreover, it might be a time interval). It is unclear whether *furþ(um)* selects for a goal or a source of the event. As an example, both (48-a) and (48-b) are conceivable uses for an adverbial ('towards', 'forth (from)') or a prepositional meaning ('to', 'forth from')[22]:

(48) a. Falkor walked furþum the food bowl.
b. Falkor walked furþum the bed to the food bowl.

In either case, the assumption can be that the specified location is discourse New, i.e. not Given (cf. Section 2.3.1, p. 33). Moreover, a location that is the goal or source

[22] As a side note, ModE *forth* can modify both events that overtly specify a goal or a source while the respective other remains covert (e.g. *go forth from here*$_{\text{SOURCE}}$ vs. *go forth to the mountains*$_{\text{GOAL}}$).

of an event is conceptually and cognitively a prominent, and arguably, salient point of reference. Based on these assumptions a number of avenues for the development of *furþum*$_{\text{SAO}}$ are plausible: Following König and Traugott (1988); Traugott and Dasher (2002), a GIIN account seems feasible. In essence, pragmatic strengthening led to a conventionalization/lexicalization of (what used to be) implicatures with the result that the triggering of alternatives becomes absorbed as lexical meaning.

Before closing this subsection, another dimension on an implicature-based account opens up by considering the additive meaning component for the adverbial *furþum* noted in the lexicographical literature ('also', 'moreover'). In such a scenario, in contexts of counter-expectation, improbability/unlikelihood becomes absorbed as presuppositional meaning to provide a scalar ordering to alternatives that are available due to a prior additive presupposition.

In conclusion, the trouble with conversation implicatures is that they are hard to pin down in historical data. This problem is exacerbated in the *furðon*-case since the diachronic empirical situation is dire.

### Proposal #2 – Weak *Furðon* First (WFF)

Here, I will introduce a second, also reconstructed, way of modeling the development from *furþum*$_{\text{ADV}}$ to *furþum*$_{\text{SAO}}$. In the following discussion I uses the term 'phase' as a broad term for successive historic time intervals—with the possibility of intermediate overlaps where they are adjoined to one another. I want to be clear that, based on the sparse empirical evidence available, I cannot point to discrete 'stages' and seminal 'shifts' between such stages.

The following proposal is based on the proximal use and centers on the SOURCE component. In order to outline the diachronic change, I suggest more toy examples involving my lazy dog, Falkor:

(49) Falkor came furþum his bed.
Falkor came forth his bed
'Falkor came/moved away from his bed.'

Phase 1: In (49), there is no overt goal. The contribution of *furþum* can be thought of as similar in meaning to an unbounded, directional preposition: For example *towards* as in *x walked towards y* the trajector x travels from some implicit location z

(x's point of departure) in the direction of an overtly given y, the goal/destination.[23] In contrast, for *furþum* (as in *x walked furþum y*) y is the overtly given source of the movement, the goal is left implicit (via a free variable that gets its value from context)—with respect to (49), the value of x corresponds to *Falkor*, for y it is *Falkor's bed*. In addition to a directional meaning, as indicated by the etymological literature, *furþum* also had a non-directional, i.e. stative meaning, ('in front of', 'before', 'at a little distance'). In adverbial use, the *furþum/forth* in (49) can be paraphrased as 'away'. Overall, for this proposal, I focus on a proximal interpretation of *furþum* ('away/forth from the bed (but not far)')—in contrast to a distal interpretation ('far/further away/towards/forth to'; cf. Proposal #3).

What's under discussion here is the question of how much of an effort did Falkor put in/how far did he travel when we called him to the front door (where we keep his harness and leash) in order to go for a walk? The text proposition comes with a number of alternatives: {*F. stayed in bed*, *F. stepped outside of his bed*, *F. came to the hallway*, *F. came to the front door*}. The strongest true proposition is *F. left his bed*. Arguably, there is a scalar implicature that Falkor did not make it any further than out of his bed—that he did not make it into the hallway.[24] Under normal circumstances, in a discourse dedicated to clarifying if everybody is ready to go for a dog walk, it is reasonable to assume that *Falkor* is Given and backgrounded, and

[23] The terms 'trajector', 'figure', 'destination', 'landmark', and 'ground' are borrowed from the preposition literature (Talmy, 1978; Zwarts, 2005; von Stechow, 2006a; Kracht, 2021). I use them here as they lend themselves well for discussing the moving and fixed parts of events and nicely complement the thematic roles terminology (Maienborn, 2011; Maienborn and Schäfer, 2011).

[24] The exhaustification operator EXH contributes the inference that any alternative propositions not entailed by the text proposition do not hold (Chierchia et al., 2011; Crnič, 2013):

(i) $[\![\textbf{exh}]\!]^{g,c}(\mathrm{C}, \mathrm{p}, \mathrm{w}) = 1$ iff $\mathrm{p}(\mathrm{w}) = 1$ and $\forall \mathrm{q} \in \mathrm{C}[\mathrm{p} \not\subseteq \mathrm{q} \rightarrow \mathrm{q}(\mathrm{w})=0]$

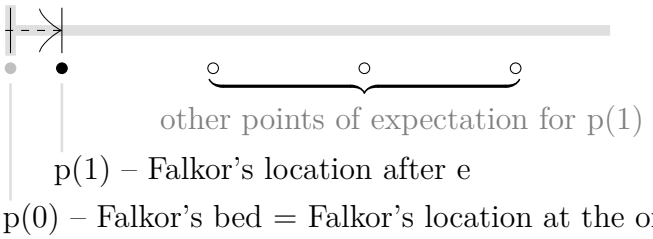
(ii) [EXH C] [F. moved out [of his bed]$_{\mathrm{F}}$] $\rightsquigarrow$ Falkor moved out of his bed but no further.

The implicature in (ii) amounts to the following: { not [Falkor came to the hallway], not [ Falkor came to the front door ] }.

(iii) [EXH C] [ not [F. moved out [of his bed]$_{\mathrm{F}}$] ] $\rightsquigarrow$ { not [Falkor came to the hallway], not [ Falkor came to the front door ] }

if the immediate question is *is Falkor coming (to meet us by the front door)*, then *came* is Given as well. Falkor's whereabouts, his current location, is what we are asking about and, thus, can be assumed to be focused ([his bed]$_{\text{F}}$) and provide the alternatives mentioned above. In other words, *furþum* presupposes a topography of some sort (in keeping with Eckardt (2009)—whose terminology, in fact, is 'topology') (cf. also Krifka, 2008; Büring, 2007; Roberts, 2012; Büring, 2016; Rooth, 2016, for relevant information structural notions). As hinted before, I will think of such a topography as a path with a starting point and an endpoint (cf. Chapter 2). Consider the following schematic (50) for a conceptual overview:

(50)




If we now turn to an example with negation, then Falkor leaving his bed is denied, as in (51). The context remains constant—as in (49), the question is *how far did Falkor move/how far has he made it/did he make it?*

(51) Falkor did not come furþum his bed.
Falkor did not come forth his bed
∼'Falkor didn't [leave his bed]$_{\text{F}}$.'

not [ Falkor come [furþum his bed]$_{\text{F}}$ ]

Phase 2: *Furþum* became analyzed as a focus particle. The following 'sub-developments' seem to be necessarily involved in order for *furþum* to become analyzed as a SAO:

First, the focused point of reference y (in prepositional terms, the 'landmark') should be considered a weak element. This is plausibly the case considering (i) for y (=*Falkor's bed*) to mark the onset of a relevant event (and its path), and (ii) the proposition based on the asserted property being-in-front/before/ahead-of(y) is the weakest next to the alternatives: Any points after the point of departure for the event will entail that the event took place at the starting point. In the sense of Eckardt and Speyer (2016), *furþum* is part of a transparent focus construction—much like French *pas* in "*(Even) il ne marche pas*$_{\text{F}}$ [which] transparently denotes

'Even: he doesn't walk a (single) step'" in the Jespersen Cycle of Negation (Eckardt and Speyer, 2016, 3). As Eckardt and Speyer (2016) explain, a tacit or overt *even* takes scope over the proposition.

Second, to some extent *furþum*'s ('forth') core semantic contribution needs to be 'covered' by e.g. the verb *come/leave*, e.g. by some result state encoding meaning component. The idea here is that the predicate involves a change of state along the lines of *depart*, i.e. from 'there' to 'not-there' (i.e. from 'AT(P(0))' to 'not(AT(P(0)))'). Arguably, this might more easily be the case in contexts under negation (and potentially other, non-negated DE contexts): If the weakest alternative (*Falkor moved away from/left his bed*) is denied, then a hearer can infer that *F. did not move (at all)* (by virtue of the EXH-operator, cf. fn. 24, p. 128). The *furþum* becomes available to be analyzed and interpreted as assigning the presupposition of the point of reference y being the weak scalar item. In other words, *furþum* takes on the role of the tacit *even* which, according to Eckardt and Speyer (2016), discharges the alternatives arising from the focus construction. In accordance with the Avoid Pragmatic Overload (APO) rule (Eckardt, 2009), *furþum* is analyzed as encoding the presuppositions that were formerly contributed by the focus construction.

One more tentative note with respect to Eckardt and Speyer's (2016) discussion of the Jespersen Negation Cycle and focus cline is in order: Potentially this is a case, where, due to *furþum* being recruited as a focus particle, a cyclical focus cline was 'interrupted' as *furþum* was no longer available to go on to conventionalize into a bleached focus construction.

Phase 3: At this stage, *furþum* functions as a SAO, as in (52). It takes wide scope over negation in order to evaluate its host proposition relative to the set of alternatives in C:

(52) Falkor did not come furþum his bed.
Falkor did not come furþum his bed
'Falkor didn't even [leave his bed]$_F$.'/'Falkor didn't as much as [leave his bed]$_F$.'

a. furþum ∼ C [ not [ Falkor come [*out of*] [his bed]]]$_F$]

b. p = not [Falkor came [*out of*] his bed]

c. C = { F. didn't come out of bed, F. didn't come to the hallway, F. didn't come to the front door }

The proposition p in (52-b) is the strongest proposition ("<")—it entails all the alternatives in (52-c): If *F. did not come out of bed* holds, then *F. did not come it to the hallway* holds as well, etc. The above reconstruction has *furðon* grammaticalize into a scalar additive operator under negation. The last step that needs to happen in order to arrive at the picture we have for Old English is that weak *furðon* generalizes to non-DE contexts.

In conclusion, the advantage is that this account ties in with the quantitative picture regarding *furþum*$_{\text{SAO}}$'s predominantly associating with weak elements across downward entailing operators. This point of view is, of course, based on the assumption that a universal-SAO with a 'weak-to-strong' history, in this case *furðon*, maintains a strong and stable preference for scale-reversing contexts.

### Proposal #3 – Strong *Furðon* First (SFF)

A third possible trajectory for the emergence on *furðon*$_{\text{SAO}}$ is, in contrast to Proposal #2, based on the distal/GOAL-oriented use of *furþum*$_{\text{ADV}}$'s meaning. An adequate paraphrase for *furþum*, the predecessor for *furðon*$_{\text{SAO}}$, is PDE *towards, until* (i.e. *forth to* rather than *forth from*). The latter, *until*, has been observed to have an *even*-semantics in Spanish (Remus Gergel, p.c.):

(53) Más de 2 años y no ha entendido el mensaje? Paz con los
more than 2 years and no have understand the message peace with those
que quieran y guerra a los que no, desde el principio lo ha
who want and war to those who not from the beginning it has
dicho y **hasta** un niño lo entiende. Y ud de niños sí que
said and even a child it understands and you of children yes that
sabe bastante...
know enough
"More than 2 years and they haven't understood the message? Peace with those who want it and war with those who don't, they've said it from the beginning and even a child understands that. And you certainly know a lot about children..."
(https://x.com/GalandProvincia/status/1865512112329556049, X, 2024)[25]

As for Proposal #2, I use the broad term 'phase' for successive historic time intervals—

[25] Colloquial paraphrase provided by Google Gemini 1.5 Flash; Dec. 15, 2024.

without committing to discrete stages or seminal semantic shifts between such stages. Next, I argue for Proposal-#3/SFF, sketching the necessary developments for *furðon*$_{\text{SAO}}$ to emerge from *furþum*.

Phase 1: The adverbial *furþum* presupposes paths and occurs with movement predicates. In particular, in its goal-oriented use, similar to *even*$_{\text{SCA}}$, it occurs with the endpoint of the relevant path, which is feasibly discourse-new. There is a minute shift from 'towards, until GOAL' to 'all way to GOAL'. As discussed for *even*, if some figure travels to the endpoint of a path (i.e. from p(0) to p(1)), it is entailed that the figure travels through intermediate points p(i). With a focus on the endpoint bringing about a focus alternative that is stronger then the alternatives generated from intermediate points, there is a scalar ordering of alternatives contributed by path that *furþum* presupposes. *Furþum* becomes analyzed as assigning the scalar presupposition itself. The additive presuppositions (i.e. *other alternatives hold in addition to the strongest alternatives*) comes about as a direct consequence of the scalar presupposition. At the end of this development, 'scalar additive *furþum*' has emerged. In other words, charitable hearers adapt their lexicon entries to the effect that *furþum* maximizes its presuppositions over time (cf. Gergel, 2023).

Phase 2: From a path-based semantics, scalar additive *furþum* generalizes to other, non-path-based contexts—associating with strong elements in scale-preserving contexts. As this point, the weaker alternatives need no longer be 'weak via entailment'—they can be pragmatic.

Phase 3: Further, scalar additive *furþum* generalizes to scale-reversing contexts. At this point, OE *furðon*$_{\text{SAO}}$ is fully established.

In conclusion, in the context of the current Proposal #3 *furðon*$_{\text{SAO}}$'s scalar PSP originates from the scalar nature of paths. The scalarity of this presupposition is derived from the semantic strength resulting from entailment facts associated with paths. This scalarity becomes encoded as the scalar presupposition of *furðon*$_{\text{SAO}}$. The additive presupposition comes about as a consequence of the scalar PSP.

As a side note, a somewhat similar trajectory might be relevant for additive uses of particles related to *furðon* such as Old Norse comparative *firr* (cf. Köbler, 1986, and discussion in Section 3.6.1), and PDE *further (more)*—with the caveat that these uses never developed a 'hard coded' scalar presupposition.

**Discussion**

In the above section, I have introduced three proposals that can explain the emergence of *furðon*$_{\text{SAO}}$. All three endeavor to bridge the gap between the lexicographical sources and the Old English corpus data. The advantage of Proposal #1 is that the assumption of conversational implicatures becoming lexicalized is permissible without the availability of supporting empirical evidence. Grammaticalization literature is a treasure trove for cases in which the conventionalization of invited inferences is a successful model for explaining semantic change. Proposals #2 and #3 come with the advantage that they—in line with the overarching goal of this dissertation—allow to establish a direct connection between the scalar presuppositions of *furðon*$_{\text{SAO}}$ and spatial properties of the semantic objects, i.e. paths, the non-scalar predecessor *furþum* operated on. Proposal #2's advantage is that it might offer an explanation for the majority weak uses in the Old English corpus data—under the assumption that a universal SAO's genesis as a weak SAO would maintain a preference for weak uses after having been extended/generalized to strong uses. This last point also marks the major shortfall of this proposal, namely having to accept the emergence of a weak SAO with an ensuing extension to strong uses—a typologically uncommon trajectory as has been suggested by (cf. Gast and van der Auwera, 2011). Proposal #3's advantage is that the diachronic path is quite similar to the emergence of *even*$_{\text{SAO}}$ (as discussed in Chapter 2) and, therefore, has a theoretical—albeit historically later—antecedent. Proposals #2 and #3 appear to be the most promising candidates for a successful modeling of *furðon*$_{\text{SAO}}$'s emergence as they rest on plausible semantic shifts, which can be threaded together to make for a cohesive path/cline of semantic change. Despite Proposal #2 constituting the typologically uncommon variant, it is—at this juncture—the more successful in explaining the imbalance in the OE data which clearly favors weak uses. A series of experimental studies ought to be able to confirm/reject the above, competing proposals—including #1, which had its validity supported by experimental work in Gergel et al. (2021).

To connect to the typological discussion, I refer back to Crnič (2011) who proposes a number of different classes of SAOs (cf. Chapter 2, Section 2.1.1.3, p. 17ff; as well as Crnič (2011)). In particular, *even* is said to have both strong and weak uses (rather than separate entries in the lexicon). As the empirical discussion above

has shown, *furþum*$_{\text{SAO}}$ can also have both weak and strong uses—it is a universal SAO like *even*$_{\text{SAO}}$. The patterns described in Section 2.1.1.3 are the basis for the typological generalizations repeated below. These generalizations have been the basis for some tentative musings by Gast and van der Auwera (2011) as well as Crnič (2011):

(54) Implicational relation for strong scalar particles

There is a scalar particle that is only strong in the language
⇒ There is a scalar particles [sic!] that is only weak in the language

(Crnič, 2011, his (28))

(55) Implicational relation for weak scalar particles

There is a scalar particle that may only be weak and that only occurs in the immediate scope of negation in the language ⇒ No other weak scalar particle that may only be weak occurs in the immediate scope of negation in the language

(Crnič, 2011, his (29))

Crnič (2011) draws on Gast and van der Auwera's (2011) typological investigation which surveyed 40 European languages. In Gast and van der Auwera's (2011) terms, "if an SAO can be used in scale-preserving contexts [...] and in nonnegative scale-reversing contexts [...], it can also be used in negative scale-reversing contexts" (Gast and van der Auwera, 2011, 25).

In summary, Crnič's and Gast and van der Auwera's statements are pertaining to the synchronic status quo of languages. Bringing in a diachronic perspective, the following can be concluded—in particular with respect to (54): If Proposal #3 is on the right track and *furðon*$_{\text{SAO}}$ developed as an initially strong-only SAO—without the availability of a separate and distinct weak-only SAO (like *even*$_{\text{SAO}}$ did), then this seems to be an 'unstable situation' in a language and the newly-emerged SAO is bound to generalize to scale-reversing contexts (—otherwise, one would expect (54) to be the case). This is plausible under the Maximize-Presupposition-Marking-over-Time paradigm (cf. Gergel, 2023)[26]: Over the course of development

[26] Remember, that according to Crnič (2011) *even*$_{\text{SAO}}$ is morphologically complex; weak *even* consists of EVEN and SOLO and, thus, presupposes more than strong uses of *even* (consisting of

from the adverbial *furþum* ('forth') onward, the particle constantly maximizes its presuppositions.

Briefly turning to Proposal #2: Neither Gast and van der Auwera (2011, 34) suggesting that weak operators tend not to develop into strong operators nor the typological generalizations/implicational relations that both Crnič (2011) and Gast and van der Auwera (2011) offer speak against *furðon*$_{\text{SAO}}$ developing as a weak SAO before generalizing to strong, scale-preserving contexts.

## 3.7 Conclusion and further development

In summary, *furðon* can be shown to have its scalar presupposition derived from its adverbial ancestor *furþum* whose semantics, in turn, presuppose a scalar object (a 'topography', e.g. a path). The emergence of *furðon*$_{\text{SAO}}$ can be modeled along two routes; more specifically, from two different points of departure: First, based on the relative proximity between a trajector of a movement event and the corresponding source of the event (Proposal #2, 'Weak-*Furðon*-First'). Second, based on a distal use of *furþum* and the points along a path traveled by a trajector on its way to the goal of the relevant movement event (Proposal #3, 'Strong-*Furðon*-First'). At any rate, if either of Proposals #2 and #3 are on the right track, then the universal focus particle *furðon* inherited its scalar semantics from the scalar nature of the spatio-temporal properties of events. In this regard, *furþum* is similar to *even* (Chapter 2). In conclusion, with respect to *furðon*$_{\text{SAO}}$, this chapter is in support of the main hypothesis of this dissertation.

If Proposal #3/SFF can be confirmed, *furðon*$_{\text{SAO}}$ shares another similarity with *even* in emerging as a strong operator and generalizing to weak uses (SFF). Should Proposal #2/WFF, turn out to be on the right track, then *furþum*$_{\text{SAO}}$'s and *even*$_{\text{SAO}}$'s developments differ is that they took opposite routes: In contrast to *furþum*$_{\text{SAO}}$'s WFF-cline, *even*$_{\text{SAO}}$ emerged as a strong operator and generalized to weak contexts with a lag (see Ch. 2, Sec. 2.5.4).

It should be stressed that the empirical basis for the above proposals are rather thin. On the one hand, there are etymological surveys and reconstructed Proto-

EVEN only)

Germanic/Indo-European forms and lexemes. On the other hand, there is *furðon* as a fully-fledged universal scalar additive operator at the onset of the available recorded history of English. In its various uses, and those relative to one another, *furðon* remains stable throughout its life. From a quantitative point of view, no diachronic shift in distributional patterns is detectable among all 'strong *furðon*s'. With respect to non-DE/strong *furðon*, it seems even more problematic to attempt to draw conclusions for diachronic variation given the small per-period sets of available data.

The significant change throughout its recorded history in Old English is that *furðon* drastically reduces in frequency—*furðon* seems to die out during late Old English/early Middle English times. However, a plausible trajectory for *furðon* 'after its time' as as scalar additive operator is that it developed into a 'basic' additive operator. This might have happened partly due to high frequency of *forth* OED (2024c) and (*further*; OED (2024e)) being firmly established during (late) Old English. The adverb *forth* shares etymological roots with *furðon*, with the reconstructed Germanic root (variants) **furþ(a)*, **fur(a)* (see also Goth *faur(a)*, *faurþis*).[27] With several of the (late) Old English uses of *furðon* being consistent with a *moreover/furthermore/also* reading, i.e. an additive interpretation, it stands to reason that the scalar presupposition of SAO-*furðon* was relaxed and the relationship needed no longer be one of strength or informativeness.

A further important note in this context is the possibility that *furðon*$_{\text{SAO}}$ continued its life outside the written record (e.g. due to genre restrictions/conventions). It is at least conceivable (but nonetheless speculation) that the driving force behind *furðon*$_{\text{SAO}}$'s life cycle is MaxPMoT (cf. Gergel (2023); Heim (but also 1991)) and weak uses constituted the last stage for *furðon*—as they have a 'maximized presuppositional profile' (in comparison to strong *furðon*). At some point, *furðon*$_{\text{SAO}}$ might have receded into informal usage (and no longer found its way into the written language corpora) and eventually died out altogether; before the new item *even* came on stage (cf. Chapter 2).

Further directions in confirming the above proposals are experimental surveys on

[27] A side note here is that *forth* formed the compound *even-forth* with (pre-SAO) *even* 'straight/steadily onward' (OED, 2023b).

the basis of Gergel et al.'s (2021), Gergel et al.'s (2023) HuDSPa approach (Human Diachronic Simulation Paradigm). An angle in this connection would be to pit two (or more) plausible diachronic trajectories against one another in an experimental setting and elicit a preference for one hypothetical scenario over its competitors. Since multiple discrete shifts in meaning need to succeed one another in order to get from *furþum*$_{\text{ADV}}$ to *furþum*$_{\text{SAO}}$, a whole battery of successive experimental investigations would need to be carried out and informed by one another. Avenues such as this are subject to future work.

# Chapter 4

# German comparative *noch*, an additive, continuative approach

## 4.1 Introduction

In this chapter, I will discuss the semantics and diachronic development of *noch* as a scalar particle used in comparative constructions ('$noch_{\text{COMP}}$'). This chapter will, thus, complete this dissertation's trilogy of investigations of 'high-scale-particles'. With the first two particles—PDE *even* and OE *furðon*—having been analyzed as focus particles, $noch_{\text{COMP}}$ is the non-focus-associating member of the trio. I will argue for a development of $noch_{\text{COMP}}$ as directly derived from the temporal continuous ('$noch_{\text{TEMP}}$') use of *noch* during the Old German period.[1] As a consequence, $noch_{\text{COMP}}$ extends the main claim of this dissertation from spatial scalarity (the sources for $even_{\text{SAO}}$'s and $furðon_{\text{SAO}}$'s scalar presupposition) to temporal scalarity as the source for a scalar presupposition.[2]

Another, independent reason for inclusion of $noch_{\text{COMP}}$ here is that it, as well as English comparative *still*, have been suggested to parallel *sogar*/*even* and make identical contributions in terms of scalarity and likelihood. The argument arises in

[1] Throughout, I will rely on shorthands such as $noch_{\text{COMP}}$ and $noch_{\text{TEMP}}$, as well as $noch_{\text{ADD}}$ ('additive'), $noch_{\text{MARG}}$ ('marginal'); without committing to the notion of these labels serving as lexemes—with corresponding, disjoint lexicon entries—in their own right. The shorthands indicate 'uses' rather than 'particles/adverbs' in their own right.

[2] An earlier version of this chapter has been published as Kopf-Giammanco (2020) in Gergel and Watkins (2019).

comparatives, consider the data in (1) (repeated from above, p. 8, Ch. 1) and (2):

(1) a. Ann has a house. Mary has an even bigger house.

b. Ann has a house. Mary has a bigger house still.

(adapted from Ippolito, 2007, p. 23, fn. 37, her (iii-a), (iv-a))

(2) a. X is a way to solve the problem. A still more efficient way to solve the problem is Y.

b. X is a way to solve the problem. An even more efficient way to solve the problem is Y.

(adapted from Ippolito, 2007, p. 23, fn. 37, her (iii-a), (iv-a))

Ippolito (2007) argues that (1-a) and (1-b) share the inference that Ann's house is big, i.e. that it exceeds a contextually given standard; Similarly for (2-a) and (2-b), which share the inference that X is an efficient way to solve the problem. Umbach (2009b, p. 547) (pointing to a similar suggestion by an anonymous referee) rejects this idea; putting partial blame on German *noch* frequently—and inaccurately—being glossed/translated as *even*. More importantly, she provides the data in (3) to show that *noch/still* and *sogar/even* do not make identical contributions:

(3) A company praising their new web pages:

a. Unsere neuen Webseiten sind noch kundenorientierter.
our new webpages are still customer-friendly.COMP
'*Our new web pages are still more customer-friendly.*'

b. Unsere neuen Webseiten sind sogar kundenorientierter.
our new webpages are even customer-friendly.COMP
'*Our new web pages are even more customer-friendly.*'

(adapted from Umbach, 2009a, p. 547, fn. 3, (i)-(ii))

On the one hand, the contribution of *noch/still* in (3-a) is that the old website was customer-friendly. On the other hand, the same sentence with *sogar/even* instead of *noch/still*, (3-b) entails that it is unlikely that the new websites are more customer-friendly than the old ones.[3] There is no entailment for the standard term of comparison, the quality of the old website, and it exceeding a standard-degree of

[3] This might be facilitated in a context where it is common knowledge that the company under discussion does not bother with customers' experience and has no interest in improving it.

customer-friendliness. As Umbach notes, this is clearly not the same for sentence (3-a) with *noch/still*. I will return to $noch_{\text{COMP}}$'s interaction with *even/sogar* at the end of this chapter. For the further discussion, I adopt the label 'scalar' for $noch_{\text{COMP}}$ by virtue of it requiring a scale for its comparition and maintain the view that $noch_{\text{COMP}}$ and *even/sogar* are similar but nonetheless different beasts.

There is an extensive amount of synchronic work on German *noch* ('still, yet') and its various readings, uses, and its logical equivalents and counterparts (e.g. Bierwirth, 1896; König, 1977, 1991; Löbner, 1989; Krifka, 2000; Ippolito, 2007; Umbach, 2009b,a, 2012; Beck, 2016c,a; Klein, 2018; Beck, 2020). The major classes of *noch*-readings are defined along semantic types and types of scales, as well as syntactic behavior. The major uses of *noch* have been described as temporal, additive, degree/spatial marginal, and degree-related, comparative and modal. By and large, these labels should be clear, however, there are a few blurred lines, inconsistencies and overlaps across the literature. To date, the most comprehensive study of the semantics of *noch* and its various readings is Beck (2020). She puts forwards an analysis of *noch*, taking the temporal continuous uses ('$noch_{\text{TEMP}}$') as the point of departure and develops a convincing uniform account of not only other temporal ('further-to' and 'subconstituent') uses but extends her uniform semantics to marginal readings based on paths and degrees. Beck (2020) stops short of additive and comparative uses of *noch*—the latter being at the center of this chapter—and points to Ippolito (2007) and Umbach (2009b, 2012). There is little diachronic work on the semantics of *noch* addressing how the various readings have come about. In this chapter, I want to address the development of the comparative reading of *noch*. Specifically, I will propose an account for the origins of $noch_{\text{COMP}}$'s scalar presupposition. As a side note, while it is disputed whether *still* has a comparative reading in the first place, its development from an adverb of manner to a temporal continuous adverb has received attention from a diachronic perspective in Schimmelpfennig (2015).

The structure of this chapter is as follows: After a brief introduction to the major uses on *noch* in section 4.2, I will discuss the main contributions to the understanding of the semantics of *noch* in section 4.3. In section 4.4, I will report on an experiment geared towards identifying the presuppositional properties of com-

parative $noch_{\text{COMP}}$ which, in turn, will inform the discussion on the semantics of $noch_{\text{COMP}}$ in section 4.5. Section 4.6, will give an overview of the diachronic data, which is the basis for the discussion of an analysis of diachronic change in section 4.7. Like the previous chapters in this dissertation, the discussion on diachronic change is based on systematic semantic and pragmatic annotation of corpus data (cf. e.g. Gergel et al. (2017b), Gergel et al. (2016), Gergel et al. (2017a)). At the core of the proposal *noch* is undergoing a shift of scales—from a scale of times to a scale of degrees.

## 4.2 Uses of *noch* in PD German

In this section I want to briefly revisit the major uses of present day *noch*:

(4) a. Peter ist noch im Büro.
Peter is still in the office
*'Peter is still at the office.'* (temporal, continuative reading)

b. Assertion: Peter is at the office at t (reference time).

c. presupposition: Peter is at the office at a relevant earlier time t which immediately precedes ('left-abuts') t.

The example in (4-a) shows the temporal use of *noch* ('$noch_{\text{TEMP}}$'). Its semantics will play a central role in the discussion below and I will go into more detail there.

The data in (5-a) is an example for the *further-to* use of $noch_{\text{TEMP}}$:

(5) a. Er duschte noch.
he showered still
*'He took a shower before [doing something else.]'* (*further-to*, temp.)

b. Assertion: He took a shower at the topic time.

c. presupposition: During the immediately preceding time, he did something similar to taking a shower.

(taken and adapted from Beck (2020), her (17'))

The major difference of this use, with respect to what is asserted and presupposed, is that there is no continuation of the event over the course of the presupposed, immediately preceding time and the topic/reference time of the event in the assertion.

Rather, the interpretive effect is that what is asserted takes place in addition to the previous eventualities (of a similar kind, e.g. getting ready to see a movie). Moreover, there is strong sense of future-orientedness: His taking a shower happened before finally doing something else. Beck's implicature-based future orientedness will receive more attention below. In her (2020) analysis, the sense of impeding change in the state of affairs *noch* can introduce is accounted for in the interaction between assertive content, presupposition and scalar implicatures.

(6) is an example for the temporal, subconstituent reading of *noch*. It could be argued that, with respect to (6), out of all the times in the morning, the time that Lydia left is a marginal time:

(6) Lydia ist noch am Vormittag abgereist.
Lydia is still in the morning departed
Intended: *'It was still morning when Lydia left.'*
(temporal, subconstituent reading; (Beck, 2016c, her (23)ff))

Sentence (7-a) shows the comparative use of *noch*. Its semantics and diachronic development are the center of this chapter:

(7) a. Maria ist noch größer als Peter.
Maria is still taller than Peter
*'Maria is still taller than Peter.'* (comparative reading)

b. Ass.: Mary is taller than Peter.

c. ?presupposition: The standard term of comparison, Peter's height, is relatively high.

It has been suggested that the presuppositional contribution of $noch_{\text{COMP}}$ is a condition on the context to the effect that the comparison base exceeds a contextually given standard (e.g. Hofstetter (2013); Klein (2018); and, for *still*, Ippolito (2007)). (8) is modeled after Klein (2018) where, as he notes, no direct comparative is used. While a marginal reading is possible—along both a temporal or a degree scale— (8) is intended with a comparative reading:

(8) Die Geburtenrate liegt noch unter der japanischen.
the birth rate lies still under the Japanese
*The birth rate lies still under the Japanese [birth rate].* (comparative)

a. Ass.: A contextually relevant birth rate is below the Japanese birth rate.

b. ?presupposition: The Japanese birth rate is low.

(taken and adapted from Klein (2018), his (6b))

Klein comments "it is assumed that the birth rate of Japan is already low" (2018, 289)[4]:

The following use is the marginal reading of *noch*: Out of all places that are in Austria, Salzburg is a marginal case.

(9) Salzburg ist noch in Österreich.
Salzburg is still in Austria
intended: *'Salzburg is in Austria but just barely (since it's so close to the border)'* (marginal reading)

The last major reading to be briefly introduced here is the additive use of *noch*:

(10) (Felix hatte (schon) drei Bier.) Jetzt trinkt er noch ein Bier.
Felix had already three beers now drinks he still a beer
*'Felix (already) had three beers. Now he is having another beer.'*
→ additive reading

## 4.3 *Noch$_{comp}$*

Before turning to the discussion of *noch*$_{\text{COMP}}$'s diachronic development, I will put the semantics for present-day *noch*$_{\text{COMP}}$ in place. The following is a review of the literature on *noch*$_{\text{COMP}}$ with a focus on the two most recent analyses of *noch*$_{\text{COMP}}$.

[4] A strategy to force a marginal reading is to include *gerade* ('just') as Umbach's (2012) (i) where the interpretive effect amounts to Berta being a marginal candidate next to all the other individuals that are taller than Adam. The same can be achieved for Klein's example data, cf. (ii). See also (13), below,—fashioned after Umbach's (i)—and parallel data in König (1977).

(i) Berta ist (gerade) noch größer als Adam.
*'Berta is still taller than Adam.'* (Umbach, 2012, her (15b))

(ii) Die Geburtenrate liegt gerade noch unter der japanischen.
the birth rate lies just still under the Japanese
*The birth rate is still just under the Japanese [birth rate]—but just barely.*

The major contributors to the understanding of the semantics of the comparative reading of *noch* are König (1977), Ippolito (2007), Klein (2018)[5], Umbach (2009b,a, 2012), and Hofstetter (2013)[6]. König (1977) analyses $noch_{\text{COMP}}$ from a marginality point of view, i.e. sentences like (11), in König's words, "imply a second comparison involving Peter" (ibid., p. 189) based on the positive form of the adjective in *Peter is tall*:

(11) Maria ist noch größer als Peter.
Maria is still taller than Peter
*'Maria is still taller than Peter.'*

(taken and adapted from König (1977), his (49))

(12) $\langle noch/still,\ Peter\langle\lambda,\ x\langle Maria\ is\ taller\ than\ x\rangle\rangle\rangle$

(taken and adapted from König (1977), his (49'))

The implicit comparison in *Peter is tall* compares *Peter* to a standard degree of tallness (i.e. average body height) and places Peter's height above that standard. (12) "presupposes that Peter is taller than many other people and since the sentence asserts that [Maria] is taller than Peter is also implies that [Maria] is very tall indeed" (König, 1977, p. 189). Out of all individuals that are ranked on the scale of degrees of tallness, Peter is a marginal case (König, 1977). Umbach (2009b), commenting on König (1977): there is a 'reversal of roles' when comparing this analysis ((11) and (12)) to König's analysis of a prototypical marginal reading of *noch* ($noch_{\text{MARG}}$), cf. (13) and (14):

(13) Maria ist (gerade) noch größer als Peter.
Maria ist (just/barely) still taller than Peter
*'Maria is still taller than Peter (but only just).'*

(14) $\langle noch/still,\ Maria\ \langle\lambda, x\langle x\ is\ taller\ than\ Peter\rangle\rangle\rangle$

[5] Klein (2018, 11th chapter) is the published version of two talks given at Tübingen University and what Beck (2020) cites as Klein (2007/2015). Unfortunately, I was not able to track down and put myself in possession of the manuscript(s) for the Tübingen-talks. Klein (p.c.) notes that his (2018) is "wholly overhauled" from what Beck (2020) cites.

[6] Hofstetter (2013) has a focus on the Turkish evaluative intensifier *daha* which, especially in its use in comparatives, shares crucial properties with German *noch*.

(taken and adapted from König (1977), his (47'))

Umbach (2009b) fleshes out König's (1977) proposal and concludes that the role reversal is due to different syntactic structures. In a comparative reading *noch* combines with an AP (11′) and in a marginality reading *noch* combines with a DegP (13′).

(11′) [$_{\text{CP}}$ Maria [$_{\text{VP}}$ ist [$_{\text{DegP}}$ **[$_{\text{AP}}$ noch [$_{\text{AP}}$ größer ]]** [als Adam]]]]

(13′) [$_{\text{CP}}$ Maria [$_{\text{VP}}$ ist **[$_{\text{DegP}}$ noch [$_{\text{DegP}}$ [$_{\text{AP}}$ größer] [als Peter]]]** ]]

(taken and adapted from Umbach (2009b), her (17b.) and (18b.))

Umbach's (2009b) criticism of König's (1977) proposal is that it does not explain why a "comparative may trigger norm-relatedness when combined with comparative *noch*" (cf, section 4.3.1, below).

As mentioned above, Beck (2020) does not extend her uniform 'continuative' analysis to comparative (or additive) *noch* but only offers limited remarks on its semantics. Based on her remarks, it seems like she approaches *noch*$_{\text{COMP}}$ with the assumption that it is a type of marginal use. However, Beck (2020) also shares her reservations regarding this assumption in that *noch*$_{\text{COMP}}$ seems to be different from marginal (and temporal) *noch* by relying on their different respective constituencies. Before turning to the crucial data for this particular point, I will note another observation by Beck, namely that *noch*$_{\text{COMP}}$ can occur in two configurations: It can either go on record as to the difference between the two measures under comparison—or not:

(15) a. Berta ist noch größer.
Berta is still taller
'Berta is even taller.'/%'Berta is taller still.' (comparative–plain)

b. Berta ist noch 3 cm grösser.
Berta is still 3 cm taller
'Berta is another 3 cm taller.' (comparative–differential)

(Beck, 2020, her (107))

In a comparative-differential configuration as in (15-b) and turning to the crucial data in (16), it can be seen that *noch* requires adjacency to the differential measure

in order for the comparative reading to come about, (16-b). If that is not case, either a marginal reading (16-c) or a temporal reading as in (16-a) arises:

(16) a. Noch ist Berta 3 cm grösser.
still is Berta 3 cm taller
'It is still the case that Berta is 3 cm taller.' (temporal)

b. Noch 3 cm ist Berta grösser.
still 3 cm is Berta taller
'Berta is another 3 cm taller.' (comparative)

c. Noch Berta ist (3 cm) grösser.
still Berta is (3 cm) taller
'Berta is still taller (Cecilia isn't taller anymore).' (marginal)

(Beck, 2020, her (108))

From a diachronic perspective, if $noch_{\text{COMP}}$ is taken as an instance of marginal *noch*, a plausible prediction would be that marginal uses can be found attested before comparative uses. The empirical picture does not support a diachronic trajectory based on König's analysis. The comparative use of *noch* is attested considerably sooner than the marginal reading—at least as far as $noch_{\text{MARG}}$ operating on a scale of degrees or paths is concerned.

### 4.3.1 Umbach's (2009b) analysis

The core of Umbach's (2009b) proposal is that $noch_{\text{COMP}}$ is anaphoric and, thus, relates to a preceding comparison. Her discussion is based on anaphoricity and norm-relatedness which is entailed in some, but not all, contexts that $noch_{\text{COMP}}$ can occur in, cf. (17)–(19); with '+/− *NR*' indicating norm relatedness arising (+) or not arising (−).

(17) a. Adam ist größer als Chris. Aber Berta ist NOCH größer (als Adam). − NR
*'Adam is taller than Chris. But Berta is still taller (than Adam).'*

b. Adam ist größer als 1,80m. Aber Berta ist NOCH größer (als Adam).− NR
*'Adam is taller than 1.80m. But Berta is still taller (than Adam).'*

(18) a. Adam ist groß. Aber Berta ist NOCH größer (als Adam). + NR

*'Adam is tall. But Berta is still taller (than Adam).'*

b. Adam ist nicht klein. Aber Berta ist NOCH größer (als Adam). – NR
*'Adam is not small. But Berta is still taller (than Adam).'*

(19) Berta ist NOCH größer als Adam. + NR
*'Berta is still taller than Adam.'*

(taken and adapted from Umbach 2009b, her (19) to (21))

According to Umbach (2009b), neither (17-a), (17-b) nor (18-b) entail that Berta is taller than the norm. However, (18-a) does have norm-relatedness and comes with the corresponding entailment due the antecedent comparison involving the positive form of the same adjective as in the *noch*-sentence. This suggests that norm-relatedness is triggered by $noch_{\text{COMP}}$ "if and only if the comparison base of the antecedent statement is given by the norm of the adjective in the *noch* comparative" (Umbach, 2009b, p. 10). In other words, the antecedent comparison needs to contain (i) the same adjective as the *noch*-sentence and (ii) the adjective must be in the positive form and (iii) provide a standard degree of tallness which (iv) serves as the comparison base of the antecedent comparison. These criteria do not hold for (17-a) and (17-b), where the comparison base of the antecedent is provided by the height of a third individual (*Chris*) or a measure phrase (*1.80m*), and for (18-b), where a different norm is introduced by *klein* ('small').

$Noch_{\text{COMP}}$ occurring in the third type of context ('out of the blue'), shown in (19), entail that both Adam and Berta are tall. Umbach suggests to analyze (19) along the lines of (18-a) and take the antecedent to be accommodated. The accommodated antecedent will be of the form *Adam is taller than the tallness norm*, i.e. composed of the comparison base of the *noch*-sentence and the norm of the adjective.

Umbach's conclusion is that comparative *noch*, in some but not all contexts, entailing norm-relatedness is a consequence of $noch_{\text{COMP}}$ being "anaphoric requiring an antecedent comparison" (Umbach, 2009b, p. 10). It is precisely the anaphoricity for an antecedent comparison that is in contrast to König's (1977) proposal which suggests that an existential presupposition of an additional individual is the contribution of $noch_{\text{COMP}}$. Umbach's (2009b) point of view is that there is an antecedent comparison, not an antecedent individual, with the comparison consisting of a pair

in a degree-relation.

In formalizing the semantics of her analysis, Umbach cites (van der Sandt, 1992) in following the "*presupposition-as-anaphors* paradigm" (Umbach 2009b, p. 11; her italics) and arrives at the interpretation of $noch_{\text{COMP}}$ in (20). The underlined part is the presupposition, where $y$ is provided by the standard term of comparison and d is a free variable bound by the antecedent comparison:

(20) $[\![ [_{\text{AP}} \textit{ noch } [_{\text{AP}} \textit{ größer } ] ] ]\!] = \lambda y\ \lambda x.:\ \underline{\text{ht(y)} > \text{d}}.\ \text{ht(x)} > \text{ht(y)}$

(cf. Umbach (2009a); her (24); her underlining)

(20) applied to (21-a) would yield (21-b). The free variable d can then be bound to one of the contexts in (17) and (18) which provide the degrees in (22): ht(chris), 1.80m, $\text{d}_{\text{S-tall}}$, $\text{d}_{\text{S-small}}$.

(21) a. Berta is NOCH größer als Adam.
*'Berta is still taller than Adam.'*

b. $\underline{\text{ht(adam)} > \text{d}}.\ \text{ht(berta)} > \text{ht(adam)}$

(22) a. $\text{ht(adam)} > \text{ht(chris)}$ 'Adam is taller than Chris.'
b. $\text{ht(adam)} > 1.80\text{m}$ 'Adam is taller than 1.80m.'
c. $\text{ht(adam)} > \text{d}_{\text{S-tall}}$ 'Adam is tall.'
d. $\text{ht(adam)} > \text{d}_{\text{S-small}}$ 'Adam is not small.'

(cf. Umbach (2009a); her (25) and (26); her underlining)

Consequentially, according to Umbach, it will be entailed that Berta is taller than Chris, taller than 1.80m, taller than the tall-standard, or taller than the small-standard. However, that Berta is tall is only entailed by (22-c)—since Adam is tall and it is asserted that Berta is taller than Adam.

With regard to Umbach's interpretation of $noch_{\text{COMP}}$ in (20), she points out a particular shortcoming when compared to König's (1977) proposal, namely the lack of "order—of time or marginality—which is commonly regarded as essential for the meaning of *noch*" (Umbach, 2009b, 12). Furthermore, additive *noch* ($noch_{\text{ADD}}$), as well as the temporal and marginality readings of *noch*, relate to a scale: $Noch_{\text{TEMP}}$

relates to the order of times, $noch_{\text{MARG}}$ relates to the order of marginality (or inverse prototypicality) and $noch_{\text{ADD}}$ relates to the order of mentioning. This order of mentioning is "frequently aligned with a contextually given 'semantic' scale, for example, time in narratives" (Umbach, 2009b, 12). She continues:

> Comparative *noch* requires an antecedent. This is what makes it additive. The related scale is, first of all, to [sic!] the order of mentioning. But the order of mentioning is aligned to the order of degrees given by the adjective of the *noch*-comparative such that the latter preserves the former: If comparison1 one [sic!] precedes comparison2 in mentioning, the comparison subject of comparison1 has to precede the comparison subject and the comparison base of comparison2 with respect to the order of degrees. (Umbach, 2009b, 13)

Essentially, Umbach states that all uses of *noch* are scalar, with the additive use of *noch* relating to the order of mention and the comparative use of *noch* being "subsumed as a particular instance of the additive reading relating primarily to the order of mention and secondarily to the degrees given by the adjective" (Umbach, 2009b, 14).

### 4.3.2 Hofstetter's (2013) analysis

For the following discussion, I turn back to example (11) (=(23), below). Hofstetter (2013) assumes that the presupposition for $noch_{\text{COMP}}$ demands that Peter's height is relatively tall, i.e. exceeds a contextually given standard, regardless of what the context is[7]:

(23) Maria ist noch größer als Peter.
Maria is still taller than Peter
*'Maria is still taller than Peter.'*

(24) a. Ass.: Mary is taller than Peter.

[7] Other important contributors to the understanding of $noch_{\text{COMP}}$ have made this suggestion (e.g. König, 1977; Ippolito, 2007; Klein, 2018). I am focusing on Hofstetter (2013) here because argument is the most fleshed-out formal account for $noch_{\text{COMP}}$.

b. presupposition: The standard term of comparison, Peter's height, is relatively high.

(25) $[\![noch_{\text{COMP}}]\!] = \lambda\text{Comp.Op.} \in D_{<<d,t>,<<d,t>,t>>}.\lambda D_1 \in D_{<d,t>}.\lambda D_2 \in D_{<d,t>}$:
$\underline{\exists d' \in D_d[D_1(d') \,\&\, d' > s_c]}$. Comp.Op. $(D_1)$ $(D_2)$,
where "$s_c$" is a standard degree of height provided by the context
and "Comp.Op." is the comparative operator.[8]

(adapted from Hofstetter (2013), his (2/59); my underlining)

The underlined part in (25) points to the presupposition that the comparison base of the *noch*-comparison exceeds a contextually given standard ($d' > s_c$). In other words, there is no norm-relatedness involved in Hofstetter's semantics for $noch_{\text{COMP}}$ and not the same anaphoricity as in Umbach's (2009b) analysis.

Hofstetter applies the S-family test (Kadmon, 2001) for presupposition but does so only for English *still* in an exemplary fashion and concludes that the test "clearly reveals that all members of the family directly presuppose that Peter is comparatively tall". Unfortunately, Hofstetter does not provide any introspective reasoning as to the projection behavior of the proposed presupposition.[9]

What Hofstetter does provide is judgment on the following sentence when testing if the meaning component in question in cancelable:

(26) *Paul ist noch größer als Peter, aber Peter ist nicht groß.
Paul is still tall.COMP than Peter but Peter is not tall
Intended as: *'*Paul is even/still taller than Peter, but Peter is not tall.'*

(taken and adapted from Hofstetter 2013, 27; his (2/49))

The judgment in (26), (*), is in line with Umbach's (2009b) 'out of the blue'-example

[8] Hofstetter writes this as $[\![still_{\text{evaluative}}]\!]$. However, he states that German *noch* and English *still* share the same properties and are equivalent (Hofstetter, 2013, 31).

[9] It seems odd to rely on English *still* as an equivalent for the German $noch_{\text{COMP}}$ since American English speakers report that for translations of sentences like (23) they immediately get a temporal reading/a temporal reading is salient for them. It seems to be British English that allows *still* as an equivalent for *noch* in comparative uses. Speakers of American English seem to prefer *even* which, in turn, translates into German as *sogar*. In conclusion and want for a 'better equivalent', I will rely on "*still/even*" for the glosses in this paper.

(19). It presupposes an antecedent comparison of the form *Peter is tall* and NRness arises. Consequentially, Hofstetter (2013) sees his intuition confirmed since it is one of the hallmark criteria for presuppositions that they are not cancelable. If antecedents along the lines of Umbach (cf. (17) to (19)) are provided, it can be seen that the presupposition does not arise/can be canceled:

(27) a. Peter ist größer als Phil. Paul ist noch größer als Peter, aber Peter ist nicht groß.
*'Peter is taller than Phil. Paul is still/even taller than Peter, but Peter is not tall.'*

b. Peter ist größer als 1,80m. Paul ist noch größer als Peter, aber Peter ist nicht groß.
*'Peter is taller than 1.80m. Paul is still/even taller than Peter, but Peter is not tall.'*

c. *Peter ist groß. Paul ist noch größer als Peter, aber Peter ist nicht groß.
*'Peter is tall. Paul is still/even taller than Peter, but Peter is not tall.'*

d. Peter ist nicht klein. Paul ist noch größer als Peter, aber Peter ist nicht groß.
*'Peter is not short. Paul is still/even taller than Peter, but Peter is not tall.'*

For all examples in (27), there are Hofstetter's sentence from (26) paired with an antecedent sentence fashioned after Umbach's design. All of these utterances are good and felicitous—except (27-c), where the assertion in the antecedent sentence *Peter ist groß* ('Peter is tall') is in contradiction with the final clause *... aber Peter ist nicht groß* ('...but Peter is not tall'). Conversely, contradicting a presupposition in the other utterances ((27-a), (27-b), (27-d)) should not be possible according to 'purely presuppositional' account in Hofstetter's terms. In other words, (27-a), (27-b), and (27-d) coming out as OK seems to indicate that Hofstetter's presupposition demanding from the context that (with respect to these data) Peter exceeds a contextual standard of tallness seems to be on the wrong track. Looking at the individual utterances in turn reveals that none of these entail that Peter (or Paul) are tall. These bits of introspective data indicate that Hofstetter's entry for $noch_{\text{COMP}}$ is too restrictive regarding its presupposition-component and that Umbach's argument seems to be on the right track.

## 4.4 Experimental study—norm relatedness vs. presupposition

### 4.4.1 Overview and material

In order to get a clearer picture of the presupposition of $noch_{\text{COMP}}$, I designed and carried out an experimental investigation. At the heart of the study, Hofstetter's (2013) analysis, i.e. German $noch_{\text{COMP}}$ triggers the presupposition that the standard term of comparison is taller than a contextually given standard, and Umbach's (2009b) analysis, based on norm-relatedness ('NRness'), were tested against one another.

Table 4.3 shows one out of 16 token sets in total. Every token set consists of four target items which, in Table 4.3, are spread out across the four lines/conditions (for details on the conditions, cf. 4.4.2). Every target item consists of both 'condition' and 'continuation'. The continuation is the same across all conditions.[10] 16 such token sets were created (cf. Appendix B, p. 191f. for an overview).

| cond. no. | condition | | continuation |
|---|---|---|---|
| 1 | A ist groß | und C ist noch größer als A. | Dabei ist A nicht groß. |
| | *'A is tall* | *and C is still taller than A.* | *And yet A is not tall.'* |
| 2 | A ist groß | und C ist größer als A. | Dabei ist A nicht groß. |
| | *'A is tall* | *and C is taller than A.* | *And yet A is not tall.'* |
| 3 | A ist größer als B | und C ist noch größer als A. | Dabei ist A nicht groß. |
| | *'A is taller than B* | *and C is still taller than A.* | *And yet A is not tall.'* |
| 4 | A ist größer als B | und C ist größer als A. | Dabei ist A nicht groß. |
| | *'A is taller than B* | *and C is taller than A.* | *And yet A is not tall.'* |

Table 4.1: 4 conditions per token set

The token sets were based on 16 predicative adjectives, thus, in total there were 64 target items. The 16 token sets were split into 8 antonym pairs (*groß–klein*, 'tall–short' etc.) which shared contexts when possible. Differing contexts were created

[10] In the questionnaires, condition and continuation were presented as one string, without the gaps in Table 4.3. They are included here for ease of representation.

when necessary. Female and male names were counterbalanced (3 female, 3 male), the remaining items are inanimate and unnamed individuals.[11]

The 64 target items were split into eight 'questionnaire groups' which was done in order to prevent response fatigue and reduce questionnaire duration.[12] Every participant rated eight different target items—two from every condition and, at the same time, two from every token set. The 64 items were rotated among the questionnaire groups, for more details I would like to refer to Appendix B (p. 191), specifically Table A.3 (p. 193).

In addition to the target items, 16 fillers were created, which were the same across all questionnaire groups, i.a. across all participants. The fillers were designed based on the following criteria. They were made to 'look' the same; i.e. they consisted of two sentences, the first of which consisting of two clauses (cf. Tab. 4.1, above). No item was to contain (any use of) *noch*. Moreover, the design required to avoid comparatives and predicative adjectives. There were two 'very bad' fillers in order to prevent response fatigue and to test for subject attention. German *auch* ('also/too') was used as a distractor; ten filler items contained *auch*—six did not. Male and female names were again balanced (8+8). The filler items were based on parallel/similar contexts as the test items to the extent possible; for 'good' fillers contrasting contexts were created (*to like/dislike; to play an instrument well/awfully,* etc.).

### 4.4.2 Experimental design, methods and participants

The experiment was based on a two by two design, i.e. two factors with two levels each. The first factor was the proposition *A is tall* being asserted in the first clause (level 1, '`ass`') or not (level 2, '`com`', i.e. for *comparative* instead of *assertion*). The second factor was *noch* being absent (level 1, '`-n`') or present (level 2, '`+n`'). This resulted in four conditions as shown in Table 4.2, below. For ease of representation and readability, I will use conditions 1–4 rather than the factor-level combinations for the discussion below. The four conditions amount to four minimal pairs. The numbering of the four conditions (1 through 4) and their vertical representation in

[11] In the study, full names were used—unlike the 'A', 'B', and 'C' abbreviations in Table 4.1.

[12] This is not to be confused with 'groups', i.e. specific groups completing specific conditions.

the above table does not indicate any ranking as to the predictions for experimental ratings by either Umbach or Hofstetter.

| factor 1 / factor 2 | level 1 | level 2 |
|---|---|---|
| level 1 | `ass_-n` → condition 2 | `com_-n` → condition 4 |
| level 2 | `ass_+n` → condition 1 | `com_+n` → condition 3 |

Table 4.2: 2x2 design (2 factors, 2 levels each) → 4 conditions

Subjects were presented with the respective target item. They were instructed to imagine that the first sentence (condition) and the second sentence (continuation) are uttered by one person in one situation. Their task was described as to judge whether both sentences can be true in one and the same situation. For every item the prompt was *"Können beide Sätze als wahr geäußert werden?"* ('Can both sentences be uttered as true?'). Subjects had a 6-point scale at their disposal ranging from *"Nein, ganz sicher nicht."* ('No, definitely not'; 1 point) to *"Ja, ganz sicher."* ('Yes, definitely'; 6 points), with these two as the only labels, at both ends of the scale. In the following, I will refer to high ratings of (close to) 6 points ('Yes, ..') as 'good' ratings and, vice versa, to low ratings ('No, ..') as 'bad' rating.

### 4.4.3 Predictions

For conditions 1 and 2, both Hofstetter's and Umbach's predictions are that they are rated as 'bad' since the (identical) continuations contradict the assertions.

Condition 3 is the critical condition. Hofstetter's (2013) prediction here is that participants would rate it as 'bad' since the continuation should contradict the presupposition that *A is tall*. This is due to A's height being presupposed as exceeding a contextual standard (cf. (25), p. 151). Arguably, following Hofstetter, one might expect ratings similar to condition 1 where the proposition 'A is tall' is asserted and then contradicted in the continuation. Umbach's prediction for condition 3 is that it should be rated as 'good' since norm relatedness (and the inference that C or A are tall) should not arise here and, thus, there is no contradiction. This is due to the free variable d (cf. (20)) being bound to an antecedent comparison of the form

in (22-a).

For condition 4, both Hofstetter and Umbach predict 'good' ratings—*A is tall* is not asserted (factor 1, level 2), hence no contradiction with the continuation, and *noch* is absent (factor 2, level 2), hence no (putative) presupposition can be triggered (for Hofstetter) or norm relatedness cannot arise (for Umbach).

As mentioned, condition 3 is the critical condition where Hofstetter's (2013) analysis, and Umbach's (2009b) analysis have differing predictions:

Table 4.3 sums up the structure of items in all conditions and the respective predictions in terms of ratings:

| cd_fac_lev | condition | | continuation | Hs.[13] | Um.[14] |
|---|---|---|---|---|---|
| 1_ass_+n | A ist groß | und C ist noch größer als A. | Dabei ist A nicht groß. | bad | bad |
| | *'A is tall* | *and C is still taller than A.* | *And yet A is not tall.'* | | |
| 2_ass_-n | A ist groß | und C ist größer als A. | Dabei ist A nicht groß. | bad | bad |
| | *'A is tall* | *and C is taller than A.* | *And yet A is not tall.'* | | |
| 3_com_+n | A ist größer als B | und C ist noch größer als A. | Dabei ist A nicht groß. | **bad** | **good** |
| | *'A is taller than B* | *and C is still taller than A.* | *And yet A is not tall.'* | | |
| 4_com_-n | A ist größer als B | und C ist größer als A. | Dabei ist A nicht groß. | good | good |
| | *'A is taller than B* | *and C is taller than A.* | *And yet A is not tall.'* | | |

Table 4.3: Experimental design; NR-ness; 4 conditions, 2x2

The design underwent a number of developmental stages and updates due to test runs yielding inconclusive results and revealing confounds. For example, items fashioned after other examples from the existing literature were considered (e.g. (26) with adversative *aber*, 'but'), as well as weaker formulations in the prompts were considered instead of asking for truth judgments (i.e. tapping into participants' logical/structural thinking). The latter decision was made in order to avoid issues of (non-)accommodation and processing effects. Further, attempts at fashioning the continuation more idiomatic or more 'natural'—by inserting e.g. *gar* (e.g. *Dabei ist A gar nicht groß*)—were discarded due the potential confounding effects.[15]

[15] The particle *gar* would, in fact, make the continuation come across as more idiomatic. However due its somewhat unclear semantics as a discourse particle and it being a crucial component in the formation of the German scalar additive particle *sogar* (Eckardt and Speyer, 2016, cf.), it seemed safer to err on the side of caution in this experimental context. Due to the 2x2 design of minimal pairs and the resulting look at relative acceptability, overall idiomaticity or 'naturalness' of experimental items is not the main concern.

The questionnaires were compiled and published on SoSci (2019) which provides a singly survey link and randomly allots questionnaires if participants request the study via the survey link. The survey link was shared on SurveyCircle (Johé, 2019) and various social media platforms.

### 4.4.4 Participants

123 participants completed the study. The following meta-data are reported as available: Participants' ages ranged from 18 to 72 years old at an average age of 26.4 years. 74 identified as female, 35 identified as male, 14 did not identify as either of these two genders. In terms of country of origin ('*Where did you grow up?*'), 81 participants were from Germany, 18 from Austria, one from Switzerland, and one from Italy, the remaining 22 participants did not disclose that information.

### 4.4.5 Data processing

Starting with 123 responses, I excluded subjects (*i*) whose native language was not German (10 participants did not disclose their native language at all and were excluded), (*ii*) who did not give affirmative consent to use their responses, (*iii*) who indicated negative overall commitment to the experiment, (*iv*) who indicated that their responses should not be considered meaningful responses, and (*v*) who admitted to having been distracted multiple times throughout the questionnaire. This resulted in 95 admissible participants. Disregarding filler items, each participant rated 8 items (2 from each of the 4 conditions), resulting in 760 data points overall, with 190 data points for every condition.

### 4.4.6 Results

#### 4.4.6.1 Descriptive statistics

The following provides a first look at the results in terms of descriptive statistics. By and large, the results seem to support Umbach's (2009b) analysis. As expected without any bias for or against any of the analyses, conditions 1 (`ass_+n`) and 2 (`ass_-n`), where the assertion that e.g. *x ist groß* ('x is tall') is contradicted by the continuation, received low ratings when asked if both sentences can be uttered as

| | cd1/ass_+n | cd2/ass_-n | cd3/com_+n | cd4/com_-n |
|---|---|---|---|---|
| N | 190 | 190 | 190 | 190 |
| Mean | 2.058 | 2.005 | 4.621 | 4.847 |
| Median | 1.000 | 1.000 | 5.000 | 5.000 |
| Std Dev | 1.597556 | 1.628117 | 1.640615 | 1.49173 |
| Minimum | 1 | 1 | 1 | 1 |
| Maximum | 6 | 6 | 6 | 6 |

Table 4.4: Descriptive statistics for the 4 conditions

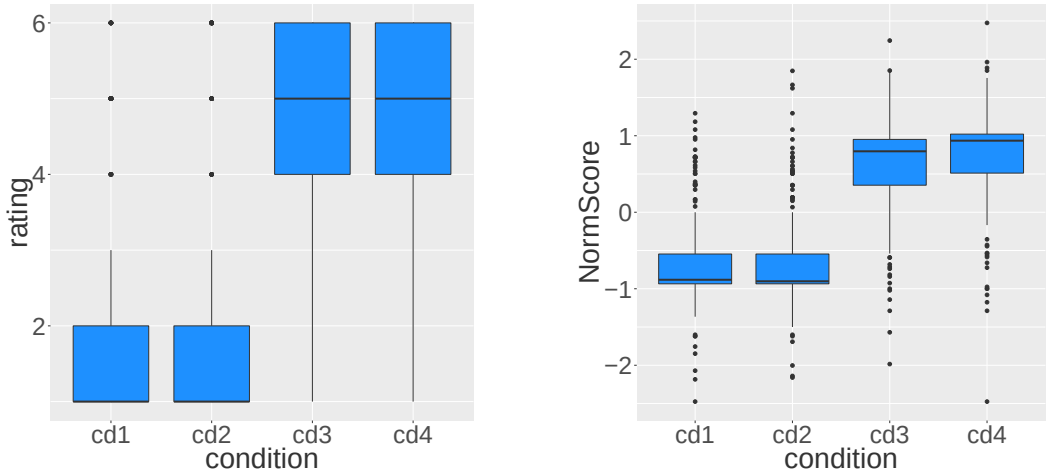



Figure 4.1: Ratings (left) and norm scores (right) over 4 conditions

true—the medians for both conditions are 1.0, cf. Table 4.4 (p. 158) and Fig. 4.1 (p. 158). However, conditions 3 (com_+n) and 4 (com_-n), received rather high ratings with both their medians at 5.0. For more descriptive statistics see Figs. 4.1 and 4.2—for box plots and histograms respectively. See below, section 4.4.6.2ff., for a more detailed discussion of the results based on more detailed statistical analysis.

#### 4.4.6.2 Linear Mixed Effects Model

I built linear mixed effects models for my data with R (R Core Team, 2019)[16] with the lme4-package[17] (Bates et al., 2015). The ratings (from 1 to 6) were z-transformed into norm scores. That is, for every participant I calculated means (part_mean) and standard deviations (part_sd) and then for all eight ratings per participant

[16] R version 3.6.0 (2019-04-26)

[17] lme4 version 1.1-12

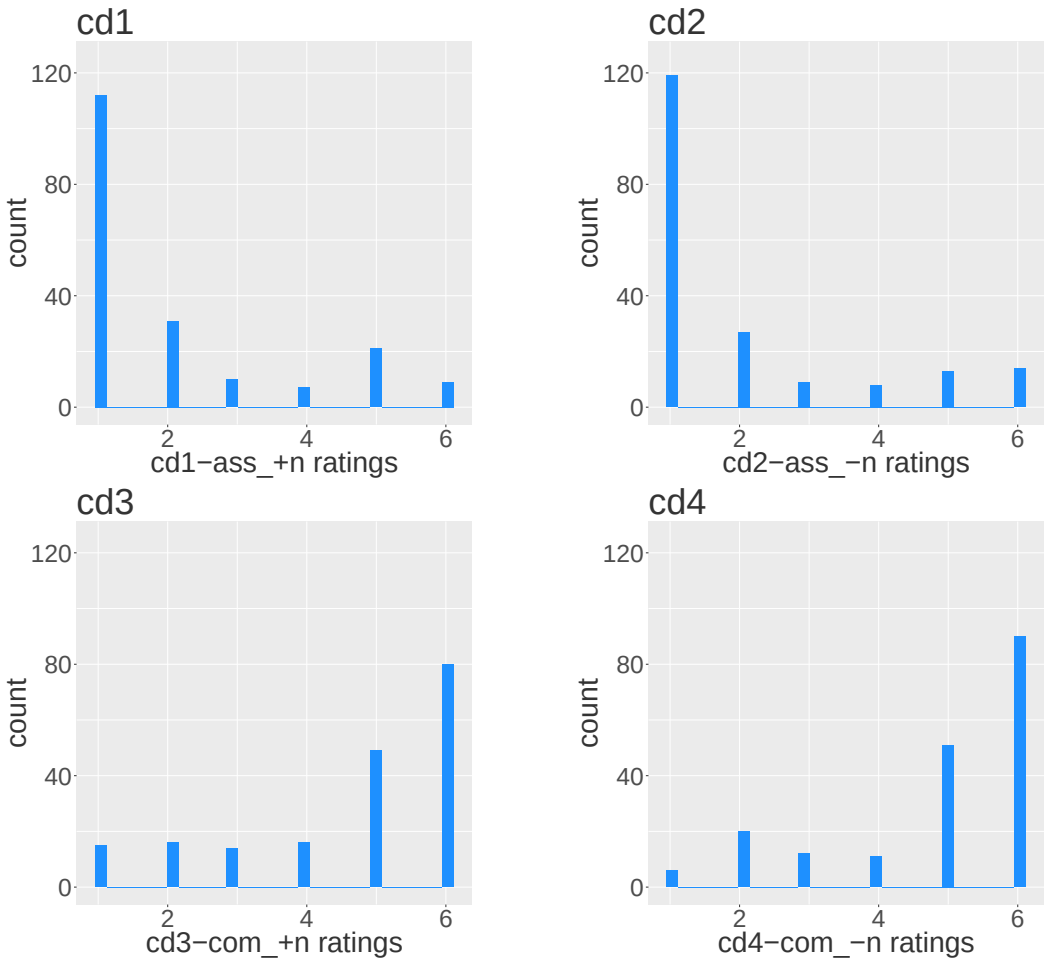



Figure 4.2: Histograms for ratings in 4 conditions (2 factors, 2 levels each)

(cf. Fig. 4.1 for box plots of ratings and norm scores):

(28) norm score = (rating − part_sd) / part_mean

For the further discussion on statistic modeling, the terms *norm score* and *score* will be used synonymously. For model 1, score is taken as a function of an interaction of the fixed effects (factor 1: Assertion of '*x is tall*' (level 1) or not (level 2); factor 2: *noch* absent (level 1) or present (level 2)) and model 2 is a reduced version of model 1, i.e. without the interaction as in model 1. Both models accounts for participants and contexts as random effects assigning random intercepts. I was able to also include random slopes for both factors correlated with the respective two random intercepts, resulting in a maximally random effects structure for my models. The outline of the basic structure for model 1 is in (29) and for model 2 in (30):

(29) $\text{score} \sim \text{fac.1} * \text{fac.2} + (1 + \text{fac.1} * \text{fac.2} \mid \text{partcpt.}) + (1 + \text{fac.1} * \text{fac.2} \mid \text{context}) + \varepsilon$

(30) $\text{score} \sim \text{fac.1} + \text{fac.2} + (1 + \text{fac.1} * \text{fac.2} \mid \text{partcpt.}) + (1 + \text{fac.1} * \text{fac.2} \mid \text{context}) + \varepsilon$

See Table 4.5 for the output for model 1. Note, I used the lmerTest-package[18] (Kuznetsova et al., 2017) to add p-values to the lmer-summary:

```
Fixed effects:
                  Estimate   Std. Error         df   t value   Pr(>|t|)
(Interecept)      -0.65142      0.05822   46.21000   -11.190    9.5e-15   ***
fac_1com           1.36396      0.08936   45.32000    15.264    < 2e-16   ***
fac_2+n           -0.01899      0.08184   21.78000    -0.232      0.819
fac_1com:fac_2+n  -0.09008      0.10438   17.99000    -0.863      0.399
```

Table 4.5: R output for `lmer()` call on model 1 (29)

Factor 1, level 2 (`com`) has a significant effect with a t-value at 15.264 and a p-value below 2e-16. Most importantly, there is no significant effect of factor 2 (`+/-n`*(och)*), level 2 with a p-value of 0.819. Moreover, there is not interaction between factor 1, level 2 and factor 2, level 2. To be sure and test specifically for an interaction between factors 1 and 2, I calculated model 2. Comparing models 1 and 2 (in R

[18] lmerTest version 3.1-0

with the `anova()`-call) gives the following output (cf. Winter, 2013):

| | DF | AIC | BIC | logLik | deviance | Chisq Chi | Df | Pr(>Chisq) |
|---|---|---|---|---|---|---|---|---|
| mymodel 2 | 24 | 1467.2 | 1577.8 | -709.58 | 1419.2 | | | |
| mymodel 1 | 25 | 1468.4 | 1583.7 | -709.20 | 1418.4 | 0.7649 | 1 | 0.3818 |

Model 2 has a slightly lower AIC and in the comparison of the two models the difference comes out as not significant. This suggests that there is no interaction between factors *1* and *2* ($\chi^2(1)$=0.7649, p=0.3818).

### 4.4.7 Conclusions

At first glance, the results seem to support Umbach's (2009b) analysis. It seems that the non-asserted proposition, i.e. that the standard term of comparison in a *noch*-comparative exceeds a contextually given standard degree, can be canceled and may, therefore, not be regarded presuppositional.

As pointed out by one reviewer of Kopf-Giammanco (2020), there may be flaws inherent to the experimental design to the effect that, in line with Hofstetter's analysis, the presupposition of *noch* in condition 3 is unmet, remains non-accommodated and nothing should be there to contradict/cancel by the continuation. Among other things, it was exactly this point that I attempted to address by asking participants to judge the compatibility of the truth of two sentences. Nevertheless, the issue may remain.

A few of the desiderata in retrospect is the lack of judgments for data like (Hofstetter's) (26) (=(31), below). What is it that makes this sentence seemingly infelicitous? And under what circumstance could this sentence be felicitous? Would an antecedent comparison as in (32) (cf. conditions 3 and 4 above) make (31) felicitous? While this seems possible, I do not have reliable introspective judgments and conclude that more experimental work is required taking a different approach in eliciting judgments.

(31) *Paul ist noch größer als Peter, aber Peter ist nicht groß.
Paul is still tall.COMP than Peter but Peter is not tall
(taken and adapted from Hofstetter 2013, 27; his (2/49))

(32) ?Peter ist größer als Kurt. Paul ist noch größer als Peter,
Peter is tall.COMP than Kurt Paul is still tall.COMP than Peter
aber Peter ist nicht groß.
but Peter is not tall
'*Peter is taller than Kurt. Paul is still taller than Peter but Peter is not tall.*'

With these caveats in mind, and accepting the results of the above experimental study, I will turn back to the semantics of *noch* in the next section.

## 4.5 Updating the semantics of *noch*$_{\textbf{comp}}$

Based on the above findings, I propose to update the lexical entry for $noch_{\text{COMP}}$ in (33) to (34):

(33) Hofstetter's (2013) entry (=(25)):
$[\![noch_{\text{COMP}}]\!] = \lambda\text{Comp.Op.} \in D_{<<d,t>,<<d,t>,t>>}.\lambda D_1 \in D_{<d,t>}.\lambda D_2 \in D_{<d,t>}$:
$\underline{\exists d' \in D_d[D_1(d') \,\&\, d' > s_c]}$. Comp.Op. $(D_1)$ $(D_2)$,
where "$s_c$" is a standard degree of height provided by the context
and "Comp.Op." is the comparative operator.
(adapted from Hofstetter (2013), his (2/59); my underlining)

(34) $[\![noch_{comp}]\!]=\lambda d^*\in D_d.\lambda CO\in D_{<<d,t>,<<d,t>,t>>}.\lambda D_1\in D_{<d,t>}.\lambda D_2\in D_{<d,t>}$:
$d^* \leq \max(D_1)$. CO $\max(D_1)$ $\max(D_2)$,
where $d^*$ is a free variable to be bound by the context and ranked lower than the max-degree of the comparison base
CO is the comparative operator of the *noch*-comparison.

I assume clausal comparison with the comparison operator of type:
<<d,t>,<<d,t>,t>> (cf. Beck, 2011) and the lexical entry in (35). The logical form for sentence (36-a) (=(19), due to Umbach (2009b)) is in (36-b) where one can see that quantifier raising solves the problem of the type mismatch of the DegP and adjective (for both clauses). Via predicate abstraction in (37) and intermediate steps in (38)(relying on the lexical entry (35)), the LF in (36-b) yields (39) (relying on the lexical entry for *noch* in (34)), cf. LF in Fig. 4.3.

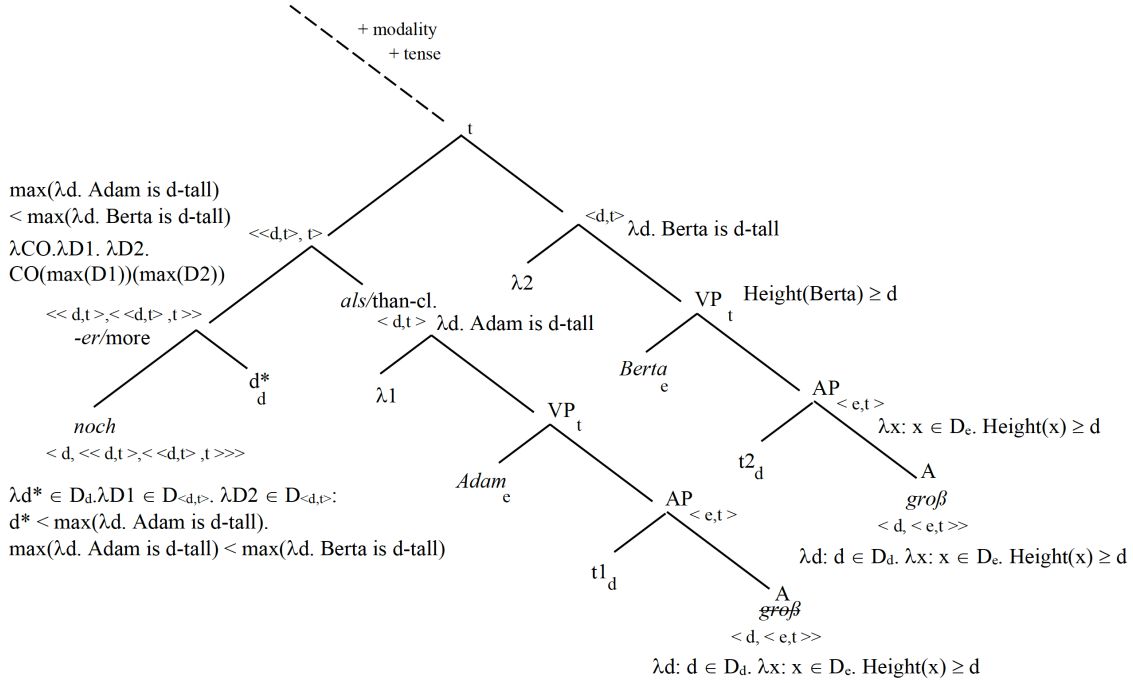



Figure 4.3: LF for (36-a)

(35) $[\![\text{-er}]\!] = \lambda D1.\lambda D2.\ \max(D2) > \max(D1)$

(36) a. Berta ist noch größer als Adam.

b. [ noch d* [-er than [ 2 [ Adam ist [AP t2 groß ] ] ] [ 1 [ Berta ist [AP t1 groß ] ] ] ] ]

(37) a. [1 [ Berta ist [AP t1 groß]]] = λd. B is d-tall

b. [2 [Adam ist [AP t2 groß]]] = λd. A is d-tall

(38) [ noch d* [λD1.λD2. max(λd. B is d-tall) > max(λd′. A is d′-tall) ]]

(39) $\lambda d^*.\lambda D_1.\lambda D_2$: $d^* \leq \max(\lambda d.\ A \text{ is d-tall}).\ \max(\lambda d.\ A \text{ is d-tall}) < \max(\lambda d.\ B \text{ is d-tall})$

(40) [[(36-a)]] is defined only if Adam is taller than something else relevant, i.e. the degree d*, provided by the context, and it is true if and only if Berta is taller than Adam.

There is no condition on the context that Adam is taller than a contextually given standard. Thus, norm relatedness does not arise (cf. Umbach (2009b) and Section 4.3.1), which seems to be the desired situation given the experimental study reported above, Section 4.4. In essence, the free degree variable d* is what norm relatedness

hinges on. Depending on what in the context d* refers to, *noch* will give rise to norm relatedness. Let us assume the context provides a proposition along the lines of condition 1 (cf. Table 4.1, p. 153), e.g. *Adam ist groß* ('Adam is tall') preceding (36-a). In such a case, the maximum degree to which *Adam is tall* (i.e. comparison base of *noch*-comparative) is equal or higher than the degree of the height of Adam as per the proposition from the context—which comes with a positive operator and puts Adam's height above a standard of height. Umbach (2009b) points to this aspect of meaning of positive degree adjectives in the context of $noch_{\text{COMP}}$. Similarly and more generally, von Stechow (2006b) notes: The idea is that there is a scale *S* introduced by an adjective, e.g. *tall*, and there is a function *N* that yields the neutral part of the scale and the neutral part *N(S)* contains all elements that are neutral in terms of tallness (von Stechow, 1984; Beck, 2011). The positive operator universally quantifies over all the degrees contained in the neutral part of the scale (von Stechow, 2006b).

(41) S |--------[------------------]-----------><br>
short Neutral tall

(42) The Positive Operator<br>
$[\![\mathbf{Pos}_{\text{N,S}}]\!]^{\text{g}} = \lambda \text{A}_{\text{dt}}.(\forall \text{d} \in \text{N(S)})\ \text{A(d)}$

(43) Adam is tall.<br>
$[\![\mathbf{Pos}_{\text{N,S}} \lambda \text{d.tall}_{\text{S}}(\text{d})(\text{Adam})]\!]$ iff $(\forall \text{d} \in \text{N(S)})$ HEIGHT(Adam) $\geq$ (d)<br>
|--------[------------------]-----A----->|

(taken and adapted from von Stechow (2006b), his (3-1) to (3-3))

With regard to the semantics of *noch*, if there is no such proposition in the context but a comparison as in condition 3 (cf. Table 4.1, p. 153), then there is no Pos-operator involved (von Stechow, 1984, 62) and, in Umbach's words, norm-relatedness does not arise.

(44) Berta ist noch größer als Adam.

The question that has remained unanswered is what happens in out-of-the-blue *noch*-comparatives—with no overt antecedent. Umbach argues that for (36-a) (=(44)) an

antecedent gets accommodated as being "composed out of the comparison base of the *noch* comparative and the norm of the adjective (with respect to the comparison class)" (Umbach, 2009b, p. 10). Essentially, this accommodated antecedent is of the form 'Adam is tall', which, in turn, features von Stechow's (2006b) Pos-operator.

## 4.6 Diachronic Data

The following discussion mainly relies on data from the DDD corpora of Old German (OG) (Donhauser et al.) via the ANNIS software for querying those corpora (Krause and Zeldes, 2016)[19]. Other supplemental sources I rely on include the Kali-Korpus (Diewald, 2014), and the TITUS project (Gippert et al., 2003).

The OG period was split into subperiods: OG0 (pre-750); OG1 (750–850); OG2 (850–950); OG3 (950–1050). The existing part-of-speech (POS) annotation was supplemented with annotations specifically geared towards occurrences of *noh*, the OG form of ModGerman *noch* (in the following, I will use the two forms interchangeably). The existing (DDD-)POS tags for the form *noh* are ADV (adverbial) and KON (conjunction). For my purposes, I ignore conjunctive uses of *noh* such as in (45).

(45) Nist thes gisceid **noh** giuuant, uuio er girrit thaz lant, uuio er
Not.is of.this boundary nor measure how he confuses the land how he
iz allaz uuirrit, ioh thesa uuorolt merrit.
it all stirs and this world injures
*'There is neither boundary nor measure to which he disturbs the country as he causes it trouble and to the entire world.'*

(Otfried DDD_O_Otfr.Ev.4.20 (edition 278 - 289) via ANNIS.)

The ADV occurrences of *noh* were—in addition to the pre-existing annotation—annotated for temporal, additive and comparative uses, i.e. $noch_{\text{TEMP}}$, $noch_{\text{ADD}}$, and $noch_{\text{COMP}}$. The following is an overview of occurrences of *noh*/*noch* in the diachronic data available in the DDD corpus:

[19] "DDD" is the shorthand for *Deutsch Diachron Digital* ('German Diachronic Digital'), an 'umbrella project' providing the home for a number of projects editing and annotating diachronic corpora for the various historical stages of German. The corpora are also referred to a *Deutsche(s) Referenzkorpus/-ora*.

| **OG1:** | **form** | **KON** | **ADV** |
|---|---|---|---|
| Tatian | prose | 95 | 43 |
| Isidor | prose | 11 | 9 |
| Monsee Fragments | prose | 8 | 4 |
| Heliand | verse | 2 | 36 |
| Old Saxon Genesis | verse | 0 | 5 |
| **OG2:** | **form** | **KON** | **ADV** |
| Otfried | verse | 67 | 58 |
| Smaller OG language monuments | (mix.) | 7 | 3 |
| **OG3:** | **form** | **KON** | **ADV** |
| Notker (various) | prose | 96 | 118 |

Table 4.6: Subperiods and sources; KON vs. ADV

The following table shows the frequencies of all occurrences of adverbial uses of *noh* across the subperiods OG1–OG3 in all of the text of the DDD corpus:

| subperiod | freq. (%) |
|---|---|
| OG1 | 0.073 |
| OG2 | 0.088 |
| OG3 | 0.070[20] |

Table 4.7: Frequencies of *noh* (ADV), based on no. of tokens in OG subperiods

Regarding OG1, the Heliand text had to be excluded since its periodization is unclear with two different sources having found their way into the corpus texts.

Otfried is the only major text available from OG2 (and unfortunately in verse) and, therefore, was included. The additional material available from OG2 are minor hits from the Smaller Old High German Language-Monuments ('Kleinere Althochdeutsche Sprachdenkmäler') which, in turn, are difficult to pin down in terms of periodization as a whole. Hits from single texts were considered for annotation. The following numbers in Table 4.8 are based on the final selection of corpus text considered:

| | (cjn) | temp (amb.)[21] | comp (amb.) | add (amb.) |
|---|---|---|---|---|
| OG1 | (122) | 45 (8) | 1 (1/0?) | 12 (4) |
| OG2 | (66) | 53 (6) | 2 (2) | 8 (6) |
| OG3 | (54) | 21 (4) | 3 (0) | 4 (4) |

Table 4.8: Subperiods and readings of *noh*

The annotation of 214 tokens from the OG3 (Notker) texts is not exhaustive in terms of a thorough consideration of target occurrence, target sentence and its (wider) context. The numbers in the above table are based on 76 OG3-tokens annotated in detail and are to be taken representative for the entire subperiod. Among the 76 tokens categorized, there was one *noh* with an unambiguously comparative reading. The detailed one-by-one annotation of 76 tokens was supplemented with targeted corpus searches for $no(c)h_{comp}$ uses, with various queries among all 214 uses of *noh* in the Notker texts, which yielded two more hits of $no(c)h_{comp}$, bringing the total for OG3 to 78 tokens.

In the following, I want to discuss the most important aspects and examples of the diachronic data. The most problematic bit of diachronic data is (46):

(46) Ibu auuar in aftrun steti ga sizzis enti quuimit dir otlihhero qui dit daer
if but in back place you.sit and comes you lower says who
dih za demo naht muose la dota, sizzi.2SG.IMP NOH hohoro.COMP
you to the dinner invited sit still higher
baz.COMP enti ist dir danne guot lihhora;
better and is you then honorable
*'But if you sit down somewhere in the less prominent places and the person who invited you for dinner tells you to sit in a more prominent place, then it is better to sit still higher and that is then honorable.'*

(MonsF-1,M.XIV,edition141-152)

(46) is problematic for a number of reasons. The most striking problem is that it could be a very early instance of $noh_{\text{COMP}}$. Example (46) is the reason that, in Table 4.8, the first line for $noh_{\text{COMP}}$ reads "1(1/0?)". To consider it in more detail: The wider context is about humility and humbleness. (46) is embedded in an allegory and the allegorical context is limited in its potential to disambiguate.

The preceding context talks about how shameful it is to take a prominent seat at a table when invited to dinner and then being told to take a less prominent seat.

The comparative reading does not have strong support as the expected action to attain humility (in a Christian world view) would be to turn down an offer to sit higher/take a more prominent seat. A temporal (further-to) interpretation runs into the problem that this is a hypothetical situation and there is no detectable temporal sequence aside from the salient time of mentioning. Moreover, in contrast to the majority of early uses of *noch*, it lacks a temporal particle adjacent to it. A conjunctive, coordinating interpretation would require another negative constituent to be coordinated with. The example is from the Mondsee Fragments, it is in Bavarian dialect and dates from the early 9th century ($\sim$ 810CE)(Krause and Zeldes, 2016). Thus, if (46) constitutes an instance of $noch_{\text{COMP}}$, it would (i) indicate that Southern dialects of German might have been more innovative and (ii) mean that the comparative reading has been available relatively soon.

Turning to more diachronic data, especially ones ambiguous for temporal and comparative readings (both (47) and (48) are from Otfrid, i.e. OG2):

(47) Ladotun auur tho then man, ther thes gisiunes biquam, quadun,
invited but then the man who of.the seeing became said
sih thera dati noh tho baz biknati.
himself of.the deed still there better appraise.SUBJ.PAST.3.SG
*'They then requested of the man who gained eyesight to appraise/evaluate his action still there more thoroughly.'*

(1.OG2.OtfEbKell.202.105)

The context for (47) is a story about Jesus giving eyesight to a blind man. The miracle was worked on a Sabbath, which is the reason for public outcry. The formerly blind man is being questioned by the people and by the local high council about the events and about his opinion of Jesus—for the third time in (47). The criticism Jesus faces is rooted not only in breaking Sabbath but—additionally and more importantly—that he claims to be God's son, which, in turn, allowed him to do as he wishes on a Sabbath.

This sentence is ambiguous between a temporal and a comparative reading. Both, the presuppositions for the temporal and the comparative interpretations

are satisfied in the context. The preceding context features two instances of the formerly blind man stating his opinion of Jesus. Moreover, there is a (locative/temporal cf. e.g. (Petrova, 2011)) particle adjacent to *noh*. The comparative interpretation is supported by the fact, that the man has stated his opinion of Jesus twice before and, moreover, the statements regarding Jesus have changed in degree 'for the better/more favorable'—for the benefit of the public eye: At first, the man called Jesus 'the savior'; at the second time, he called him 'a friend of god ... a divine prophet'. Thus, he lessened the degree to which Jesus was stated to be akin to God. Another argument for a comparative interpretation is that, arguably, the finite verb *biknati* (*biknaen*, 'to confess, appraise, declare') is an atelic verb ('hold a belief/attitude') rather than an accomplishment ('declare your attitude/make a statement'). The lack of a direct (accusative) object would support that view. In conclusion, I argue that the comparative interpretation is salient.

As noted, (48) is ambiguous between a temporal and a comparative reading:

(48) Thar uuarun mit githuinge thie iungoron noh tho inne, sie scolta
there were with violence the apostles still there inside they should
ruaren NOH tho mer thaz selba uuoroltlicha ser.
move still there more the same earthly suffering
*'The apostles were still inside with violence, they should continue to move/stir the earthly suffering.'*

(1.OG2.OtfEbKell.351.12)

The example in (48) is set in the context of an allegory with the apostles fishing on—and Jesus remaining on the shores of—the lake Sea of Galilee. The story states that Jesus is not with the apostles anymore and they now have to continue their work without him (with fishing serving as the vehicle to symbolize their Christian mission as apostles). Thus, they are situated in the rough waters of the lake (=out in the world on their mission) whereas Jesus is on the calm and dry shore (=dead; in heaven). (48) is ambiguous between a temporal and comparative reading. I will discuss it in more detail in the following section.

The following bits of data can be straightforwardly interpreted as comparative uses of *noch*. They all date from the OG3 period, indicating that during this time (950-1050) the comparative reading of *noh* is available and established:

(49) Úbe árg uuéllen uuêlih íst, árg kemúgen, dáz íst nóh
if evil.ACC to.want bad is evil be.able.to.do, that is still
uuêlichera.
worse
*'If it is bad to want evil things, then to be able to do evil things is still worse.'*

(Notker.Boeth-DeConPhil.III.201)

(49) is unambiguously comparative. There is no temporal sequence available and there is no temporal particle adjacent to *noh*. In the comparative interpretation, the comparison base (wanting evil) is in the same token. Similarly, there is no temporal sequence discernible in (50):

(50) Ér íst tero góto chúnnigosto . nóh tánne bíst tû
he is of.the gods most.knowledgeable still then/there are you
chúnnigora . uuánda ratio gemág mêr dánne sermo .
more.knowledgeable because reason can.do more than conversation
*'He is the most knowledgeable about the gods. But you are still more knowledgeable because reason can achieve more than conversation.'*

(1.OG3.N:Mart.Cap.II.111-121.J)

There is no temporal sequence that would support a temporal interpretation. It is notable that the first clause has the superlative form of the adjective *chunnig* ('knowledgeable'), while the Latin gloss does not feature superlative.[22] I assume that the superlative in the OG version is present for rhetorical reasons. The comparative reading of *noh* is salient—in both the Latin and the OG versions.

In (51) (from OG3) the *noh* is adjacent to *mêrun* ('more'), there is no temporal sequence and (51) can unambiguously be interpreted as comparative:

(51) Michel ist íro guôllichi an dînemo haltâre christo. [Lat.] Ímo selbemo
great is her glory in your savior christ him self
gíbest du noh mêrun guôllichi. unde mêrun ziêreda. sô dû in
give you still more glory and more adornment as you him
gesezzest ad dexteram tuam.
set to.LAT right.LAT your.LAT
*'Great is the glory of the church in your savior christ. You give him still more glory and more adornment by setting him at your right side.'*

[22] The Latin glosses in Notker's translation are included in the corpus data and can be accessed along with the OG material via the ANNIS search tool. In the glosses here, "[Lat.]" indicates the presence of such a Latin gloss.

(1.OG3.N:Ps:20.61-63)

The major conclusions to be drawn from the data (Table 4.8) are (i) that the comparative reading of *noch* developed within the OG period and (ii) that the (unambiguously identifiable) additive reading became available alongside the comparative reading. Umbach (2009b) stresses that $noch_{\text{COMP}}$ shares a number of properties with $noch_{\text{ADD}}$, i.e. "patterns with the additive reading of *noch*" (Umbach, 2009b, 9). Moreover, while Beck makes no explicit mention of this, her (2016c) analyses of the continuative, the subconstituent reading, and the further-to reading of $noch_{\text{TEMP}}$, seem to make for a convincing trajectory from a 'standard' continuative reading towards an additive reading. Both, Umbach's (2009b) and Beck's (2016c) analyses and views combined make for a compelling argument to assume that $noch_{\text{COMP}}$ developed based on $noch_{\text{ADD}}$. However, the mere observation that $noch_{\text{COMP}}$ shares similarities with $noch_{\text{ADD}}$ does not justify the assumption that the former is derived from the latter. The similarities may well be due to the common origin in $noch_{\text{TEMP}}$. While the diachronic, empirical basis—despite considerable efforts—is admittedly rather weak, I argue that the early ambiguous cases ($noch_{\text{COMP}}$ and $noch_{\text{TEMP}}$) provide sufficient evidence for contexts inviting varying interpretations under "constant entailments" (Beck, 2012). Both (47) and (48) and their contexts license a temporal reading (especially when excluding the comparative operator for the sake of contrasting the involved meaning components as minimal pairs introspectively). The fact that this ambiguity with a temporal interpretation exists among the earliest uses of comparative *noch* in those contexts leads me to propose an analysis of $noch_{\text{COMP}}$ being derived from $noch_{\text{TEMP}}$ in the next section. With regard to example (46), as problematic as it is for the overall timeline I am suggesting, it could provide support for my proposal as a shift of scales (temporal to degrees): If (46) is indeed an instance of $noh_{\text{COMP}}$, then (allowing to some degree for the innovativeness in Southern dialects of German) a process of reanalysis from $noch_{\text{ADD}}$ to $noch_{\text{COMP}}$ is arguably even less likely the case.

## 4.7 Diachronic change—from *noch*$_{temp}$ to *noch*$_{comp}$

In this section, I will lay out my proposal for the semantic shifts $noh_{\text{COMP}}$ underwent during its development. My argument is that the comparative reading of *noch* is the direct offspring to the original temporal reading of *noch* through a process of reanalysis, from operating on a scale of times to a scale of degrees. The basis for the temporal readings is Beck's (2016c; 2020) analysis of temporal continuative *noch*—a semantics, in turn, based on a uniform account with the context- and usage-independent semantics in (52):

(52) $[\![\textit{noch/still}]\!] = \lambda S.\lambda x^*.\lambda x\text{: } x^* \prec_S x \;\&\; P(x^*).P(x)$

(Beck, 2020, her (18))

The major ingredients are: S, which stands for a scale and depends on the context *noch/still* occurs in; x* is anaphoric and immediately precedes/left abuts the argument x; the predicate P, which is to hold for the argument x—and the immediately preceding x*. In temporal continuative reading—operating a temporal scale—noch(/still) relates two times topic/reference time (t) to a prior (i.e. relatively further in the past) time t*. The assertion is that the predicate P holds at time t. The presupposition is that the predicate P holds at time t* and that t* immediately precedes t.

(53) $[\![\textit{noch/still}_{<}]\!] = \lambda t^*.\lambda t{:}t^* \prec t \;\&\; P(t^*).\; P(t)$ (type <i,<i,<<i,t>,t>>>)

The scale S is temporal order "<", the precedence relation on time intervals (type <i,<i,t>>). "$\prec$", immediate precedence, is a subset of "<".

(i) Assertion: P(t)
P is true of t

(ii) Presupposition: $t^* \prec t \;\&\; P(t^*)$
the relevant other time t* immediately precedes t
& P is true of t*

(iii) Scalar alternatives: $\{P(t')|t'\in Alt(t)\}$
What times t' is P true of

((Beck, 2020, her (19)); cf. also Beck (2016c))

As noted above, I follow Beck in taking *no(c)h* as not conventionally associating with focus and as directly relating and ranking focus alternatives. However, as Beck points out *no(c)h* does interact with scalar alternatives, cf. (53-iii). These alternatives—in particular open alternatives, not covered by presupposition and assertion—are at the center of Becks derivation of implicatures regarding the future time (i.e. the time following reference/topic time t). For now, and the following diachronic discussion, what's important are meaning components (53-i) and (53-ii).

**Stage I (pre-reanalysis):**

*Noh* has the standard temporal continuative reading of *noch* at this stage. There is the presupposition of t* (a free variable to be bound by context and left-abutting reference time) and a predicate P (a property of times, type <i,t>, that holds of reference time t as per the assertion) holds for t. With respect to (54), the assertion is that Jesus is in town. The presupposition is that the predicate 'Jesus is in town' holds at an earlier t*, which immediately precedes reference time:

(54) ther heilant ... uuas noh thanne in theru steti ...
the savior was still then in the place/town
*'The savior was still in the town.'*

(1.OG1.TatianEvHarm.135.18)

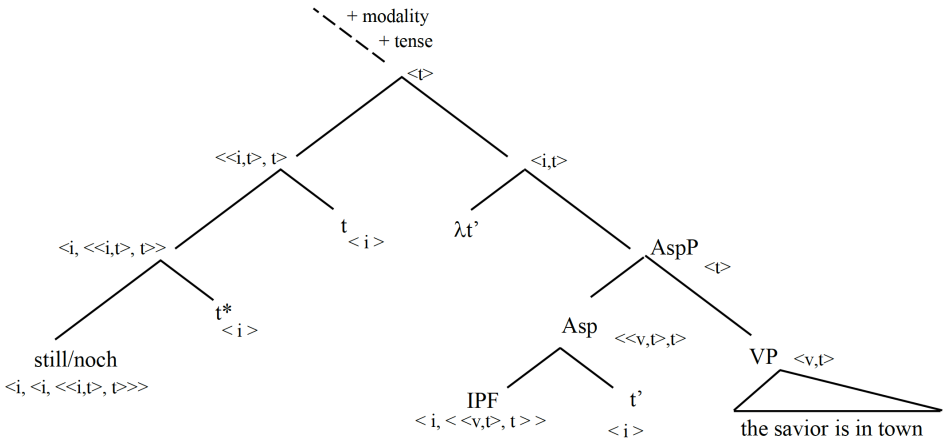



Figure 4.4: LF for (54); cf. (Beck, 2016c)

**Stage II:**

Let's turn back to example (55) (=(48), above) for the following discussion:

(55) Thar uuarun mit githuinge thie iungoron noh tho inne, sie scolta
There were with violence the apostles still there inside they should
ruaren NOH tho mer thaz selba uuoroltlicha ser.
move still there more the same earthly suffering
*'The apostles were still inside with violence, they should continue to move/stir the earthly suffering.'*

(1.OG2.OtfEbKell.351.12)

The *noh* in sentence (55) is ambiguous between a temporal and a comparative interpretation. The temporal continuative interpretation arises with the predicate ('*They move/stir the earthly suffering*') being true at reference time and a presupposed earlier time (which can be inferred from the context and is overtly satisfied in previous chapters of the stories—albeit not necessarily in the words of the allegory). In this regard, this is a perfect example since the entire allegory is about the contrast between the earlier time (when Jesus was with the apostles) and the later (reference) time (when Jesus has left the apostles).

The comparative operator in example (55) has the effect of comparing the maximum of a property of degrees (subject of comparison/comparee term) to another maximum of a property of degrees (object/comparison base)—both type <d,t>—with the standard term of comparison being temporally located before reference time.[23] The two different points in time are provided by the context since the *than*-clause is covert.

The temporal reading of *noh* puts a condition on the context that at an earlier, presupposed time t 'the apostles move the earthly suffering' and it asserts that 'the apostles move the earthly suffering' at reference time t, cf. LF in Fig. 4.5 (cf. also Beck, 2016c). With the comparative operator having scope over the entire structure, the assertion has to be something similar to 'the apostles move the earthly suffering

[23] I assume gradable predicates here via a degree argument slot in an adverbial phrase, cf. 4.5. I do not go into details as to whether or not (certain) verbs have a degree argument slot or where the degree argument is originating from; for discussion see Piñón (2008), Rett (2013), Kennedy and McNally (2005), Kennedy (2012) et al. and references therein.

more than at an earlier time'. Thus, there is a conflict: On the one hand, the temporal *noch* requires a predicate to be true at an earlier time and at reference time and, on the other hand, the comparative requires that the predicate for reference time and an earlier time differs with regard to degrees. This type of context represents a critical context, i.e. there is an ambiguity ("constant entailments"; Beck, 2012) and at the same time one reading fits the context better than the other. In Eckardt's (2011) words, this constitutes a bridging context. In her discussion on reanalysis, she mentions 'precarious uses' and notes that the criteria for what constitutes a precarious use are manifold; among other things, they "can challenge the hearer by pragmatic infelicities" (Eckardt, 2011, 44).

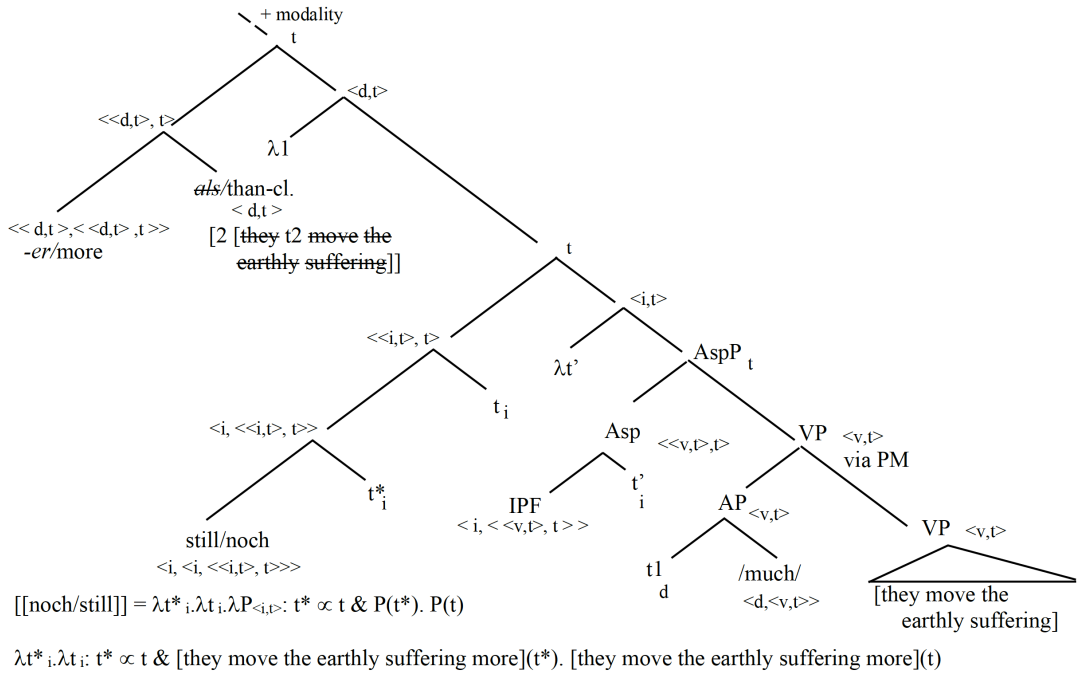


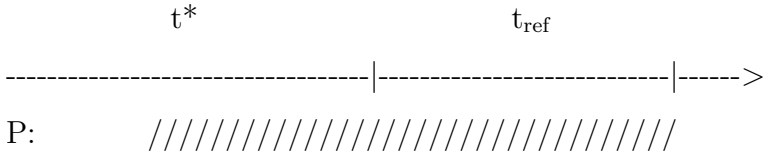

Figure 4.5: LF for $noch_{temp}$ for (55); cf. (Beck, 2016c)

**Stage III:**

The time interval at reference time becomes reanalyzed as the interval of degrees to which the comparee term and the comparison base differ. As a consequence, the presupposed left-abutting time t (for which P(t*)=1) is now analyzed as an interval of degrees to which the comparison base and another, presupposed degree d* differ (on the scale introduced in the matrix clause comparison). The degree d* serves as the lower bound of this second interval of degrees. While $noch_{\text{TEMP}}$'s t is placed

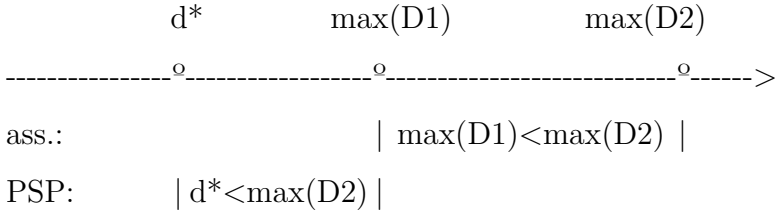
at a temporal location lower and relative to reference time (t* < t), *noch*$_{\text{COMP}}$'s presupposed d* is located lower on a scale of degrees relative to the standard term of comparison (d* < max($D_{<d,t>}$)). In other words, the interval t presupposed by *noch*$_{\text{TEMP}}$ corresponds to the interval of degrees presupposed by *noch*$_{\text{COMP}}$, cf. below, (56), and Fig. 4.6 for the post-reanalysis LF. The time variable for reference time is interpreted together with the matrix clause, i.e. in the LF, below the comparison, as tense. This is necessary since the *than*-clause will have a different tense due to a different temporal location[24]. Thus, P(t) from the temporal interpretation corresponds to the property of degrees (at present tense) in (55) in the comparative interpretation. It may be argued that the task of pointing to an earlier time is taken over by the comparison which might facilitate for t to be analyzed as the lower bound of another comparison, i.e. another difference in degrees.

(56) a.




(taken and adapted from (Beck, 2016c))

b.




A question that has remained unaddressed so far is, what happens to the rather strong condition that the presupposed time left-abuts reference time (t* ∝ t). I argue that it "carries over" and remains intact in the sense that two areas of a scale of degrees are still ordered and adjacent, with the degree of the standard term of comparison being the marker at the boundary between the two different intervals.

Another argument that may be raised is that data like (55) say more about future times (times following reference time), rather than reference time or a preceding time

[24] Data like (i) suggests that aspect and tense need to be interpretable below comparison with both clauses having different tenses and aspect. See also (von Stechow, 2006b).

(i) This time our guests are staying longer than they stayed last time.

t* and, therefore, an analysis of diachronic change should take e.g. Beck's (2016c) further-to analysis of $noch_{\text{TEMP}}$ as a starting point. In this line of argument, the additive component of comparative *noch* and the notion of additive component of the 'forward-directedness' of the further-to use might be associated diachronically. If (55) did not feature a comparative operator, the continuative reading of $noch_{\text{TEMP}}$ would give the right predictions and be perfectly satisfied by the context.

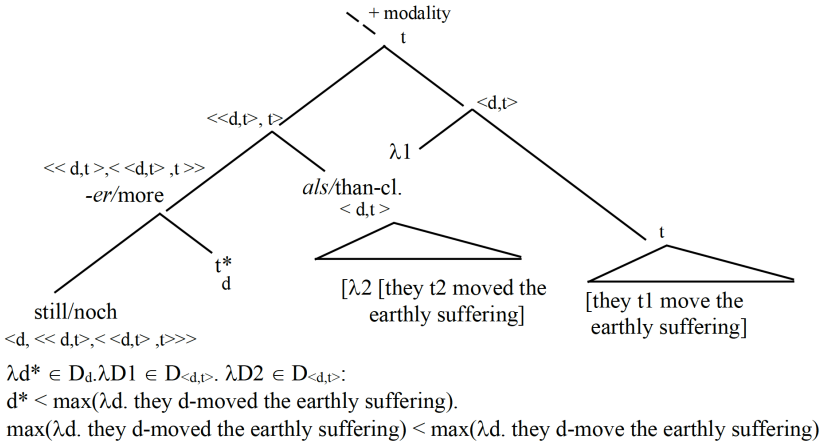



Figure 4.6: LF for $noch_{comp}$ for (55); cf. (Beck, 2016c)

**Stage IV:**

Unambiguous $noch_{\text{COMP}}$ is available as early as OG3 (950-1050). The context for (57), below, is that God took Jesus to him when he died among the humans. After that the Christian church/religion is endowed with glory (since Jesus has lifted all sins from the humans) and Jesus is also endowed with (even more) glory because he sits next to God for eternity. (57) does not license a temporal reading. As with the previous example, there is an antecedent comparison where the maximum degree to which the church has glory ($\max(D_1)$ in Fig. 4.6) is compared to a standard degree of glory.

(57) Michel ist íro guôllichi an dînemo haltâre christo. [Lat.] Ímo selbemo
great is her glory in your savior christ him self
gíbest du noh mêrun guôllichi. unde mêrun ziêreda. sô dû in
give you still more glory. and more adornment. as you him
gesezzest ad dexteram tuam.
set to.LAT right.LAT your.LAT.
*'Great is the glory of the church in your savior Christ. You give him still more glory and more adornment by setting him at your right side.'*

(1.OG3.N:Ps:20.61-63)

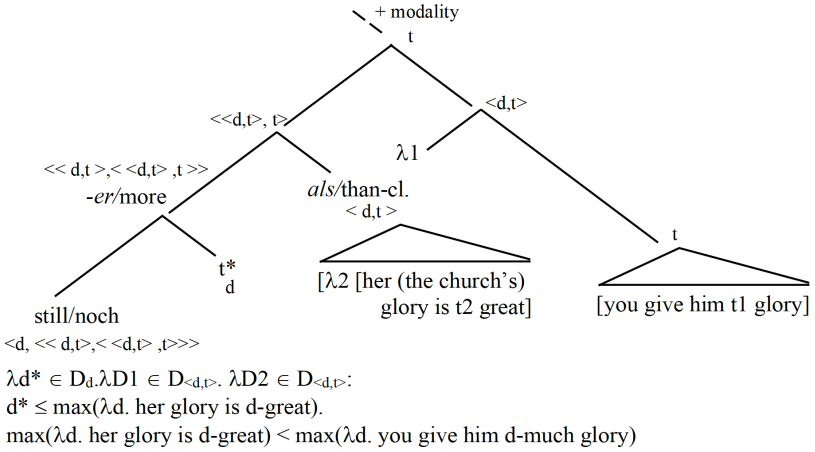



Figure 4.7: LF for (57); cf. (Beck, 2016c)

In the OG3 subperiod, cf. (57), the comparative *noch*, in contrast to the earlier examples from OG2, the context does not necessarily allow a temporal reading any longer. The modern German interpretation of $noch_{\text{COMP}}$ is fully available at that stage.

(58) $[\![\text{noch}_{\text{comp}}]\!]=\lambda d^*\in D_d.\lambda CO\in D_{<<d,t>,<<d,t>,t>>}.\lambda D_1\in D_{<d,t>}.\lambda D_2\in D_{<d,t>}$:
$d^* \leq \max(D_1)$. CO $\max(D_1)$ $\max(D_2)$,
where d* is a free variable to be bound by the context and ranked lower than the max-degree of the comparison base
CO is the comparative operator of the *noch*-comparison.

## Summary and Discussion

The main takeaways from the above proposal are that *noch* is anaphoric as both Beck's (2020) and Umbach's (2009b) accounts would have it—$noch_{\text{COMP}}$ requires an antecedent comparison to d*. Further, in line with Umbach (2009b), $noch_{\text{COMP}}$ is additive in that it adds the asserted comparison to another, presupposed comparison. Moreover, in a sense my treatment of $noch_{\text{COMP}}$ as derived from $noch_{\text{TEMP}}$ is also continuative as discussed by Beck (2020) and Klein (2018). What does not seem to be supported by the above discussion is to consider $noch_{\text{COMP}}$ an instance of $noch_{\text{MARG}}$.

To sum up, the above account is able to argue for the following parallels between

the Beck's (2016c; 2020) semantics for $noch_{\text{TEMP}}$ and $noch_{\text{COMP}}$ (König, 1977; Klein, 2018; Hofstetter, 2013; Umbach, 2009b): As for the respective assertive meaning components, the time interval t in $noch_{\text{TEMP}}$ (cf. P(t)) corresponds to the interval of degrees on the relevant scale for $noch_{\text{COMP}}$ (cf. $\max(D_2)>\max(D_1)$). With respect to to the respective presuppositional components, the relevant other time interval t* (in e.g. P(t*)) corresponds to the intervals of degrees ranging from d* to $\max(D_1)$. The free variable d* is the anaphor and its value can be provided in the context or—if necessary, in absence of a suitable, overt antecedent—accommodated as the relevant contextual standard degree of e.g. a positive adjective.

Given the above proposal regarding the origin of $noch_{\text{COMP}}$ being $noch_{\text{TEMP}}$, it is tempting—and necessary—to extend Beck's (2020) analysis of the $noch_{\text{TEMP}}$'s scalar implicatures to $noch_{\text{COMP}}$ and, thus, accounting for the inference that there are no relevant taller entities e.g. other than Berta (cf. (36-a), above). This endeavor will have to be pursued in another venue as I expect an analysis taking the potential import of stress (on e.g. either the particle vs. the adjective) into account to go beyond the scope of this chapter.

## 4.8 Conclusions

In this chapter, I argued for $noch_{\text{COMP}}$'s scalar presupposition originating in the scalar nature of the temporal dimension ('time') which temporal continuative *noch* operated on ('$noch_{\text{TEMP}}$'). I relied on Beck's (2020) semantics for $noch_{\text{TEMP}}$—the 'old meaning' in my proposal for $noch_{\text{COMP}}$'s emergence. In order to get a clearer picture of the 'new meaning', i.e. the semantics of $noch_{\text{COMP}}$, I carried out and reported on an experimental investigation of the presuppositional meaning of $noch_{\text{COMP}}$. Based on a systematic and exhaustive annotation of Old High German corpus data (Donhauser et al., 2021), I was able to empirically bridge the gap between old meaning and new meaning. I showed that the earliest Old High German data permitting a comparative interpretation is ambiguous between a temporal and a comparative interpretation. The earliest unambiguous comparative uses originate from the OG3 subperiod (950-1050 CE). There are no other degree-related uses of *noch* in in the Old High German data. I propose a process of reanalysis under constant entailments for the emergence

of *noch*$_{\text{COMP}}$. As a consequence and in support of my wider claim, I can point to time, and its inherent scalarity, as the source for *noch*$_{\text{COMP}}$'s scalar presupposition.

Turning to previous discussion in the literature: The above supports Ippolito's (2007) stance against considering *noch*$_{\text{COMP}}$ a marginal use of *noch*. *Noch*$_{\text{COMP}}$ is additive in the sense of Umbach's (2009b) arguments: It presupposes an additional comparison. It is continuative in the sense of Beck (2016c, 2020): The *noch*-comparison left-abuts the presupposed, additional comparison. Finally, *noch*$_{\text{COMP}}$ is scalar as the comparison is bound to a relevant scale along which the comparison is located.

I now turn back to the notion that *noch*$_{\text{COMP}}$ and *even/sogar* are equivalent—as discussed at the top this chapter. As a reminder, Ippolito (2007, 23; fn. 37) suggests that *noch*$_{\text{COMP}}$ parallels *sogar/even* and assigns the presupposition that its proposition be unlikely next to alternatives (cf. also Bennett, 1982)—a point Umbach (2009b) refutes (cf. discussion above, p. 140f; (1)-(3)). Umbach takes a different route and refutes the idea that *still/noch* are scalar (in terms of probability) and the contribution parallels that of *even*. As mentioned, for Umbach comparative *still/noch* is an additive particle but she specifies that if a mere order relation is decisive in scalarity, then *still/noch* ought to be considered scalar—in addition to being additive.

Another reason to consider *still/noch* and *even/sogar* as different is that they co-occur in data like (59) and (60) where they seem to make different contributions. Consider the following attested data with the German pair *noch–sogar* and the English equivalents *still–even*:

(59) Der 'modernisierte' ECT ist **sogar noch** gefährlicher [...]
the modernized ECT is even still dangerous.COMP
*'The modernized ECT is even more dangerous still [...]'*

(https://www.derstandard.de/story/3000000247719/der-klimakiller-vertrag-wird-moderner-wird-er-auch-gefaehrlicher; Der Standard; 2024)

(60) Lopez then takes his focus **even** wider **still**, tying this persistent little bud to people who feel the world is coming undone and who've lost hope.

(https://www.npr.org/2019/03/27/707358144/barry-lopez-shares-6-places-that-shaped-his-world-understanding-in-horizon; NPR, 2019)

The comparative uses of *noch* in (59) and *still* in (60) presuppose an antecedent comparison, which in both cases is satisfied in/inferable from the context (e.g. *the old ECT is dangerous*—it exceeds a contextual standard). *Sogar* presupposes that p is stronger/unlikelier than alternatives q arising from focus on the asserted comparison. In other words, the p *the new ECT is more dangerous than the old ECT* is stronger/more unlikely ('>') than the q *the old ECT is more dangerous than a contextually relevant standard*. As similar situation holds for (60). In conclusion, *noch* and *sogar* (as well as *still* and *even*) respectively contribute different presuppositions.

A number of aspects need further investigation, such as $Noch_{\text{COMP}}$'s implicatures for instance. The additive use of *noch* and its diachrony need a detailed corpus based research in order to (i) better understand when and how it arose and (ii) its possible entanglement with the development of the comparative use of *noch*. Beck's (2016c; 2020) discussion of a variety of temporal readings leading up to additivity of *noch* provides a plausible diachronic trajectory for the development $noch_{\text{ADD}}$ which, in turn, (iii) requires a more thorough look at the data on $noch_{\text{TEMP}}$. Furthermore, $noch_{\text{COMP}}$ needs investigating in later periods as well. One closely watched type of use of *noch* should be non-comparative degree-related uses of this particle and their relation to $noch_{\text{COMP}}$ as well as $noch_{\text{MARG}}$.

# Chapter 5

# Conclusion

In this dissertation, I investigated the emergence of scalar presuppositions of *even*-words. The particles under investigation are the scalar operators (Early) Modern English *even*, Old English *furðon* and (Old High) German comparative *noch*. For each particle in turn, I established a direct link between their scalar presuppositions (i.e. new meanings) and the scalar nature of the spatio-temporal semantics associated with the respective predecessor/old meanings. For the focus particles *even* and *furðon*, I proposed their scalar presuppositions to originate in paths along which movement events unfold. I traced comparative *noch*'s scalarity back to the temporal scale of temporal continuative *noch*. In this conclusion, I will discuss and summarize the main findings of each of the previous chapters—and particles—in turn.

In Chapter 2, I traced the development of *even* and its emergence as a scalar additive operator (SAO). The crucial developmental shifts with respect to *even*'s scalar presupposition concern its origin in the non-scalar particularizer 'exactly'-*even* ('$even_{\text{EXA}}$', paraphrasable as 'exactly'). In accordance with Eckardt's (2009) exactness-presuppositions, $even_{\text{EXA}}$ was infelicitous when particularizing polar ends of a scale/path (*Frodo walked exactly halfway to Mordor*/*The glass is exactly 75% full* vs. #*Frodo walked exactly to Mordor*/*The glass is exactly entirely full*). $Even_{\text{EXA}}$'s exactness-presuppositions were relaxed in critical contexts to the effect that it could also particularize the polar ends of a scale/path. The effect of this shift is what I call 'scalar *even*', paraphrasable as 'all the way'. $Even_{\text{SCA}}$ particularizes the endpoints of event paths that come about due to prepositional phrases headed by bounded directional prepositions (goal PPs). The intermediate points along the event path

are necessarily entailed to hold: If *Frodo traveled (all the way) to Mordor* holds, then Frodo necessarily also traveled to all the intermediate points along the way (Bree, Rivendell, Lothlorien, etc). Entailment directly corresponds to strength, thus, focus alternatives generated from the endpoint are stronger than the alternatives generated from intermediate points along the path. *Even*$_{\text{SCA}}$ maximized its presuppositional meaning and assigned the relevant scalar presupposition. From path-based uses *even*$_{\text{SCA}}$ generalized to other contexts to fully establish itself as *even*$_{\text{SAO}}$—in particular also stative eventualities and pragmatic scales. Finally, *even*$_{\text{SAO}}$ generalized from strong uses (association with strong elements in scale-preserving contexts) to weak uses (association with weak elements in scale-reversing contexts). I base my proposal for *even* on manually and exhaustively annotated data sourced from the Early English Books Online corpus—specifically from the first six decades (1470-1529 CE). Unambiguous uses of *even*$_{\text{SAO}}$ are attested as early as the 1520s. Further support for my argument comes from a quantitative picture for particularizer *even*'s association with static vs. directional PPs. I showed that association with directional PPs is on the rise when comparing the first and second 30-year slices of the EEBO. In conclusion, I traced *even*'s scalar presupposition back to the scalar nature of the paths on which *even*$_{\text{EXA}}$ and *even*$_{\text{SCA}}$ operates.

As a result of my account for the emergence of *even*'s scalar presupposition, I can contribute diachronic evidence to the synchronic debate as to the quantification force *even* exerts over focus alternatives. Due to *even*$_{\text{SCA}}$ focusing the endpoints of the relevant paths and, as a consequence, all intermediate points falling short of the endpoint being entailed, I argue that the scalar presupposition of *even* is best modeled by universal (rather than existential) quantification over alternatives.

In Chapter 3, I turned to the second *even*-word by introducing the Old English (OE) scalar additive particle *furðon* ('even'). *Furðon* is fully established as a universal scalar additive focus particle in the exhaustively annotated OE corpus data (YCOE; Taylor et al. (2003)). Notably, *furðon* is not a cognate/etymon to *even*; like *even*$_{\text{SAO}}$, *furðon*$_{\text{SAO}}$ is assumed to take wide scope and, when relevant, associates with focus across scale-reversing operators. As far as the relevant old meaning (from which the SAO *furðon* derived) is concerned, I argued for *furþum* ('forth') as the relevant adverbial on the basis of an extensive review of lexicographical sources. This

adverbial had proximal/source-oriented uses (cf. PDE 'forth from') and distal/goal-oriented uses ('forth to/towards').

Regarding the emergence of *furðon* as a SAO and its scalar presupposition, due to the lack of corpus data from pre-OE times, the semantic change from Proto-Indo-European/Germanic times to the OE quantitative picture needed to be reconstructed. I discuss three proposals that can explain the development of *furðon*$_{\text{SAO}}$, with the first (Proposal #1) couched in rather traditional GIIN terms. More in line with the agenda of this dissertation, Proposals #2 and #3 argue for the path objects that *furþum* operated on in movement predicates as the origin for the scalar presupposition of the *furðon*$_{\text{SAO}}$. Under Proposal #2, I argue for *furðon*$_{\text{SAO}}$ to arise from a transparent focus construction as a weak SAO (association with weak elements in scale-reversing contexts), which then generalizes to strong uses ('weak-*furðon*-first'; WFF). The crucial developmental steps here are: Taking proximal/source-oriented uses as point of departure, *furþum* associates with the weak element which is the least distance traveled from a source along a path, i.e. to leave the source (∼ *Fred traveled forth from the shire*). In summary, under tacit *even* and negation this weak element is rejected and—via entailment—so are all stronger focus alternatives (∼ *even*$_{\text{(tacit)}}$ [ *not* [ *Fred traveled forth from the shire*]]). *Furþum* maximizes its presuppositional marking by taking on tacit *even*'s duties: It assigns the relevant scalar presupposition; the additive presupposition comes about as a consequence of alternatives generated from points along the relevant point further away from the source (∼ *furðon*$_{\text{SAO}}$ [ *not* [ *Fred traveled from/left the shire*]]). The main advantage of this proposal is that it offers a possible explanation for the overwhelming majority of weak uses throughout the OE corpus data. Under Proposal #3, *furðon*$_{\text{SAO}}$ arises as a strong SAO (association with strong elements in scale-preserving contexts), which then generalizes to weak uses ('strong-*furðon*-first'; SFF). This account sees *furðon* arising in similar fashion as *even*. The relevant parallel regards the goal-orientedness of the respective older meanings: Both, the distal/goal-oriented use of *furþum* and *even*$_{\text{SCA}}$ focus the endpoint of a path in a movement predicate. The crucial developmental shift here is that *furþum* became analyzed as assigning the scalar presupposition for the, already present, weaker alternatives (generated from intermediate points along the relevant path). Once established as a SAO, *furðon*$_{\text{SAO}}$

generalized to non-path uses as well as weak uses[1]. The main advantage of Proposal #3 is that it is more in line with what, according to Gast and van der Auwera (2011), is the more common direction: Based on their typological study encompassing 40 European languages, they conclude that a generalization from strong to weak uses is more common that a generalization from weak to strong uses. At any rate, with Proposals #2 and #3 I argue that the scalar meaning component of the scalar additive focus particle *furðon* can be directly linked to the scalar nature of the path which the non-scalar older meaning, the adverbial predecessor *furþum*, interacts.

In Chapter 4, I turned to the final of the three scalar items here, German comparative *noch* ('still', i.e. $noch_{\text{COMP}}$). On the basis systematic annotation of corpus data (DDD; Donhauser et al. (2021)), I argued that $noch_{\text{COMP}}$ derived its scalar PSP from the temporal scale that temporal continuative *noch* ('$noch_{\text{TEMP}}$'). The crucial developmental shifts take place in bridging contexts. Uses of Old High German (OHG) *noh* (i.e. PDG *noch*, 'still') are ambiguous between a temporal interpretation and the earliest available comparative interpretation. In such contexts $noch_{\text{TEMP}}$ became reanalyzed as the $noch_{\text{COMP}}$ before it is first attested as unambiguous in OG3-data (950–1050 CE). For my account of the semantic change from $noch_{\text{TEMP}}$ to $noch_{\text{COMP}}$, I took Beck's (2016c; 2020) analysis of $noch_{\text{TEMP}}$ as the point of departure. In order to get a clearer picture of the presuppositions that would be the output of this semantic change (i.e. the new target meaning), I conducted an experimental study. The results of this acceptability study are in support of Umbach's (2009b) Norm-Relatedness. At the same time, the idea that the standard term of comparison in a *noch*-sentence exceeds a contextual standard no matter what is not supported by my findings. $Noch_{\text{COMP}}$ was thus confirmed to presuppose an antecedent comparison involving the the standard term of comparison of the *noch*-sentence (the '*noch*-comparee') and, as the additional comparee, a free variable to be provided by the context. In the absence of an antecedent, a sentence like *Connie ist noch größer als Bertha* ('Connie is still taller than Bertha'), speakers accommodate the presupposition as Bertha's height being compared to a contextual standard ($\sim$ *Bertha is tall*). As a consequence, the inference that Bertha is tall arises. If there is a relevant antecedent, such as e.g. *Bertha ist größer als Adam* ('Bertha is taller than Adam'),

[1] However, there is no reason to assume that these shifts necessarily occurred in this order.

then the free variable becomes saturated by Adam's height, rather than a contextual standard. As a consequence, there is no guarantee that the *noch*-comparee *Bertha* is tall. In conclusion, I regard $noch_{\text{COMP}}$ an additive and scalar particle; additive because an additional comparison is presupposed, and scalar because this additional comparison ranks lower on the relevant scale (e.g. degrees of height in above examples). I argued that my account for the reanalysis of $noch_{\text{TEMP}}$ as $noch_{\text{COMP}}$, conforms to Beck's (2020) goal for a uniform analysis of all uses of *noch* as originating in the temporal continuative reading. I argued that my account for the reanalysis of $noch_{\text{TEMP}}$ as $noch_{\text{COMP}}$, conforms to Beck's (2020) goal for a uniform analysis of all uses of *noch* as originating in the temporal continuative reading. Moreover, I argued not to consider $noch_{\text{COMP}}$ an instance of marginal *noch* operating on degrees.

Coming back to the big picture and the wider goal of this dissertation: I have shown that scalar presuppositions, with respect to the three scalar items under investigation here, can be traced back to the scalar nature of space ($even_{\text{SAO}}$ & $furðon_{\text{SAO}}$) and time ($noch_{\text{COMP}}$). I base my argument on the systematic annotation and investigation of corpus data, in order to establish links between relevant old meanings and new, scalar meanings. As far as the relevant old meanings are concerned, I was able to rely on corpus data for $even_{\text{SAO}}$ and $noch_{\text{COMP}}$; for $furðon_{\text{SAO}}$, I had to rely on lexicographical sources. As far as the semantics for new, scalar meanings are concerned, I drew on semantics literature. Moreover, in the case of $furðon_{\text{SAO}}$, I provided a detailed profile of its distribution and various uses during OE. With respect to $noch_{\text{COMP}}$, I ran an experiment to gain a better understanding of $noch_{\text{COMP}}$'s presuppositions. In terms of providing a detailed description of plausible semantic shifts in order to get from the old meanings to the new meanings, I relied on corpus data for the emergence of both $even_{\text{SAO}}$ (EEBO) and $noch_{\text{COMP}}$ (DDD). For $furðon_{\text{SAO}}$'s emergence, there is no corpus data to establish an empirically sound account on par with those for *noch* and *even*. However, a number of plausible proposals that can explain the development of $furðon_{\text{SAO}}$ from an adverbial with a 'forth'-meaning are available. Two out of the three proposals presented are discussed in considerable and plausible detail. I have argued and shown that new presuppositional meaning can be traced to old presuppositional meaning and its interaction with context(s) when such an approach is based on the systematic and detailed annotation of diachronic corpus

data. This approach allowed me to identify a number of discrete shifts that can be threaded together to form a coherent diachronic cline or presuppositional change in scalar presuppositions: Scalar presuppositions originate in the presuppositional profiles of the non-scalar predecessors.

From a broader perspective, the findings presented herein underscore the efficacy of a systematic and exhaustive annotation of corpus data. Given that corpus-based diachronic linguistics aims to elucidate the development of grammatical systems, the most reliable conclusions necessitate an exhaustive annotation for any given sub-period. By providing such comprehensive annotation for the relevant corpus data, I was able to account for presuppositional changes in a well-motivated selection of scalar presuppositions. In others words, the quantitative picture arising from my annotation allows to make qualitative differences visible—both in terms of identifying particular uses/readings (compare e.g. $even_{\text{EXA}}$ vs. $even_{\text{SCA}}$ in Chapter 2) and in terms of identifying the nature of the contexts that correlate to particular uses (cf. relevance of goal PPs for $even_{\text{SCA}}$). My arguments are grounded in the modeling of plausible semantic shifts, which collectively form presuppositional clines. The parallel, discrete semantic shifts from $even_{\text{SCA}}$ ('all the way') to $even_{\text{SAO}}$ (Chapter 2) and from *furþum* ('forth to(wards)') to $furðon_{\text{SAO}}$ (Chapter 3, Proposal #3) illustrate that in both instances, an endpoint-oriented item maximized its presuppositional meaning to assign a scalar additive presupposition (Gergel, 2023; Heim, 1991). Crucially, the plausibility of the semantic shifts from old to new meanings, is due to the interaction the involved meanings with the respective contexts, which either permit constant entailments (Beck, 2012), or, in the presence of infelicities, invite semantic shifts in cooperative/charitable hearers Eckardt (2009); Schwenter and Waltereit (2010). Such discrete shifts can be considered part of an inventory of diachronic semantic shifts, comprising combinations of old/input and new/output meanings with contextual factors.

Future directions with respect to the phenomena explored here include the experimental verification of the reconstruction-based proposal discussed in Chapter 3. Additionally, experimental verification remains a viable option for validating the corpus-based accounts, despite the availability of corpus data, e.g. for $noch_{\text{COMP}}$ (Chapter 4) and $even_{\text{SAO}}$ (Chapter 2), as exemplified by the Human Diachronic

Simulation Paradigm ('HUDSPA'; Gergel et al. (2021, 2023)). Beyond the scalar items investigated in this dissertation, my findings advocate for moving beyond GIIN/IITSC approaches for other items identified as common sources and targets (König and Traugott, 1988; König, 1989, 1991; Traugott and Dasher, 2002; Hopper and Traugott, 2003; Traugott, 2006). Exploring other scalar additive operators presents an immediate and intriguing extension to enhance our understanding of language change in general and scalar presupposition in particular. Furthermore, investigating plain additive particles (e.g., English *also*, *too*; Swedish *också*) in connection with scalar additives is another promising direction. Relevant questions include, but are not limited to, the conditions under which scalar interpretations are triggered, as observed for Swedish *även* (König, 1989, p. 322), which is cognate to English *even* and German *eben*, the latter of which never developed a scalar presupposition.

# Appendix A

# Appendix – Experimental design; Ch. 4 (*noch*)

Table A.1 contains all the condition-3-target items for all 16 token sets. For space constraints I can only include one condition. However, based on Table A.1 and 4.1 (p. 153) it is straight forward to reconstruct the remaining conditions as Table A.2 exemplifies by means of the first token set in line no. 01 in Table A.1.

Table A.3 shows the combinatorics behind the compilation of the questionnaires (A–H). The goal was to minimize response fatigue and reduce questionnaire duration. Therefore, I ended up with 8 questionnaires, each containing 8 target items and 16 fillers. The 64 target items were rotated/pseudo-randomized among the questionnaire groups. This was done to ensure that every participant had to rate 8 items while (i) never seeing any token set more than once, (ii) rating every condition twice, (iii) at least one item from every antonymous token set pair (i.e.: token set 1 – *tall* & token set 2 – *short*).

| no. | target item & and *translation* |
|---|---|
| 01 | Emil ist größer als Felix und Georg ist noch größer als Emil. Dabei ist Emil nicht groß.<br>*'Emil is taller than Felix and George is still taller than Emil. And yet Emil is not tall.'* |
| 02 | Sarah ist kleiner als Tina und Ulrike ist noch kleiner als Sarah. Dabei ist Sarah nicht klein.<br>*'Sarah is shorter than Tina and Ulrike is still shorter than Sarah. And yet Sarah is not short.'* |
| 03 | Die Birke ist höher als die Eiche und die Fichte ist noch höher als die Birke.<br>Dabei ist die Birke nicht hoch.<br>*'The birch tree is taller than than the oak tree and the spruce is still taller than the birch tree.*<br>*And yet the birch is not tall.'* |
| 04 | Die Goldmine ist tiefer als die Kupfermine und die Salzmine ist noch tiefer als die Goldmine.<br>Dabei ist die Goldmine nicht tief.<br>*'The gold mine is deeper than the copper mine and the salt mine is still deeper than the gold mine.*<br>*And yet the gold mine is not deep.'* |
| 05 | Das Sofa ist breiter als der Tisch und das Regal ist noch breiter als das Sofa. Dabei ist das Sofa nicht breit.<br>*'The sofa is wider than the table and the shelf is still wider than the sofa. And yet the sofa is not wide.'* |
| 06 | Das Fenster ist schmaler als der Gang und die Türe ist noch schmaler als das Fenster.<br>Dabei ist das Fenster nicht schmal.<br>*'The window is narrower than the hallway and the door is still narrower than the winder.*<br>*And yet the window is not narrow.'* |
| 07 | Der Rhein ist länger als die Elbe und die Donau ist noch länger als der Rhein. Dabei ist der Rhein nicht lang.<br>*'The Rhine is longer than the Elbe and the Danube is still longer than the Rhine. And yet the Rhine is not long.'* |
| 08 | Das Kabel ist kürzer als der Draht und das Seil ist noch kürzer als das Kabel. Dabei ist das Kabel nicht kurz.<br>*'The cord is shorter than the wire and the rope is still shorter than the cord. And yet the cord is not short.'* |
| 09 | Doris ist schneller als Elsa und Flora ist noch schneller als Doris. Dabei ist Doris nicht schnell.<br>*'Doris is faster than Elsa and Flora is still faster than Doris. And yet Doris is not fast.'* |
| 10 | Oskar ist langsamer als Peter und Robert ist noch langsamer als Oskar. Dabei ist Oskar nicht langsam.<br>*'Oscar is slower than Peter and Robert is still slower than Oscar. And yet Oscar is not slow.'* |
| 11 | Konrad ist jünger als Lukas und Max ist noch jünger als Konrad. Dabei ist Konrad nicht jung.<br>*'Conrad is younger than Lucas and Max is still younger than Conrad. And yet Conrad is not young.'* |
| 12 | Gina ist älter als Hannah und Ilse ist noch älter als Gina. Dabei ist Gina nicht alt.<br>*'Gina is older than Hannah and Ilse is still older than Gina. And yet Gina is not old.'* |
| 13 | Das Buch ist besser als das Musical und der Film ist noch besser als das Buch. Dabei ist das Buch nicht gut.<br>*'The book is better than the musical and the movie is still better than the book. And yet the book is not good.'* |
| 14 | Das Buch ist schlechter als das Musical und der Film ist noch schlechter als das Buch. Dabei ist das Buch nicht schlecht.<br>*'The book is worse than the musical and the movie is still worse than the book. And yet the book is not bad.'* |
| 15 | Die 'Mona Lisa' ist schöner als 'Die Geburt der Venus' und 'Sternennacht' ist noch schöner als die 'Mona Lisa'.<br>Dabei ist die 'Mona Lisa' nicht schön.<br>*'The Mona Lisa is more beautiful than The Birth of Venus and The Starry Night is still more beautiful than The Mona Lisa.'*<br>*'And yet The Mona Lisa is not beautiful.'* |
| 16 | Das T-Shirt ist hässlicher als die Jeans und der Pullover ist noch hässlicher als das T-Shirt. Dabei ist das T-Shirt nicht hässlich.<br>*'The t-shirt is uglier than the jeans and the pullover is still uglier than the t-shirt. And yet the t-shirt is not ugly.'* |

Table A.1: Experimental design; condition-3-target items (fac 1, lev 2 & fac 2, lev 2) for 16 token sets.

| cond | fac 1 | fac 2 | item |
|---|---|---|---|
| 1 | ass | +n | Emil ist groß und Georg ist noch größer als Emil. Dabei ist Emil nicht groß.<br>*'Emil is tall and George is still taller than Emil. And yet Emil is not tall.'* |
| 2 | ass | −n | Emil ist groß und Georg ist größer als Emil. Dabei ist Emil nicht groß.<br>*'Emil is tall and George is taller than Emil. And yet Emil is not tall.'* |
| 3 | com | +n | Emil ist größer als Felix und Georg ist noch größer als Emil. Dabei ist Emil nicht groß.<br>*'Emil is taller than Felix and George is still taller than Emil. And yet Emil is not tall.'* |
| 4 | com | −n | Emil ist größer als Felix und Georg ist größer als Emil. Dabei ist Emil nicht groß.<br>*'Emil is taller than Felix and George is taller than Emil. And yet Emil is not tall.'* |

Table A.2: example, 4 conditions per token set (fac 1, lev 2 & fac 2, lev 2).

| item no. | token set | cond. | **questionnaire** | item no. | token set | cond. | **questionnaire** |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 1 | *A* | 33 | 9 | 1 | *E* |
| 2 | 1 | 2 | *B* | 34 | 9 | 2 | *F* |
| 3 | 1 | 3 | *C* | 35 | 9 | 3 | *G* |
| 4 | 1 | 4 | *D* | 36 | 9 | 4 | *H* |
| 5 | 2 | 1 | *E* | 37 | 10 | 1 | **A** |
| 6 | 2 | 2 | *F* | 38 | 10 | 2 | **B** |
| 7 | 2 | 3 | *G* | 39 | 10 | 3 | **C** |
| 8 | 2 | 4 | *H* | 40 | 10 | 4 | **D** |
| 9 | 3 | 1 | *B* | 41 | 11 | 1 | *F* |
| 10 | 3 | 2 | *C* | 42 | 11 | 2 | *G* |
| 11 | 3 | 3 | *D* | 43 | 11 | 3 | *H* |
| 12 | 3 | 4 | *E* | 44 | 11 | 4 | **A** |
| 13 | 4 | 1 | *F* | 45 | 12 | 1 | **B** |
| 14 | 4 | 2 | *G* | 46 | 12 | 2 | **C** |
| 15 | 4 | 3 | *H* | 47 | 12 | 3 | **D** |
| 16 | 4 | 4 | **A** | 48 | 12 | 4 | **E** |
| 17 | 5 | 1 | *C* | 49 | 13 | 1 | *G* |
| 18 | 5 | 2 | *D* | 50 | 13 | 2 | *H* |
| 19 | 5 | 3 | *E* | 51 | 13 | 3 | **A** |
| 20 | 5 | 4 | *F* | 52 | 13 | 4 | **B** |
| 21 | 6 | 1 | *G* | 53 | 14 | 1 | **C** |
| 22 | 6 | 2 | *H* | 54 | 14 | 2 | **D** |
| 23 | 6 | 3 | **A** | 55 | 14 | 3 | **E** |
| 24 | 6 | 4 | **B** | 56 | 14 | 4 | **F** |
| 25 | 7 | 1 | *D* | 57 | 15 | 1 | *H* |
| 26 | 7 | 2 | *E* | 58 | 15 | 2 | **A** |
| 27 | 7 | 3 | *F* | 59 | 15 | 3 | **B** |
| 28 | 7 | 4 | *G* | 60 | 15 | 4 | **C** |
| 29 | 8 | 1 | *H* | 61 | 16 | 1 | **D** |
| 30 | 8 | 2 | **A** | 62 | 16 | 2 | **E** |
| 31 | 8 | 3 | **B** | 63 | 16 | 3 | **F** |
| 32 | 8 | 4 | **C** | 64 | 16 | 4 | **G** |

Table A.3: Combination of token sets and conditions into questionnaires.

# Bibliography


Anderson, S. R. (1972). How to get *even*. *Language*, 48(4):893–906.

Bates, D., Mächler, M., Bolker, B., and Walker, S. (2015). Fitting linear mixed-effects models using lme4. *Journal of Statistical Software*, 67(1):1–48.

Beaver, D. and Clark, B. (2008). *Sense and Sensitivity. How Focus Determines Meaning*. Wiley-Blackwell, Chichester, UK.

Beck, S. (2011). Comparison Constructions. In Maienborn, C., von Heusinger, K., and Portner, P., editors, *Semantics: An International Handbook of Natural Language Meaning*, volume 2, pages 1341–1389. De Gruyter, Berlin.

Beck, S. (2012). Pluractional comparisons. *Linguistics and Philosophy*, 35:57–110.

Beck, S. (2016a). Discourse related readings of scalar particles. In *Proceedings of Semantics and Linguistic Theory 26*, pages 142–165, University of Texas, Austin.

Beck, S. (2016b). Focus sensitive operators. In Féry, C. and Ishihara, S., editors, *Information Structure*, pages 227–250. OUP, Oxford.

Beck, S. (2016c). Temporal *noch/still* and further-to readings of German *noch*. In *Proceedings of Sinn und Bedeutung 20*, pages 4–25, Universität Tübingen.

Beck, S. (2020). Readings of scalar particles: noch/still. *Linguistics and Philosophy*, 43:1–67.

Beck, S., Berezovskaya, P., and Pflugfelder, K. (2009). The use of *again* in 19th-century English versus Present-Day English. *Syntax*, 12-3:193–214.

Beck, S. and Gergel, R. (2015). The diachronic semantics of English *again*. *Natural Language Semantics*, 23,3:157–203.

Beck, S. and Snyder, W. (2001). The resultative parameter and restitutive *Again*. In Féry, C. and Sternefeld, W., editors, *Adiatur Vox Sapientiae: Festschrift für Arnim von Stechow*, pages 48–69. Akademie Verlag, Berlin.

Bennett, J. (1982). Even if. *Linguistics and Philosophy*, 5:403–418.

Bierwirth, C. (1896). Noch–its English equivalents and the relative frequency of their occurrence. *Modern Language Notes*, 11(6):168–174.

Blake, N. F. (1970). *The History of Reynard the fox. Translated from the Dutch original by William Caxton*. Number 263 in Early English Text Society. OUP, London, New York.

Bosworth, J. and Toller, T. N. (1848). *An Anglo-Saxon Dictionary*. OUP, Oxford.

Bosworth-Toller (2024a). "forÞ-on". Online. https://bosworthtoller.com/11910, last accessed Aug 4, 2024.

Bosworth-Toller (2024b). "forÞum". Online. https://bosworthtoller.com/11949, last accessed Aug 4, 2024.

Bosworth-Toller (2024c). "furþ-um". Online. https://bosworthtoller.com/11949, last accessed Aug 4, 2024.

Boutkan, D. and Siebinga, S. M. (2005). *Old Frisian etymological dictionary*. Brill, Leiden.

Büring, D. (2007). Semantics, intonation, and information structure. In Ramchand, G. and Reiss, C., editors, *The Oxford Handbook of Linguistic Interfaces*, Oxford Handbooks in Linguistics, pages 445–473. OUP, Oxford.

Büring, D. (2016). *Intonation and Meaning*. OUP, Oxford.

Chierchia, G., Fox, D., and Spector, B. (2011). Scalar implicature as a grammatical phenomenon. In Portner, P., Maienborn, C., and von Heusinger, K., editors, *Semantics*, Handbücher zur Sprach- und Kommunikationswissenschaft, HSK 33.3, pages 2297–2331. Mouton De Gruyter, Berlin.

Clark Hall, J. R. (1916). *A Concise Anglo-Saxon Dictionary*. Macmillan, New York, 2nd edition.

Crnič, L. (2011). *Getting even*. Dissertation, MIT.

Crnič, L. (2013). Focus particles and embedded exhaustification. *Journal of Semantics*, 30:533–558.

de Vries, J. (1961). *Altnordisches etymologisches Wörterbuch*. Brill, Leiden.

Deo, A. (2015). Diachronic semantics. *Annual Review of Linguistics*, 1:179–197.

Diewald, G. (2014). *Kali Korpus*. Leibniz Universität Hannover. http://www.kali.uni-hannover.de.

Donhauser, K., Gippert, J., and Lühr, R. (2021). *DDD-AD*. Humboldt-Universität zu Berlin. Version 1.0; Accessed on Sept 16, 2017, http://www.deutschdiachrondigital.de/.

Dowty, D. R. (1979). *Word Meaning and Montague Grammar. The Semantics of Verbs and Times in Generative Semantics and in Montague PTQ*. D. Reidel, Dordrecht, Holland.

Dowty, D. R. (1986). The effects of aspectual class on the temporal structure of discourse: Semantics or pragmatics? *Linguistics and Philosophy*, pages 37–61.

Eckardt, R. (2001). Reanalysing *Selbst*. *Natural Language Semantics*, 4:371–412.

Eckardt, R. (2006). *Meaning Change in Grammaticalization*. OUP, Oxford.

Eckardt, R. (2009). APO: Avoid pragmatic overload. In Visconti, J. and Hansen, M.-B. M., editors, *Current Trends in Diachronic Semantics and Pragmatics*, pages 21–42. Emerald, London.

Eckardt, R. (2011). Semantic reanalysis and language change. *Language and Linguistics Compass*, 5,1:33–46.

Eckardt, R. (2012). Grammaticalization and Semantic Reanalysis. In Maienborn, C., von Heusinger, K., and Portner, P., editors, *Semantics: An International*

*Handbook of Natural Language Meaning*, volume 33:3 of *HSK Handbücher zur Sprach- und Kommunikationswissenschaft*, pages 2675–2701. De Gruyter, Berlin.

Eckardt, R. and Speyer, A. (2016). Information structure and language change. In Féry, C. and Ishihara, S., editors, *The Oxford Handbook of Information Structure*, pages 503–519. OUP, Oxford.

Fillmore, C. (1965). Entailment rules in semantic theory. In *Project on Linguistic Analysis, Report No. 10*, pages 60–82, Columbus.

Gast, V. and van der Auwera, J. (2011). Scalar Additive Operators in the Languages of Europe. In *Language*, pages 2–54. Linguistic Society of America.

Gergel, R. (2009). *Rather*. On a modal cycle. In van Gelderen, E., editor, *Cyclical Change*, pages 243–264. John Benjamins, Amsterdam, Philadelphia.

Gergel, R. (2023). Cyclicity effects in the development of presuppositions. Forthc.

Gergel, R. and Beck, S. (2015). Early Modern English '*again*': A corpus study and semantic analysis. *English Language and Linguistics*, 19(1):27–47.

Gergel, R., Blümel, A., and Kopf, M. (2016). Another heavy road of decompositionality: Notes from a dying adverb. In *Proceedings of PLC 39*, pages 109–118. University of Pennsylvania Working Papers in Linguistics: Vol. 22.

Gergel, R., Kopf-Giammanco, M., and Masloh, J. (2017a). Surprisal and satisfaction: Towards an information-theoretic characterization of presuppositions with a diachronic application. In *IWCS 2017 – 12th International Conference on Computational Semantics – Short papers*.

Gergel, R., Kopf-Giammanco, M., and Puhl, M. (2021). Simulating semantic change: A methodological note. In Beltrama, A., Schwarz, F., and Papafragou, A., editors, *Proceedings of ELM 1*, volume 1, pages 184–196. Linguistic Society of America.

Gergel, R., Kopf-Giammanco, M., and Watkins, J. (2017b). Annotating presuppositional information in historical corpora. In *Talk at 23rd International Conference on Historical Linguistics, San Antonio, Texas*.

Gergel, R., Puhl, M., Dampfhofer, S., and Onea, E. (2023). The rise and particularly fall of presuppositions: Evidence from duality in universals. In *Proceedings of ELM 2*, pages 72–82. Linguistic Society of America.

Gergel, R. and Watkins, J., editors (2019). *Quantification and Scales in Change*. Language Science Press, Berlin.

Giannakidou, A. (2007). The landscape of EVEN. *Natural Language & Linguistic Theory*, pages 39–81.

Gippert, J., Martínez, J., and Korn, A. (2003). *TITUS - Thesaurus Indogermanischer Text- und Sprachmaterialien*. http://titus.fkidg1.uni-frankfurt.de/indexe.htm.

Greenberg, Y. (2015). *Even*, comparative likelihood and gradability. In Brochhagen, T., Roelofsen, F., and Theiler, N., editors, *Proceedings of Amsterdam Colloquium 20*, pages 147–156. UVA: Amsterdam.

Greenberg, Y. (2016). A novel problem for the likelihood-based semantics of *even*. *Semantics and Pragmatics*, 9(s).

Greenberg, Y. (2018). A revised, grability semantics for *even*. *Natural Language Semantics*, 26:51–83.

Greenberg, Y. (2019). *Even* and *only*: Arguing for parallels in scalarity and in constructive focus alternatives. In Baird, M. and Pesetsky, J., editors, *Proceedings of NELS 49*, pages 45–60. Amherst: GSLA.

Greenberg, Y. (2022). On the scalar antonymy of *only* and *even*. *Natural Language Semantics*, 30:415–452.

Grice, H. P. (1975). Logic and conversation. In Cole, P. and Morgan, J., editors, *Syntax and Semantics 3. Speech Acts.*, pages 41–58. Academic Press, New York.

Hamblin, C. L. (1973). Questions in Montague. *Foundations of Language*, 10(1):41–53.

Heidermanns, F. (1993). *Etymologisches Wörterbuch der germanischen Primäradjektive*. Studia linguistica Germanica; 33. De Gruyter, Berlin.

Heim, I. (1991). Artikel und Definitheit. In von Stechow, A. and Wunderlich, D., editors, *Semantik/Semantics. Handbücher zur Sprach und Kommunikationswissenschaft*, volume 6, pages 487–535. De Gruyter, Berlin, New York.

Heim, I. and Kratzer, A. (1998). *Semantics in Generative Grammar*. Blackwell, Malden, MA.

Hofstetter, S. (2013). *Selected Issues in the Theory of Comparison: Phrasal Comparison in Turkish and a Cross-Linguistic Perspective on Intensifiers, Negative Island Effects and the Distribution of Measure Phrases*. Dissertation, Universität Tübingen.

Holthausen, F. (1974). *Altenglisches etymologisches Wörterbuch*. Germanische Bibliothek. Winter, Heidelberg, 3 edition.

Hopper, P. and Traugott, E. C. (2003). *Grammaticalization*. CUP, Cambridge, UK, 2nd edition edition.

Horn, L. R. (1969). A presuppositional analysis of *only* and *even*. In *Papers from the 5th Regional Meeting of the Chicago Linguistic Society*, page 98–107, Chicago.

Ippolito, M. (2007). On the meaning of some focus-sensitive particles. *Natural Language Semantics*, 15:1–34.

Jackendoff, R. S. (1972). *Semantic Interpretation in Generative Grammar*. MIT Press, Cambridge, MA.

Johé, J. (2019). Survey circle. Online. Accessed on 07/17/2019, https://www.surveycircle.com/.

Kadmon, N. (2001). *Formal Pragmatics*. Blackwell, Malden, MA.

Karttunen, F. and Karttunen, L. (1977). *Even* questions. In *Papers from the Seventh Annual Meeting, North Eastern Linguistic Society*, Cambridge, Mass.

Karttunen, L. and Peters, S. (1979). Conventional implicature. In Oh, C. and Dinneen, D., editors, *Syntax and Semantics 11: Presupposition*. Academic Press, New York.

Katz, J. J. and Fodor, J. A. (1963). The structure of a semantic theory. *Language*, 39(2):170–210.

Kay, P. (1990). 'even'. *Linguistics and Philosophy*, 13:59–111.

Kennedy, C. (2012). The composition of incremental change. In Demonte, V. and McNally, L., editors, *Telicity, Change, State: A Cross-categorical View of Event Structure*. OUP, Oxford.

Kennedy, C. and McNally, L. (2005). Scale structure, degree modification, and the semantics of gradable predicates. *Language*, 81(2):345–381.

Ker, N. R. (1957). *Catalogue of Manuscripts Containing Anglo-Saxon*. Claredon Press, Oxford.

*KJV* Romans 10 (1987). Biblegateway. Online. accessed on 19/09/2024, https://www.biblegateway.com/passage/?search=Romans+10&version=KJV, based on the 1987 print.

Klein, E. (1971). *A Comprehensive Etymological Dictionary of the English Language*. Elsevier, Amsterdam et al.

Klein, W. (2018). *Looking at Language*. De Gruyter Mouton, Berlin, Boston.

Kopf-Giammanco, M. (2020). German noch under reanalysis. In Gergel, R. and Watkins, J., editors, *Quantification and Scales in Change*, pages 161–198. Language Science Press, Berlin.

Kracht, M. (2021). Spatial prepositions and locative in formal semantics. In Gutzmann, D., Matthewson, L., Meier, C., Rullmann, H., and Zimmermann, T. E., editors, *The Wiley Blackwell Companion to Semantics*, pages 1–20. Wiley Blackwell, Hoboken.

Kratzer, A. (1991). The representation of focus. In von Stechow, A. and Wunderlich, D., editors, *Semantik/Semantics. Handbücher zur Sprach und Kommunikationswissenschaft*, volume 6, pages 825–834. De Gruyter, Berlin, New York.

Krause, T. and Zeldes, A. (2016). *ANNIS3: A new architecture for generic corpus query and visualization.* Digital Scholarship in the Humanities 2016 (31); http://dsh.oxfordjournals.org/content/31/1/118.

Krifka, M. (1998). The origins of telicity. In Rothstein, S., editor, *Event and Grammar*, number 70 in Studies in Linguistics and Philosphie, pages 197–235. Springer, Dordrecht.

Krifka, M. (2000). Alternatives for aspectual particles: Semantics of *still* and *already.* In *Proceedings of the Twenty-Sixth Annual Meeting of the Berkeley Linguistics Society: General Session and Parasession on Aspect (2000)*, pages 401–412, Berkely Linguistic Society.

Krifka, M. (2008). Basic notions of information structure. *Acta Linguistica Hungarica*, 55:243–276.

Kroch, A., Santorini, B., and Delfs, L. (2004). *The Penn-Helsinki Parsed Corpus of Early Modern English (PPCEME).* Department of Linguistics, University of Pennsylvania, first edition. Release 3.

Kroch, A., Santorini, B., and Diertani, A. (2016). *The Penn-Helsinki Parsed Corpus of Modern British English (PPCMBE2).* Department of Linguistics, University of Pennsylvania, second edition. Release 1.

Kroch, A., Taylor, A., and Santorini, B. (2000). *The Penn-Helsinki Parsed Corpus of Middle English (PPCME2).* Department of Linguistics, University of Pennsylvania, second edition. Release 4.

Kuznetsova, A., Brockhoff, P. B., and Christensen, R. H. B. (2017). lmerTest package: Tests in linear mixed effects models. *Journal of Statistical Software*, 82(13):1–26.

Köbler, G. (1982). *Altniederdeutsch-neuhochdeutsches und neuhochdeutsch-altniederdeutsches Wörterbuch.* Arbeiten zur Rechts- und Sprachwissenschaft; 18. Arbeiten-zur-Rechts-und-Sprachwissenschaft-Verlag, Giessen-Lahn, 2 edition.

Köbler, G. (1986). *Altnordisch-neuhochdeutsches und neuhochdeutsch-altnordisches Wörterbuch.* Arbeiten zur Rechts- und Sprachwissenschaft; 24. Arbeiten zur Rechts- und Sprachwissenschaft Verl., Gießen-Lahn.

König, E. (1977). Temporal and non-temporal uses of 'noch' and 'schon' in German. *Linguistics and Philosophy*, I(2):173–198.

König, E. (1989). On the historical development of focus particles. In Weydt, H., editor, *Sprechen mit Partikeln*, pages 318–329. De Gruyter, Berlin, et al.

König, E. (1991). *The Meaning of Focus Particles. A Comparative Perspective.* Routledge, London, New York.

König, E. and Traugott, E. C. (1988). Pragmatic strengthening and semantic change: The conventionalizing of conversational implicature. In Hüllen, W. and Schulze, R., editors, *Understanding the Lexicon: Meaning, Sense and World Knowledge in Lexical Semantics*, pages 110–124. Niemeyer, Tübingen.

Lehmann, W. P. (1986). *A Gothic Etymological Dictionary.* E. Brill, Leiden.

Löbner, S. (1989). "schon - erst - noch": An integrated analysis. *Linguistics and Philosophy*, II(2):167–212.

Madden, F. (1847). *Laȝamons Brut, or Chronicle of Britain; a poetical semi-Saxon paraphrase of the Brut of Wace.*, volume 1. The Society of Antiquaries of London, London.

Maienborn, C. (2011). Event semantics. In Maienborn, C., von Heusinger, K., and Portner, P., editors, *Semantics: An International Handbook of Natural Language Meaning*, volume 33:1 of *HSK Handbücher zur Sprach- und Kommunikationswissenschaft*, pages 802–829. De Gruyter, Berlin.

Maienborn, C. and Schäfer, M. (2011). Adverbs and Adverbials. In von Heusinger, K., Maienborn, C., and Portner, P., editors, *Semantics: An International Handbook of Natural Language Meaning*, volume 33:2 of *HSK Handbücher zur Sprach- und Kommunikationswissenschaft*, pages 1390–1420. De Gruyter, Berlin.

Mann, S. E. (1987). *An Indo-European comparative dictionary.* Buske, Hamburg.

Montague, R. (1973). The proper treatment of quantification in ordinary English. In Hintikka, K. J. J., Moravcsik, J. M. E., and Suppes, P., editors, *Approaches to Natural Language – Proceedings of the 1970 Workshop on Grammar and Semantics*, pages 221–242, Stanford University.

Nevalainen, T. (1994). Aspects of adverbial change in Early Modern English. In Kastovsky, D., editor, *Studies in Early Modern English*, pages 243–259. De Gryuter, Berlin, New York.

OED (2023a). "even, adv. and prep.". Online. https://www.oed.com/view/Entry/65255, last accessed May 12, 2023.

OED (2023b). "even-forth, adv. and prep.". Online. https://www.oed.com/dictionary/5124629, last accessed Aug 2, 2024.

OED (2023c). "forthe". Online. https://www.oed.com/view/Entry/73666, last accessed July 31, 2024.

OED (2024a). "but (prep., adv., conj., n.2)". Online. https://doi.org/10.1093/OED/2687276200., last accessed Sept 03, 2024.

OED (2024b). "for-thon". Online. https://www.oed.com/dictionary/3836157, last accessed July 29, 2024.

OED (2024c). "forth". Online. https://www.oed.com/dictionary/3830626, last accessed Aug 2, 2024.

OED (2024d). "forth on". Online. https://www.oed.com/dictionary/3836368, last accessed July 29, 2024.

OED (2024e). "further". Online. https://www.oed.com/dictionary/3331742, last accessed Aug 2, 2024.

OED (2024f). "only (adv., conj., & prep.)". Online. https://doi.org/10.1093/OED/4586264543, last accessed Sept 3, 2024.

Orel, V. (2003). *A Handbook of Germanic Etymology*. E. Brill, Leiden, Boston.

Oxford Text Archive (2015). *Early English Books Online (Phase 1) (EEBO)*. University of Oxford. Accessed on Sept 27, 2023, https://ota.bodleian.ox.ac.uk/repository/xmlui/handle/20.500.12024/5.

Partridge, E. (1966). *A Short Etymological Dictionary of Modern English*. Routledge, London, New York, 4th edition.

Petrova, S. (2011). Modeling word order variation in discourse: On the pragmatic properties of vs order in Old High German. *Oslo Studies on Language 3*, 3:209–228.

Piñón, C. (2008). Aspectual composition with degrees. In McNally, L. and Kennedy, C., editors, *Adjectives and Adverbs: Syntax, Semantics, and Discourse*, pages 183–219. OUP, Oxford.

Pokorny, J. (1989). *Indogermanisches etymologisches Wörterbuch*, volume 1. Francke, Bern, 2 edition.

ProQuest (2015). *Early English Books Online*. Accessed on 12.07.24, https://about.proquest.com/en/products-services/eebo/.

R Core Team (2019). *R: A Language and Environment for Statistical Computing*. R Foundation for Statistical Computing, Vienna, Austria. https://www.R-project.org/.

Rett, J. (2013). Similatives and the degree arguments of verbs. *Natural Language and Linguistic Theory*, 31(4):1101–1137.

Roberts, C. (2006). *Only*, Presupposition and implicature. (Submitted).

Roberts, C. (2012). Information structure in discourse: Towards an integrated formal theory of pragmatics. *Semantics and Pragmatics*, 5:1–69.

Rooth, M. (1985). *Association with Focus*. PhD thesis, University of Massachusetts, Amherst.

Rooth, M. (1992). A theory of focus interpretation. *Natural Language Semantics*, 1:75–116.

Rooth, M. (2016). Alternative semantics. In Féry, C. and Ishihara, S., editors, *The Oxford Handbook of Information Structure*, Oxford Handbooks in Linguistics, pages 19–40. OUP, Oxford.

Schimmelpfennig, L. (2015). *Diachronic Development of still*. Thesis, Universität Tübingen.

Schwarzschild, R. (1999). Givenness, AvoidF and other constraints on the placement of accent. *Natural Language Semantics*, 7:141–177.

Schwenter, S. A. and Waltereit, R. (2010). Presupposition accommodation and language change. In Davidse, K., Vandelanotte, L., and Cuyckens, H., editors, *Subjectification, Intersubjectification and Grammaticalization*, pages 75–102. Mouton De Gruyter, Berlin.

SoSci (2019). SoSci - der Online Fragebogen. Online. accessed on 07/17/2019, https://www.soscisurvey.de/.

Stalnaker, R. (1973). Presuppositions. *Journal of Philosophical Logic*, 2:447–457.

Stratmann, F. H. (1867). *A Dictionary of the Old English Language. Compiled of Writings from the XIII, XIV and XV Centuries*. Kremer & Baum, Krefeld.

Stratmann, F. H. (1878). *A Dictionary of the Old English Language. Compiled from Writings of the XII. XIII. XIV. and XV. Centuries*. Gehrlich, Krefeld, 3rd edition.

Stratmann, F. H. and Bradley, H. (1891). *A Middle English Dictionary. Containing Words used by English Writers from the Twelfth to the Fifteenth Century*. OUP, London.

Talmy, L. (1978). Figure and ground in complex sentences. In Greenberg, J. H., Ferguson, C. A., and Moravcsik, E. A., editors, *Universals of Human Language*, volume 4, Syntax, pages 625–649. Stanford University Press, Stanford, Cal.

Taylor, A., Warner, A., Pintzuk, S., and Beths, F. (2003). *The York-Toronto-Helsinki Parsed Corpus of Old English Prose (YCOE)*. Department of Language and Linguistic Science, University of York.

Tiefenbach, H. (2010). *Altsächsisches Handwörterbuch/A Concise Old Saxon Dictionary*. De Gruyter, Berlin, New York.

Torp, A. B. and Falk, H. M., editors (1909). *Vergleichendes Wörterbuch der indogermanischen Sprachen*, volume 3: Wortschatz der germanischen Spracheinheit. Vandenhoeck & Ruprecht, Göttingen, 4 edition.

Traugott, E. (2006). The semantic development of scalar focus modifiers. In van Kemenade, A. and Los, B., editors, *The Handbook of the History of English*, Handbooks in Linguistics, pages 335–359. Blackwell, Malden et al.

Traugott, E. (2011). Grammaticalization and mechanisms of change. In Narrog, H. and Heine, B., editors, *The Oxford Handbook of Grammaticalization*, Handbooks in Linguistics, pages 1–8. OUP, Oxford.

Traugott, E. and Dasher, R. (2002). *Regularity in Semantic Change*. Cambridge Studies in Linguistics. CUP, Cambridge.

Traugott, E. C. (1988). Pragmatic strengthening and grammaticalization. In *Proceedings of the Fourteenth Annual Meeting of the Berkeley Linguistics Society*, pages 406–416.

Umbach, C. (2004). Cataphoric indefinites. In Meier, C. and Weisgerber, M., editors, *Proceedings of Sinn und Bedeutung 8*, pages 301–315, Universität Konstanz.

Umbach, C. (2009a). Another additive particle under stress: German additive *noch*. In *Proceedings of the Tenth Symposium on Logic and Language - LoLa 10*, volume 10, pages 149–156.

Umbach, C. (2009b). Comparatives combined with additive particles: The case of German *noch*. In *Proceedings of Sinn und Bedeutung*, volume 13, pages 543–558.

Umbach, C. (2012). Strategies of additivity: German additive *noch* compared to *auch*. *Lingua*, 122(15):1843–1863.

van Gelderen, E. (2014). *A History of the English Language*. John Benjamins, Ansterdam, Philadelpia.

Vendler, Z. (1957). Verbs and times. *Philosophical Review*, 66(2):143–160.

von Stechow, A. (1984). Comparing semantic theories of comparison. *Journal of Semantics*, 3:1–77.

von Stechow, A. (1991). Current issues in the theory of focus. In von Stechow, A. and Wunderlich, D., editors, *Semantik/Semantics. Handbücher zur Sprach und Kommunikationswissenschaft*, volume 6, pages 804–825. De Gruyter, Berlin, New York.

von Stechow, A. (2006a). Spatial prepositions in interval semantics. MS. Universität Tübingen.

von Stechow, A. (2006b). Times as degrees. MS. Universität Tübingen.

Walde, A. (1973). *Vergleichendes Wörterbuch der Indogermanischen Sprachen*, volume 2. De Gruyter, Berlin, reprinted edition.

Watson, G. (1971). *The New Cambridge bibliography of English literature*, volume 1: 1660-1800. CUP.

Watson, G. (1974). *The New Cambridge bibliography of English literature*, volume 1: 600-1660. CUP.

Winter, B. (2013). *Linear models and linear mixed effects models in R with linguistic applications*. Online: arXiv:1308.5499, [http://arxiv.org/pdf/1308.5499.pdf].

Zwarts, J. (2005). Prepositional aspect and the algebra of paths. *Linguistics and Philosophy*, 28:739–779.

List of corrections for dissertation 'High Presuppositions in Change' (15. Mai 2025)

(Martin Kopf-Giammanco, 2025)

1. Added header with author's name and title of dissertation.
2. p. i: Corrected year of publication.
3. p. ii: Added to acknowledgments: "I take full ownership of any errors, shortcomings and imperfections in this dissertation."
4. p. 1: "The focus in on *even*-words" > "The focus is on *even*-words"
5. p. 1: "York-Helsinki-Toronto Corpus of Old English prose" > "York-Helsinki-Toronto Corpus of Old English Prose"
6. p. 2: "Heim (1991)'s 'Maximize Presupposition"' > "Heim's (1991)'s 'Maximize Presupposition"'
7. p. 3: "Gergel (2023)'s" > "Gergel's (2023)"
8. p. 3: "in need of systematic investigation" > "in need of a systematic investigation"
9. p. 3: "Traugott (2006)" > "Traugott's (2006)"
10. p. 3: "Eckardt (2009)'s" > "Eckardt's (2009)"
11. p. 4: "particle/chapter" > "each particle and the corresponding chapter"
12. p. 4: "The core idea is that $even_{\text{SAO}}$ has its high-scale semantics in $even_{\text{EXA}}$'s endpoint/goal-orientedness in predicates with bounded directional PPs" > "The core idea is that $even_{\text{SAO}}$ derives its high-scale semantics from $even_{\text{EXA}}$'s endpoint/goal-orientedness in predicates with bounded directional PPs"
13. p. 4: "I can make to following" > "I can make the following"
14. p. 5: "down-ward entailing" > "downward entailing"
15. p. 5: "upward-entailing" > "upward entailing"
16. p. 5: "Old English *furðon* which" > "Old English *furðon*, which"
17. p. 5: "as a scalar additive particles." > "as a scalar additive particle."
18. p. 5: "Old English (OE)." > "Old English."

19. p. 5: "(scale-reversing)" > "(or scale-reversing)" for better cohesion across the newly added "(DE)"
20. p. 7: "Beck (2020)'s" > "Beck's (2020)"
21. p. 7: "The third *even*-word under investigation here is the German comparative *noch*. The emergence of German comparative *noch* complements *furðon* and *even*" > "The third *even*-word under investigation here is the German comparative *noch* ('$noch_{\text{COMP}}$'). The emergence of $noch_{\text{COMP}}$ complements *furðon* and *even*"
22. p. 7: "There are two major methodological components in Chapter 4 on comparative *noch* ('$noch_{\text{COMP}}$')." > "There are two major methodological components in Chapter 4 on $noch_{\text{COMP}}$."
23. p. 7: "The results seems to be" > "The results seem to be"
24. p. 7: "Umbach (2009b)'s" > "Umbach's (2009b)"
25. p. 7: "Hofstetter (2013)'s" > "Hofstetter's (2013)"
26. p. 7: "Ippolito (2007)'s" > "Ippolito's (2007)"
27. p. 7: "Another import reason" > "Another important reason"
28. p. 8: "In Chapter 4 we will get a clearer picture" > "In Chapter 4, I will develop a clearer picture"
29. p. 8: "spatiotemporal" > "spatio-temporal"
30. p. 8: "and the contribution" > "and that the contribution"
31. p. 9: "I want to take brief look" > "I want to take a brief look"
32. p. 10: Removed "This database allows to attest unambiguous uses of $even_{\text{SAO}}$ as early as the 1520s."
33. p. 10: Removed last paragraph of introduction to Ch. 2.
34. p. 10: Added "I will introduce my approach to classifying and annotating the information structural phenomena entailed by the focus particle *even* in diachronic data."
35. p. 12: " (cf. Appendix A, p. [pagenumber]; but also Rooth (1985, 1992); Krifka (2008); Beck (2016b))" > "(cf. Rooth, 1985, 1992; Krifka, 2008; Beaver and

Clark, 2008; Beck, 2016b)."

36. p. 13: "Katz and Fodor (1963)'s" > "Katz and Fodor's (1963)"
37. p. 14: "Greenberg (2022)" > "Greenberg's (2022)"
38. p. 15: "Kay (1990)'s" > "Kay's (1990)"
39. p. 16: "Greenberg (2015)" > "Greenberg (2016)'s"
40. p. 16: "Greenberg (2022)" > "Greenberg's (2022)"
41. p. 16: "where in fact" > "were in fact"
42. p. 18: "downward entailing (DE) operators" > "downward entailing operators"
43. p. 19: "Crnič (2011)'s" > "Crnič's (2011)"
44. p. 19: "Crnič (2011)'s" > "Crnič's (2011)"
45. p. 20: "French (Fr.)" > "French (Fr)"
46. p. 20: "Fr." > "Fr"
47. p. 20: "Fr." > "Fr"
48. p. 20: "Fr." > "Fr"
49. p. 20: "Ger." > "Ger"
50. p. 20: "Ger." > "Ger"
51. p. 20: "Ger." > "Ger"
52. p. 21: "Gast and van der Auwera (2011)'s" > "Gast and van der Auwera's (2011)"
53. p. 21: "Gast and van der Auwera (2011)'s" > "Gast and van der Auwera's (2011)"
54. p. 30: "shows up in new context: 'list construction"' > "shows up in the new context 'list construction"'
55. p. 32: "Eckardt (2009)'s" > "Eckardt's (2009)"
56. p. 32: Changed heading of section to accommodate material from former Appendix A.
57. p. 33: Added subsection 2.3.1—mostly as provided from former Appendix A

58. p. 37: “Schwarzschild (1999)” > “Schwarzschild’s (1999)”
59. p. 38: added citations “Watson (1971, 1974)” in parenthesis referencing New Cambridge Bibliography of English Literature
60. p. 38: removed “relevant” as not all flaws described are relevant: “However, the EEBO has a number of relevant flaws.” > “However, the EEBO has a number of flaws.”
61. p. 38: The position of Figure 2.1 was changed from ‘`H`’ to ‘`!htbp`’ to allow for a more flexible placement of the figure.
62. p. 39: The position of Table 2.1 was changed from ‘`H`’ to ‘`!htbp`’ to allow for a more flexible placement of the figure.
63. p. 39: As a consequence of repositioning of Table 2.1, the formerly preceding colon was changed to a period character. In order to maintain readability, the remaining tables in this section were left at the positioning setting ‘`H`’; in turn, this necessitates a page reference: “cf. Table 2.1 (p. 40).”
64. p. 42: “Eckardt and Speyer (2016)’s” > “Eckardt and Speyer’s (2016)”
65. p. 42: Added “This absolute frequency of 144 occurrences amounts to a relative frequency in the first 60 years the EEBO of 0.0012%. This is (expectedly) considerably lower than the 0.065-% frequency of all FP-labeled uses of *even* in the Late Modern English PPCMBE data (Kroch et al., 2016).”
66. p. 42: “Traugott (2006)’s” > “Traugott’s (2006)”
67. p. 46: “(‘LC’)” > “(LC)”
68. p. 46 (64): removed [...] from gloss
69. p. 46: “(‘NOB’)” > “(NOB)”
70. p. 47: “the following two data:” > “the following three data points:”
71. p. 56: The problem arises due to a typesetting issue. The previous paragraph is part of a LaTeXitemize environment. I changed the positioning of Table 2.4 to “[H]” (with package ‘float’) to force its position into alignment with the LaTeXcode, i.e. after the itemize environment. As a consequence, the itemize-material spilling onto p. 56 is now removed from the paragraphs below the table and in closer proximity to main parts of the itemize environment above.

72. p. 62 (81): removed [...] twice from gloss
73. p. 62 (83): removed [...] from gloss
74. p. 63 (83): In the paraphrase, [T]he > The & [...] > ...; this is not a quote but my own paraphrase.
75. p. 67: “remedied should it become” > “remedied, should it become”
76. p. 67: “Eckardt (2009)’s” > “Eckardt’s (2009)”
77. p. 67: “some intermediate point along” > “some intermediate points along”
78. p. 67: “i.e. ¬( p(1)=p’(0) ∨ p(1)=p(1) ).” > “i.e. ¬( p(1)=p’(0) ∨ p(1)=p’(1) ).”; inserted “”’ at “p” (p > p’) to remove non-intended tautology.
79. p. 68: “i.e. ∃p’(i)⊆p’[ p’(i) ⊈ p]” > “i.e. ∃p’(i)[ p’(i) ⊈ p]”
80. p. 70: “Eckardt (2009)’s” > “Eckardt’s (2009)”
81. p. 72: “overview,” > “overview (Table 2.6),”
82. p. 73: “40 pre-1500 *even*s” > “39 pre-1500 *even*s”
83. p. 73: Complementing the changes in Table 2.6, I added the following sentences: “I performed separate applications of the $\chi^2$ Test of Independence for all three modes of data selection. Regardless of the mode of selection, the test confirms that there is a significant relationship between the two variables *time* (with levels ‘15$^{\text{th}}$-c.’ and ‘16$^{\text{th}}$-c.’) and *P-type* (levels ‘static’ and ‘bounded-directional’); cf. bottom row in 2.6 for the detailed reports.”
84. p. 73 (iii): In the paraphrase, [...] > ... (not a quote, my own paraphrase)
85. p. 73 Table 2.6: Updated the entire table with $\chi^2$-test-of-independence reports; made the table more coherent and accessible as a whole. As a consequence of the changes to the table, the table became taller and needed more space. Due to typesetting constraints, the table is now located at the top of the next page.
86. p. 75: “(‘NOB’)” > “(NOB)”
87. p. 76: “can be assume to be” > “can be assumed to be”
88. p. 78: “(cf. ‘<’ in (104))” > “(cf. ‘<’ in (104), indicating ‘more informative/stronger than’)”

89. p. 78 (104): "q $<_{\mathrm{C}}$ (103-a)" > "q < (103-a)"; remove subscript capital "C".
90. p. 78: "Eckardt (2009)'s" > "Eckardt's (2009)"
91. p. 79: "Eckardt (2009)'s" > "Eckardt's (2009)"
92. p. 80: "In the remaining examples below," > ""
93. p. 84: "Gast and van der Auwera (2011)'s" > "Gast and van der Auwera's (2011)"
94. p. 86: (i.) I changed the relative order of the two paragraphs following (113); (ii.) To clarify, I changed the paragraph now immediately following (113) (formerly the second after (113)) to:

> Notice that in (113) there is mismatch between the pragmatic ordering in the hierarchy of beings that have authority in the interpretation of divine law: On the one hand, (outside of God) angels are the strongest alternatives, i.e. the most authoritative entities. On the other hand, when it comes to the ordering in the context and ordering of alternative propositions, *Paul trusts an angel* is the weakest alternative. For instance, it is entailed by stronger alternatives (*If Paul trusts lay people, then Paul trusts an angel*). Due to scale reversal as a consequence negation, *Paul does not trust an angel*$_{\mathrm{F}}$*[...]* is the strongest possible proposition and any weaker alternatives are entailed by it: {Paul does not trust x | x is a relevant entity}.

95. p. 87: "('SAO')" > "(SAO)"
96. p. 87: "(cf. Section for details with respect to *even*)" > "(cf. Section 2.1.1, for details with respect to *even*)"
97. p. 88: "I will argue for and go into more details with respect to Proposals #2 and #3. On the one hand, I argue Proposal #2 to best explain *furðon*'s penchant for associating with weak elements throughout the OE period. On the other hand, Proposal #3 will be best in line with the discussion of possible clines for SAOs in the literature and, moreover, parallel *even*$_{\mathrm{SAO}}$'s emergence to some extent." > "I will go into more detail with respect to Proposals #2 and #3. Among these two competing accounts, I will argue for Proposal #2 as it

best explains *furðon*'s penchant for associating with weak elements throughout the OE period despite the fact that Proposal #3 follows a typologically more common and expected trajectory and also parallels $even_{\text{SAO}}$'s emergence to some extent."

98. p. 88: "In Section 3.4 (p. 98), I will discuss the challenges involved in researching phenomena related to information structure on the basis of diachronic data and lay out my approach to the annotation of *furðon*." > "In Section 3.4 (p. 98), I will briefly touch on the challenges involved in researching phenomena related to information structure and the particle *furðon*. By and large, my approach here mirrors the notions put in place with respect to *even* in Chapter 2."

99. p. 126: "The first (#2)—I will call it the 'weak-*furðon*-first' proposal (WFF)—is motivated by two factors:" > "The first and favored Proposal #2—I will call it the 'weak-*furðon*-first' proposal (WFF)—is motivated by two factors:"

100. p. 133: "Proposal #2's advantage is that it might offer an explanation for the majority weak uses in the Old English corpus data. The disadvantage of this proposal is having to accept the emergence of a weak SAO, which generalizes to strong uses in order to establish itself as a universal SAO. Such a diachronic development has been suggested to be uncommon (cf. Gast and van der Auwera, 2011)." > "Proposal #2's advantage is that it might offer an explanation for the majority weak uses in the Old English corpus data—under the assumption that a universal SAO's genesis as a weak SAO would maintain a preference for weak uses after having been extended/generalized to strong uses. This last point also marks the major shortfall of this proposal, namely having to accept the emergence of a weak SAO with an ensuing extension to strong uses—a typologically uncommon trajectory as has been suggested by (cf. Gast and van der Auwera, 2011)."

101. p. 37: Added "(based on historical scholarship)" > "(based on historical and philological scholarship)"

102. p. 37: "of a good portion of surviving texts" > "of the overwhelming majority of surviving texts"

103. p. 89: "(represented as 'q $<_c$ p' which reads as 'p is stronger/less likely than q on a relevant contextually given scale')" > "(represented as 'p $<_c$ q' which reads as 'p is less likely/stronger than q on a relevant contextually given scale')"

104. p. 89: Deleted "See Appendix A [pagenumber] for a more detailed discussion of the semantics of focus."

105. p. 90 (2) in gloss: "CONJ" > "and"

106. p. 90: "is overtly in" > "is overt in"

107. p. 90: "In most cases the" > "In most cases, the"

108. p. 90: "below, in section 3.5.1, below." > "below, in section 3.5.1".

109. p. 93: Remove last paragraph of Section 3.2

110. p. 90: "the meaning *even*" > "the meaning of *even*"

111. p. 98: "introduce attested" > "introduce some attested"

112. p. 99: Removed several paragraphs and included them in subsection 2.3.1 on page 33 (in the *even* Chapter). This was done in order to avoid duplicate descriptions the methodological approach to identifying the focus domain in historical data. Section 2.3.1 now also includes content from the former (now removed) 'IS-Appendix'. The *even*-chapter is a better place for this kind of methodological discussion than the later *furðon*-chapter.

113. p. 105: Removed the last paragraph and example because I had made an error and conflated movement of focus and movement of particle.

114. p. 103 fn. 9: (p 90) > (p. 90)

115. p. 103 (20): "CONJ" > "and"

116. p. 104 (21): "INT" > "yea"

117. p. 103 (20): In the paraphrase; [...] > ... (not a quote, my own paraphrase)

118. p. 106 (25): "(from the archaic) lo" > "(uniform) yea"

119. p. 113 (33): without god's permission > without God's permission

120. p. 113 (33): unless the Saviour > unless the Savior

121. p. 113 (32): "turn to god." > "turn to God."

122. p. 113 (33): “permitted.VDB” > “permitted”
123. p. 113: “interpreted with as” > “interpreted as”
124. p. 114: No changes made; The second item in the list is pertaining to ‘if-protasis’; The last point is accounting for the separate configuration ‘negation and if-protasis’.
125. p. 115: “a women” > “a woman”
126. p. 115: ‘touching his clothes heal.” > “touching his clothes heals.”
127. p. 115, (35): “Vices and Virtues” > “West-Saxon Gospels”
128. p. 118 (40): “yeah” > “yea” (uniformity)
129. p. 120: “the contexts above allows for” > “the contexts above allow for”
130. p. 120: “In conclusion, the contexts above allows for a conservative and an innovative interpretation and as such, make for type of context Beck (2012) has in mind, which permit Constant Entailments in both old and new interpretations.” > “In conclusion, the contexts above allow for both a conservative and an innovative interpretation. Therefore, these contexts constitute ‘Constant-Entailments-context’—permitting both old and new interpretations.”
131. p. 120: “I will close diachronic debate” > “I will close the diachronic debate”
132. p. 124: “Köbler (1982)’s” > “Köbler’s (1982)”
133. p. 122: “developed to *fort fort* (cf. Holthausen, 1974, p. 113)” > “developed to *fort* (cf. Holthausen, 1974, p. 113)”
134. p. 124: “an item to related to” > “an item related to”
135. p. 124: “Turning to other historical stages of Germanic languages, more specifically skimming the lexicographical literature for an item related to *furðon*—with a scalar additive use—has so far remained unsuccessful.” > “Turning to other historical stages of a number of Germanic languages and skimming the relevant lexicographical literature for an item related to *furðon*—with a scalar additive use—has so far remained unsuccessful.”
136. p. 125: “I follow to this convention” > “I follow this convention”
137. p. 125: “As as the semantics” > “As far as the semantics”

138. p. 125: “the are ‘proximal’ or” > “there are ‘proximal’ or”
139. p. 129: “a weak elements.” > “a weak element.”
140. p. 130: “Eckardt and Speyer (2016)’s” > “Eckardt and Speyer’s (2016)”
141. p. 131: added “(Remus Gergel, p.c.)” to indicate provenance of facts regarding Spanish *hasta* with a reading equivalent to ModE scalar additive *even*;
142. p. 133: Added “Despite Proposal #2 constituting the typologically uncommon variant, it is—at this juncture—the more successful in explaining the imbalance in the OE data which clearly favors weak uses.”
143. p. 134: “Gast and van der Auwera (2011)’s” > “Gast and van der Auwera’s (2011)”
144. p. 134: “Gast and van der Auwera (2011)’s” > “Gast and van der Auwera’s (2011)”
145. p. 134: “can to be concluded” > “can be concluded”
146. p. 134: “one would (57)” > “one would expect (57)”
147. p. 135: “It should to be stressed” > “It should be stressed”
148. p. 137: “Gergel et al. (2021, 2023)’s” > “Gergel et al.’s (2021), Gergel et al.’s (2023)”
149. p. 139: Added footnote noting that an earlier version of Chapter 4 has been prior published in Gergel and Watkins (2019).
150. p. 144: “Umbach (2012)’s” > “Umbach’s (2012)”
151. p. 152: “it is one the hallmark criteria” > “it is one of the hallmark criteria”
152. p. 161: “As pointed out by an anonymous reviewer,” > “As pointed out by one reviewer of Kopf-Giammanco (2020),”
153. p. 162: “Hofstetter (2013)’s” > “Hofstetter’s (2013)”
154. p. 167: “limited in potential” > “limited in its potential”
155. p. 178: “are that is anaphoric” > “are that ***noch*** is anaphoric;”
156. p. 178: “is so consider” > “is **t**o consider”
157. p. 179: “Beck (2016c, 2020)’s” > “Beck’s (2016c; 2020)”

158. p. 179: “Beck (2020)’s” > “Beck’s (2020)”
159. p. 180: “Umbach (2009b)” > “Umbach’s (2009b)”
160. p. 180: “Ippolito (2007)’s” > “Ippolito’s (2007)”
161. p. 183: “Eckardt (2009)’s” > “Eckardt’s (2009)”
162. p. 186: “I turn” > “turn**ed**”
163. p. 186: “I argue” > “argue**d**”
164. p. 186: “Beck (2016c)/Beck (2020)’s” > “Beck’s (2016c; 2020)”
165. p. 186: “Umbach (2009b)” > “Umbach’s (2009b)”
166. p. 187: “Beck (2020)’s” > “Beck’s (2020)”
167. p. 191: Table A.1’s positioning was changed from `[H]` to `[!htbp]`
168. p. 191: Table A.2’s positioning was changed from `[H]` to `[!htbp]`
169. p. 191: Table A.3’s positioning was changed from `[H]` to `[!htbp]`