

Literally (or not)? A corpus-based diachronic study of the usualisation of non-literal employments of *literally* in American English

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Abstract

The adverb *literally* was originally used to express “literal, exact, or actual sense,” yet it also acquired figurative meaning, resulting in uses that appear to reverse its original sense (*Oxford English Dictionary* s.v. *literally*, adv.). In previous research (Aijmer 2023; Calhoun 2015; Israel 2002; Park 2016), this development has primarily been analysed as an example of grammaticalisation with a focus on the outcome of the change (i.e. *literally* adopting an intensifying function). As a result, the underlying usage-based dynamics of *literally*’s development have received less attention. This paper examines the extent to which Schmid’s (2015, 2020, 2023) Entrenchment-and-Conventionalization Model (EC-Model) can be used to conceptualise these dynamics. Drawing on the model’s notion of usualisation, this study maps the development of *literally* along the subprocesses of symbolisation, contextualisation, and syntagmaticalisation based on data from the *Corpus of Contemporary American English* (COCA). The findings indicate increasing absolute and relative frequencies of non-literal uses of *literally*, genre-specific variation and changing syntagmatic environments. These developments reflect the three subprocesses of the EC-Model and emphasise its capability to conceptualise grammaticalisation within a multidimensional and coherent theoretical framework.

1. Introduction

This paper is an enquiry into the development of the adverb *literally* under the framework of Schmid’s (2015, 2020, 2023) Entrenchment-and-Conventionalization Model (henceforth: EC-Model). While *literally* has originally been employed to express “literal, exact, or actual sense,” it has also acquired figurative meaning, resulting in uses that “[reverse] the original sense of *literally*” (*OED* s.v. *literally*, adv.). For example, this is manifest in a statement like “My children are literally animals in a cage during deer dog season” (COCA 1990, Spoken) or in certain hyperbolic utterances such as “Did you memorize the memo? I’ve read it literally a million times” (COCA 2019, TV/Movies).

Non-literal employments of the adverb *literally* have received a considerable amount of — largely negative — public attention, and they have also sparked linguists’ interest.¹ Several studies have investigated the change of *literally* and widely overlap in the conclusion that *literally* is in the

¹ For example, this negative public attention is reflected in complaints that *literally* is a “much-abused adverb” (Flood 2014) and that its non-literal use is allegedly “woefully incorrect” (Hamersly 2019).

initial stages of a grammaticalisation process (Aijmer 2023; Calhoun 2015; Israel 2002; Park 2016). Grammaticalisation, as defined by Hopper & Traugott (2003: xv), denotes “the process whereby lexical items and constructions come in certain linguistic contexts to serve grammatical functions, and, once grammaticalised, continue to develop new grammatical functions.” In the case of *literally*, this new grammatical function consists in emphasis and intensification (Quirk, Greenbaum, Leech & Svartvik 1985: 583). Hence, *literally* appears to follow a similar development to other intensifiers. According to Partington (1993: 181), “[a] number of lexical items which today have an intensifying function began life with modal semantic content, through which speakers comment on their assessment of the truth of the matter under discussion or vouch for the sincerity of their words.” Prominent examples of this are the adverbs *very* and *quite*, which stem from Old French and had previously meant ‘true’ and ‘clear,’ yet acquired intensifying meaning in the late Middle English period (Traugott 1982: 251). However, in distinction to these intensifiers, *literally* is (still) unable to express scalar meaning (Israel 2002: 424).

Even though established grammaticalisation theory represents a useful framework for analysing the change of *literally*, it has paid more attention to the result of the change (i.e. *literally* gradually turning into an intensifier) than to its underlying usage-based dynamics. Against this backdrop, the present paper approaches *literally*’s development from the perspective of Schmid’s EC-Model, focusing on usualisation, which encompasses the processes by which non-literal uses of *literally* become conventionalised, sustained, and adjusted (Schmid 2020: 92f.). By looking at usualisation and its subprocesses, this paper aims for a more nuanced assessment of the development of *literally* than the general observation that it “proceeds to grammaticalize and is becoming much more widespread in its use as an intensifier” (Calhoun 2015: 9). Therefore, the paper furthermore contributes to a growing body of literature testing the EC-Model’s suitability to analyse different processes of language change (see Benker 2025; Schmid 2020, 2023; Schmid, Würschinger, Fischer & Küchenhoff 2021; Würschinger 2021).

Drawing on data from the *Corpus of Contemporary American English* (Davies 2008–, henceforth COCA) from 1990, 2004, and 2019, this paper enquires into the extent to which non-literal uses of the adverb *literally* in American English display evidence of usualisation across time. Its methodological approach can, therefore, be described as a diachronic corpus-based study.

This paper unfolds in four steps. Section 2 provides an overview of the EC-Model as well as a discussion and operationalisation of the concept of usualisation. Section 3 addresses the key characteristics of COCA and outlines the methodology of this study. Section 4 reports the results, which are finally discussed in the context of Schmid’s EC-Model in Section 5. A conclusion is provided in Section 6.

2. Theoretical background: the EC-Model and usualisation

This section first provides an overview of the main tenets of the EC-Model relevant to *literally*'s development (Section 2.1), before discussing the concept of usualisation and how it can be operationalised in the context of the present study (Section 2.2).

2.1 An overview of the EC-Model

Through the EC-Model, Schmid conceptualises language as a dynamic and usage-based system. Aiming at a “unified theory of linguistic structure and linguistic usage” (Schmid 2015: 5), he argues that “the *linguistic system* consists purely of the ongoing interaction between communicative activities, social and cognitive processes, and forces of various types” (Schmid 2020: 1). Put differently, the EC-Model conceives language as the continuously emerging and, therefore, dynamic outcome of sustained language use. Against this backdrop, the EC-Model can be broadly situated within the wider theoretical framework of construction grammar (Benker 2025: 3). However, in distinction to established construction grammar approaches, which Schmid (2015: 6) criticises for their broad, “somewhat open-ended list-like conception of linguistic knowledge”, the EC-Model seeks to account for linguistic knowledge (and change in this knowledge) through a delimited range of processes and a “quite neatly charted cohort of forces” (Schmid 2015: 6). What further distinguishes the EC-Model from other construction grammar approaches is that Schmid (2020: 11) speaks of *utterance types*, thereby denoting various kinds of linguistic entities instead of using the term *construction* for form-meaning associations.² The utterance type that stands at the core of the present paper is the association of the word form *literally* with a figurative, that is, non-literal, meaning.

The EC-Model consists of three main components: usage, entrenchment, and conventionalisation. Usage is essentially concerned with the production and comprehension of utterance types, involving a set of repeated activities (Schmid 2015: 6f.). Entrenchment “is defined as the continuous routinization and re-organization of associations, depending on exposure to and frequency of similar processing events” (Schmid 2015: 10). Conventionalisation refers to “the continuous mutual coordination and matching of communicative knowledge and practices” (Schmid 2015: 10). They are interconnected in the following ways: Usage influences both conventionalisation and entrenchment, whereas conventionalisation and entrenchment respectively affect usage. Conventionalisation and entrenchment are only connected among themselves through usage (Schmid 2015: 7).

² As Benker (2025: 3) summarises, “Schmid [...] does not use the term construction because of a slight terminological imprecision: Goldberg [...] uses the term construction to refer to a cognitive entity, while Croft [...] uses the term to refer to form-meaning pairings as used in social interaction. The EC-Model describes the dynamic interplay of both of these concepts.” See also Schmid (2020: 15). For an overview of the two core understandings of the term *construction* that prevail in the recent literature and an assessment of their theoretical implications, refer to Haspelmath (2023: 6f.).

While the interconnections between the components of the EC-Model must be acknowledged, this study is mainly concerned with the dimension of conventionalisation and, particularly, with usualisation. Besides diffusion, usualisation represents one of the two processes associated with conventionalisation. Even though both processes are possibly interesting in the context of the development of *literally*, (social) diffusion cannot be studied based on data from COCA because this corpus does not provide metadata on the speakers' social backgrounds. Therefore, the present paper concentrates on the usualisation of non-literal uses of *literally*. This concept is introduced in more detail in the following section.

2.2 Usualisation and its subprocesses

The term usualisation, as conceived by Schmid (2020: 92f.), denotes a set of subprocesses that — together with diffusion — contribute to the conventionalisation of innovative utterance types, as well as the maintenance and adjustment of already established utterance types. As a result of usualisation, utterance types manifest as systematic regularities at the semasiological, onomasiological, contextual, syntagmatic, and cotextual level within a specific community (Schmid 2020: 93). Usualisation is, furthermore, “responsible for the conventionalisation of innovative form-meaning pairings, as well as innovative forms and meanings” and, therefore, also plays a central role in various kinds of language change, “labelled by such terms as grammaticalization, lexicalization, pragmaticalization, idiomatization, and context-induced change” (Schmid 2020: 124). Against this backdrop, the concept of usualisation appears to be a suitable framework for investigating the development of *literally*, which not only involves the association of the word form *literally* with a figurative meaning, but is also frequently discussed in the context of grammaticalisation theory (Aijmer 2023; Calhoun 2015; Israel 2002; Park 2016).

Schmid (2020: 124) distinguishes four subprocesses that are involved in usualisation, namely symbolisation, contextualisation, syntagmaticalisation, and paradigmaticalisation. Symbolisation is mainly concerned with the linking of forms and meanings, thereby encompassing the establishment, sustenance, and adaption of “onomasiological regularities regarding the forms chosen to reach communicative goals and semasiological regularities regarding the meanings and pragmatic functions connected with forms” (Schmid 2020: 93). Contextualisation refers to the ways in which utterance types are established, sustained, and adapted in situational contexts and specific contexts, mainly genres and registers (Schmid 2020: 93). Syntagmaticalisation is associated with developments affecting the sequential arrangements in which utterance types can possibly appear (Schmid 2020: 93). Finally, paradigmaticalisation refers to the establishment, sustenance, and adaption of “regularities concerning onomasiological and semasiological oppositions between utterance types” (Schmid 2020: 93). This process implies changes to the system of competing linguistic elements.

To study symbolisation, this paper will look at the frequencies of non-literal uses of *literally* attested in COCA. For *literally* to display evidence of ongoing symbolisation, the present study would have to find an increase of such uses between 1990, 2004, and 2019.³ This would point toward a strengthening of the association of the word form *literally* with figurative meaning.

As for contextualisation, this paper will look at the frequency development of non-literal uses of *literally* across different genres in COCA. Non-literal uses of *literally* would exhibit evidence of contextualisation if different rates and directions of change occurred across genres between 1990, 2004, and 2019. Except for the genres Blog and Web, which were added later than 1990, this investigation will consider all available genres in COCA (i.e. Spoken, Fiction, TV/Movies, Magazine, Newspaper, and Academic).

With regard to syntagmaticalisation, this paper will compare the syntagmatic environments in which *literally* occurs in 1990 and 2019 through a collocation analysis,⁴ looking at both word classes and word forms (see Schmid 2023: 29f.). It measures syntagmatic regularity in terms of a collocation's absolute and normalised frequency, as well as log Dice values.⁵ While absolute and normalised frequencies provide an understanding of what is frequently combined, log Dice values shed light on what is typically combined (Schmid 2023: 29f.). Syntagmaticalisation would be indicated by changes in the syntagmatic regularities in which *literally* occurs.

Lastly, paradigmatisation goes beyond the scope of the present paper, as it only looks at *literally* and, therefore, cannot investigate how competing linguistic elements (e.g. other intensifiers) react to the increasing frequency of non-literal uses of *literally*.

3. Corpus and methods: taking *literally* literally

This section is concerned with the corpus and methods used in the present study. It begins with a brief discussion of the main characteristics of COCA (Section 3.1), before it turns to the categorisation of different uses of *literally* (Section 3.2) and, finally, to the methodology of the collocation analysis (Section 3.3).

3.1 The Corpus of Contemporary American English (COCA)

The *Corpus of Contemporary American English* (Davies 2008–) provides the data basis for the present study. It is a large balanced corpus of American English, consisting of more than one billion words that were collected between 1990 and 2019. For the entire time span, the corpus distinguishes

³ The years 1990, 2004, and 2019 were selected to provide observations at the beginning, approximate midpoint, and end of the period covered by COCA. See Section 3.1 for further information about COCA.

⁴ The year 2004 is excluded from the collocation analysis to reduce complexity, as comparing the initial and final observation years is sufficient to establish whether syntagmatic regularities have changed over time, if it is assumed that such changes proceed gradually.

⁵ Log Dice is a metric to measure collocation strength. In contrast to other association measures like Mutual Information, which tend to exaggerate rare and exclusive co-occurrences, log Dice is more balanced in terms of frequency, and, therefore, favours “collocates which occur exclusively in each other’s company but do not have to be rare” (Brezina 2018: 70, 74). For an introductory discussion of log Dice and other collocation measures, see Brezina (2018: 66–101).

six genres: Academic, TV/Movies, Spoken, Fiction, Magazine, and Newspaper.⁶ While these are (relatively) equally represented, minor size differences are still manifest in the word counts in Table 1, and this study will therefore examine genre-specific developments based on normalised frequencies (see Section 4.2).

Table 1. COCA genre sizes per year

Genre	1990	2004	2019
Academic	3,983,143	4,009,359	4,080,106
TV/Movies	3,207,900	4,378,535	4,350,065
Spoken	4,374,469	4,359,084	4,300,658
Fiction	4,162,242	4,099,691	4,099,130
Magazine	4,101,447	4,337,309	4,152,861
Newspaper	4,082,931	4,121,117	4,123,367
Total per year	23,912,132	25,305,095	25,106,187

3.2 Classification

The COCA search for *literally* provided a total of 2,631 results for the years 1990, 2004, and 2019. From these results, duplicates and tokens that represent explicit metalinguistic comments on the use of *literally* (e.g. “She said the word ‘literally’ a lot” (COCA 2004, TV/Movies) or “I just used ‘literally’ figuratively” (COCA 2019, TV/Movies)) were removed, as they would distort the actual usage numbers. This procedure led to a total sample size of 2,610 tokens, comprising 597 tokens for 1990, 815 tokens for 2004, and 1,198 tokens for 2019.

All tokens were examined within a context of 15 slots to the left and to the right respectively of the occurrence of *literally* and manually classified into one of three semantic categories that align with the different senses of *literally* mapped by the *Oxford English Dictionary* (OED, s.v. *literally*, adv.). The categorisation of the different meanings of *literally* is shown in the rightmost column of Table 2. These three categories were named non-literal uses, meaning preserving uses, and unclear uses.⁷

The category “non-literal uses” was applied to tokens in which a literal interpretation of the utterance is untenable in the context provided, thereby leading to a transparently figurative meaning, as corresponding to the OED sense I.1.c. According to the OED, such uses reverse the adverb’s “original sense.” For instance, the reversal of the original meaning becomes manifest in a sentence like “Heads are going to roll, literally, if the currency reform people get their way in the United States” (COCA 1990, Newspaper). Here, the sense is reversed because *literally* appears in combination with a figurative expression. In addition to such uses, the category was also applied to transparently

⁶ The genres Web and Blogs were added later and are not considered here.

⁷ In most cases, the frequent patterns “literally and figuratively” or “literally and metaphorically” fell under the category “meaning preserving” because they present an utterance as *literally* valid yet concurrently acknowledge a figurative dimension of meaning. This must be distinguished from uses that do not allow for unambiguous classification, for example, due to potentially competing literal and non-literal readings; these were classified as unclear uses.

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hyperbolic uses of *literally*, which also reverse its original meaning, as, for instance, in “Did you memorize the memo? I’ve read it literally a million times” (COCA 2019, TV/Movies).⁸

Table 2. Categorisation of *literally*’s senses including the descriptions and examples provided by the *OED* (s.v. *literally*, adv.)

OED sense	OED description	Example given by the OED	Category
I.1.a.	“In a literal, exact, or actual sense; not figuratively, allegorically, etc.”	“The expression ‘class warfare’ was meant analogically, not literally, by Marx and Engels.” <i>M. Desai, Marx’s Revenge (2004) x. 169</i>	meaning preserving
I.1.b.	“Used to indicate that the following word or phrase must be taken in its literal sense, usually to add emphasis.”	“Bloody Dionysian murders..in which a man, said to be a ‘rapist’, is literally torn into pieces.” <i>(2006) New York Review of Books 2 November 20/2</i>	meaning preserving
I.1.c.	“Used to indicate that some (frequently conventional) metaphorical or hyperbolic expression is to be taken in the strongest admissible sense: ‘virtually, as good as’; (also) ‘completely, utterly, absolutely.’”	“‘OMG, I literally died when I found out!’ No, you figuratively died. Otherwise, you would not be around to relay your pointless anecdote.” <i>Herald-Times (Bloomington, Indiana) 22 October a8/1</i>	non-literal
I.2.a.	“With reference to a version of something, as a transcription, translation, etc.: in the very words, word for word.”	“In the second case..we do not reproduce literally what the other person said, but only the sense of the other person’s words.” <i>G. E. R. Haddock, Crit. Introd. Philos. Frege iv. 72</i>	meaning preserving
I.2.b.	“In extended use. With exact fidelity of representation; faithfully.”	“Physical passion is almost impossible to portray literally on the dance stage.” <i>New York Magazine 10 December 92/3</i>	meaning preserving
II.3.a.	“With or by the letters (of a word). <i>Obsolete. rare.</i> ”	“Pupils should be required to spell words both literally and phonically... For instance, c-a-t is the literal spelling of the word cat.” <i>School Education vol. 4 103</i>	(not considered)
II.3.b.	“In or with regard to letters or literature. <i>Obsolete. rare.</i> ”	“And yet I tell you me-thinks you are very bookishly and literally wise.” <i>R. Harvey, Philadelphus 7</i>	(not considered)

While the category “non-literal uses” encompasses employments that reverse the original meaning of *literally*, the category “meaning preserving uses” comprises utterances that allow for a realistic literal (i.e. non-figurative) interpretation, corresponding to the *OED* senses I.1.a, I.1.b, I.2.a, and I.2.b. This includes descriptions of realistic physical states and processes (e.g. “We each were served with a large plate that literally was covered by the largest pieces of meat I have ever seen.” (COCA 1990, Newspaper)), indications of verbatim quotations, exact representations, or literal translations (e.g. “the word Baku literally means ‘city of strong winds’” (COCA 1990, Newspaper)). Yet it also includes the mentioning of realistic numbers, sizes, and distances, as in “literally within walking distance”

⁸ Unlike these examples of non-literal uses of *literally*, the example that the *OED* provides for sense I.1.b. involves a different form of reversal: *literally* signals that the expression to be “torn into pieces,” instead of its otherwise figurative interpretation (New York Review of Books November 20/2, 2006, quoted in *OED* s.v. *literally*, adv.), is to “be taken in its literal sense” (*OED* s.v. *literally*, adv.). Thus, the reversal here affects the interpretation of the following idiomatic expression rather than the meaning of *literally* itself.

(COCA 1990, Newspaper) or “a company or partnership for literally dozens of business deals” (COCA 1990, Newspaper). Furthermore, cases in which *literally* did not serve an immediately transparent semantic function, yet in the given context still did not reverse its original meaning, were subsumed under this category: “He literally wanted to hold her hands” (COCA 1990, Fiction).

Additionally, the category “unclear uses” was applied to tokens where the context did not allow for unambiguous classification, for example, because both figurative and literal readings were possible or because insufficient information was provided. For example, the statement “I think that literally you were addicted to the computer and the TV” (COCA 1990, Spoken) could just as much carry hyperbolic meaning, as it could refer to an actual medical condition. Also, when individual tokens did not exactly match the *OED* senses considered in this paper, they were subsumed under the category “unclear uses.”

3.3 Methodology of the collocation analysis

Besides the semantic categorisation of the uses of *literally*, which is the foundation for the study of symbolisation and contextualisation, this paper also investigates the extent to which *literally* is affected by syntagmaticalisation. To do so, a collocation analysis is conducted, and the syntagmatic regularities in which *literally* occurs in 1990 and 2019 are examined. Drawing on the software *LancsBox X* (Brezina & Platt 2025), all tokens from 1990 and 2019 were first part-of-speech-tagged and then respectively subjected to a collocation analysis of both word classes and word forms for the windows L3–L1 (encompassing the three slots to the left of *literally*) and R1–R3 (encompassing the three slots to the right of *literally*). To analyse what is frequently combined, this paper looks at the absolute and normalised frequencies, whereas to analyse what is typically combined, it looks at the collocations’ respective association strength. The individual collocations were ordered according to their association strength measured in terms of log Dice values. For both windows, the collocates (in terms of both word forms and word classes) with the ten highest log Dice values were respectively analysed for changes in absolute and normalised frequency as well as association strength between 1990 and 2019.

4. Results

This section first reports the results for the overall frequency development (Section 4.1), before turning to the genre-specific developments (Section 4.2). It concludes with the results of the collocation analysis (Section 4.3).

4.1 Absolute and relative frequencies of non-literal uses of *literally*

Table 3 provides the absolute frequencies of the categories “meaning preserving,” “non-literal,” and “unclear” across 1990, 2004, and 2019, along with percentage changes. Their significance was

assessed through log-likelihood testing based on the corpus sizes for the respective year.⁹ Overall, the table shows an increase of tokens, starting at 597 in 1990 and rising to 815 in 2004, and further to 1,198 in 2019. In absolute terms, this adds up to an overall growth of 100.7 percent between 1990 and 2019. Meaning preserving uses increase steadily over time, from 466 tokens in 1990 to 572 in 2004, and to 824 in 2019. Over the whole period, they rise by 76.8 percent. By comparison, non-literal uses display the most substantial growth between all three time points, increasing from 96 tokens in 1990 to 187 tokens in 2004, and further to 310 tokens in 2019. This corresponds to an absolute rise of 222.9 percent between 1990 and 2019. Also, the uses of *literally* categorised as “unclear” increase over time: from 35 tokens in 1990 to 56 tokens in 2004, and to 64 tokens in 2019.

Table 3. Absolute frequencies and percentage change

	1990	2004	% change 1990–2004	2019	% change 2004–2019	% change 1990–2019
Meaning preserving	466	572	+22.7% *	824	+44.1% ***	+76.8% ***
Non-literal	96	187	+94.8% ***	310	+65.8% ***	+222.9% ***
Unclear	35	56	+ 60.0%	64	+14.3%	+82.9% **
Total	597	815	+36.5% ***	1,198	+47.0% ***	+100.7% ***

Significance based on log-likelihood testing on absolute frequencies.

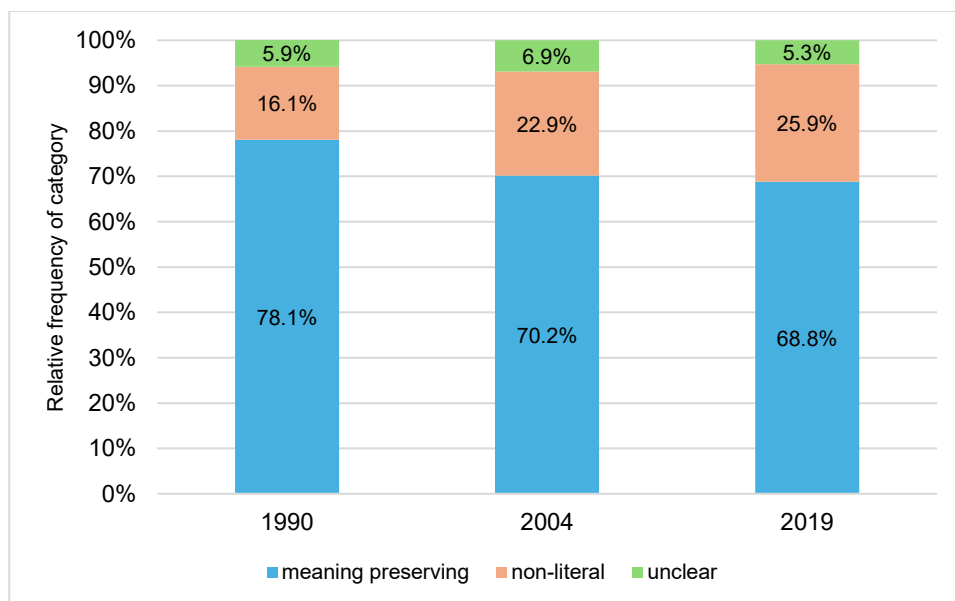


Figure 1. Relative frequencies of meaning preserving, non-literal, and unclear uses across 1990, 2004, and 2019; percentages are rounded to one decimal place

As the total token number varies across the three years, relative frequencies of meaning preserving, non-literal, and unclear uses are also reported in Figure 1.¹⁰ Overall, the figure shows a changing distribution of the three categories between 1990, 2004, and 2019. The proportion of meaning

⁹ For this, Rayson's (n.d.) log-likelihood and effect size calculator was used. The significance levels applied throughout this paper are * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

¹⁰ The proportions as well as the change in percentage points are reported in Table 8 in the Appendix.

preserving uses decreases from 78.1 percent of tokens in 1990 to 70.2 percent in 2004 and to 68.8 percent in 2019. This amounts to a reduction of 9.3 percentage points over the entire period. Concurrently, the proportion of the category “non-literal” grows from 16.1 percent in 1990 to 22.9 percent in 2004, and further to 25.9 percent in 2019, reflecting an overall growth of 9.8 percentage points. In both categories, the change of relative frequencies between 1990 and 2004 is bigger than between 2004 and 2019.

4.2 Genre-specific frequency developments

Figure 2 reports the genre-specific frequency developments of the different meanings of *literally*. Due to differing genre sizes, the absolute frequencies were normalised per 10,000 words. The normalised frequencies were subsequently rounded to three decimal places. Nevertheless, the relative percentage change was calculated based on unrounded normalised frequencies. The significance of the changes was assessed through log-likelihood testing based on the absolute frequencies and the genre sizes of the respective year.¹¹

Figure 2, which — unlike Figure 1 — excludes unclear uses and visualises the frequency developments of non-literal and meaning preserving uses, illustrates an increase in the normalised frequency of non-literal uses of *literally* in five of the six genres between 1990 and 2019.¹² In those five genres, non-literal uses of *literally* increased more steeply than meaning preserving uses.

The Academic genre is the only exception, as it displays a decline of both categories. Meaning preserving uses declined across all three years. While non-literal uses increased very slightly between 1990 and 2004, they showed a strong reduction between 2004 and 2019. Overall, non-literal uses decreased by 44.2 percent in relative terms over the entire time span. Consequently, the total occurrences of *literally* declined.

The Fiction genre exhibits a steady increase of both non-literal and meaning preserving uses across 1990, 2004, and 2019. The frequency of meaning preserving uses more than doubled between 1990 and 2004 and increased further by 35 percent until 2019, accumulating to an overall relative growth of 174.2 percent. Non-literal uses rose even more substantially, namely by 407.6 percent between 1990 and 2004, then by 70 percent until 2019. The overall relative growth of non-literal uses between 1990 and 2019 was 763.1 percent. The extent of this relative growth is exceeded only by developments in the TV/Movies genre (see below).

Data on the Magazine genre also show a growth of tokens across both categories, apart from meaning preserving uses in the interval 1990 to 2004. However, between 1990 and 2019, meaning preserving uses revealed a relative increase of 38.3 percent. During the same period, non-literal uses rose more strongly, namely by 142.4 percent.

¹¹ All values for genre- and year-specific absolute frequencies (in parentheses), normalised frequencies, relative percentage change, and significance levels are to be found in Tables 9 to 14 in the Appendix.

¹² The frequency developments of unclear uses of *literally* can be found in the Appendix.

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In the Newspaper genre, total tokens remained relatively stable, showing a relative increase of only 1.7 percent between 1990 and 2019. Concurrently, in terms of meaning preserving uses, a gradual decline is manifest. This decline equals a reduction of 11.2 percent between 1990 and 2019. In contrast, non-literal uses overall rose by 40.7 percent in relative terms, despite a drop of 15.7 percent between 2004 and 2019. Thus, Newspaper is the only genre in which the overall frequency remains essentially stable, even though the distribution of the categories “meaning preserving” and “non-literal” changes.

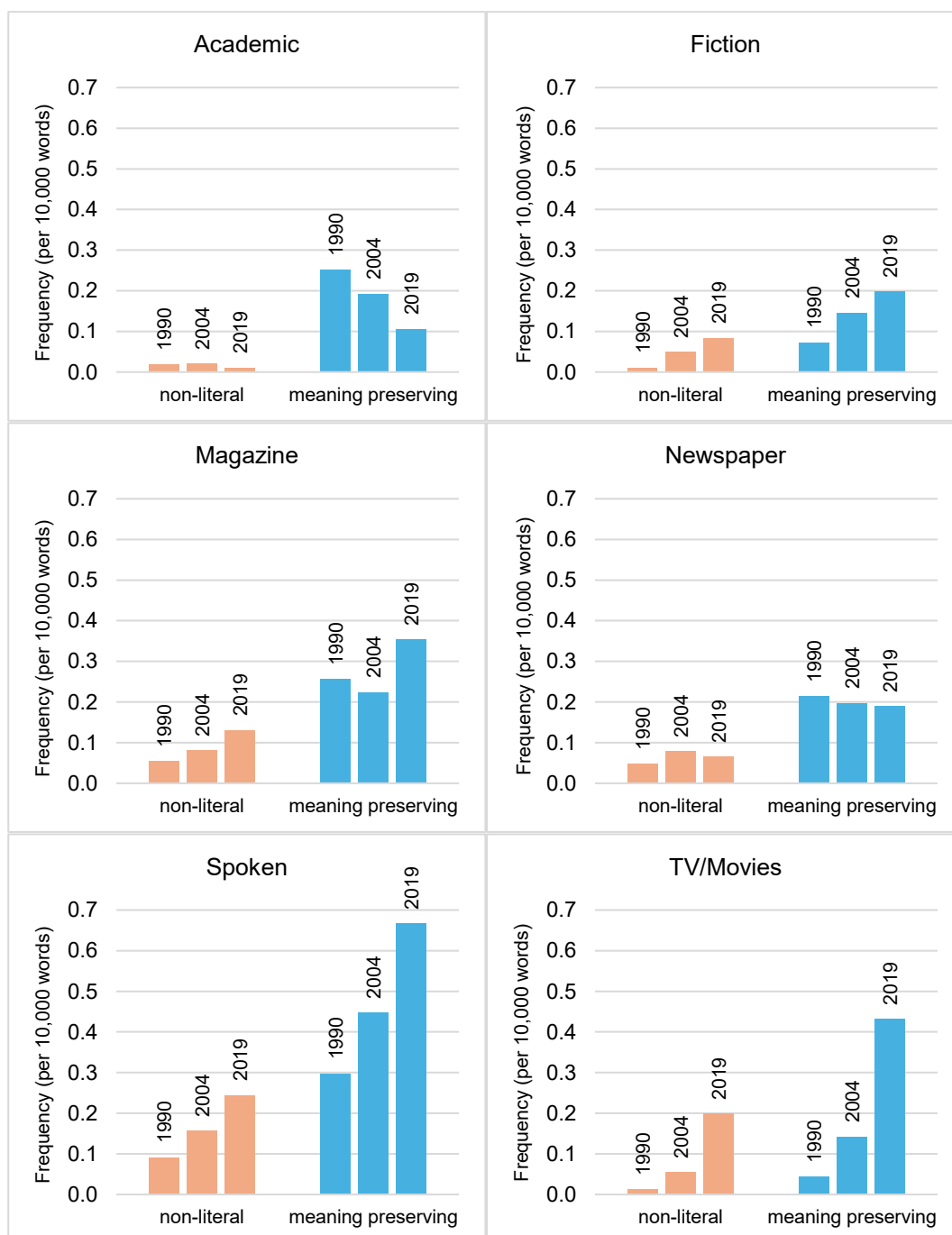


Figure 2. Genre-specific frequency developments of non-literal and meaning preserving uses of *literally*, normalised per 10,000 words

In the Spoken genre, total uses increased by 130.7 percent between 1990 and 2019. In the same period, meaning preserving uses rose by 124.6 percent. However, the biggest increase can be found in the category “non-literal.” This change amounts to a relative increase of 167 percent between 1990 and 2019. Among all genres, the Spoken genre exhibits the highest frequency of non-literal uses.

Finally, the data for the TV/Movies genre show strong growth across all categories and time intervals. Between 1990 and 2019, the total frequency of uses rose by 947.2 percent. A similarly big increase can be found for meaning preserving uses, which increased by 890.3 percent over the same time span. However, the biggest increase is to be found with non-literal uses, which corresponds to an overall relative change of 1,485.5 percent. This also represents the largest relative change among the genres examined here.

4.3 Collocation analysis

This subsection reports the results for the window-specific collocation analysis in *LancsBox X*. It respectively provides the ten most typical collocations of *literally* in terms of word classes and word forms within the windows L3–L1 and R1–R3 in 1990 and 2019. As the number of total tokens per year differs substantially ($n = 597$ in 1990 and $n = 1,198$ in 2019), Tables 4 to 7 report both absolute frequencies and normalised frequencies relative to the yearly number of total tokens. Collocates are sorted in descending order based on their log Dice value.¹³

Table 4. Collocation analysis for L3–L1 in 1990 ($n = 597$), absolute frequency and normalised frequency relative to yearly token totals

Rank	L3–L1 word classes	Absolute frequency (normalised)	Log Dice	L3–L1 word forms	Absolute frequency (normalised)	Log Dice
1	AUX	251 (0.420)	12.3	is	54 (0.090)	11.1
2	PRON	266 (0.446)	12.0	quite	37 (0.062)	10.9
3	NOUN	373 (0.625)	11.7	was	42 (0.070)	10.9
4	VERB	210 (0.352)	11.4	it	42 (0.070)	10.8
5	PROPN	125 (0.209)	11.3	and	49 (0.082)	10.7
6	ADV	120 (0.201)	11.0	the	63 (0.106)	10.4
7	CCONJ	55 (0.092)	10.7	are	29 (0.049)	10.4
8	SCONJ	45 (0.075)	10.6	that	33 (0.055)	10.4
9	DET	100 (0.168)	10.6	I	26 (0.044)	10.2
10	ADJ	76 (0.127)	10.6	you	24 (0.040)	10.1

Table 4 illustrates the collocates of *literally* in the window L3–L1 in the corpus data from 1990. Auxiliary verbs, pronouns, nouns, and verbs are the word classes with the highest frequencies and log Dice values. They are followed by proper names and adverbs. Finally, coordinating and

¹³ As becomes apparent in this section, function words dominate the ten most typical word forms in both windows across both years. However, no additional filtering was applied for word forms to preserve the comparability of the analyses of word forms and word classes. According to Schmid (2023: 29), “the schematic level of word-classes and the lexically specific level of word-forms [...] provide information on two complementary types of syntagmatic regularity, viz. the grammatical and the lexical ones.”

subordinating conjunctions, as well as determiners and adjectives are slightly less prevalent, and exhibit similar values in terms of both log Dice values and frequencies.

As regards word forms, variations of the verb *to be* (*is*, *was*, and *are*) show a strong association with *literally*. The adverb *quite* is the second-strongest collocate of *literally* in the window in question. Among the ten most typical collocates, the personal pronouns *I* and *you* rank lowest with similar frequencies and log Dice values.

Table 5 shows that in 2019, pronouns, auxiliary verbs, and nouns remained the three most typical and frequent word classes in the window L3–L1. Pronouns increased substantially in terms of normalised frequency but slighter in terms of their log Dice value. A further change affects subordinating conjunctions, which — in contrast to 1990 — are no longer among the ten most typical collocates. Instead, prepositions now appear among the ten most typical word classes.

Regarding word forms, the personal pronoun *I* became the word form most strongly associated with *literally* in the window L3–L1, displaying both the highest frequency and log Dice value. Also, the personal pronouns *you* and *he* have increased in terms of log Dice values and frequencies, whereby *he* is new among the ten most typical forms. In contrast to 1990, the form *'s* appears among the ten most typical collocates in L3–L1. Of the 74 occurrences of *'s*, 68 are contractions of *is* and six are instances of the possessive. This development will be discussed in more detail in Section 5. Finally, the verb forms *is*, *was*, and *are* remain closely associated with *literally*.

Table 5. Collocation analysis for L3–L1 in 2019 ($n = 1,198$), absolute frequency and normalised frequency relative to yearly token totals

Rank	L3–L1 word classes	Absolute frequency (normalised)	Log Dice	L3–L1 word forms	Absolute frequency (normalised)	Log Dice
1	PRON	811 (0.677)	12.1	I	170 (0.142)	11.5
2	AUX	479 (0.400)	12.1	is	98 (0.082)	11.0
3	NOUN	619 (0.517)	11.7	it	101 (0.084)	10.9
4	PROPN	303 (0.253)	11.4	that	95 (0.079)	10.8
5	VERB	401 (0.335)	11.2	and	105 (0.088)	10.8
6	CCONJ	136 (0.114)	11.0	you	78 (0.065)	10.5
7	ADV	205 (0.171)	10.7	's	74 (0.062)	10.5
8	ADJ	145 (0.121)	10.7	was	68 (0.057)	10.5
9	PREP	188 (0.157)	10.6	he	64 (0.053)	10.5
10	DET	157 (0.131)	10.4	are	57 (0.048)	10.4

Table 6 presents the collocates of *literally* in the window R1–R3 in the corpus data from 1990. In terms of word classes, nouns, prepositions, and determiners are both most frequent and have the highest log Dice values. In contrast, auxiliary verbs, proper names, and coordinating conjunctions exhibit lower frequencies and lower log Dice values. Verbs exhibit the fourth highest frequency, yet rank sixth in terms of association strength.

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Regarding word forms, *the*, *of*, and *to* exhibit both the highest frequency and the highest log Dice values. These forms are directly followed by several other function words (*a*, *in*, *and*, *on*, and *as*), then finally by the verb form *means* and the adverb *figuratively*.

Table 6. Collocation analysis for R1–R3 in 1990 ($n = 597$), absolute frequency and normalised frequency relative to yearly token totals

Rank	R1–R3 word classes	Absolute frequency (normalised)	Log Dice	R1–R3 word forms	Absolute frequency (normalised)	Log Dice
1	NOUN	189 (0.317)	10.7	the	138 (0.231)	11.5
2	PREP	84 (0.141)	10.1	of	76 (0.127)	11.1
3	DET	69 (0.116)	10.1	to	54 (0.09)	10.8
4	PRON	52 (0.087)	9.7	a	46 (0.077)	10.7
5	ADJ	40 (0.067)	9.6	in	42 (0.070)	10.5
6	VERB	53 (0.089)	9.5	and	35 (0.059)	10.2
7	PART	17 (0.028)	9.1	on	17 (0.028)	9.6
8	AUX	26 (0.044)	9.0	as	16 (0.027)	9.6
9	PROPN	24 (0.040)	8.9	means	14 (0.023)	9.5
10	CCONJ	15 (0.025)	8.8	figuratively	14 (0.023)	9.5

Table 7 illustrates that verbs, determiners, and prepositions are the word classes found most frequently in the window R1–R3 in 2019, and they also exhibit the highest log Dice values. Nouns, which in 1990 had been the word class with the strongest association to *literally*, appear in fifth position. Nevertheless, both the log Dice values and the (normalised) frequency of nouns have increased compared to 1990. Auxiliaries, particles, and proper names are slightly less frequent, and display the lowest log Dice values among the ten most typical collocates.

Regarding word forms, function words also dominate in 2019. *The* remains the most frequent form that also exhibits the highest log Dice value. However, both the normalised frequency and the log Dice value have slightly decreased since 1990. Different to 1990, the adverb *just* and the personal pronoun *I* appear in 2019 among the ten most typical collocates in the window R1–R3.

Table 7. Collocation analysis for R1–R3 in 2019 ($n = 1,198$), absolute frequency and normalised frequency relative to yearly token totals

Rank	R1–R3 word classes	Absolute frequency (normalised)	Log Dice	R1–R3 word forms	Absolute frequency (normalised)	Log Dice
1	VERB	745 (0.622)	12.1	the	205 (0.171)	11.4
2	DET	398 (0.332)	11.8	a	104 (0.087)	10.8
3	PREP	405 (0.338)	11.7	in	74 (0.062)	10.5
4	PRON	498 (0.416)	11.4	to	72 (0.060)	10.2
5	NOUN	529 (0.442)	11.4	I	70 (0.058)	10.2
6	ADJ	185 (0.154)	11.0	and	69 (0.058)	10.2
7	ADV	236 (0.197)	10.9	just	44 (0.037)	10.0
8	AUX	198 (0.165)	10.8	of	50 (0.042)	9.8
9	PART	103 (0.086)	10.6	on	36 (0.030)	9.7
10	PROPN	163 (0.136)	10.5	it	41 (0.034)	9.6

Overall, the collocation analysis demonstrates that the syntagmatic regularities in which *literally* appears vary over time. While function words dominate the ten most typical word forms in both

windows across both years, the distribution of the surrounding word classes changes. In the window R1–R3, nouns, prepositions, and determiners are the most typical word classes in 1990, whereas verbs are the most typical in 2019 and are followed by determiners and prepositions. In the window L3–L1, pronouns overtake auxiliaries in frequency and increase slightly in typicality. In accordance with this, the personal pronouns *I*, *you*, and *he* increase in terms of their frequency and typicality. This development will be returned to in Section 5.

5. Discussion

This section discusses the above presented results in relation to the EC-Model, examining the extent to which non-literal uses of *literally*, as a specific utterance type, display evidence of usualisation. As mentioned in Section 2, this paper covers symbolisation, contextualisation, and syntagmaticalisation as subprocesses of usualisation, yet it cannot cover paradigmaticalisation, which involves how competing linguistic elements respond to *literally*'s development.

Non-literal uses of *literally* exhibit evidence of symbolisation across the data from 1990, 2004, and 2019. As symbolisation implies the strengthening of a specific form-meaning association through repeated usage (Schmid 2020: 93), this development is reflected by the increase of the absolute frequency of non-literal uses across all monitored periods. However, meaning preserving uses also increase in terms of absolute frequency, albeit at a slower rate. As a result, non-literal uses have not replaced meaning preserving uses. However, since meaning preserving and non-literal uses increase at different rates, their proportion is changing. Yet, in the data, meaning preserving uses of *literally* remain dominant.

Also, non-literal uses of *literally* are indicative of contextualisation, as different rates and directions of change occur across genres between 1990, 2004, and 2019. The most consistent increase of both non-literal and meaning preserving uses is reflected by the Spoken genre and the TV/Movies genre. Across all three years, the Spoken genre displays the highest token numbers for both non-literal and meaning preserving uses. In contrast, the TV/Movies genre (which largely includes imitations of authentic spoken language) displays a sharper increase, as it ranks second lowest for meaning preserving and lowest for non-literal uses in 1990, yet second highest in both categories in 2019. Taken together, both developments suggest that spoken language is an important (if not perhaps the driving) factor of the overall change of *literally*.

Both the Fiction and Magazine genres also increasingly adopt non-literal uses of *literally*, yet they do so to a lesser extent than the previously mentioned two genres. While both genres increasingly seem to tolerate non-literal uses of *literally*, they also maintain *literally*'s original meaning. Yet even though non-literal uses grow proportionately stronger than meaning preserving uses, the latter remain dominant across all three years. A possible explanation for the comparatively lesser extent of adoption of non-literal uses in these genres could be that Magazine and Fiction both

follow established conventions for written language, but at the same time allow for subjective perspectives, in which non-literal uses of *literally* appear especially frequently.

In the Newspaper genre, the change of *literally* is relatively limited with only small shifts in frequency. However, a slight overall increase of non-literal uses can be observed, while a slight decrease of meaning preserving uses takes place. This small extent of change plausibly reflects journalists' rather conservative attitude to language use (Cotter 2010: 211) and editorial processes that often involve several people critiquing language production. Yet, the slight increase of non-literal uses of *literally* illustrates Cotter's (2010: 2) observation that even though "the news media have their own culture and their own patterns of language use, they also participate in the communicative routines of the wider society in which they are embedded."

Finally, the Academic genre largely seems to resist the change of *literally*. Both meaning preserving and non-literal uses decline, whereby non-literal uses are already consistently rare. This overall decline of tokens in the Academic genre suggests that — against the backdrop of *literally*'s change — both meanings of *literally* are increasingly avoided within the Academic genre. This avoidance of *literally* in the Academic genre (and partially also in the Newspaper genre), when set against the big increase in most other genres, might suggest that *literally* is nowadays perhaps regarded as "incorrect" or as overly colloquial in these genres. This would likely also have implications for paradigmatisation, as this could indicate that other linguistic items that carry similar meanings appear more frequently instead of *literally*.

However, there are limitations of studying contextualisation based on COCA data. As COCA does not provide metadata on specific contexts, this paper has studied contextualisation based on genres, which is not equivalent to context but can be taken as an indicator for context. Yet, if genre is accepted as an indicator for context, COCA still provides a useful data source for studying contextualisation, given that there is no other balanced corpus of American English of comparable size.

Syntagmaticalisation is also relevant to the change of *literally*, as the syntagmatic regularities in which it appears in 1990 and 2019 differ considerably. Perhaps the most notable development on the level of both word classes and word forms appears in the window L3–L1. This development affects pronouns, especially the personal pronouns *I*, *you*, and *he*, which increase in terms of frequency and typicality. Furthermore, in contrast to 1990, contracted *is* appears among the ten most typical collocates in this window in 2019. Both developments suggest that over time *literally* has become increasingly used in more subjective and informal contexts. This is consistent with the finding that both meaning preserving and non-literal uses of *literally* increase most strongly in the Spoken and the TV/Movies genre, but to a lesser extent in the Newspaper or not at all in the Academic genre. While both of the former genres are prone to informal language use and expressing subjective perspectives, the latter two are expected to use rather formal or institutional language.

Furthermore, this development, which is related to both contextualisation and syntagmaticalisation, illustrates that different subprocesses of usualisation can affect each other.

In the window R1–R3, *literally* displays stronger collocations with function words, such as *the*, *a*, *in*, or *to*. In terms of word classes, the finding that *literally* in 2019 collocates more strongly with verbs and adjectives is particularly striking, as this might reflect its increasing use to express emphasis and intensification. However, even though the results can justifiably be interpreted as evidence for syntagmaticalisation, the analysis conducted in this paper remains limited. One aspect that might influence the results of the collocation analysis is the strongly differing numbers of total tokens from 1990 and 2019. Furthermore, a more detailed look at changes of the syntagmatic profile of *literally* could be achieved through a slot-specific collocation analysis.

Examining these three subprocesses of usualisation across three different points in time provides additional insights into the development of *literally*. Considering multiple dimensions of the change foregrounds its processual character. This approach complements previous research (Aijmer 2023; Calhoun 2015; Israel 2002; Park 2016), which has primarily focused on the outcome of the change (i.e. *literally* adopting an intensifying function), rather than on its underlying usage-based dynamics.

6. Conclusion

This paper has enquired into the development of the adverb *literally* under the framework of Schmid's (2015, 2020, 2023) EC-Model. *Literally* was originally employed to express "literal, exact, or actual sense," yet it has also acquired figurative meaning, resulting in uses that "[reverse] the original sense of literally" (OED s.v. *literally*, adv.).

Previous research analysed this change as an example of grammaticalisation (Aijmer 2023; Calhoun 2015; Israel 2002; Park 2016). While established grammaticalisation theory represents a useful framework for studying the change of *literally*, its focus lies primarily on the result of the change (i.e. *literally*'s gradual development into an intensifier), yet not so much on its underlying usage-based dynamics.

Against this backdrop, this paper has applied the EC-Model to conceptualise the changing use of *literally*. To complement grammaticalisation approaches, the change affecting *literally* was mapped along three of the subprocesses of usualisation: symbolisation, contextualisation, and syntagmaticalisation. It was found that *literally* exhibits evidence of all these subprocesses.

In terms of symbolisation, the increase of both absolute and relative frequencies hints at a strengthening of non-literal uses of *literally* as a specific form-meaning association or — in Schmid's (2020: 11) terms — as a specific utterance type. However, meaning preserving uses of *literally* increase in terms of absolute frequency as well. As a result, both non-literal and meaning preserving uses continue to coexist.

This paper has furthermore found that the change of *literally* is highly genre-dependent, and, therefore, also indicative of contextualisation. While non-literal uses of *literally* increase most strongly in the Spoken and TV/Movies genres, and to a smaller extent in the Fiction and Magazine genres, the Newspaper and the Academic genres largely seem to resist the change.

Additionally, it has been demonstrated that the change of *literally* can also be described along the lines of syntagmaticalisation. The comparison of the syntagmatic regularities in which *literally* appeared in 1990 and 2019 suggests that it increasingly appears in rather subjective and informal contexts and that it is progressively used for expressing intensification or emphasis.

These findings allow for a more nuanced assessment of the development of *literally* than the mere observation that it is affected by grammaticalisation and is increasingly assuming an intensifying function. Thereby, they attest to the EC-Model's capability to conceptualise a grammaticalisation process in a systematic and multi-dimensional framework.

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Appendix

Relative frequency development

Table 8. Relative frequencies as proportions of all tokens, and change in percentage points (pp); percentages are rounded to one decimal place

	1990	2004	pp change 1990–2004	2019	pp change 2004–2019	pp change 1990–2019
Meaning preserving	78.1%	70.2%	–7.9	68.8%	–1.4	–9.3
Non-literal	16.1%	22.9%	+6.9	25.9%	+2.9	+9.8
Unclear	5.9%	6.9%	+1.0	5.3%	–1.5	–0.5
Total	100%	100%	0	100%	0	0

Genre-specific developments

Significance in Tables 9 through to 14 is based on log-likelihood testing on absolute frequencies. Significance is reported as follows: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. The normalised frequencies are rounded to three decimal places. Relative percentage change was calculated based on unrounded frequencies.

Table 9. Academic genre (normalised per 10,000 words, with absolute frequencies in parentheses) and relative percentage change

	1990	2004	% change 1990–2004	2019	% change 2004–2019	% change 1990–2019
Meaning preserving	0.251 (100)	0.192 (77)	–23.5%	0.105 (43)	–45.1% **	–58.0% ***
Non-literal	0.018 (7)	0.020 (8)	+13.5%	0.010 (4)	–50.9%	–44.2%
Unclear	0.005 (2)	0.010 (4)	+98.7%	0.002 (1)	–75.4%	–51.2%
Total	0.274 (109)	0.222 (89)	–18.9%	0.118 (48)	–47.0% ***	–57.0% ***

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Table 10. Fiction genre (normalised per 10,000 words, with absolute frequencies in parentheses) and relative percentage change

	1990	2004	% change 1990–2004	2019	% change 2004–2019	% change 1990–2019
Meaning preserving	0.072 (30)	0.146 (60)	+103.1% **	0.198 (81)	+35.0%	+174.2% ***
Non-literal	0.010 (4)	0.049 (20)	+407.6% ***	0.083 (34)	+70.0%	+763.1% ***
Unclear	0.017 (7)	0.010 (4)	–42.0%	0.020 (8)	+100.0%	+16.0%
Total	0.099 (41)	0.205 (84)	+108.0% ***	0.300 (123)	+46.4% **	+204.6% ***

Table 11. Magazine genre (normalised per 10,000 words, with absolute frequencies in parentheses) and relative percentage change

	1990	2004	% change 1990–2004	2019	% change 2004–2019	% change 1990–2019
Meaning preserving	0.256 (105)	0.224 (97)	–12.6%	0.354 (147)	+58.3% ***	+38.3% *
Non-literal	0.054 (22)	0.081 (35)	+50.4%	0.130 (54)	+61.1% *	+142.4% ***
Unclear	0.017 (7)	0.023 (10)	+35.1%	0.034 (14)	+46.2%	+97.5%
Total	0.327 (134)	0.327 (142)	+0.2%	0.518 (215)	+58.1% ***	+58.5% ***

Table 12. Newspaper genre (normalised per 10,000 words, with absolute frequencies in parentheses) and relative percentage change

	1990	2004	% change 1990–2004	2019	% change 2004–2019	% change 1990–2019
Meaning preserving	0.213 (87)	0.197 (81)	–7.8%	0.189 (78)	–3.8%	–11.2%
Non-literal	0.047 (19)	0.078 (32)	+66.9%	0.065 (27)	–15.7%	+40.7%
Unclear	0.010 (4)	0.024 (10)	+147.7%	0.019 (8)	–20.0%	+98.0%
Total	0.269 (110)	0.298 (123)	+10.8%	0.274 (113)	–8.2%	+1.7%

Table 13. Spoken genre (normalised per 10,000 words, with absolute frequencies in parentheses) and relative percentage change

	1990	2004	% change 1990–2004	2019	% change 2004–2019	% change 1990–2019
Meaning preserving	0.297 (130)	0.447 (195)	+50.5% ***	0.667 (287)	+49.2% ***	+124.6% ***
Non-literal	0.091 (40)	0.156 (68)	+70.6% **	0.244 (105)	+56.5% **	+167.0% ***
Unclear	0.030 (13)	0.048 (21)	+62.1%	0.053 (23)	+11.0%	+80.0%
Total	0.418 (183)	0.652 (284)	+55.7% ***	0.965 (415)	+48.1% ***	+130.7% ***

Table 14. TV/Movies genre (normalised per 10,000 words, with absolute frequencies in parentheses) and relative percentage change

	1990	2004	% change 1990–2004	2019	% change 2004–2019	% change 1990–2019
Meaning preserving	0.044 (14)	0.142 (62)	+224.5% ***	0.432 (188)	+205.2% ***	+890.3% ***
Non-literal	0.012 (4)	0.055 (24)	+339.6% **	0.198 (86)	+260.7% ***	+1,485.5% ***
Unclear	0.006 (2)	0.016 (7)	+156.4%	0.023 (10)	+43.8%	+268.7%
Total	0.062 (20)	0.212 (93)	+240.7% ***	0.653 (284)	+207.4% ***	+947.2% ***