Reduction or expansion? *A bit of* both.

A case study on the development of German degree modifiers

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Abstract

Following Traugott's (2007, 2008a,b) research on the grammaticalization of English degree modifiers, this paper explores the history of a family of very similar quantifier/degree-modifier constructions in German. In particular, we present a detailed diachronic analysis of *ein bisschen* ('a bit_{DIM}') and *ein wenig* ('a little'). On the basis of data from the German Text Archive (*Deutsches Textarchiv*) and the historical archive of the German Reference Corpus (*Deutsches Referenzkorpus*), we examine to what extent these constructions followed a grammaticalization path comparable to the one Traugott observed for their English counterparts. Quantitative analyses on the gradual context expansion of *ein wenig* and *ein bisschen* are combined with qualitative analyses on potential bridging contexts allowing for reanalysis to occur. Diachronically, there is a reduction in individual formal variation as the constructions converge in their behaviour. Their combined histories suggest that the older German modifiers may have served as attractor sets for an increasingly strengthened mid-level quantifier/degree-modifier schema, promoting the emergence of younger modifiers such as *ein Quäntchen* ('a quantum_{DIM}') and *ein Tick* ('a tick') via analogy. These observations stress the crucial role that network links between constructions can play in grammaticalization.

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1. Introduction

Both in grammaticalization studies and in diachronic construction grammar, the development of degree modifiers such as *a bit* or *a little* have sparked much interest (e.g. Traugott 2008a,b,

Traugott & Trousdale 2013). It is not hard to see why, in this particular case, both perspectives complement each other. On the one hand, the development of quantifiers from a semantically fairly specific noun like *bite* (e.g. *of bread, of food*) to a partitive (*a bit of the food*), quantifier (*a bit of money*) and degree modifier (*a bit shy*) is a prime example of key grammaticalization processes such as semantic bleaching (Hopper & Traugott 2003; Lehmann 2015) or context expansion (Himmelmann 2004). On the other hand, patterns like [*a bit of* N], [*a shred of* N], or the more abstract [NP *of* NP] are **[p.138]** textbook examples of constructions, i.e. form-meaning pairs at various levels of abstraction (cf., e.g., Croft 2001, Goldberg 2006). What is more, these constructions lend themselves particularly well to studying the complex relations between constructions, thus giving a glimpse into the organization of the so-called "constructicon" (cf., e.g., Hilpert 2014). In Goldberg's (1995) terms, inheritance relations can be assumed between the more abstract [NP *of* NP] constructions and the subschemas in which the first NP slot is filled by a combination of an indefinite determiner and one specific noun.

So far, many studies on the development of quantifier/degree-modifier constructions have focused on English (e.g. Traugott 2007, 2008a,b, Brems 2007, 2012, De Clerck & Brems 2016). However, other languages also have quantifier/degree-modifier constructions that are strikingly similar to the English ones, as is the case, for instance, in Dutch (e.g. De Clerck & Colleman 2013) and in Spanish (e.g. Verveckken 2012, 2015). Therefore, it seems worthwhile investigating whether these have undergone a similar development as their English counterparts. In this paper, we will focus on the German constructions *ein wenig* 'a little' and particularly *ein bisschen* 'a bit$_{DIM}$'[1] and their development at the beginning of the New High German period, which, according to the most widespread periodization scheme of the German language history, begins in the mid-17th century. While *ein wenig* had already been well-established by then, (*ein*) *bisschen* was a fairly new construction. It is first attested in the 15th century (cf. Pfeifer 1993) and still rather infrequent at the beginning of the time period under investigation. Importantly, the paradigmatic relations that can be assumed to hold between both variants also extend to other, less frequent constructions such as *ein Quäntchen* 'a quantum$_{DIM}$ (of)', *eine Handvoll* 'a handful (of)' or the much older variant *ein lützel* 'a little', which, however, has fallen out of use in most variants of German long before the beginning of the New High German period. While many of the previous studies on similar binominal constructions in Spanish, Dutch and English focus on their development into grammaticalized

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[1] Subscript DIM stands for 'diminutive', as marked by the German suffixes *-chen* and *-lein*, for instance. Other subscript glosses used in this paper are FEM for 'feminine' and NEUT for 'neuter'.

quantifiers, the present case study is equally concerned with a further step of grammaticalization, namely the change from quantifier into degree modifier.

This study addresses three questions with regard to the diachronic development of the most frequent German quantifier/degree-modifier constructions *ein wenig* and (*ein*) *bisschen*:

a. To what extent did the German quantifier/degree-modifier constructions follow a grammaticalization path comparable to the one Traugott (e.g. 2008a) observed for their English counterparts?

b. Can the attested developments be usefully conceived of as constructional change involving both expansion and reduction?

c. How do older and younger German quantifier/degree-modifier constructions interact in a "layered" (Hopper 1991) domain of grammar?

To answer these questions, we will first present a brief research overview before turning to our own diachronic corpus study, which combines quantitative analyses on the gradual context expansion of *ein wenig* and *ein bisschen* with qualitative analyses on potential bridging contexts (cf. Heine 2002). Section 2 sketches out how diachronic construction grammar brings together two contrasting research traditions that can be labelled "grammaticalization as reduction" and "grammaticalization as expansion", following Traugott & Trousdale (2013). After a review of Traugott's work on English degree modifiers in Section 3, Section 4 introduces the quantifier/degree-modifier constructions investigated in our follow-up study on German. Section 5 then describes the corpus data and methods used. The results of the corpus analyses are presented and discussed in Sections 6 to 8. Finally, Section 9 summarizes our findings and provides an outlook.

Setting up this investigation in a bottom-up fashion on the basis of a large sample of authentic usage data, we adopt a usage-based version of construction grammar. That is, we subscribe to the central tenets of usage-based theory (e.g. Bybee 2010, Tomasello 2003, Langacker 2000, Hopper 1987, Givón 1979; see Kemmer & Barlow 2000 for a summary): language structure is taken to be grounded in and built up from concrete usage events with the aid of domain-general cognitive abilities such as categorization, pattern extraction, analogy and inference-making; there is a constant feedback loop between grammar and usage, which holds for both the communal grammar and the mental grammar of individual speakers throughout

their lifetime. This feedback loop allows grammatical changes to proceed in a gradual but directed manner. It follows from these assumptions that the organisation and reorganisation of grammar must be strongly affected by frequency of use (e.g. Diessel 2007). We will therefore pay close attention to the frequency profiles of the German quantifier/degree-modifier constructions in our account of their grammaticalization.

[p.140]

2. Reduction and expansion in a construction grammar framework for grammaticalization

According to Traugott (2010) and Traugott & Trousdale (2013: 96-112), two contrasting approaches have developed over the past thirty years of grammaticalization research. On the one hand, there is a line of research maintaining that grammaticalization is essentially a process of reduction (e.g. Lehmann 2015, Givón 1979, Heine et al. 1991). In this approach, grammaticalizing expressions are said to reduce and freeze in form. They become more dependent on, and later even obligatory in particular syntagmatic contexts. Meaning changes are thought of in terms of semantic bleaching, i.e. the loss of concrete meaning. On the other hand, there is a tradition of research emphasizing that grammaticalization involves expansion. This view is perhaps most clearly represented in Himmelmann's (2004) notion of context expansion. However, already in the 1980s, some researchers stressed the expansive nature of grammaticalization, focusing on the role of pragmatic enrichment/strengthening and on the emergence of polysemy and polyfunctionality (e.g. Traugott 1988, Sweetser 1998, Bybee et al. 1994, Tabor & Traugott 1998).

Construction grammar has proved a fruitful framework for studying grammaticalization and related phenomena such as lexicalization and degrammaticalization. Recent construction grammar approaches explicitly address the issue of grammaticalization-as-reduction versus grammaticalization-as-expansion. As Traugott & Trousdale (2013: 147) put it, "grammatical constructionalization involves expansion in construction types and range of use on the one hand, and chunking and fixing of form on the other." Reduction and fixing in form and expansion and generalization in function may be considered two sides of the same coin when conceiving of grammaticalization as a routinization process that turns more controlled into more automated linguistic activities (cf. Lehmann 2016, Bybee 2003a, 2010, Haspelmath 1999: 1054f.). By spelling out how reduction and expansion are intertwined, the framework of usage-

based diachronic construction grammar manages to bring together the two longstanding traditions in grammaticalization research.

Moreover, construction grammar approaches to grammaticalization put emphasis on constructional networks as well as constructional levels. A new node in the taxonomic network ("constructicon") is formed, as a new more procedural construction emerges on the basis of extant, more referential/contentful constructions (cf. Goldberg 1995, Langacker 2008, Bybee 2010, Traugott 2014, Diessel 2015). Interrelated constructions may be entrenched at various degrees of abstraction and schematicity. This idea is, for instance, captured in the concepts **[p.141]** of micro-, meso- and macro-constructions introduced by Traugott (2007, 2008a,b):

(1)   a.   Macro-constructions: high-level schemas, the highest level relevant for the discussion at hand.

        b.   Meso-constructions: sets of similar-behaving constructions (with a shared structure).

        c.   Mirco-constructions: individual construction types (not instances of use).

        d.   Constructs: empirically attested tokens.

For illustration, consider the English constructions [*will* V], [*be going to* V], [*be about to* V], [*shall* V] and (non-standard) [*be fixing to* V] (Trousdale & Norde 2013: 36). Each of these expressions constitutes an individual micro-construction, but they can also be subsumed under one macro-construction on grounds of their shared function of marking the future. Some of these future-marker micro-constructions are formally more alike than others: [*be going to* V] and [*be fixing to* V] can be said to be sanctioned by one mid-level schema; [*will* V] and [*shall* V], on the other hand, belong to a different mid-level schema. This is the level of meso-constructions in-between specific micro-constructions and highly abstract macro-constructions. Such more or less schematic units are assumed to serve as the levels at which change-enabling processes and mechanisms like analogy operate. A single autonomous micro-construction with a high discourse frequency is possibly only weakly linked to a higher-level schema (meso- or macro-constructions). However, the more members a higher-level schema has, the more entrenched and productive it typically is and the stronger the links across constructional levels tend to be. Network links between formally or functionally related constructions provide micro-constructions with possible directions of change.

3. English quantifier/degree-modifier constructions

Traugott (2007, 2008a,b) demonstrates the impact of constructional levels in her research on English degree modifiers. She studies a set of expressions with a shared binominal [NP *of* NP] structure, such as *a bit of, a lot of, a kind of, a sort of, a bunch of* and *a shred of*. For the diachronic development of these expressions, Traugott proposes the following grammaticalization path:

(2)   pre-partitive > partitive > quantifier > degree modifier > free adverb

[p.142]

This development is assumed to have taken place mainly between the 15th and 19th centuries. Each stage is illustrated by one example of the *a bit of* construction in (3) below (adopted from Traugott 2008a: 29).

(3)   a.   Hu he wrec in adam **þe bite of** an eappel
                      'How he avenged in Adam the bite of an apple'
                      (c.1230, MED)

            b.   Gif God was made of **bits of** breid
                      (c.1550,OED)

            c.   if you think to scape with sending mee **such bitts of** letters you are
                      mistaken
                      (1653, PCEEC)

            d.   I would not be **a bit** wiser, **a bit** richer, **a bit** taller, **a bit** shorter, than I
                      am at this Instant
                      (1723, Richard Steel, *The Conscious Lovers*, Internet Archive)

            e.   Lucilia: Hear me. Cleontes: Not **a bit**.
                      (1739, Henry Baker, *The Cit Turn'd Gentleman*, Internet Archive)

Traugott (2008a: 23) argues that innovative uses with new pragmatics and semantics led to mismatches between form and meaning. This tension was resolved via syntactic reanalysis:

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(4) $[NP_1 [of NP_2]]$ > $[[NP_1 of] NP_2]]$

In the English binominal constructions, the first NP with *bit, lot, kind, sort* etc. ceased to be the syntactic head and developed into a modifier (cf. *kinda, sorta*). An important factor in the expansion of these constructions to degree-modifier functions was the existence of quantifying degree modifiers such as *quite* and *all*, which can combine with nouns as well as with adjectives, verbs and other word classes (e.g. *quite a hypocrite* versus *quite hypocritical*). Speakers and hearers, Traugott (2007: 536) hypothesizes, matched "the binominal micro-construction with the structural properties of the adverbial degree modifier macro-construction, i.e., reanalysis as an adverbial, licensing syntactic contexts typical of this new function (e.g., adjectives, as in *sort of cold*, *a lot wiser*)." In short, grammaticalization progressed as language users matched and realigned construction types based on functional and structural similarity.

4. German quantifier/degree-modifier constructions: An overview

As pointed out in the Introduction, there are a number of quantifier/degree-modifier constructions in German that are strikingly similar both to each other and to the English constructions studied by Traugott. The most frequent forms *ein wenig* and *ein bisschen,* exemplified in (5) and (6), can be used quasi-synonymously in present-day German. However, their distribution seems to be partly conditioned by regional factors (cf. Tiefenbach 1987: 7). In addition, the younger variant **[p.143]** *ein bisschen* was stigmatized as colloquial until the mid-19th century at least (cf. Tiefenbach 1987: 6, fn. 6).

(5)   aber seine Aussprache war **ein wenig** bäuerisch, und sein Auge blickte nicht ein 'but his pronunciation was a little rural, and his eye didn't look fine' (1805, DeReKo-HIST)

(6)   Warte doch, du mußt noch **ein bißchen** Eigenlob hören. 'Wait, you have to hear a bit of self-praise.' (1896, DeReKo-HIST)

Apart from these two, *ein lützel* 'a little', exemplified in (7), used to be quite frequent up to the Middle High German period but, in most varieties of German, fell out of use in the 17th century (Pfeifer 1993).

(7)   und alse er von dem valle **ein lützel** sich erholte 'and when he recovered a bit from the fall' (c.1210, Gottfried von Straßburg, *Tristan*, MWB)

Lützel is also attested as a free adjective, but both in its free use and in the quantifier/degree-modifier construction it was superseded by *wenig*, which is first attested in the 9th century as an adjective meaning 'miserable, minor, little'. However, the more concrete meaning variants – such as e.g. *mit einer wênegen rindes hût* 'with a <u>small</u> cow hide' (Eneide, 12th century, MHDBDB) – were lost over time. As *wenig* became quasi-synonymous with *lützel*, it seems reasonable to assume that the quantifier/degree-modifier construction [*ein lützel* X] served as a model for its younger counterpart [*ein wenig* X].

While *bisschen* is attested from the 15th century onwards, its "generalized" quantifier/degree modifier use, according to Kluge (2012), only dates back to the 17th/18th century. However, a fairly similar use of the non-diminutivized form *ein bissen* can be found in negated contexts as early as in the Middle High German period.

(8)   Daz doch ist nirgen **bissen** war. 'This is not a bit true.' (Minneburg, 14th century, MHDBDB)

(9)   du tust im nyrgen **pissen** we. 'You don't hurt him a bit' (Minneburg, 14th century, MHDBDB)

In these examples, *bissen* is used to intensify the negation[2]. While it seems unlikely that such uses might have influenced the quantifier/degree-modifier use of *biss***[p.144]***chen*, which only started much later, these attestations show that the metonymic relation between *bissen* 'bite' and smallness has already been well-established when the quantifier/degree-modifier use of *ein bisschen* emerged.

This paper will focus on *ein bisschen*, *ein wenig*, and the relation between both at the beginning of the New High German period. However, it should be kept in mind that these are only the two most frequent quantifier/degree-modifier constructions during that time period. Other variants exist as well, although most of them are subject to more rigorous constraints

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[2] Given the sparse data available for the Middle High German period, it cannot be determined if *bissen* used to be a pure negative polarity item. However, the use of *bissen* as a negation intensifier is interesting in view of Brems' (2007) discussion of polarity-sensitive small-size nouns such as *a shred of* and *a jot of*.

than *ein bisschen* and *ein wenig.* For instance, *eine Handvoll,* as in (10), can only be used as a quantifier with a concrete *modificatum*, not with abstract nouns and not as a degree modifier (**eine Handvoll Armut* 'a handful of poverty', **eine Handvoll schlecht* 'a handful bad'). *Ein Funke/Fünkchen/Fünklein* 'a spark (of)', by contrast, can only be used if the modified item is abstract, like *Liebe* 'love' in (11).

(10)   er war geflohen vor **einer Handvoll** waghalſiger Tyroler 'He had fled a handful of reckless Tyroleses' (Bettina v. Arnim, Goethes Briefwechsel, 1835, DTA)

(11)   Schlieſt eurem Hertzen ein / wie ich / **ein Fůncklein** Liebe 'Take into your heart, like my, a spark_DIM of love' (Abschatz, Gedichte, 1704, DTA)

Unlike these two constructions, *ein wenig* and *ein bisschen* can be used in a broad variety of contexts, and they can function as partitives (*ein bissel Brots* 'a bite_DIM of bread_GEN', Albertus, Landstörtzer, 1615, DTA), quantifiers (*er bat um ein bißchen Essen* 'he asked for a bit_DIM of food', GRI, 1819, DeReKo-HIST), and degree modifiers (*ein bißchen ungestüm* 'a bit_DIM vehement', HK3, 1819, DeReKo-HIST). As the quantifier and degree-modifier uses are the most frequent ones in the corpus data and also the most prominent ones in present-day German, we refer to these constructions as quantifier/degree-modifier constructions; note, however, that the partitive reading is still available not only for *ein bisschen*, but also for *ein wenig*, as in *ein wenig von dem Pulver* 'a little of the powder' (Mattioli, Theatrvm Botanicvm, 1690, DTA).

If the development of German quantifier/degree-modifier constructions follows a similar path as the diachronic evolution of their English counterparts sketched in Section 3, it can be assumed that the use of *ein bisschen* and *ein wenig* as quantifiers and degree modifiers is a more recent development than their use as partitives (and, in the case of *ein bisschen*, its literal use in the sense of 'bite'). While the categorization of a specific usage variant as partitive, quantifier, or degree modifier is not always possible in a clear and straightforward way, a variety of parameters can be operationalized to assess major tendencies in the diachronic **[p.145]** development of the constructions under discussion. These parameters, along with our data sources, will be discussed in the next two sections.

5. Studying the German degree modifiers: Corpus data and methods

In order to investigate the diachronic development of German degree modifiers from the 17th to the 19th century, we conducted an exhaustive search in two corpora: the German Text Archive (*Deutsches Textarchiv*, DTA) and the historical archive of the German Reference Corpus (*Deutsches Referenzkorpus*, DeReKo-HIST). The DTA (www.deutschestextarchiv.de) is a collection of German texts covering the period from 1600 to 1900. Still under development, it currently consists of ca. 138 million tokens from more than 2,000 texts. The DeReKo-HIST archive is made up of ten different subcorpora comprising historical newspaper texts as well as literary works and the entire GerManC corpus (Durrell et al. 2007). Overall, it contains about 68 million tokens from the second half of the 17th century until 1962 which are, however, distributed quite unequally over the different subcorpora. Unfortunately, the corpus documentation does not feature any information about token frequencies per individual time period. In the case of the DTA, these frequencies can be easily retrieved as all corpus documents are publicly accessible in various formats. Figure 1 visualizes the distribution of the DTA texts over the different decades covered by the corpus and over the four text types the texts are assigned to. When taking a closer look at the design of the DTA, it becomes obvious that it is a rather "opportunistic" corpus as well, as it is not balanced for different time periods and as some text types are overrepresented, while others – particularly newspaper texts – hardly occur at all in the data. However, given their sheer size, these corpora are currently the best resource available for investigating the time period in question, and especially for investigating mid- and low-frequency phenomena. As we will see below, (*ein*) *bisschen* is rather infrequent, despite its highly frequent use in (colloquial) present-day German.
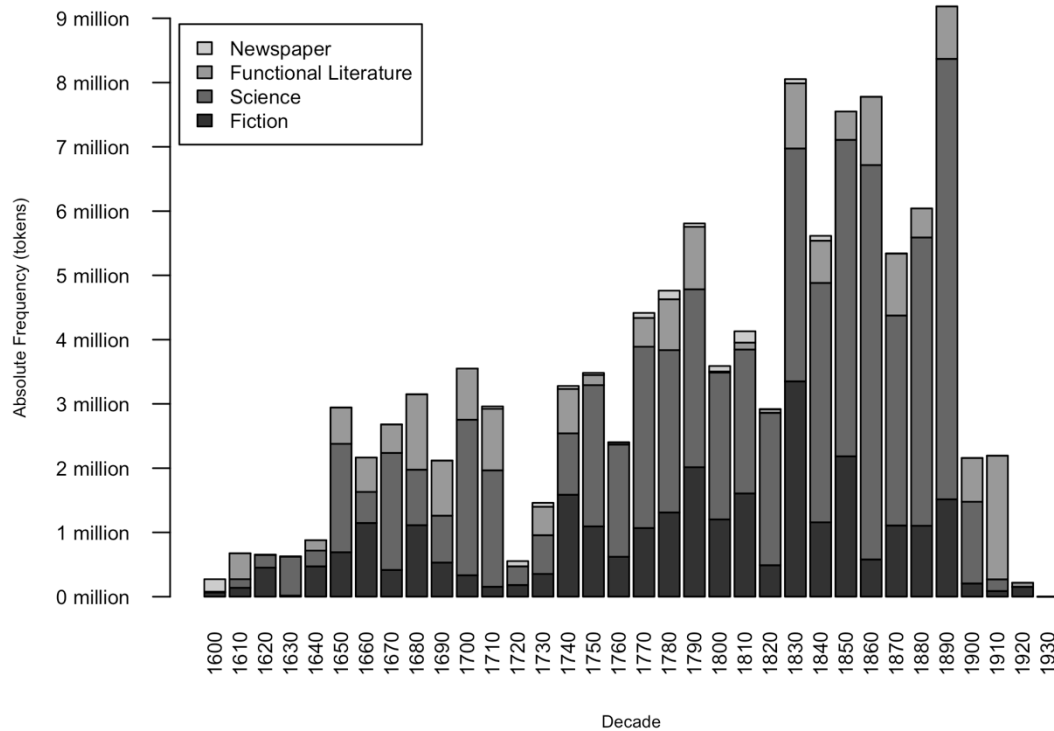
German Text Archive

Fig. 1: Distribution of the DTA texts over the individual decades and text types.

From both databases, all instances of *ein wenig* and (*ein*) *bisschen* were extracted. In the case of (*ein*) *bisschen*, regional variants with other diminutive suffixes were also taken into account (e.g. *bissel*, *bissle*). Note that in the case of the older construction, only instances in which *wenig* is preceded by the indefinite determiner *ein* were searched. Just as in the case of its English counterpart *little*, *wenig* is used as an adjective outside of the [*ein wenig* X] construction, which can be used attributively or predicatively: *wenig Geld* 'little money', *sie isst wenig* 'she eats little'. Therefore, it is not possible to leave out the determiner in the quantifier/degree-modifier construction. For instance, *sie gab mir ein wenig Geld* 'she **[p.146]** gave me a little [bit of] money' cannot be replaced by *sie gab mir wenig Geld* 'she gave me little money'. The latter entails a quantitative evaluation of the amount of money taking a certain context-dependent "norm" as reference point, expressing that the sum is considerably below this reference point. In the case of *ein wenig Geld* 'a little money', by contrast, one could say that the lower boundary (i.e. zero) is taken as the reference point. The difference is even more obvious in cases where *ein wenig* is used in a temporal sense. *Ich gehe wenig spazieren*, lit. 'I little go for a walk', means that I (habitually) hardly ever go for a walk, while *Ich gehe*

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ein wenig spazieren, lit. 'I go for a walk a little', means that I go for a walk for a short time. If anything, the determiner can be shortened to *'n*:

(12)   wir wollen uns den August da drüben jetzt mal **'n wenig** von nahe besehn 'Let's take a little closer look at this guy over there' (Hauptmann, Der Narr, 1910, DWDS)

Also, *wenig* in the quantifier/degree modifier sense cannot occur with a determiner other than *ein*. **Das wenig Geld*, for instance, is not possible; *das wenige Geld* 'the little money', however, is possible, but here, *wenig* is used as a free adjective again (with a certain sum of money as reference point, as discussed above). By contrast, *bisschen* can occur with different determiners, as in (13), or even without a determiner, as in (14).

(13)   Ach, **das bischen** Leben, wieviel Angst und Qual hat man davon. 'Oh, that bit of life, how much anxiety and pain you have from it!' (Frapan, Bittersüß, 1891, DTA)

[p.147]

(14)   "Ich lese **bißchen**!" 'I read [a] bit!' (1892, DeReKo-HIST)

Therefore, all instances of *bisschen* were taken into account regardless of the preceding context, whereas for *wenig* only cases in which it occurs with the determiner *ein* were considered.

After extracting all attestations of the two patterns from the corpora, false hits – such as *ein wenig bekannter Autor* 'a little known author' – were manually discarded. Overall, 3226 instances of (*ein*) *bisschen* and 15,783 instances of *ein wenig* were found in the data. Table 1 summarizes the token frequencies. The differences between the sum total of instances in DeReKo-HIST and DTA, on the one hand, and the joint data from DeReKo-HIST/DTA, on the other, are due to the fact that some texts occur in both databases. Therefore, duplicates were removed from the joint dataset semi-manually by calculating the normalized Levenshtein distance (which indicates the number of edits necessary to change a given string *A* into string *B*) for each pair of attestations in the concordance and manually checking the rows with the lowest values. This allowed for identifying cases in which two different editions of the same text adopting slightly different graphemic conventions had entered the data. If the dates of two equivalent attestations differed, the older attestation was retained.

	DTA	DeReKo-HIST	DTA/DeReKo joint database
(*ein*) *bisschen*	922	2628	3226
ein wenig	9176	7382	15,783

Tab. 1: Token frequencies of (*ein*) *bisschen* and *ein wenig* in the German Text Archive, the German Reference Corpus, and the joint DTA/DeReKo-HIST database.

6. Quantitative corpus analyses

This section presents the results of the quantitative analyses of the about 19,000 attestations of *ein wenig* and *ein bisschen* in the two databases. It is structured around the following three topics: token frequency, parts of speech modified by the constructions, and determiner variation.

6.1 Token frequency

Since the total number of tokens per decade in the database as a whole can only be reliably determined for the DTA, the comparison of token frequencies reported in this section relies exclusively on the DTA data, i.e. all 922 instances **[p.148]** of (*ein*) *bisschen* and all 9176 instances of *ein wenig* to be found in the DTA. Figure 2 plots the normalized token frequencies of *ein wenig* and *ein bisschen*, including both non-logarithmized and log-transformed frequencies. Logarithmic transformation, as Baayen (2008: 39) points out, can substantially reduce potential skews in the data and thus reduce the influence of outliers. As the left figure shows, the frequency of *ein wenig* drops notably, while its younger competitor (*ein*) *bisschen* becomes more frequent over time.
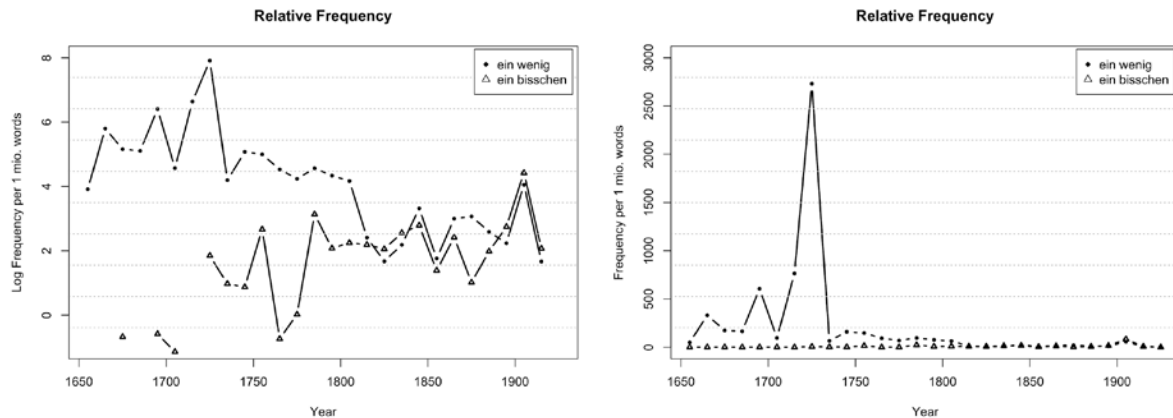
Fig. 2: Left panel: Normalized log token frequencies of *ein wenig* and (*ein*) *bisschen* in the German Text Archive (DTA). The right panel shows the non-logarithmized frequencies; here, the overall picture of the diachronic development is distorted by one extreme outlier.

In addition to their descriptive value, frequency profiles of constructions can have explanatory value when interpreted with usage-based theory: Bybee (2003a,b, 2010), Krug (2000, 2003), Haiman (1994) and others have put forward the hypothesis that increasing frequency of use is not only an outcome but also a motor in grammaticalization because regular repetition fuels domain-general cognitive processes, such as chunking, habituation and neuromotor automation, **[p.149]** that may be responsible for the formal and functional changes characteristic of grammaticalization.

6.2 Parts of speech modified by the constructions

All corpus hits were annotated for the part of speech of the *modificatum*. Both constructions can modify different word classes, which in turn might give clues to their degree of grammaticalization (viz. their status as partitive, quantifier, degree modifier, or free adverb).

For the older construction *ein wenig*, no significant change is detectable in the joint DTA/DeReKo-HIST database from about ca. 1725 onwards.[3] Before that, some ups and downs can be observed in the case of nouns and verbs, as plotted in Figure 3. However, this may be largely due to the low absolute frequencies in the period in question (see Figure 5 below). Also note that the first four decades (the first nine decades in the case of *ein bisschen* in Figure 4 below) have been discarded from the present analysis due to the very low total number of hits.

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[3] For testing the significance of frequency changes, the signed-rank correlation test Kendall's Tau was used throughout the paper (cf. Hilpert & Gries 2009 for the use of Kendall's tau for assessing frequency changes in diachronic corpora).

After 1725, verbs are modified most frequently by *ein wenig* throughout the entire period in question, with a very slight initial upward trend. For nouns and adjectives, an equally insignificant downward trend can be observed in the first few decades after 1725, but altogether, they consistently make up for about 30% and 10% of the items modified by *ein wenig*, respectively.
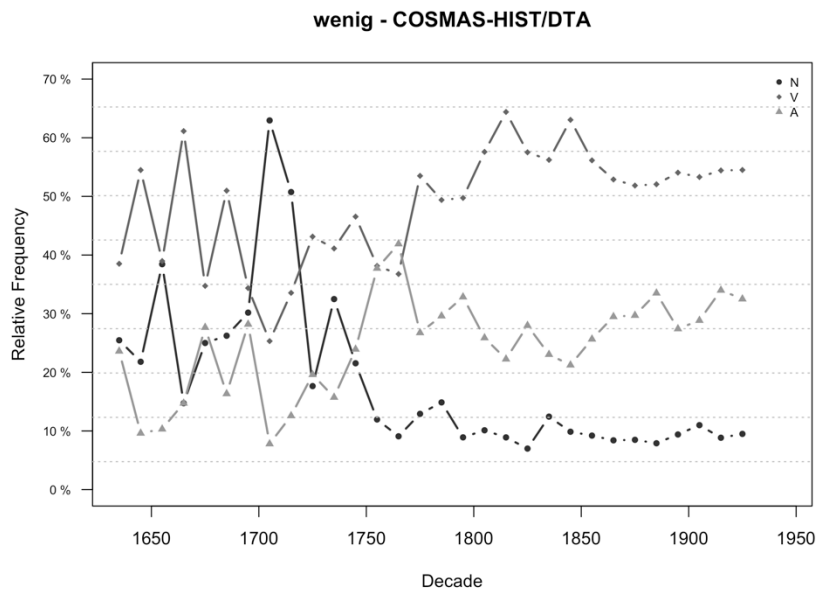

Fig. 3: Relative frequencies of nouns, verbs, and adjectives modified by *ein wenig* in proportion to the sum total of items modified by *ein wenig* across the decades of the joint DTA/DeReKo-HIST database. **[Fig. 3 on p. 150]**

In the case of (*ein*) *bisschen*, a fairly clear pattern of diachronic change can be detected from about 1750 onwards (as pointed out above, the absolute numbers in the first few decades are too low to allow for a meaningful analysis of relative frequencies). While the relative frequencies of nouns in the [(DET) *bisschen* X] construction constantly decreases, adjectives and especially verbs become more frequent. Interestingly, with this diachronic shift, *ein bisschen* approximates the usage patterns of *ein wenig* with respect to the proportions of verb, adjective and noun modification.
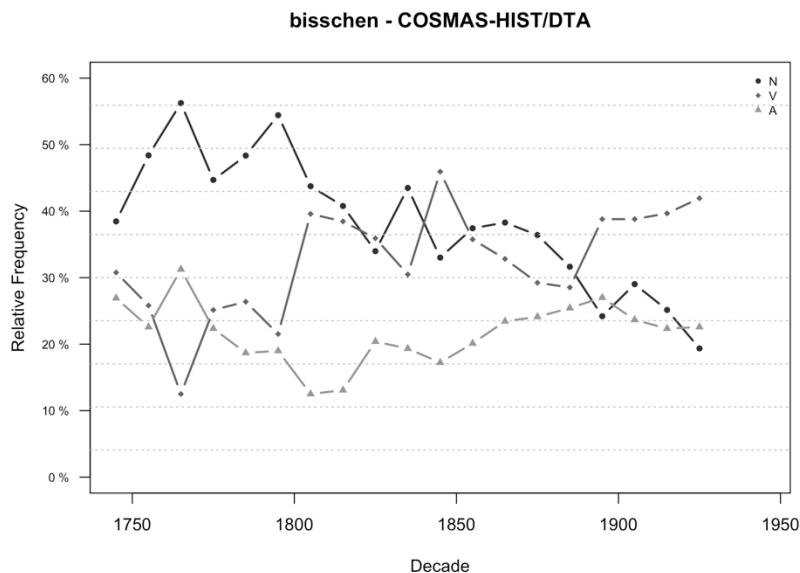
Fig. 4: Relative frequencies of nouns, verbs, and adjectives modified by (*ein*) *bisschen* in proportion to the sum total of items modified by (*ein*) *bisschen* across the decades of the joint DTA/DeReKo-HIST database. **[Fig. 4 on p. 150]**

Given the differences in absolute token frequency between the individual decades, it is useful to take a look not only at the relative values, but also at the absolute frequencies of the different parts of speech. Figure 5 plots the absolute frequencies of items belonging to the three major parts of speech modified by *ein wenig* and (*ein*) *bisschen*, respectively.
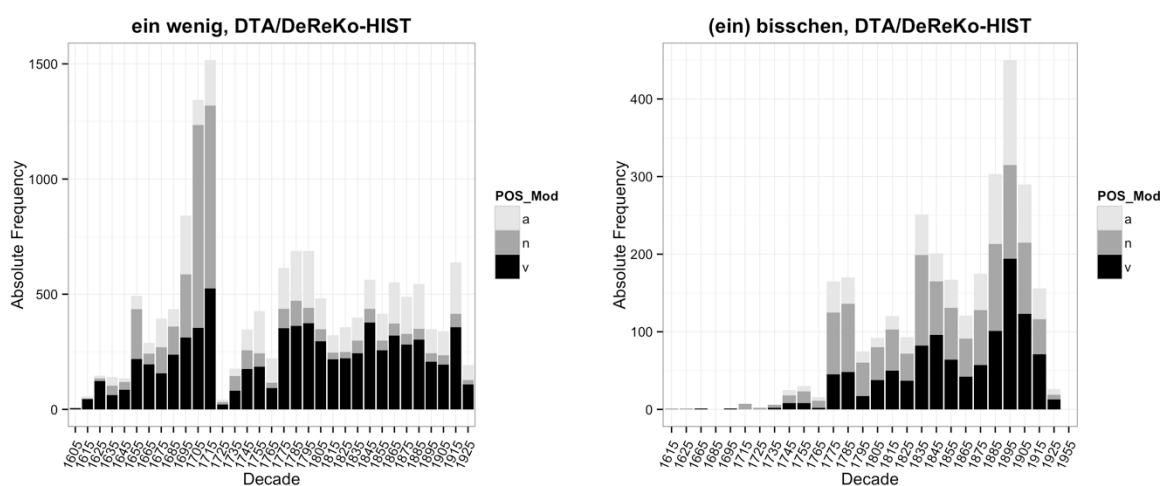

Fig. 5: Absolute frequencies of nouns, verbs, and adjectives modified by *ein wenig* and (*ein*) *bisschen* in the joint DTA/DeReKo-HIST database. **[Fig. 5 on p. 151]**

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The observation that nouns become less frequent in the [(DET) *bisschen* X] construction is very much in line with the grammaticalization scenario leading **[p.152]** from a literal use to partitive, quantifier, and degree-modifier uses. If the concrete use of *ein bisschen*, i.e. 'a bite of', represents the starting point for its subsequent grammaticalization into a quantifier and degree modifier, it can be expected that the construction is, at first, mostly constrained to modifying nouns. In addition, we can assume that the first nouns to be modified by *ein bisschen* were concrete nouns.

To test this hypothesis, all nouns in the DTA/DeReKo-HIST joint database were annotated for their concreteness, adopting a coarse-grained distinction between "concrete" and "abstract" items. Figure 6 shows that abstract nouns become more frequent in both constructions. In both cases, the increase is statistically significant according to a Kendall's tau test (*bisschen:* $\tau = 0.37$, $z = 2.42$, $p < 0.05$; *wenig:* $\tau = 0.64$, $T = 356$, $p < 0.001$). Surprisingly, the increase is much clearer in the case of the older construction *ein wenig*, while *ein bisschen* features abstract *modificata* from the beginning. The very low relative frequency of abstract nouns in the [*ein wenig* N] construction before 1700 might be an artefact of the corpus structure, as this period contains cooking recipes in which *ein wenig* + concrete noun occurs very frequently (e.g. *ein wenig Wein* 'a little wine' etc.). However, the increase is quite robust over the entire period in question. This observation lends support to the hypothesis that the existence of a paradigmatic relation between *ein wenig* and *ein bisschen* can be assumed from the earliest stages of the younger construction. When the [*ein bisschen* X] construction grammaticalized, the modification of abstract nouns (and other parts of speech, for that matter) with *ein wenig* was already widespread. This pattern could be easily adopted for the formally similar [*ein bisschen* X] construction. This in turn is in line with the idea that a joint meso-construction can be assumed for the German quantifier/degree-modifier constructions, which also includes the older variant *ein lützel*. The subordinate constructions belonging to this meso-construction are connected via paradigmatic relations, and their diachronic development is very likely to be a coevolutionary one. This idea will be developed further in Section 8.
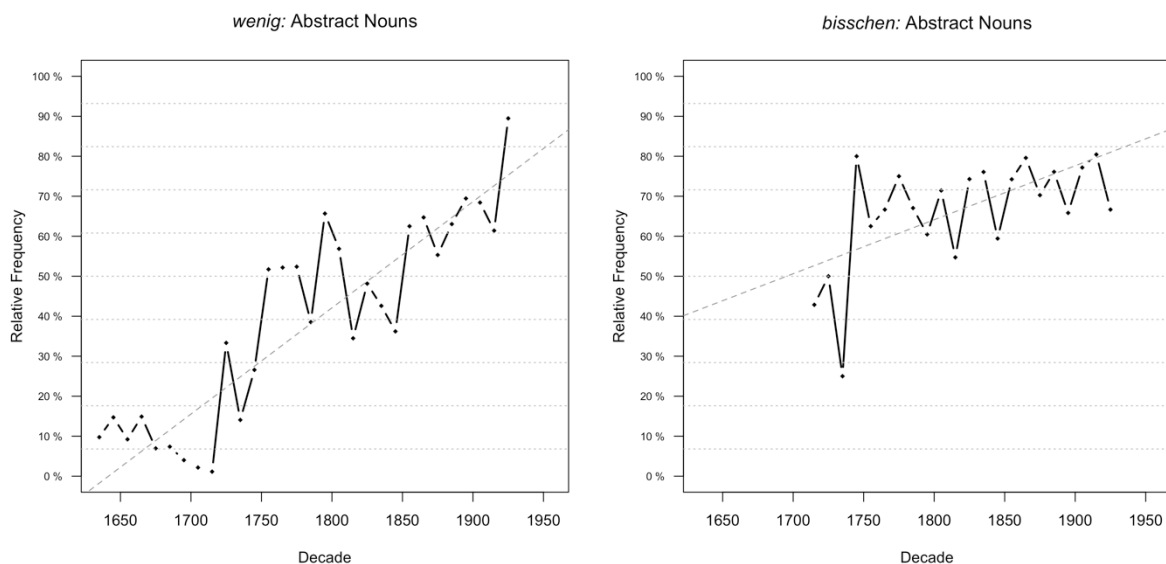
Fig. 6: Relative frequencies of abstract nouns modified by *ein wenig* and (*ein*) *bisschen* in the joint DTA/DeReKo-HIST database (in relation to the total number of nouns modified by the respective construction). **[Fig. 6 on p.153]**

In sum, then, the data lend support to a grammaticalization scenario similar to the one discussed by Traugott (e.g. 2008a) for English. In the case of *bisschen*, the modified nouns tend to be concrete nouns at first. Gradually, however, the distribution of nouns, verbs, and adjectives roughly aligns to that of *ein wenig*. In addition, the patterns of "co-evolution" between *ein bisschen* on the one hand and *ein wenig* on the other lend support to the idea that both constructions share a common more abstract schema, just like their English counterparts can be seen as instantiations of an [NP *of* NP] meso-construction.

[p. 153]

6.3   Determiner variation

As pointed out above, the use of determiners varies in the case of (*ein*) *bisschen*, while *wenig* usually cannot be used as a quantifier or degree modifier without the indefinite determiner *ein*. However, given the hypothesis that *bisschen* gradually assimilates to the general [*ein* N] pattern of the quantifier/degree-modifier meso-construction, we can expect the variation between different determiners to **[p.154]** decrease over time. In fact, this is exactly what we find in the data. The use of *ein* together with *bisschen*, as opposed to definite articles or possessive and demonstrative determiners (e.g. *das*, *mein*, *dieses* respectively), increases significantly over the time period covered by DTA and DeReKo-HIST (Kendall's $\tau = 0.55$, T = 163, p < 0.001). In

more general terms, this finding translates into a fixing or freezing of form that is frequently seen as characteristic of grammaticalization, especially so in the "grammaticalization-as-reduction" approach.
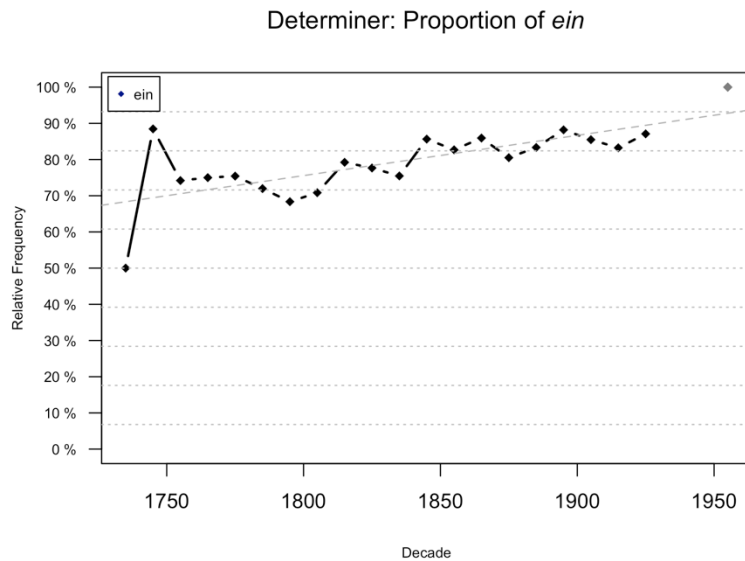

Fig. 7: Relative frequency of *bisschen* used with the indefinite article *ein* in proportion to the total number of attestations of *bisschen* in the joint DTA/DeReKo-HIST database.

7. Bridging Contexts and Motivations for Innovation

When adopting a more qualitative perspective, the corpus data can shed light on how specific usage events provide potential for diachronic change. Several constructs in the sample are ambiguous, thus illustrating bridging contexts (Heine 2002) for formal and functional reanalysis. The appearance of uses such as (15) **[p.155]** suggests that a syntactic reanalysis of the kind described by Traugott (cf. (4) above) did occur in German as well.

(15)   Hätt' ich's doch nicht gedacht, daß in **der bißchen Neige** meines Lebens noch etwas Bittrers wäre als Tod!
'I wouldn't have thought that, in the[FEM] bit[NEUT] of remainder[FEM] of my life, something was more bitter than death!'
(1776, DereKo-HIST)

In this sentence, the definite article *der* shows gender agreement, not with *bißchen*, but with the following noun *Neige* 'remainder'. This clearly indicates a reconfiguration of constituent structure such that *bisschen* was demoted from head noun to modifier. Given that uses without any preceding determiner at all have also become acceptable in colloquial German (cf. *Ich lese bisschen*, example (14) above), there is little doubt that *bisschen* ceased to be an ordinary count noun heading a noun phrase. Changes of this sort are predicted by Hopper's (1991) grammaticalization principle of decategorialization.

Other constructs represent bridges between established and innovative functions. For illustration, consider the attested sentences in (16) to (21), all of which allow for multiple readings.

(16)   Mariechen – sagte ich – so iß doch nur **en bischen**!
         'Mariechen – I said – (please) eat just a bit(e)!'
         (1801, DeReKo-HIST)

(17)   Ich habe aber doch Mittel gefunden, dem Kinde einigemal **ein Bißchen** Brod
         zuzustecken.
         'But I found means to slip the child a bit of bread a few times.'
         (1784, DeReKo-Hist)

(18)   Und von dieser [Versuchung] muß ich dir auch noch **ein Bischen** erzählen,
         mein Sohn!
         'And of this [temptation] I have to tell you a bit, my son!'
         (1788, DeReKo-HIST)

(19)   … wo man nur während des Karnevals **ein bißchen** Cancan tanzt
         '… where they dance a bit of Cancan / dance the Cancan a bit only during
         carnival'
         (1840, DeReKo-HIST)

(20)   Ist etwa die Brühe zu dünne, magst du **ein wenig** in Butter braun geröstet
         Mehl hinein rühren;
         'If the broth is too watery, you may stir in a little flour that was browned in

butter / stir in flour that was browned in butter a bit'

(1715, DTA)

(21)   Ich wollte es noch **ein wenig** geheim halten, aber sie haben sich selber

verrathen

'I wanted to keep it secret a little (while), but they gave themselves away'

(1844, DeReKo-HIST)

[p. 156] The first two examples, occurring in the context of ingestion, are very likely to instantiate literal uses of the noun *Bisschen*, but there is still some slight uncertainty about its actual function, which could range from the pre-partitive to the quantifier type. Similarly, example (18) is ambiguous between a partitive and a degree-modifier reading. While the speaker may have had in mind a conservative partitive use, for the hearer or reader a degree-modifier interpretation is equally likely, especially given the adjacency of *Bischen* to the verb *erzählen* 'tell' and its distance to the preceding PP *von dieser* 'of this'. Examples (19) and (20) allow for both quantifier and degree-modifier readings: the elements modified can be either the nouns (*Cancan*, *Mehl* 'flour') or the verbs (*tanzen* 'dance', *geröstet* 'roasted'). Sentence (21) clearly contains a degree-modifier use of *ein wenig*, but there is some ambiguity as to whether the modifier *ein wenig* is more closely linked to the adjectival part or the verb part of *geheim halten* 'keep secret'. Such minor indeterminacies in constituency relate to some of the finer semantic nuances of *ein wenig* and *ein bisschen*. When combined with adjectives, these German modifiers specify intensities and degrees of properties. When modifying verbs, however, they often do not express intensities of activities but rather senses that have to do with (short) durations of time. Systematic polysemies between older and newer meanings have remained to the present day. Consequently, the diachronic grammaticalization path of these constructions is largely mirrored in their synchronic polyfunctionality.

Both hearer-centred and speaker-centred motivations are relevant to functional expansion, structural reinterpretation and other kinds of linguistic innovation. Hearers are generally inclined to draw rich contextual inferences when interpreting utterances. Pragmatic inferencing, usually grounded in conceptual metonymy (e.g. Panther & Thornburg 2003), is a key factor in various approaches to meaning change, such as Traugott & Dasher's (2002) Invited Inferencing Theory of Semantic Change, Heine et al.'s (1991) notion of context-induced reinterpretation, and Croft's (2000) metanalysis. Speakers may exploit invited

inferences and produce innovative constructs, motivated by the maxim of expressiveness or "extravagance" (Haspelmath 1999). Through this combination of production- and comprehension-oriented factors, non-conventional or ambiguous constructs like the ones exemplified above can, if experienced repeatedly, alter the cognitive representation of the construction they instantiate.

8. Layering, Attractor Sets and Constructional Levels

As *ein lützel*, *ein wenig* and *ein bisschen* coexisted in Early New High German (ca. 1350-1650), the three micro-constructions entered into a paradigmatic rela**[p.157]**tion. What the quantitative data on *ein wenig* and *ein bisschen* suggest is that the younger micro-constructions gradually converged with the older ones, both functionally and formally. This happened despite the fact that the individual constructions originated from sources that were formally rather different, given that *bisschen* started as a noun and *wenig* as an adjective, for instance (cf. Section 4). The convergence of the usage patterns of the *ein bisschen* construction with those of *ein wenig* indicate that the grammaticalization of *ein bisschen* was not independent but strongly assisted by paradigmatic associations to the more established *ein wenig* construction. Likewise, it can be assumed that the development of *ein wenig* was influenced by the yet older *ein lützel* construction.

Links in constructional networks point to possible directions of functional expansion. Language users, when processing non-conventional and ambiguous constructs that do not easily match an existing micro-construction, can have recourse to other constructions that are deemed similar. In their diachronic construction grammar framework, Traugott & Trousdale (2013: 57) assume that

> [w]hen the hearer attempts to match a construct with an existing part of the constructional network and fails to do so because there is no existing micro-construction that fully sanctions the construct, there is mismatch. The best the hearer can do is create a link to align the meaning or the form of the construct with the meaning or form of other extant (sub)schemas in the network. This is done based on the discourse/pragmatic properties associated with both the (new) construct and the (existing) constructional subschema [i.e. meso-construction].

More specifically, encountering a novel *ein bisschen* construct in a bridging context that also makes an innovative degree-modifier interpretation plausible can arouse new associations to the *ein wenig* construction, which readily sanctions degree-modifier uses. When parsing

subsequent usage events with [*ein bisschen* X], language users may co-activate [*ein wenig* X], and the link between both micro-constructions becomes strengthened. In addition, nodes higher up in the constructional network might be formed and strengthened, as will be discussed further below. The marked or "extravagant" status of early degree-modifier uses of *ein bisschen* formed analogously to *ein wenig* diminished over time through the habituating effect of repeated experience (cf. Haiman 1994). In order to accommodate emerging degree-modifier constructs, the *ein bisschen* construction was incited to generalize in meaning. As a result, it successfully expanded its functional range.

As in English, there is a whole family of quantifier/degree-modifier constructions in present-day German. They form a layered domain of grammar (cf. Hopper 1991). Further innovative modifiers have gained ground more recently, **[p. 158]** such as *ein Quäntchen* 'a quantum_DIM', *eine Prise* 'a pinch', *ein Funken* 'a spark' (cf. *ein Fünklein*, discussed in Section 4), *ein Tick* 'a tick' and *eine Idee* 'an idea'.

(22)   Immerhin, auch in dieser schönen neuen Arbeitswelt ist noch Platz für **ein Quäntchen** persönlicher Idylle. 'At least, even in this nice new world of work, there is room for a bit (lit.: quantum_DIM) of a personal idyll' (1999, *Die Zeit*)

(23)   **Eine Prise** Liberalismus wird dem Land guttun 'a pinch of liberalism will do the country good' (2012, *Die Zeit*)

(24)   Aber wenn die Bundesregierung ihren eigenen Bericht ernst nimmt und noch über **einen Funken** Anstand verfügt, muß sie Stahl jetzt wieder in sein Amt einsetzen. 'But if the Federal Government takes their own report seriously and still has a spark of decency, they must put Stahl back into his office.' (1993, D*ie Zeit*)

(25)   Joachim Löw sah, wie seine Spieler meist **einen Tick** schneller waren als ihre Gegner 'Joachim Löw saw that his players were usually a bit faster than their opponents' (2008, *Die Zeit*)

(26)   Das klang dem anderen Gast des Abends dann doch **eine Idee** zu pessimistisch. 'To the other guest of the evening, this sounded a bit (lit.: idea) too pessimistic.' (2008, *Die Zeit*)

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Compared to *ein wenig* and *ein bisschen*, younger modifiers like the ones exemplified above (and the ones discussed in Section 4) are used considerably less frequently and still have far more syntagmatic restrictions. For example, *ein Tick* and *eine Idee* combine almost exclusively with adjectives, and, more specifically, with graded adjectives, as in (25) and (26). The quantifiers *ein Quäntchen* and *ein Funken*, on the other hand, are still strongly associated with a few individual collocates, forming common expressions such as *ein Quäntchen Glück* 'a quantum$_{DIM}$ of luck' or *ein Funken Hoffnung* 'a spark of hope'. This is reminiscent of Early New High German uses of *ein bisschen* when the expression exhibited a clear preference for "edible" collocates that is no longer prominent in today's German. Each modifier has a distinct history that strongly depends on its lexical source, and there are effects of persistence (Hopper 1991). Clearly, these individual histories would merit further investigation. For instance, Idee (which is first attested in DTA and DeReKo in 1855 in a degree-modifier construction: *eine Idee stärger* 'an idea stronger') seems like a fairly atypical source for a degree modifier at first glance. On second thought, however, several explanations readily suggest themselves. Firstly, Idee refers to something that is construed as an individuated entity **[p.159]** – this is supported by the fact that it occurs in the pluralized form (which suggests a count noun construal) in around 40% of all cases attested in the DTA. Secondly, while ideas can obviously be big or small, some sense of smallness might be attached to the word via iconicity and sound symbolism, as Idee is a one-syllable word (iconicity: shortness implicates smallness) and front vowels tend to be associated with smallness (see e.g. Preziosi & Coane, 2017; Hartmann et al., forthcoming).

On the other hand, also clear tendencies of diachronic convergence can be found in this family of quantifier/degree-modifier constructions, as the quantitative corpus analyses on *ein bisschen* and *ein wenig* have revealed.

For this convergence and addition of constructions to happen, a number of forces had to operate in conjunction with each other. First, we take the described development to lend support to the hypothesis that a higher-level quantifier/degree-modifier schema can be assumed for the micro-constructions under discussion. From ca. 1500 onwards, with *ein lützel*, *ein wenig* and *ein bisschen* coexisting and reinforcing each other, a common abstract schema became more and more firmly entrenched. Figure 8 is an attempt to visualize this schema or meso-construction.

$$\text{ein}\quad \begin{Bmatrix} \textit{wenig} \\ \textit{bisschen} \\ \textit{lützel} \\ \text{N 'SMALL (UNIT)'} \end{Bmatrix} \quad \begin{Bmatrix} \text{Adv} \\ \text{V} \\ \text{N} \\ \text{A}(\textit{-er}) \\ \text{P} \\ \dots \end{Bmatrix}$$

Fig. 8: Mid-level quantifier/degree-modifier schema for (Early) New High German. (The suffix *-er* on adjectives marks their comparative form: Some younger degree-modifier constructions can only be used with this form, e.g. *einen Tick schneller* 'a tick faster', but **einen Tick schnell* 'a tick fast'.)

Crucially, the postulated mid-level schema has a specific form (including *ein* 'a') that makes it distinct from other schemas covering structurally different quantifiers and degree modifiers such as the one-word items *etwas* 'somewhat', *leicht* 'slightly', *sehr* 'very' and *viel* 'much'. That is, whereas *ein bisschen* and *ein wenig* are sanctioned by the same meso-construction (Figure 8), modifiers that do not share a structural pattern, like *ein bisschen* and *etwas*, are assumed to be linked only at an even higher level of abstraction, namely the degree-modifier macro-construction. Second, the addition of *ein Funken*, *eine Idee*, *ein Quäntchen*, *ein Tick* and other innovative modifiers to the schema shown in Figure 8 would have been very unlikely if there were not a few well-established micro-constructions that can serve as attractors for new schema members via analogical pattern matching. Analogy, as pointed out by Fischer (2010, 2011, 2013), must be acknowledged to **[p.160]** operate pervasively as a fundamental mechanism of language change from a processing point of view. In contemporary German, *ein wenig* and *ein bisschen* are interchangeable in most contexts, and they are highly productive and in frequent use. A language user who regularly experiences [*ein bisschen* X] and [*ein wenig* X] as functionally equivalent quantifier/degree-modifier constructions may develop some degree of (tacit) awareness of the semantic commonality of the lexical elements *Bisschen* and *wenig*, which both have 'small (unit)' as central meaning component. The semantic component 'small (unit)' is shared by the lexical sources for [*ein Funken* X], [*eine Idee* X], [*ein Tick* X], [*ein Quäntchen* X] and [*eine Prise* X], all of which express downtoning meanings accordingly. It thus appears that *ein bisschen* and *ein wenig*, thanks to their respectable discourse frequencies, productivity and interchangeability, acted as models for the emergence of novel modifiers.

This assumption is in keeping with data on Spanish binominal quantifiers discussed by Verveckken (2012). She argues that the old highly frequent and highly grammaticalized construction *un montón de* 'a heap of' attracted new members to the quantifying [N1 *de* N2] schema via analogical processes that are semantically or conceptually driven. *Un montón de* is said to have served as a prototype in the emergence of a number of younger low-frequency quantifiers such as *un hatajo de* 'a herd of', *una letanía de* 'a litany of' and *un racimo de* 'a bunch of', which still exhibit strong formal and conceptual persistence, however. Besides paradigmatization, layering and persistence, Verveckken identifies several other concomitant grammaticalization features in her case study on Spanish, such as rebracketing (or syntactic reanalysis), decategorialization and context expansion. As pointed out above, all of these features apply to the development of the German constructions as well.

There is an empirical fact that complicates a unitary analysis of the German quantifier/degree-modifier constructions at hand, though. Not all of the younger modifiers have both quantifier and degree-modifier uses. *Ein Quäntchen* does serve both functions (e.g. *ein Quäntchen Effizienz* 'a quantum of efficiency' or *ein Quäntchen effizienter* 'a bit more efficient'), just like *ein bisschen* and *ein wenig*. However, *ein Tick* and *eine Idee* virtually always degree-modify graded adjectives; quantifier uses of *ein Tick* or *eine Idee* are very exceptional in (standard) German. *Eine Prise* and *ein Funken*, on the other hand, can in general only be used to quantify nouns. Micro-constructions with quantifier uses but no degree-modifier uses might simply be said to have not (yet) gone this step in the grammaticalization path suggested by Traugott for English (pre-partitive > partitive > quantifier > degree modifier > free adverb). More problematic for the idea of an universal cline are *ein Tick* and *eine Idee*. They would have to be said to have directly jumped to degree-modifier functions, skipping the "less grammaticalized" quantifier stage. Interestingly, **[p. 161]** similar grammaticalization scenarios with unattested (supposedly) intermediate stages have also been observed by De Clerck & Brems (2016) in their related study on English size nouns like *mass*(*es*), *bunch* and *heap*(*s*). In Section 7, it has been illustrated that some contexts of use in German (e.g. example 18) bear ambiguity bridging from partitive directly to degree-modifier functions, which suggests that the chronology of Traugott's cline need not be interpreted too rigidly, at least for German. Differences in the grammaticalization paths of the individual micro-constructions, including the "leap" of *ein Tick* and *eine Idee* to the degree-modifier stage, demand for explanations. In line with a possibility that De Clerck & Brems (2016: 175) consider in their case study, our interpretation is as follows: the younger German constructions did not

necessarily have to follow the original chronology of functional expansion because they could instead join an extant schema via analogy, with older micro-constructions serving as attractor sets for this schema.

A closer examination of the usage patterns in this family of constructions highlights the individual trajectories and properties of each micro-construction. At the same time, these formally and functionally highly similar micro-constructions have also been influencing and reinforcing each other in their entrenchment and use. Given the fact that some of the younger, less established expressions discussed here have only quantifier uses and others only degree-modifier uses, it appears that these two functions have in fact continued to be represented by two separate (sub)schemas. What is more, while beyond the scope of the present paper, in-depth analyses of the younger modifiers will certainly underline the need to postulate further, even more specific subschemas in order to capture individual usage constraints. For example, within the degree-modifier meso-construction, there seems to be a firmly entrenched subschema specifically with graded adjectives; this subschema appears to sanction the majority of uses of the modifiers *ein Tick* and *eine Idee* (e.g. examples 25 and 26). Pronounced individual differences between micro-constructions may pose a challenge to our account that assigns the older micro-constructions a decisive role as models for the emergence or change of younger constructions. It is, however, important to reemphasize that the by now highly frequent and unconstrained *ein bisschen* and *ein wenig* participate in all subschemas that the younger modifiers mentioned above are currently limited to. This includes, for instance, the graded-adjective subschema [*ein* X A-*er*] (as indicated in Figure 8 above), which is instantiated by more than 20% of all adjective combinations of *ein bisschen* and *ein wenig* in our historical corpus data. All in all, there is thus not only a heavy overlap in structure but also some overlap in the members shared by the quantifier meso-construction and the degree-modifier meso-construction as well as by their subschemas. These overlaps both in schema structure and in (sub)schema **[p.162]** members facilitate constructional change and, in particular, the context expansion of individual micro-constructions. The suggested constellation of network links between constructional levels promotes realignments of micro-constructions, allowing, for instance, the younger *ein Quäntchen* to expand and participate in the degree-modifier schema in addition to the related quantifier schema.

9. Conclusion and outlook

In response to the research questions raised in the Introduction, three generalizations can be drawn from this case study. First, grammaticalization is neither solely expansive nor solely reductive in nature, but, as our large sample of historical usage data illustrates, both kinds of change operate in the co-evolution of function and form. The development of the German degree modifiers involves reduction in individual formal variation and expansion in their range of use. Second, grammaticalization paths are once more shown to be valid cross-linguistically. The specific trajectory that Traugott observed in the evolution of multi-word degree modifiers in English seems to apply to the German modifiers as well. This holds true especially for the older German constructions *ein bisschen* and *ein wenig*; some of the younger modifiers in the family, in particular *ein Tick* and *eine Idee*, did not pass through the stages of the grammaticalization path in successive order, apparently because they could directly join a strengthened degree-modifier subschema by analogy. These observations, thirdly, stress the crucial role that network links between constructions can play in grammaticalization processes, thus providing valuable insights into mechanisms and motivations driving grammaticalization and language change in general.

[p. 163] Further questions prompted by the present investigation remain open for future research. We have depicted the interaction of multiple constructions mainly as a case of mutual support facilitating the grammaticalization of individual micro-constructions as well as the strengthening of meso-level schemas. In other approaches to the grammaticalization of interrelated constructions, most notably in variationist studies (see, e.g., Poplack 2011), interactions between constructions tend to be depicted as competition rather than mutual support. It remains to be clarified how the construction-grammar view of supporting networks can be reconciled with the view of competing variants, which also plays a key role in current constructionist approaches (cf. Barðdal 2008 or Delorge et al. 2014, among many others).

Other open questions concern the refinement of usage-based explanations of grammaticalization drawing on frequency effects (e.g. Bybee 2003a,b, 2010). Can low-frequent expressions grammaticalize only when assisted by strong paradigmatic associations to other more frequent grammatical micro- and meso-constructions? The studies by Hoffmann (2004), Brems (2007) and Verveckken (2012) point in this direction. Is it plausible to postulate frequency thresholds that must be satisfied for grammaticalization to occur in the absence of such a supporting network of paradigmatic associations? If so, these frequency thresholds must certainly be domain-specific (e.g. auxiliaries, prepositions, degree modifiers), and they

probably cannot be based solely on token frequency but should take into account other notions such as conceptual frequency (Hoffmann 2004). Furthermore, more research should be devoted to assessing which type-token ratios are likely to lead to the strengthening of higher-level schemas in addition to the entrenchment and routinization of individual micro-constructions. Converging evidence from both corpus-linguistic studies and psycholinguistic experimentation is required in order to find sound answers to these questions.

Corpora and Sources

DeReKo	German Reference Corpus (Deutsches Referenzkorpus), available via COSMAS II, https://cosmas2.ids-mannheim.de/cosmas2-web/
DTA	German Text Archive (Deutsches Textarchiv), http://www.deutschestextarchiv.de/
DWDS	Digital Dictionary of the German Language (Digitales Wörterbuch der deutschen Sprache), http://dwds.de/
Internet Archive	www.archive.org
MED	Middle English Dictionary, University of Michigan, http://quod.lib.umich.edu/m/med/
MHDBDB	Middle High German Conceptual Database (Mittelhochdeutsche Begriffsdatenbank), http://mhdbdb.sbg.ac.at/.
PCEEC	Parsed Corpus of Early English Correspondence, compiled by Terttu Nevalainen, Helena Raumolin-Brunberg, Jukka Keränen, Minna Nevala, Arja Nurmi and Minna Palander-Collin (2006), distributed through the Oxford Text Archive

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