

From *Symptomes* of Martirdome to *Symptoms* of Inclination: An Investigation of *Symptom* in Non-medical Writing in Early Modern English

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Abstract

The signifier term *symptom* is strongly associated with the medical register, and its history in English medical writing has been studied quite extensively. This study contributes to our knowledge of the non-medical uses of *symptom* during the Early Modern period. Drawing on the 1.4-billion-word Early English Books Online corpus, the study examines all extant occurrences of *symptom* and categorises their usage. The diachronic study shows that non-medical uses of *symptom* emerged almost immediately after the word came into common use, and that despite its semantic association with medical prognostication and ailments of various kinds, symptom has always been used to some extent as a signifier term referring to positive events and states of being.

Keywords: symptom; signifier term; Early Modern; non-medical; corpus

1. Introduction

The term *symptom* is the only widely used signifier term in English that is explicitly associated with a specific semantic field, namely medicine (see Tyrkkö 2019). Today it is in common use both within the medical profession and outside of it, and it has a generally negative connotation: a symptom of X suggests that X is something undesirable or harmful (see examples 1 and 2).

- (1) Many people suffer from this, and it doesn't have to mean that they will eventually become much worse. The main **symptom** is short-term memory loss, which includes repetition of statements and actions. (BNC B32)

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- (2) This conflict was a **symptom** of Britain's relative decline as a world power, and was characterized by its attempts to retain something of its former position through the Commonwealth and Empire. (BNC A6G)¹

The early history of *symptom* in English, along with other medical signifier terms, has been discussed at some length in previous studies (see Tyrkkö 2006, 2010 and 2019).² However, whilst the use of the term in early medical writing is well documented, to our knowledge no research has thus far been carried out on the extent to which *symptom* was used contemporaneously outside of medical writing and how quickly it began to be used by non-medical writers in reference to sign relations that are non-medical in nature.

The objective of the present study is to fill the gap by expanding the diachronic study of the term beyond the medical sphere. Using the 1.4-billion-word EEBO TCP v3 dataset as primary data, we explore when and how *symptom* came to be used by non-medical authors as a near-synonym of *sign* during the early modern period, and whether the original connotations of the medical term were reflected in the term's usage in other registers.

Combining detailed manual classification with computational topic modelling, we trace the spread of *symptom* across contemporary discursive topics observing its metaphorical use particularly in religious and institutional contexts. We show that the while the term has carried a negative or neutral semantic prosody throughout its history of use in vernacular writing, there have always been some authors who have used it in reference to positive referents. The question therefore is what was the balance between positive and neutral or negative uses of *symptom* in non-medical writing, and can we observe changes in that balance over time that would indicate a prosodic shift?

¹ Examples from the British National Corpus, accessed through the UCREL CQPweb online interface at <https://cqpweb.lancs.ac.uk/>. All examples drawn from corpora will be cited using the identifier of the text in the corpus. Other examples will be provided with a bibliographic reference.

² For a comprehensive collection of relevant studies from the medical humanities perspective, see Evans et al. (2008).

2. Background

We will begin with an overview of previous research on signifier terms in general and in the medical context in particular, followed by a brief introduction to the concept of semantic prosody.

2.1 Symptom and other signifier terms

Signifier terms are nouns that indicate the existence of a semiotic relationship between a signifier and a signified: typically, “X is a sign of Y” or “the signs of Y are X and Z”. Some of the more common signifier terms include *sign*, *mark*, *token* and *indication*, as well as the term of interest in the present study, *symptom*. Altogether the *Historical Thesaurus of English* lists 77 unique signifier terms throughout the history of English, with the greatest number of new terms appearing during the Middle English and Early Modern English periods (Tyrkkö 2019: 202). The majority of these terms fizzled out without a trace after only a few decades (e.g., *entach*, *prenostic*, *prodige*) or underwent a semantic shift away from the signifier meaning; examples of the latter include *weird* and *grudge*. Other terms, such as *foreboding*, *prodigy*, and *portent*, either had from the beginning or developed more narrowly specialised meanings and ceased to function as synonyms of generic terms like *sign* and *token*. The sporadic increase in topic-specific lexis, sometimes called a period of *linguistic trauma* (Alexander 2011), can be associated with more general changes in society and culture, which give rise to new concepts and consequently to new words. In the case of this particular lexical item, its productivity during the Middle and Early Modern English periods can be explained at least partly by the increased production of scientific writing in English, which inspired authors to introduce so-called *inkhorn terms*, that is, neologisms and derivations of existing terms intended to convey a learned effect (see Vos 1976); consider, for example, the short-lived *prenosticature*, *prognosticon*, and *presagement*. Similarly to nominalisations, which also became more frequent in scientific writing during the Early Modern period (see Tyrkkö and Hiltunen 2009), distinctly classical-sounding new terms were another way of communicating the importance and pedigree of a scientific text written in or translated into the vernacular.

While general-purpose signifier terms are used in all registers and domains of language use, preferences for specific terms over others can be observed in some fields, and detailed examination of the terms’ contextual

use can reveal subtle differences in meaning, which can and do change over time. One field of particular interest has been medicine, where a considerable part of the practice concerns the observation and correct interpretation of physical signs, as well as the formulation of accurate prognostications based on such signs (see Siraisi 1990: 133–134; French 2003: 157–184). Previous research on medical signifier terms has concentrated on diachronic changes in the semantic meanings of the terms, comparisons of the frequency trends of the different terms, as well as their relative use within different fields of early medical writing (see Tyrkkö 2006, 2010 and 2019).

Of particular interest in the medical register are the terms *symptom* and *accident*, both of which originally referred to illnesses or ailments that accompany another, typically more serious, medical condition. While the former remains recognisable as a medical term and continues to be current today, *accident* has effectively lost its meaning as a signifier term. The relationship between an illness and its accidents or symptoms was not necessarily perceived to be causal—as in, the serious illness causing the symptoms—but rather as a co-occurrence, which a doctor could nevertheless use diagnostically (Tyrkkö 2010). The original meanings of both *symptom* and *accident* reflected their nature as co-occurrences. The etymology of the term *symptom* can be traced back to the Greek σύμπτωμα (*súmptōma*),³ literally something that co-occurs or happens with something else, and the same original meaning pertains to *accident*, borrowed into English from Old French during the Late Middle English period. The etymological origin of *accident* is the Latin *accidentem* (from *accidere*, or *ad+cadere*), an almost exact Latin equivalent of the Greek term.

In English vernacular literature, the first attestation of *symptom* is found in John Trevisa's *On the properties of things* (1398),⁴ a translation of the popular proto-encyclopaedia *De proprietabus rerum* (c. 1240) by the Franciscan friar Bartholomaeus Anglicus. As example (3) shows, the Middle English spelling differed notably from the Early Modern form.

³ *Symptom* is given as an example of a word with a recognisably Greek etymology in Simon Daines' grammar *Orthoepia Anglicana* (1640). Daines notes that the letter <y> appears rarely in the beginning or middle of an English word, with the exception of words derived from Greek in which the original letter was ypsilon.

⁴ The manuscript survives in several copies, of which Harley MS 614 has been examined at the British Library by the first author.

- (3) If dreynesse encresiþ with hete, þere falliþ & comeþ worse **sinthomata**, eueles, & siknessis. (Trevisa 1398)

During the Middle English period, the term was also found in Guy de Chauliac's *Grande Chirurgie* and John Arderne's *Fistula in ano*. The earliest English translations of both manuscripts are dated to roughly 1425.⁵ Although it is possible that some translations of medical books may have featured the term *symptom* between 1425 and the middle of the sixteenth century, there is no direct evidence of this and it thus appears that *symptom* may not have been used in vernacular literature for well over a hundred years. When the first extant occurrences appear in sixteenth century printed vernacular books, they again show up in translations of continental medical books. The earliest example found in the EEBO TCP dataset is another translation of de Chauliac, this time from French, namely *The questyonary of cyrurgyens* (1540), and the next occurrences (4) are found in a translation of a surgical manual by Swiss physician Johannes Jacob Wecker's, entitled *A compendious chyurgerie* (1585).⁶

- (4) This is more properlye a **symptome** of the pestilence, as is also the carbuncle it elfe, of that kinde. (Wecker 1585)

The term also appears in two other medical books in the sixteenth century, both translations, as well as in three non-medical volumes; we will discuss the non-medical usage of *symptom* in section 4. The evidence thus shows that *symptom* emerged in original English vernacular medical writing only during the latter half of the early modern period, and it became the dominant medical signifier term during the Late Modern period, supplanting even the term *sign* (see Tyrkkö 2019).

2.2. Semantic prosody

Introduced in the early 1990s by Louw (1993), *semantic prosody* can be considered a special case of the more general phenomenon of word

⁵ Both manuscripts had multiple independent English translations (see Norri 2016).

⁶ The English translator of de Chauliac was the printer and author Robert Coplande, who worked for both William Caxton and Wynkyn de Worde. Wecker was translated by the surgeon John Banister.

association patterns, or collocations, in corpora (see, e.g., Sinclair 1991). Specifically, the concept of semantic prosody refers to the tendency of some words or phrases to carry largely or exclusively positive or negative connotations, which consequently affects the way they are used with other words.⁷ A frequently cited example is the verb *cause*: nearly all of the common collocates of *cause* in the object position are negative NPs (e.g., *damage, problems, death, harm*), as are its most common subjects (*negligence, damage, pollution*).⁸ Importantly, semantic prosody always refers to a collocational relationship between words or phrases that is attitudinal in nature.

A semantic prosody is understood to develop as a feedback loop of sorts, where a word first develops a tendency to co-occur with others that largely share positive or negative connotations. As the semantic association becomes fixed in usage within the language community, the word itself begins to trigger a positive or negative interpretation on any other words with which it is used (Louw 2000: 49–50). Once a semantic prosody has been established, the door is also open for creative and stylistic usage by going against expectations. Relevant to the present study, Louw (1993) used *symptomatic of* as an example of this: whilst the prevailing semantic prosody of the prepositional phrase *symptomatic of* is negative, the word can be used against expectations for ironic effect. As we will discuss, similar usage of *symptom* can already be attested in the Early Modern period.

Because of the usage-based nature of the process, many scholars have come to view semantic prosody more as a pragmatic or discursive phenomenon, rather than a property of the word or phrase itself (see, e.g., Stubbs 2001). Likewise, Morley and Partington (2009: 151) argue in favour of defining semantic prosody as a type of connotational meaning that is realised toward the discursive end of a spectrum of meaning-making where pure connotations reside at the lexical end. While lexical connotations are typically apparent to mature and competent speakers of a language, some semantic prosodies may only become apparent after systematic corpus-based analysis of collocations in large corpora.

⁷ The related concept of *semantic preference* does not require the evaluative or attitudinal connotation (see Partington 2004 and Bednarek 2008).

⁸ Examples drawn from the *British National Corpus*. It is worth noting here that semantic prosodies can be register-specific. For example, Hunston (2007) has shown that *cause* has a neutral semantic prosody in scientific writing.

In the case of the present study, *symptom* differs from the other contemporaneous signifier terms in having a clearly recognisable contextual origin, which we propose would be likely to influence the term's semantic prosody. The hypothesis is that whilst the term *symptom* has a neutral sense in the medical context, the association with medical language is likely to have infused the term with a negative connotation in non-medical settings, given that a layperson would largely encounter the term in discussions of illnesses or other medical problems. Furthermore, because medical signs are typically prognostic in nature—that is, they are signs by which the state or progression of an illness or ailment is determined—the term *symptom* would be likely to come across to lay audiences as a negative term.⁹

3. Material and methods

3.1 Data

The primary data for the study comes from the freely available Early English Books Online v3 dataset, made available on the CQPWeb server by the UCREL research group at Lancaster University. Based on manually keyed-in transcriptions by the EEBO Text Creation Partnership (TCP),¹⁰ version 3 of the EEBO dataset contains over 44,000 volumes of early printed books from between 1475 and 1700. The total word count of the dataset is 1.2 billion words. Reflecting the reality of early modern printing, the dataset is relatively small until the middle of the seventeenth century and then grows exponentially (see Figure 1). All genres of writing are included, with the exception of periodicals, which started appearing toward the end of the seventeenth century.

⁹ In Early Modern medicine, prognosticating played a very important role in medical practice. Physicians and other healers were often unable to actually heal the ailment, but their skill could be judged by their ability to predict correctly how the ailment would proceed. See Siraisi (1990: 133–134) and French (2003).

¹⁰ See <http://www.textcreationpartnership.org/tcp-eebo/>.

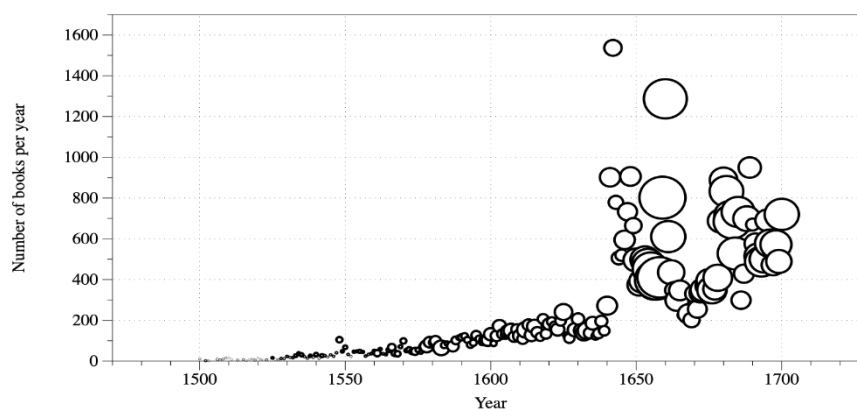


Figure 1. The increase of books per year in the EEBO v3 corpus; the size of the marker indicates the combined wordcount per year.

A rich genre classification model of no less than 80 genre classes is provided for EEBO v3 on the CQPweb server. The genre model is described by the compilers as ‘experimental and not complete’, and notably the class ‘Unclassified’ is the largest individual category, with over 168 million words and over 14,500 books. The balance of genres in EEBO reflects the history of printing, with religious books dominating from the incunabula period to the latter half of the sixteenth century, with translations of the classics, almanacks and other utilitarian literature, and academic treatises being some of the other more prolific genres. The range of genres widened considerably in the seventeenth century, though the previously mentioned genres continued to be printed in large numbers. Naturally, the dataset reflects not only what was printed but also what survived, and consequently major treatises and important reference works are more likely to have made it into EEBO-TCP than minor publications (see, e.g., Fitzmaurice et al. 2017). However, with these caveats, EEBO-TCP remains the best possible primary data for answering the research questions of the present study.

The data preparation workflow involved six steps (See Figure 2). First, all occurrences of the lexical item *symptom* were retrieved from the EEBO v3 corpus using a wildcard query. The resulting 16,104 concordance lines and the associated bibliographical metadata were downloaded from the CQPweb server and saved as a local copy. Second, hits from books with a genre category of ‘science_medicine’ were separated from the rest of the

data (5,903 items); the occurrences of *symptom* in these books were considered to be medical by default. As a third step, each member of the research team was assigned one fourth of the remaining concordance lines to prune manually. Occurrences of *symptom* in Latin passages were removed, as were false hits erroneously retrieved by the wild card query. A further 6,396 medical instances of *symptom* were removed and added to the medical subcorpus; most of these came from the ‘unclassified’ texts. As a fourth step, the newly pruned dataset of 3,313 items was divided up for a second round of manual coding, this time for topic and prosody (see details below). This step also ensured that each concordance line was examined by at least two project members. Due to the limited scope of the project and the size of the dataset, we did not carry out systematic inter-annotator agreement analysis, but the project members discussed problematic and unclear instances in several meetings, which we believed led to a unified coding standard.

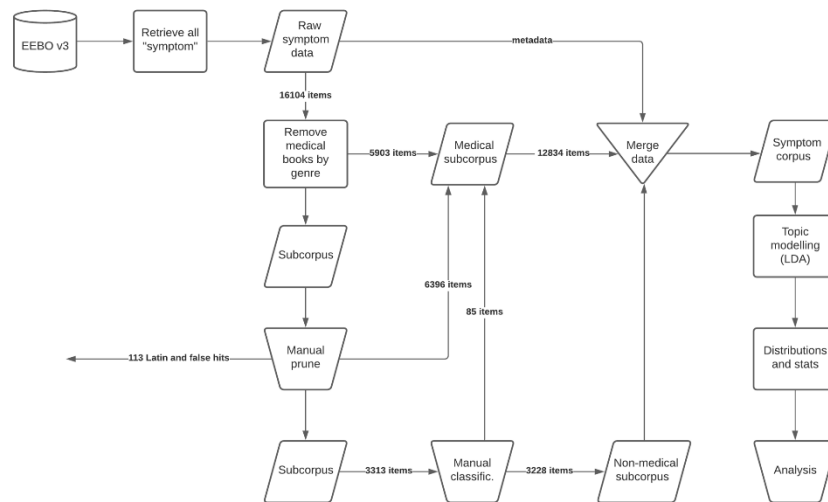


Figure 2. The workflow of data processing and analysis

3.2. Manual classification

As mentioned, the second step of manual classification involved two separate categories: topic and prosody. The topics were decided upon

following observations from the first manual classification. After discussion between the authors, the concordance lines were classified into the following four topics: *generic sign*, *religion*, *institution*, and *religious institution*. Examples of the four categories together with an explanation are provided below. For various reasons, it was not possible to classify nine items, and these have been excluded from the results.

In (5–6), *symptom* functions as a general signifier term as it is used within a context where there is no obvious correlation to the other three topic domains. Such examples in the data are classified as *generic sign*:

- (5) Let such know that I doe boldly affirme it for a truth to be a **symptom** of disobedience and disloyalty. (A64804, 1672)
- (6) When Lovers sigh, and swear their flame is true: Kneel, kiss your hands, and all Loves **symptoms** show. (B05853, 1683)

In contrast, (7–8) illustrate examples of *symptom* in the data that are classified as *religion*:

- (7) It is a **symptom** of a wretched state of Soul; if there proceed no sighs and groans, no signs of grief from the sense of God's displeasure, it is a sad evidence there is no Spiritual Life. (A26794, 1684)
- (8) yet all these eelings & revolutions, though they be **Symptoms** of wrath incumbent upon us for our sins, they may be looked upon, through a prospect of faith, as presages & prognostics of Mercy impendent for His Names Sake, (A59963, 1687)

As (7–8) illustrate, *symptom* is used widely in the data as a signifier term that communicates an unambiguous religious content. However, the data necessitated a disambiguation of religion as “faith” from religion as the “Church;” this latter usage is categorised as *religious institution*, exemplified by (9–10).

- (9) The Danger, which threatens the Protestant Interest at this day is so visible to every Eye, that't were a needless Labour to prove it. All

the **Symptoms** that appear in the Reformed Churches, seem to presage and signify a dismal Crisis. (A60131, 1688)

- (10) and though the Parliament had not openly declared themselves against this good Government of the Church, yet they had shown such **Symptoms** of their Disaffection to it, that this Impudent Libeller could presume to make them his Patrons, and present them with his Plea. (A52464, 1685)

Although (9–10) also convey religious content, the meaning is somewhat different to that of (7–8). In (7–8), the discourse relates to sin and a failure to uphold the faith, whereas in (9–10), the content conveys a sense of the Church as an institutional body.

The decision was made to separate *religious institution* from *institution* to enable the disambiguation of non-religious uses of *symptom* from religious ones within the wider context of State and Church. Examples (11–12) illustrate uses of *symptom* as a signifier term in discourse concerning State (Law, Citizens, Monarchy); such examples are classified as *institution*.

- (11) There is nothing more infallible then that a country, Kingdom, or Common-weal sick of the ablepsie of such an epidemical sectatorship, (of which disease, incivility, malice, usury, ignorance and hypocrisy are the ordinary **symptoms**) (A64608, 1653)
- (12) It is Prudence teaches how to be skilful in knowing the Causes, **Symptoms**, speediest and most effectual Cures of the Diseases of a State. (A46988, 1686)

Naturally, ambiguous examples were found in the data. Often, the difficulty lay in disambiguating *institution* from *religious institution*; however, ambiguity was found between all topics. Examples (13–14) illustrate ambiguous uses of *symptom*.

- (13) they covenanted against his Majesty and Bishops; and the storm grew to that height, that both Church and State were drowned almost in the Blood of our **symptoms** of disatisfactions which you

may read and hear in Coffee-Houses, in public and private Conversations; (A42142, 1687)

In (13), it could be argued that *symptoms of dissatisfaction* in the above context could relate to either *institution*, *religious institution*, or even *generic sign*. Such examples were discussed at length by the authors and, ultimately, consensus was reached. A decision was made to classify (13) as *religious institution* as it is not possible to completely divide Church from State. Furthermore, although an argument could be made that *symptom* in (13) is used in a generic sense because of the postmodifying preposition phrase *of dissatisfactions*, the authors judged that the wider context of the utterance motivated the more specific topic of *religious institution*.

Example (14) demonstrates the ambiguity that could be found between *generic sign* and other topics, in this case *institution*:

(14) the Inhabitants could not endure to be every day minded of their Ignominy by so scornfull a Memorial; that when no **Symptoms** of hatred were in their minds, 'twas not well to preserve them in scattered stones; that we being but strangers in Dio,'twas not for us to give Laws like Masters; that the Citizens would take it very ill that what their Kings allow'd 'em, (A40439, 1644)

Although the discourse in (14) to some extent concerns *institution* in an extended context, the use of *symptom* relates directly to emotion in individuals; therefore, (14) is classified as *generic sign*.

Furthermore, the second category concerned semantic prosody. Although semantic prosody is often categorised into positive, neutral, or negative, a decision was reached among the project members to merge neutral and negative semantic prosody into one category since the aim is to distinguish the positive use of *symptom* from neutral or negative use. A typical case of positive semantic prosody can be demonstrated by the following example: 'To Hector it both in words and gestures, seems to them a **symtome** of a great soul' (1670, Travel), which is put in contrast with this example of negative semantic prosody from the same text: 'In short, they ae generally unhandsome and unwholesome, and paint as much to hide the **symptoms** of the ocks in their Faces, as to beautify them'. As discussed in Section 2.2, the term *symptom* is used mainly with neutral

connotation in medical contexts—which were pruned in the first round of classifications (medical or non-medical)—whereas in non-medical contexts, we hypothesise that medical association has likely imbued the term with a negative connotation as opposed to a positive connotation. As such, the items were classified as *positive* or *otherwise*.

3.3. Topic modelling

In order to explore the relationship between the semantic types of individual instances of *symptom* and their co-text, we supplemented the manual classification with *unsupervised exploratory topic modelling*.¹¹ Topic modelling is a field of machine learning that comprises a variety of algorithmic approaches to identifying *topics* based on the co-occurrence patterns of words (see, e.g., Taavitsainen et al. 2019; Schneider 2020). Somewhat similarly to keyword analysis, which is more familiar to (corpus) linguists, topic modelling identifies a preset number of topics and then generates a list of statistically prominent keywords, which a human analyst can often (though not always) interpret as a semantically coherent discursive topic (see Röder et al. 2015). Once the topics have been identified, each of the observations or documents can be automatically assigned a single topic based on how well the words match the keywords of each of the identified topics. Topic modelling is thus a method of *distributional semantics*, where different clusters of word associations are used to interpret distinct contexts of use.

In the present study, we use Latent Dirichlet Allocation (LDA) on the NLP library Mallet to classify the concordance lines into content-based topics.¹² The objective was to identify recurring lexical associations which may otherwise be difficult to notice in a large dataset. Prior to the analysis, function words, numerals and punctuation were removed from the concordance lines. Setting the number of topics to 20, we ran the

¹¹ The term *unsupervised* means that the procedure is data-driven, instead of being based on prior training data that guides, or supervises, the process. We describe the approach as *exploratory*, as the primary objective was to use topic modelling as a means of taking a secondary look at the data from a somewhat different methodological perspective.

¹² Limitations of space prevent us from going into detail about the algorithmic details and tuning of model parameters in LDA. See, e.g., Blei et al. (2003) and Blei (2012).

concordance lines on Mallet and then analysed the top 30 keywords of each topic in detail. Based on the keywords, several of the topics were medical in nature, though with subtle variations; different topics were identified for wounds and injuries, for diseases, for medicaments, for patient-centred discourse, etc. Likewise, Mallet identified topics associated with governance and matters of the state, with Latin code-switching, and with religious and spiritual concepts. To aid the interpretation, we produced a network graph, or a *conceptual map*, that allowed us to see the overlaps of keywords between topics (Schneider 2020: 50–52). Highly overlapping topics were merged to reduce the dimensionality.

Once the concordance lines had been classified and recoded according to our reduced repertoire of topics, we cross-referenced the algorithmically assigned topics with the semantic types assigned by project members. This allowed us to identify instances where, for example, the human interpretation was that *symptom* referred to a religious phenomenon but surrounding co-text suggests that the topic is medical. Examining the data over time, we can see conceptual developments in the use of *symptom* which would otherwise be difficult to detect.

4. Findings

The findings will be discussed in two parts, first focusing on diachronic frequency trends and then moving on to illustrative examples of the various semantic meanings and possible prosodic polarities of *symptom*.

4.1 Quantitative observations

As already established in 2.1, although there are individual occurrences of *symptom* to be found in English vernacular literature as far back as the fourteenth century, the term did not properly emerge in medical vocabulary until the middle of the sixteenth century and usage in non-medical context only began in the first few decades of the seventeenth century (Figure 3). The difference observed between medical and non-medical texts is substantial, though naturally not particularly surprising. The trendlines show a steady increase in standardised frequency all the way to the end of the timeline.

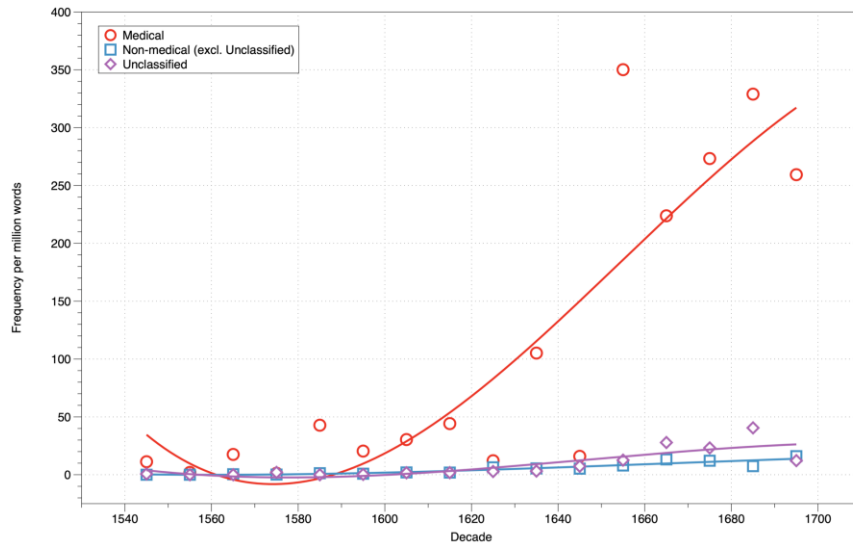


Figure 3. Diachronic trends of symptom in three main genre groups of the EEBO v3 corpus

The main concern of the present study is the non-medical use of *symptom*, and consequently we will hereafter focus almost exclusively on texts that were classified as non-medical by genre. However, as the mosaic plot of the breakdown of semantic types of reference clearly shows (Figure 4),¹³ even when the genre of the text is non-medical, *symptom* is predominantly used as a signifier term that has a medical meaning throughout the timeline. All in all, the visualisation shows relatively minor diachronic changes from the 1630s onward. *Symptom* is used both as a generic non-medical sign term and as a term with a religious referent roughly 10% of the time each, with institutional references occurring here and there in smaller proportions. The fact that *symptom* started to appear as a non-medical signifier term almost immediately after it entered vernacular medical lexis is a noteworthy finding that runs counter to what might have been expected, namely, that the adoption of the term would have occurred gradually, starting with specific genres close to medicine.

¹³ In a mosaic plot, the widths of the columns indicate the relative amount of data in each time period, while the heights of the stacked bars indicate the relative proportion of the corresponding category of item in that time period.

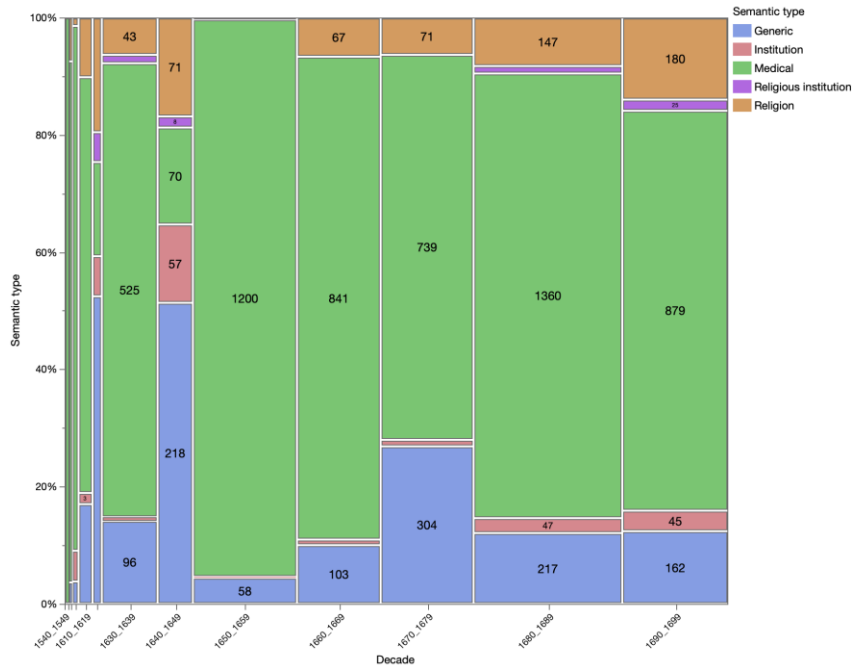


Figure 4. Mosaic plot of the breakdown of semantic types of symptom referents by decade

It may also be noted that there is one decade that appears to differ very substantially from the general trend, namely the 1640s, where medical references appear very rarely. This apparent anomaly can be explained by the Civil War, which caused a sudden spike in the printing of political books and pamphlets, and a concomitant dip in medical publishing (see Fissell 2007: 111–113). Although this might not directly affect the use of the term *symptom* in non-medical books, the data can be interpreted as indicating a sudden shift in focus to religious and institutional topics, as well as others, which fell under the ‘generic’ class. Notably, the use of *symptom* again changed drastically during the Interregnum, at which time it was used almost exclusively in a medical sense and virtually never in a metaphorical sense referring to maladies in institutions or religious contexts. Following the Restoration of Charles II, the use of *symptom* settled into a stable pattern, which persisted at least until the end of the century.

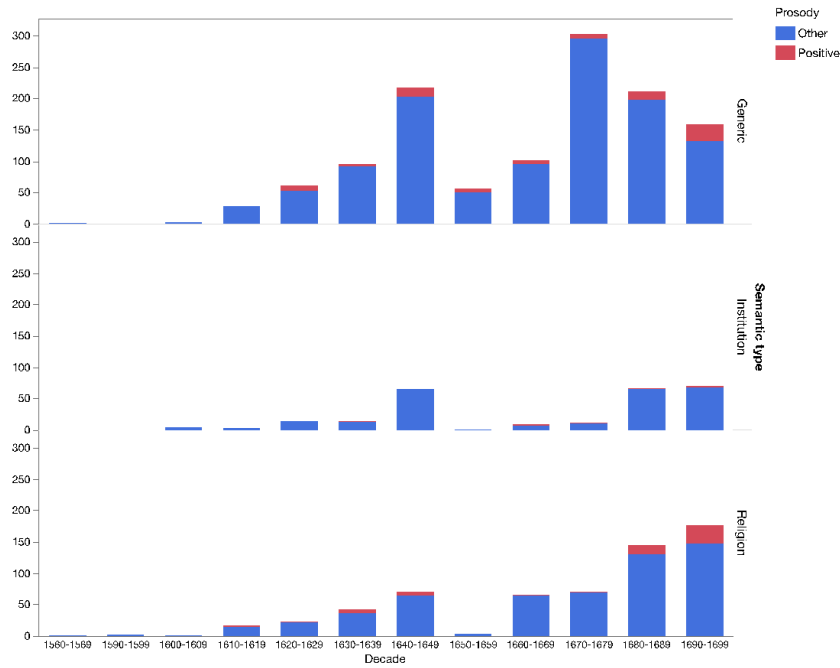


Figure 5. Breakdown of positive and negative prosody by decade and non-medical semantic type

Moving on to semantic prosody, Figure 5 shows the proportional breakdown of positive semantic prosody throughout the decades when the referent is non-medical. Although there are a few instances of positive prosody throughout the seventeenth century data, it is clear that *symptom* always had a negative or neutral connotation (for examples of positive prosody, see section 4.2). Even though the final decade of the timeline shows an apparent increase, the overall trend over the 150-year timeline is actually very slightly negative.¹⁴ Here, too, we were surprised to find that the largely stylistic and ludic use of *symptom* as a positive signifier term neither developed gradually nor dwindled away over the decades. Instead, the playful usage emerged almost immediately after the term started

¹⁴ Nominal logistic regression predicting log odds for prosody (Other/Positive) by year: intercept=18.3, p=***; year=-0.009, p=**, R²=0.006, BIC=1100,19.

appearing in non-medical texts and then remained at the same level throughout the timeline.

Moving on to the findings from topic modelling, the mosaic plot (Figure 6) shows the breakdown of computationally identified topics and the four manually assigned semantic types of sign reference across the timeline. Medical topics are naturally predominant when the lexical domain of the referent is medical, and the same is true of references to religion or religious institutions. However, as the figure shows, religious topics are often also present when the sign points to a generic or institutional referent, particularly in the beginning of the timeline.

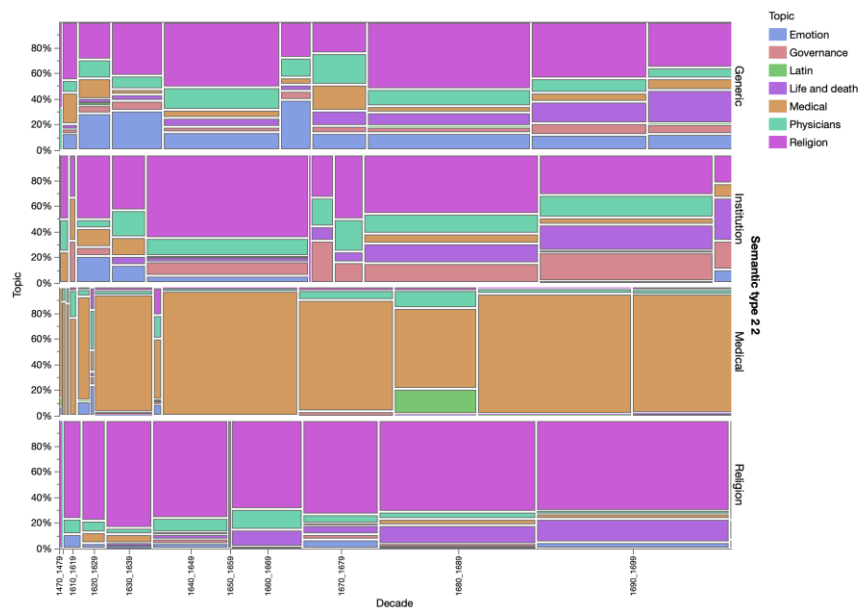


Figure 6. Mosaic plots of the LDA topics and semantic types of symptom referents by decade

There are a few particularly notable developments here. The increasing prominence of the topic labelled ‘Life and death’ is seen in conjunction with the usage of symptom as a generic and institutional sign term, and the topics of ‘Medical’ and ‘Physicians’ are seen fairly frequently with all semantic types—except with religion. The latter observation in particular merits some attention, as it suggests a rather sharp separation of medical

and religious semiospheres. Keeping in mind that we are examining the use of the medical signifier term *symptom*, this means that *symptom* was not used in reference to religious referents in medical contexts. The opposite effect is seen in the case of medical references: the topic of the co-text is almost always medical. Lastly, when *symptom* is used as a generic signifier term, we note that the topic of the co-text is ‘Emotions’ roughly 20% of the time. This level remains stable across the timeline.

4.2 Qualitative analysis

In this section, examples of *symptom* used in reference to religious, institutional and generic context will be highlighted and discussed.

4.2.1 *Symptom as a signifier term in religious discourse*

The use of *symptom* in reference to non-medical issues abounds in religious discourse throughout the corpus, a usage which is probably the result of a larger use of medical metaphors in Christian thought, originating from passages in the Bible, as illustrated in (15):

- (15) When Iesus hearde yt he sayde vnto them. The whole have no nede of the phisicio but the sicke. I came not to call the rightwise but the synners to repentaunce. (Mark 2:17, Tyndale 1526)

Harley (1993: 399–400) states that the ancient analogy of ‘God as a physician’, advocated by Augustine, started to be seen as referring to healing of the soul in the Early Modern period, rather than healing of the body as it had mostly been interpreted in the early Middle Ages. This conceptual and theological shift might have influenced the use of *symptom* in reference to sin and religious shortcomings. Medical metaphors can be found in many sermons and religious essays in the corpus, where direct comparisons between physical and metaphysical ailments are made, as in (16):

- (16) Sin now runs in a Blood, and flies higher and higher instead of abating its first Vigour, 'tis Morbus epacmasticus, epidemicus & contagiousus; as **Symptoms** still heighten, it is a catching and contagious Disease seizing upon those that come near such as are infected with it, (A41707, 1682)

Another contributing factor to the use of *symptom* in religious discourse might have been the tripartite view of humankind in Christian theology, where body, soul and spirit form an interconnected whole (Heard 1866). Such a view presumably facilitates transfer of elements such as sickness and health, strength and weakness from the body domain to the soul and spirit domains, allowing for comparisons such as in (17):

- (17) it is otherwise with spirituall diseases then with corporall: In corporall diseases, first we finde the **simptom**es of them, and then wee know them; but in spirituall diseases first wee must know them before wee can have the **simptom**es of them, before wee can be relieved of them: (A10384, 1652)

It should be noted that not all instances of *symptom* in religious contexts in the corpus refer to negative phenomena; some of the very earliest examples found, such as (18), have a positive prosody and are thus not to be interpreted as products of transferring the concept of sickness to the domain of spirituality. However, they still demonstrate a borrowing of the concept ‘inward state results in outward signs’ from the body domain, reminiscent of Damasio’s theory of emotion (see Goatly 2007). Note the use of the binomial, common in medical writing, though with the nouns in reverse order.

- (18) The Effects of Prayer, which, as **symptom**es and **sign**es doe demonstrate true feeling prayer, are three. I. It causeth a holy heate in our affections. Whereby a man findeth himselfe, after a while, much more heauenlily affected, then in the beginning of his prayer. (A05061, 1616)

4.2.2 *Symptom as a signifier term in ‘institutional’ discourse*

The earliest attestation from 1607 of *symptom* as a signifier in discourse relating to institutions can be seen in (19):

- (19) It is therefore a speciall vse of this History, to cast our eyes vpon the condition of our Predecessors, to mollifie our languishings, as a necessary **symptome** of our inciuill warres, which like a continuall feauer hath suckt (euen to the marrowe) all the vigour of this Estate, and hath not yet left it. (A11931, 1607)

The medical connotations of *symptom* in (19) are quite apparent: war is compared to a disease that sucks the life out of the Estate. The semantic domain of disease is maintained but instead of being used within the domain of the ‘human body’, it is transferred onto the domain of ‘institution’ through the conceptual metaphor THE INSTITUTION IS A BODY (Lakoff and Johnson 1980; see also Hintikka 2013).

Examples (20) and (21) are contrasting examples of how *symptom* is used as a signifier term in discourses concerning institutions; notably, these examples come from texts published in the 1640s, which of course was the decade of the Civil War in England. Our quantitative analysis has previously demonstrated how references to ‘symptoms of institution’ increased markedly during this decade.

(20) This Kingdome is sicke, and hath the **symptomes** of many diseases upon it, as 1. A bloody issue in warre. 2. The falling sicknesse in the fits of the monethly taxes. 3. The Palsie in the Excise, which commeth of the weaknesse of the sinews. All the Land shaketh. (A91559, 1648)

(21) the House hath commanded me to return you their most hearty thanks, and to let you know, that this House doth esteem your Affections herein, as the most lively demonstrations of your loyalty to His most Sacred Majestie, and infallible **symptomes** of your fidelity to the Parliament, the onely means to preserve the felicity of the English Nation. (A47687, 1642)

Interestingly, the idea of the diseased nation apparent in (20) is extended to drawing analogies between functions of the state and named illnesses; in this example, the negative semantic prosody is maintained through the use of *symptom* within the same conceptual domain. However, (21) exhibits domain expansion: *symptom* is used to describe a characteristic and not a disease. Moreover, the domain expansion conveys a positive semantic prosody to the utterance. Again, this may be explained by Louw’s (1993) argument concerning fixed semantic associations and the opportunities these provide for uses that break such associations.

4.2.3 *Symptom as a signifier term in ‘generic’ discourse*

In this section, the use of *symptom* as a generic signifier term in non-medical discourse will be discussed. In the corpus data, the first use of *symptom* (22) as a signifier for generic discourse appeared in 1567:

(22) my teares, sighes, and other pitifull regardes without nomber, whereof the pale complexion of my face, with other trembling ioyntes of therterior partes, haue made sufficient declaracion, nor credit the infynit **simptomes** and thundringe alarams whiche the only glymmeringe viewe of your bewtie, ceaseth not to minister to the weake forces of my feble harte, (A03432, 1567)

In this early example, *symptom* is used as a signifier of emotional states carrying a negative semantic prosody. Indeed, it can be argued that *symptom* is used in a manner that aligns with the original medical use to describe co-occurrences; that is, the relationship between the emotional state and symptom is not causal. However, the co-occurring symptom can be used to identify, or diagnose, the emotional state (see Tyrkkö 2010).

Throughout our data, it is possible to trace similar generic uses of *symptom* in the description of emotional states. Example (23) from 1652 illustrates how ‘love’ is often indirectly likened with ‘disease’ through the use of the signifier *symptom*; this connection is enabled through the medical connotations conveyed by *symptom*.

(23) But all Loves are not of the same complexion, nor subject to the same **Symptomes**. The generous Widow remained unshaken between her Husbands Death, which lay extreamly heavy on her heart, and the war he left upon her shoulders: (A47665, 1652)

Arguably, it is also the underlying medical connotations of *symptom* that create the negative semantic prosody (Louw 1993) apparent in (23). Interestingly, many examples of ‘symptoms of love’ can be found in our data; for the modern reader these may seem rather oxymoronic in character as love is often, at least in the Western context, viewed as a positive emotional state.

Although most uses of *symptom* as a generic signifier convey a negative or neutral semantic prosody, there is evidence in the dataset of

symptom used in utterances that convey a positive semantic prosody, or even irony as in (24) (cf. Louw 1993).

- (24) Unless we'l say, that the Wit and Figure, and Success of a Libertine mortifies his Example, and makes him less dangerous: And then by the same Rule we may conclude, that the malignity of a Distemper is a good **symptom** of Health, and that People are likely to do least mischief, when they are best prepared for't. (A33918, 1700)

Our data demonstrates that *symptom* usually conveys a negative or neutral semantic prosody even in genres outside of medicine; however, it is possible to find examples of positive semantic prosody, as illustrated by (24). Louw (1993) argues that once semantic associations become fixed within a language community, stylistic choice that creates effect is enabled. This may explain the rather ironic effect that is created through the use of *symptom* together with 'health', a term usually associated with more positive semantic prosody.

Noteworthy is also the use of *symptom* in the description of natural phenomena. Such uses appear later in the dataset and help illustrate how *symptom* progressed from a signifier of medical signs to a general signifier term. Example (25) contains an example of such genre expansion:

- (25) At length day appear'd, but with the **Symptoms** of a much greater Storm than the former, at which time, we found our Vessel riding out at Sea, some distance from the Rocks (A31542, 1687)

Symptom is used in (25) to denote some undescribed signs that indicate the development of a storm; in fact, *symptom* describes a relationship of causation, as semantically the reader is expected to understand that storms occur together with a series of signs. Compare this with earlier uses of *symptom* that described a series of co-occurrences without a direct causative effect. Furthermore, (25) conveys a negative semantic prosody as the brewing storm implies danger for the ship at sea.

Although the majority of occurrences of *symptom* to describe natural phenomena identified in the dataset convey a negative or neutral semantic prosody, there are also examples of positive semantic prosody, as seen in (26):

(26) And therefore it remains, without Contradiction, there is all the probable **Signs and Symptomes** of Rich Veyns to be had, and Found, for Digging and Seeking for. And to this Day, the best Method and Way that is Known, Practised, and used by the Spaniards, and Indians, for Gathering and Taking up Gold, (A44605, 1694)

Interestingly, this example uses the conventional binomial expression conventionally seen in medical discourse, ‘signs and symptoms’, to describe features of the landscape that infer the presence of gold (see Tyrkkö 2010). The fact that the author chose to use a binomial that was essentially repetitive outside of the medical context suggests that this was an intentional reference to medicine,¹⁵ perhaps inspired by the analogy of veins of gold in the ground and veins in the human body.

5. Discussion

The first major outcome of our investigation is that *symptom* did not enter non-medical genres of writing following a period of exclusive use in medical contexts. When *symptom* emerged in vernacular medical writing during the first few decades of the seventeenth century, it was almost immediately also picked up by authors of non-medical text, who used it as a near-synonym of established signifier terms like *sign* and *token*. This observation ran counter to our expectations, considering that specialised terminology tends to gain wider purchase only gradually and then first in specific associated genres.

Our second observation concerns the primary non-medical contexts in which *symptom* appeared with regularity. Most notably, we saw the medical origins of *symptom* reflected in metaphorical usage, whereby the signifier term referring to corruption and vices of various kinds festering in institutions is often *symptom*. The conceptualisation of the *body politic*, i.e., the state or institution conceived as analogous to the human body, goes back to the ancient times, and there is extensive literature on the topic that we cannot engage with here (see, e.g., Harris 1998; Vaught 2013). What is of interest to us here is that the use of the explicitly medical signifier

¹⁵ By the late seventeenth century in medical writing, *sign* referred to an objective indication of a malady observable by the physician, and *symptom* to subjective indications reported by the patient (see Tyrkkö 2010).

term allowed authors to trigger the medical metaphor almost as a shortcut, and as the evidence showed, many did exactly that. These instances of *symptom* were almost invariably references to some negative condition or characteristic (8/263, 2.95%). The results of the topic modelling further pointed out that when *symptom* was used for institutional reference, the topic of the co-text was often religious, particularly during the earlier decades of the seventeenth century. Given how familiar Early Modern authors were with drawing an analogy between physical and spiritual or religious health (Smith 2014), this was no great surprise. Indeed, not only was the association metaphorical, but it was also commonly understood that religious observance and righteousness bestowed physical health, and physical suffering was one of the ways in which God's displeasure was most conspicuously expressed.

When *symptom* was used in reference to explicitly religious referents, the topic of the co-text was predominantly religious, though there were some examples of cross-over with medicine. The many examples of the use of *symptom* in religious contexts attest to this metaphor and show that it was widely used throughout the period. Unlike institutional references, however, a greater proportion of these instances of *symptom* were positive in nature (65/568, 10.27%). Unlike many instances appearing in early works of fiction, poetry and essays, the positive uses of *symptom* in religious texts do not usually suggest an attempt at irony or stylistic effect, as seen in (27):

- (27) The fruit of the Spirit is Love, &c. And the rest that are added, are no other then the known effects, and **symptoms** of Love. The fruits of the Spirit are Love, Joy, Peace, Long-suffering, Gentleness, Goodness, Meekness, &c. It is the distinct character and proper attribute of the Holy Spirit, as that name signifies the Third Person in the Blessed Trinity. (A65814, 1695)

The third major observation of the study was that the negative semantic prosody that *symptom* has in Present-day English (see Louw 1993) did not appear to develop gradually over time, nor did the positive uses emerge at any given point in time, but rather the neutral or negative prosody appears to have been there right from the beginning. This, too, was somewhat surprising, considering the term was virtually unknown to the general public and even to medical authors before the 1610s. The ready

explanation is that medical signs were seen as predicting an illness, and thus the term *symptom* was recognisable to many speakers as an inherently negative term.

However, it is important at this point not to ignore the complex relationship between Early Modern vernacular writing and contemporary Latin texts. The objective of the present study was to determine how, why and when *symptom* was used in non-medical writing, but it would be a mistake to ignore the fact that up until the seventeenth century, Latin was the predominant language of all learned writing. In the Early Modern period, knowledge of Latin (and to a lesser extent Greek) was the key to formal education, and it is safe to assume that most notable authors of non-fiction books in the vernacular were also literate in Latin. Consequently, their use of *symptom* need not have been informed by exposure to the term in vernacular medical writing, but instead they may well have known the term from texts written in Latin, Greek, or possibly some modern continental language.

6. Conclusions

This corpus-based study has shed light on the emergence and complex uses of the signifier term *symptom* in non-medical texts of the Early Modern period. Somewhat surprisingly, the evidence revealed that *symptom* appeared in non-medical writing alongside medical writing with virtually no delay, albeit at a much lower overall frequency. The term was used in a variety of contexts, most of them generic in nature, but several more specialised contexts were also identified, in particular religious and institutional references. When appearing in these contexts, *symptom* was often used metaphorically in reference to maladies of the body politic or as an analogy to spiritual or religious vices and shortcomings. Throughout the time period, *symptom* had a predominantly negative or at best neutral prosody in non-medical texts, with little evidence of a particular prosodic development taking place. At the same time, a small proportion of instances of positive usage were also in evidence throughout the timeline, attesting to individual authors' apparent desire to create an ironic or conceptually complicated effect.

The findings of the study raise several new questions. A follow-up study is needed on developments in Late Modern and Present-day English, particularly in reference to metaphoric use of *symptom* and later developments in semantic prosody. A contrastive study of *symptom* in

vernacular and Latin literature during the Early Modern period would also be welcome, particularly focusing on the earlier parts of the period and the use of *symptom* by English medical authors writing in Latin.

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