

# **A Macroscope of English Print Culture, 1530-1700, Applied to the Coevolution of Ideas on Religion, Science, and Institutions**

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## **Abstract**

We combine unsupervised machine-learning and econometric methods to study England's print culture in the pivotal 16<sup>th</sup> and 17<sup>th</sup> centuries. Machine-learning synthesizes the content of 57,863 texts comprising 83 million words into 110 topics. Topics include the expected, such as Natural Philosophy, and the unexpected, such as Baconian Theology. Timelines suggest that religious and political discourse gradually became more scholarly and economic topics more prominent. The epistemology associated with Bacon was present in theological debates already before Bacon's epistemological contributions. VAR estimates provide insight into the coevolution of ideas on religion, science, and institutions. Innovations in religious ideas induced strong responses in the other two domains, especially at times when Puritanism was prominent in religious discourse. Neither science nor institutional thought evidence secularization. The Glorious Revolution and the Civil War did not spur debates on institutions nor did the founding of the Royal Society markedly elevate attention to science.

Keywords: cultural history, England, machine-learning, text-as-data, coevolution, VAR

JEL Classifications: C8, Z1, N0, P1, C3

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"I need not tell the world what (to their cost) they know, That Souldiers by  
action, and Printers by promulgation, are the two great English Factors."

Captain John Randolph, 1643.

## **Introduction**

In English cultural history, the 16<sup>th</sup> and 17<sup>th</sup> centuries were especially fecund. This era solidified the importance of the book as the dominant vehicle of culture, vastly increasing the flow of vernacular texts and allowing a much deeper penetration of the written word into a wide variety of English-speaking classes and cultural groups (Barnard and McKenzie 2002). "Retrospectively, the history of the book in Britain from 1557 to 1695 looks like a triumphalist progress in which a dominant Protestant vernacular culture, and an emergent canon of English literature, were steadily created and successfully displaced an earlier Latinate and Catholic world looking towards Europe,..." (Barnard 2002: 1). With religious considerations permeating every aspect of early-modern English society, religious works, particularly those expressing Puritan sentiments, provided an important element of the output of the expanding publishing sector (Green and Peters 2002; Collinson et al. 2002).

At the same time, the early-modern period saw the flourishing of experimental science, as exemplified in the publications of Bacon, Harvey, and Boyle and in the formation of the Royal Society, which itself played an important role in the emergence of scientific publishing (Johns 2002). Fundamental texts on political philosophy and institutional thought appeared, epitomized by the works of Harrington, Locke, and Hobbes. England in the 16<sup>th</sup>- and 17<sup>th</sup>-century thus witnessed a cultural flowering in a multiplicity of domains, with works made all the more accessible by the growing publishing industry. With accessibility, there was increasing scope for a fertile intermingling of ideas, including those about religion, science, and institutions.

But what were the central emphases in the burgeoning English print culture of the 16<sup>th</sup> and 17<sup>th</sup> centuries and when did those emphases emerge? To what extent did ideas about religion, science, and institutions coevolve and when were such coevolutionary processes especially important? In these processes, how consequential were specific historical events, such as the Civil War, the Glorious Revolution, and the founding of the Royal Society? These questions have long intrigued historians and social scientists (e.g., Hill 1965; Merton 1938; Wootton 2015) and lately have increased in importance in economics as a result of works that view culture as central in England's early economic rise (see, e.g., Mokyr 2016; McCloskey 2016).

Traditional textual analysis constitutes one approach to tackling the above questions. However, providing a balanced summary of a very large corpus is not possible using only the close reading that forms the foundation of traditional methods. Instead, given the recent availability of digitized corpora such as the Early English Books Online-Text Creation Partnership (hereafter EEBO-TCP), the application of computational and statistical techniques for analysis of text-as-data provides an eminently feasible route to systematic investigation of a large corpus of cultural works (see, e.g., Gentzkow et al. 2019; Grimmer et al. 2021; Livermore and Rockmore 2019).

Indeed, aspects of early-modern English cultural history have recently been examined using computational and statistical methods. In particular, in an innovative contribution, Erikson (2021) applies computational methods in an analysis of 2,353 EEBO-TCP economics-related texts, illuminating how the actions and writings of merchants led to a greater prominence of economic ideas in the early-modern period.<sup>1</sup>

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<sup>1</sup> More recently, Almelhem et al. (2023) undertake a quantitative study of English texts from 1500-1900 but do not specifically focus on the early-modern era – presumably because their corpus, drawn from Hathitrust Digital Library, is very limited for the pre-1700 period (see Almelhem et al. 2023: Figure B.1). Apart from Erikson (2021) and Almelhem et al. (2023), we know of no other contribution that applies computational and statistical techniques to offer systematic quantitative insight into early-modern English culture.

In this paper, we also adopt a computational approach to the investigation of early-modern English cultural history. Our perspective is distinctly macroscopic. Unlike Erikson (2021), we do not limit ourselves to a subset of the available EEBO-TCP texts or focus on specific ideas. Rather, we paint a broad-brush picture of the central cultural emphases discernible in the entire 16<sup>th</sup> and 17<sup>th</sup> century EEBO-TCP corpus. We then use macro-econometric methods to study the interactions between three cultural aggregates reflecting ideas about religion, science, and institutions discovered in the corpus.

To this end, we first use topic modelling, an unsupervised machine-learning method (Grimmer et al. 2021), synthesizing the content of 57,863 EEBO-TCP texts into 110 topics. We thereby provide a quantitative digest of the key substantive emphases in 16<sup>th</sup>- and 17<sup>th</sup>-century English print culture.

We then examine patterns within the dataset for the 110 topics that constitute that digest. We first study temporal changes in attention to specific topics. Our investigation thereby generates new stylized facts about early-modern cultural change and the timing of important cultural developments. Among the latter, debate about the emergence and origins of epistemological ideas later associated with Francis Bacon has been especially prominent (e.g., Grajzl and Murrell 2019; Shapiro 2000: 107-112; Martin 1992: 164-171). Our data and analysis casts direct empirical light on this debate. Given that Bacon has been credited as providing a central impetus to the development of a "culture of growth" (Mokyr 2016), an understanding of the emergence of epistemological thought associated with him provides insight into the cultural roots of England's early economic rise.

In our primary econometric exercise, we investigate the coevolution of ideas on religion, science, and institutions. We focus especially on the interplay between religion and science, a

connection that has been the subject of long-standing interest among social historians (e.g., Barnes 2000; Shapin 1996; Wootton 2015).

One especially prominent theory is the 'Merton thesis' (Merton 1938)—that the cultural sentiments imbued by Puritanism played a vital role in facilitating the development of modern science. According to Shapin (1996: 136), variants of that thesis are broadly accepted: "Much of what Merton then wrote about religious motives to science, and religious justifications for science, has passed into historical commonplace."<sup>2</sup> But the support is far from universal. Shapin (1988) comments on the hostile reception among many historians in the decades after Merton's original publication. Brooke (1990) views Merton's thesis as controversial and Porter (2000) does not even mention religion when discussing the culture of science in the 17<sup>th</sup> century. Wootton (2015: 908) approvingly cites the work of one of the hostile critics, who reaches the conclusion that "In the story of the rise of science, therefore, religion is a peripheral concern" (Rabb 1965: 126).<sup>3</sup> These differences surely mean that "English society, strongly influenced by Calvinism and deeply involved in the development of science and scientific institutions, constitutes an ideal test case in which to examine the relations between science and religion" (Webster 1974: 15). Moreover, a new opportunity for tests arises with the advent of promising methods offered by the conjunction of machine-learning and econometrics.

We employ vector autoregression (VAR), a standard technique in empirical macroeconomics for modeling the relationships among variables over time (see, e.g., Stock and Watson 2001). Our VAR analysis allows us to illuminate whether the interplay between religion and science in early-

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<sup>2</sup> Webster (1974: 16) summarizes the first four decades of research by historians directly on Merton's thesis: "...it appears that protestantism, or Calvinism in particular, provided a favorable environment for the development of experimental science..." See also see Cohen (1990), Harrison (2008), Mokyr (2009, 2016), Becker and Woessmann (2009).

<sup>3</sup> Cohen (1990) reviews the views of both proponents and critics. For a recent dismissal of Merton from a different milieu, literary studies, see Price (2017: 18).

modern England entailed not only the influence of religion on science, as hypothesized by Merton, but also the influence of science on religion, the comparatively less studied direction.<sup>4</sup> Additionally, we are able to provide insight into the timing of when the influence from religion to science was especially strong. For instance, both Merton (1938) and Mokyr (2016) in this respect emphasize the 17<sup>th</sup> century, but our analysis provides insights into whether any such influence occurred even earlier.

Finally, our VAR estimates allow us to cast new light on several major 17<sup>th</sup>-century events: the Civil War, the Glorious Revolution, and the formation of the Royal Society. In economics especially, the role of the Glorious Revolution has been contested. A long-held theory emphasized the view that the Glorious Revolution was a watershed in the history of English institutional development (e.g., North and Weingast 1989; North et al. 2009; Acemoglu and Robinson 2012). Recent research has challenged this perspective, revealing a more gradual evolution of English institutions than emphasized by earlier contributions (Murrell 2017; Ogilvie and Carus 2014; Hodgson 2017; Henriques and Palma 2023). We bring new empirical evidence to this debate, illuminating the extent to which the developments in 1688-1689 resonated in English print culture and specifically in the emphases on institutions.

## **The corpus**

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<sup>4</sup> For example, in commenting that "The willingness of the Protestant leaders to have reason and experience 'test' all religious beliefs" and that "Religious conceptions were...definitely integrated with sentiments basic to the contemporary science and philosophy: there was throughout a reciprocal interaction", Merton (1938: 469, 434) allows for, but does not focus on, the flow of ideas from science to religion. Harrison (2008: 266) is explicit on this point: "... it can be said that the close relations between science and religion during the seventeenth and eighteenth centuries resulted not only in the transmission of epistemic authority from religion to science, but also in the transfer of some of the properties of the new inductive sciences to religion."

## *The EEBO-TCP documents and their processing*

Processing print texts from before 1700 entails many challenges: the inscrutable fonts immune to optical character recognition (OCR), the chaotic orthography, the archaic inflections, and the appearance of untranslated Latin. TCP (2022) has solved the first of these problems for a wide-ranging set of texts by using manual keying. This is important because no current OCR software produces satisfactory output for 16<sup>th</sup>- and 17<sup>th</sup>-century texts. Therefore, no alternative machine-readable corpus of commensurate breadth and depth exists in a form that could underpin the type of inquiry into pre-1700 English culture that we undertake. We therefore begin with the corpus of 60,331 texts available from EEBO-TCP, addressing the problems of orthography, inflections, and foreign words with our own Python programs. This subsection provides an overview of the steps we took in processing that data. Appendix A provides details.

We removed all EEBO-TCP-inserted formatting symbols to begin with versions of the texts that were as close to the originals as possible. We then assigned a year of publication to each text using the information provided by EEBO-TCP. A very small number of texts could not be dated and were discarded.

We converted the non-standardized orthography that was common before the 18<sup>th</sup>-century into standard modern orthography. Older-style inflections were modernized. We translated on a word-by-word basis those words that could not be found in a modern English dictionary and were readily identified as Latin. We then dropped documents that contained either an especially small number of words or an uncharacteristically high share of words that could not be matched to any word in the English dictionary even after the processing.

The ensuing corpus was imported into R and further processed using the `textProcessor` function. We thereby converted all words to lower case, applied the Porter (1980) stemming

algorithm, and removed standard English stop words, numbers, words with fewer than three characters, words included in only one document, and punctuation. After all the processing, the final corpus consisted of 57,863 documents containing 83,337,912 letter-based strings (i.e., words).

### *Selection issues*

The EEBO-TCP project began with lists of works contained in prominent catalogs that "trace the history of English thought from the first book printed in English in 1475 through to 1700" (TCP 2022). The combined catalog comprises more than 125,000 works for which facsimiles of texts are available. Due to resource and other constraints, the texts that EEBO-TCP actually processed amounted to approximately one half of those. The project's aim was simply "to key as many different works—as much different text—as possible" (TCP 2022). EEBO-TCP implemented the project in a manner in which the individual preferences of project partners, staff, and editors had a negligible impact on text selection.<sup>5</sup>

But, of course, the EEBO-TCP corpus does not provide a random sample of English culture. Much culture was not committed to print, with only a minority of the population in early-modern England literate.<sup>6</sup> Many texts will have been lost, with survival depending on how much subsequent generations valued the texts. TCP (2022) also focused on first editions. The EEBO-TCP corpus is thus best viewed as capturing new developments rather than reflecting the stock of

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<sup>5</sup> In personal correspondence, Paul Schaffner, a TCP production manager, described the project as one in which "personal preferences of any kind had virtually no influence on selection. ...[the] selector's job was to go through [the tracking database] picking unique works in English, picking the earliest copy (assuming it was complete), avoiding Latin, and so forth. There was simply no room to introduce personal preference into this mechanical and tedious task. This was not a 'craft' operation; it was a 'production' shop."

<sup>6</sup> Nevertheless, much popular culture was published with the purpose of being read to the illiterate or to provide compendia (see, e.g., Collinson et al. 2002).



texts in use at any juncture: our analysis is more likely to reflect the production of print culture than the consumption of print culture.

----- [Figure 1: The distribution of EEBO-TCP texts over time] -----

Figure 1 shows the distribution over time of the texts in our corpus. Two features stand out. First, the growth from 1475 to 1640 reflects the growing importance of print. Second, the years with a large number of texts (e.g., 1642, 1660, 1689) are momentous ones in English history (the beginning of the English Civil War, the Restoration, and the resolution of the Glorious Revolution). None of the findings we reach in this paper simply reflect the number of texts published in any specific year.

### **Producing a machine-learning digest of English print culture**

Our first objective is to generate a machine-learning digest of the complete EEBO-TCP corpus. In this step, our unit of analysis is a document, a self-standing published work.<sup>7</sup> We use topic modeling, a standard natural-language-processing approach when the aim is to infer the core emphases in a large corpus (see, e.g., Grimmer et al. 2022, 2021).<sup>8</sup> We estimate a structural topic model (henceforth STM; Roberts et al. 2014, 2016a), a variant of topic modeling that directly incorporates document-level metadata (e.g., publication year) into the estimation to aid topic identification. To implement the estimation, we use R's `stm` package (Roberts et al. 2019).

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<sup>7</sup> We did not break documents into smaller chunks. As stressed by Grimmer et al. (2022: 50), "...splitting up a single text into many documents can substantially increase or decrease the computational cost of fitting a model. It also may make the model more or less statistically efficient." Importantly, most EEBO-TCP texts do not have readily-identifiable chapters or even paragraphs that would provide natural break points. Thus, splitting EEBO-TCP documents into smaller chunks would introduce ad-hoc breaks between the chunks, an approach that is, in our context, unlikely to improve model fit.

<sup>8</sup> Another natural-language-processing method that is gaining popularity in the analysis of texts, word embeddings, emphasizes semantics and fine-grained representation at the word level. As such, word embeddings would have been a less suitable method than topic modeling for accomplishing the goals of this paper.

Topic modeling is an unsupervised machine-learning method (see, e.g., Burkov 2019). The algorithm identifies topics by leveraging patterns across documents in word use. Each document is conceptualized as a mixture of all topics, while topics are probability distributions over the corpus vocabulary.

### *Choosing the number of topics*

Before estimation, the number of topics must be chosen. There exists no universally agreed-upon methodology for making this decision (see, e.g., Wang et al. 2019: 258-259; Grimmer et al. 2022: Ch. 13). We first estimated a series of STMs by varying the number of topics between 10 and 200. We then examined standard measures of goodness-of-fit such as held-out likelihood and size of residuals (see, e.g., Wallach et al. 2009; Taddy 2012; Roberts et al. 2016b). The model with 110 topics fit the data well, with further increases in the number of topics producing only modest gains. We also directly compared the 110-topic model with models featuring fewer and more topics. None of the alternative models dominated the 110-topic model on standard criteria: semantic coherence (measuring the internal consistency of the topics) and exclusivity (measuring whether topics can be easily distinguished).<sup>9</sup> The decision to use a 110-topic model was confirmed when we contrasted the output of that model with the output of models with different numbers of topics by reflecting on the ease of interpreting topics and distinguishing between them.<sup>10</sup>

### *Interpreting the estimated topics*

To interpret and name the estimated topics, we examined both the word-stems most highly associated with each topic and those documents that featured the topic most prominently.<sup>11</sup> Our

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<sup>9</sup> See, for example, Airoldi and Bischof (2016) and Weston et al. (2023).

<sup>10</sup> We also implemented the Lee and Mimno (2014) algorithm that provides a non-statistical perspective on the number of topics. Running the algorithm for 10 different seeds, the average number of suggested topics was 97 but the maximum was 109, suggesting that 110 topics would be sufficient.

<sup>11</sup> We routinely examined the top 40 documents, but some topics required reading a greater number.

interpretation and naming of the estimated topics therefore also incorporated an element of the close reading typical of conventional text analysis.

Appendix B describes the content and justifies the assigned names for the 110 topics. Here, we briefly illustrate our process of topic interpretation and naming by using only one example. For the pertinent topic, the top word-stems (those most associated with the topic) emphasize logical connectives: upon, yet, though, thus, mean, inde [thereunto], even, impli [imply]. The top documents (those featuring this topic in the greatest proportion) often contain the word 'experiment'. Nearly all top documents focus on religion using logical arguments and emphasizing inductive learning from facts: biblical, historical, or personal. The top document states that "If a man were but well read in the story and various passages of his life, he might be able to make an experimentall divinitie of his own. He that is observant of Gods former dealings and dispensations towards him, may be thence furnished with a rich treasury of experience against all future conditions." Accordingly, we name the topic Baconian Theology.<sup>12</sup>

Via this process we were able to readily identify the ideas underlying all 110 estimated topics. This is, in itself, a verification of the quality of text pre-processing, the choice of the number of topics, and the applicability of STM. The topics include both the innocuous and familiar-sounding ones, as well as more unusual ones, all clearly dictated by our estimates. Thus, Salvation via Faith competes for attention with Lusty Entertainments; Emotional Relationships contrasts with

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<sup>12</sup> We use the adjective 'Baconian' as an indicator of the general style and content of ideas, not to signify that Bacon directly contributed. The term Baconian Theology was not used at the time, nor is it used by historians today to characterize ideas existing at that time. This term has been used to describe a strain of thought in American Presbyterianism that arose in the 19<sup>th</sup> century and that is similar to our topic (Holifield 2003). Natural theology was commonly used during the 16<sup>th</sup>- and 17<sup>th</sup>-centuries and by historians through the ages to refer to modes of thought combining elements of scientific and theological musings. We chose not to use natural theology for this topic because that term encompasses a broader area of thought than our Baconian Theology, for example, purely deductive theology, which is another of our topics. Physico-theology is much closer to our Baconian Theology. But experiment and induction are not central to physico-theology (Blair and von Greyerz 2020) whereas they are central in our Baconian Theology. Finally, the apogee of the development of Baconian Theology in our data occurs in the 1650's, whereas physico-theology only begins to stir in the 1650's (Calloway 2015).

Expressing Loving & Loathing; Deductive Theology appears alongside Baconian Theology. The most prevalent topic is an inward-looking one, Self-Reflection, accounting for 4.32% of the corpus, while the second most prevalent is other-directed Petitions, Protests, & Proposals, occupying 3.42%.

----- [Table 1: The topics and themes with expected document-level prevalences] -----

Table 1 lists the names of all topics together with the percentages of the corpus occupied by each. These names, being necessarily brief, might not convey the full meaning of the topic. Appendix B provides more detailed information on each topic.

### *Grouping topics into broader themes*

The 110 estimated topics constitute one window into nearly two centuries of cultural change. Another perspective emerges from even more aggregation. We grouped the topics into a smaller number of broader themes. Following recent contributions faced with an analogous task (see, e.g., Gennaro and Ash 2022; Grajzl and Murrell 2023), we assigned topics to themes manually, based on our own understanding of the topics.<sup>13</sup>

In grouping topics into themes, we did not pre-commit to a fixed number of themes but rather allowed the number to emerge from the aggregation process. We strove to create themes that were broad enough to achieve a further reduction in dimensionality and narrow enough to resonate with major areas of cultural inquiry. In this process, we assigned each topic to one theme only, using the criterion of the most natural fit. Classifications were straightforward for the overwhelming

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<sup>13</sup> An alternative approach to grouping topics into themes would have been to use a clustering algorithm and cluster topics based on their document-level co-occurrence (see, e.g., Erikson 2021: Ch. 1). We chose not to pursue this route for two key reasons. First, substantively related topics do not need to co-occur at the document level. For example, in our data, Authority Relationships and Emotional Relationships, both clearly about relationships, do not co-occur at the document level: the pertinent pairwise correlation coefficient equals -0.12. Second, our methodological perspective is that machine-learning should be used when necessary (creating a 57,863-by-110 topic-document matrix from 83,337,912 letter-based strings) but using judgment and existing knowledge can be superior when practical (aggregating 110 topics into fewer themes).

majority of topics (e.g., Sin, Damnation, & Repentance to religion; Chemistry to science; Constitutional Rules to institutions). However, culture is a seamless web and thus a small set of topics lie close to the boundaries between themes. For example, Autonomous Church Governance and Hierarchical Church Governance were close to both the religion and institutions themes. Ultimately, given their emphasis on organization under the law rather than on religion, we allocated these topics to institutions.<sup>14</sup>

The resultant 11 themes differ considerably with regard to the number of included topics and the proportion of the corpus occupied (see Table 1). Unsurprisingly, religion accounts for a large number of topics (20) and a large proportion of the corpus (22%). Among religious topics, a number reflect areas of religious thought to which Puritans made major contributions (e.g., Apocalyptic Theology; Salvation via Faith; Baconian Theology; Christian Mental Exercises; Deductive Theology; Self-Reflection). Others reflect more general religious debates in which Puritans participated (Transubstantiation; Salvation via Virtue).

### **Characterizing cultural evolution temporally**

In this section we provide insights into how attention to various areas of cultural discourse changed over time. To this end, we first describe the construction of the pertinent time series. We then offer a set of observations on particularly interesting episodes identified in the corresponding timelines. The resulting observations provide a unique macroscopic overview of the evolution of a variety of cultural domains.

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<sup>14</sup> None of the central qualitative findings in this paper depend on the chosen classification.

## Constructing the time series of attention to topics and themes

The core output of our topic model is a  $57,863 \times 110$  topic-document matrix. An element of that matrix,  $\theta_{idt}$ , gives the estimated prevalence of topic  $i$  in document  $d$  published in year  $t$ . To construct annual time series of attention to the topics, we merge the topic-document matrix with metadata on publication year and document length and compute mean yearly attention to each topic. We use weighted means, weighting those documents with a greater number of words more heavily.<sup>15</sup> Let  $w_{dt}$  denote the number of words in document  $d$  published in year  $t$ . The attention to topic  $i$  in year  $t$  is then:

$$\Psi_{it} = \frac{\sum_{d \in D_t} w_{dt} \theta_{idt}}{\sum_{d \in D_t} w_{dt}}, \quad (1)$$

where  $D_t$  is the set of all documents published in year  $t$ .  $\Psi_{it}$  captures the proportion of topic  $i$  in documents in year  $t$ ,  $i = 1, \dots, 110$ ,  $t = 1530, \dots, 1700$ .<sup>16</sup> Figures containing the timelines for all  $\Psi_{it}$  appear in Appendix C.

Timelines for the themes are constructed using the same principles. For each theme  $m$  in Table 1, the average attention to that theme in year  $t$  is:

$$\Theta_{mt} = \frac{\sum_{d \in D_t} w_{dt} \sum_{i \in S_m} \theta_{idt}}{\sum_{d \in D_t} w_{dt}}, \quad (2)$$

where  $S_m$  is the set of topics comprising theme  $m$ ,  $m=1, \dots, 11$ ,  $t = 1530, \dots, 1700$ . Appendix D provides figures depicting the resultant timelines.

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<sup>15</sup> The weighting of document-level relative topic prevalences with document-level word counts addresses the fact that documents are of varying lengths. A simple (unweighted) average of the relative prevalences of a given topic in different documents for a particular year would effectively discount the importance of the longer documents, thereby underestimating the true attention in the corpus to the pertinent cultural ideas. This weighting is also necessary because some long documents are compilations, for example collections of sermons, and therefore contain more than one contribution highlighting the pertinent topic.

<sup>16</sup> In this period, each year has a significant number of documents.

*Some stylized facts about cultural change gleaned from the topic timelines*

For a particular topic, periods of rising attention to that topic indicate increasing importance of the corresponding ideas in the cultural discourse. In contrast, times of declining attention suggest a waning interest in the applicable ideas in print culture. Examination of the topic timelines therefore offers a path to establish stylized facts about cultural change. Below, we highlight a subset of the facts that are, in our view, the most intriguing ones.<sup>17</sup>

First, Baconian Theology appears already in the 1570's (i.e., when Bacon was still a teenager) and rises in importance over the next 80 years (Figure 2(a)). Therefore, even before Bacon's epistemological contributions, theological debates had featured ideas that were later to be associated with Bacon, particularly the importance of experiments or experience to pursue induction. Our results thus suggest that Bacon's name provided a particularly convenient label for a set of ideas that were already part of the existing culture: his writings served as an important "coordination device" for later thinkers (Mokyr 2016: 73). Hence, our findings suggest a view of Bacon as very much a product of his times, consistent with Harkness (2007) and Grajzl and Murrell (2019). Interestingly, in contrast to the increasing attention to Baconian Theology in the 17<sup>th</sup> century, the more conventional and austere Deductive Theology steadily wanes from the close of the 16<sup>th</sup> century onwards (Figure 2(b)).

----- [Figure 2: Selected topic timelines] -----

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<sup>17</sup> Importantly, many features of the topic timelines resonate with well-known historical events, a feature that lends credibility to our approach of examining the topic timelines to generate stylized facts about early-modern cultural change. For example, attention to Constitutional Rules rises in the 1550's (the tumultuous Tudor period ending in the Elizabethan Religious Settlement of 1559), in the 1640's (the Civil War era) and in the 1680's (the decade culminating in the Glorious Revolution). Parliamentary & Court Procedure receive above-average attention immediately before the Bill of Rights (1689) and the Act of Settlement (1701). Turkish International Politics peaks with the siege of Vienna (1683). See Appendix C.

Second, among other religious topics as well as institutional and political topics touching upon religion, there is clear evidence of a shift towards a less antagonistic form of debate as the 17<sup>th</sup> century progresses. For example, Attacking False Doctrine, which characterizes the beliefs of others with venom and hatred, declines, while a topic that captures debate conducted in non-antagonistic tones, Reasonable Religious Discourse, increases (Figure 2(c)(d)). Salvation via Virtue, which emphasizes the importance of good works such as charity, rises continually from the mid-17<sup>th</sup>-century (Figure 2(e)). Baconian Theology, also an expression of reasoned views in looking for evidence about how to interpret the world and live a good life, rises to prominence in the second half of the 17<sup>th</sup> century (Figure 2(a)). Hierarchical Church Governance peaks earlier than Autonomous Church Governance and the prevalence of each declines (Figure 2(f)(g)), indicating that the long struggles between the corresponding sets of ideas became less important. Political Uses of Religion, which expresses judgment on political issues from a religious stance, similarly declines after 1650 (Figure 2(h)).

Third, after 1688, there is a large rise in Economic Lobbying (Figure 2(i)), a finding resonating with Erikson's (2021) emphasis on the growing importance of economic ideas in the early-modern period. At the same time, within skills, those associated with religion (Catechismal Compilations; Christian Mental Exercises; Practicing Christianity; Figure 2(j)(k)(l)) decline in the latter half of the 17<sup>th</sup> century, while those especially relevant to commerce increase: Student & Practitioner Law, Legal Practice Aids, Using Numbers, and Industrial Arts (Figure 2(m)(n)(o)(p)).

Viewed as a whole, these patterns suggest that the 18<sup>th</sup> century's relative calm that facilitated economic progress was anticipated by cultural changes that appeared in the latter part of the bellicose 17<sup>th</sup> century: our timelines evidence a turn to more measured religious and political debate, as well as an increasing emphasis on economic ideas and skills relevant to commercial



matters. The cultural origins of the 18<sup>th</sup>-century 'nation of shopkeepers' can be clearly seen in the 17<sup>th</sup> century.

### **The coevolution of ideas about religion, science, and institutions**

We next turn to the investigation of the coevolution of ideas on religion, science, and institutions. To this end, we construct the pertinent time series using our STM estimates. We then lay out a plausible empirical model and show how that model can be analyzed using standard econometric techniques.

#### *The time series*

We construct annual time series of attention to the three themes of interest: religion, science, and institutions. With each theme defined as an aggregate of our STM topics (see Table 1), we must first decide whether to form aggregates of total attention or relative attention to the pertinent topics. Whereas total attention captures the total number of words devoted to a topic in a given year, relative attention reflects the proportion of words. We choose total attention because it better reflects the notion of expansion, and thus flow, of culture.<sup>18</sup> Moreover, since we are not interested in cultural accumulation that arises purely from a larger population, we measure total attention in per capita terms. Finally, to moderate the influence of outliers, we take the natural logarithm of per-capita attention. Thus, we use the following measures of attention to religion, science, and institutions in year  $t$ :

$$relig_t = \ln \left( \frac{\Theta_{religion,t} \sum_{d \in D_t} w_{dt}}{pop_t} \right) \quad (3a)$$

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<sup>18</sup> Moreover, if our time series captured relative attention, then a change in the value of a theme might merely reflect a change in attention to another theme, as opposed to a substantive change in attention to the theme under consideration.

$$sci_t = \ln\left(\frac{\Theta_{science,t} \sum_{d \in D_t} w_{dt}}{pop_t}\right) \quad (3b)$$

$$inst_t = \ln\left(\frac{\Theta_{institutions,t} \sum_{d \in D_t} w_{dt}}{pop_t}\right), \quad (3c)$$

where  $\Theta_{mt}$ , the average attention to theme  $m \in \{religion, science, institutions\}$  in year  $t$ , is defined in expression (2).  $w_{dt}$  is the number of words in document  $d$  published in year  $t$ , and  $D_t$  is the set of all documents published in year  $t$ .  $pop_t$  is England's population in year  $t$ .<sup>19</sup>

Figure 3 plots the three time-series defined by (3a), (3b), and (3c). Table E.1 in Appendix E presents descriptive statistics.

----- [Figure 3: The time series of logged per-capita attention to religion, science, and institutions] -----

### *Empirical model*

Our goal is to investigate the interrelated dynamics of ideas on religion, science, and institutions. In particular, we wish to allow the possibility of two-way effects between each pair of the series  $relig_t$ ,  $sci_t$ , and  $inst_t$  defined in (3a)-(3c). We therefore study the behavior of the three-variable vector

$$\mathbf{y}_t = \begin{bmatrix} relig_t \\ sci_t \\ inst_t \end{bmatrix}. \quad (4)$$

Importantly, the value of each element of  $\mathbf{y}_t$  plausibly depends on its own past values as well as on past values of the other elements of  $\mathbf{y}_t$ . Specifically, the 'normal' process of reaction and counter-reaction of ideas in publications makes  $\mathbf{y}_t$  a function of  $\mathbf{y}_{t-1}, \mathbf{y}_{t-2}, \dots$ . This reflects the

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<sup>19</sup> See Broadberry et al. (2015) for the data on population, which is measured in millions.

notion that heightened attention in one area of print culture at time  $t$  might change the amount of attention to all areas after  $t$ .

But  $\mathbf{y}_t$  is affected by more than this process of lagged reaction and counter-reaction. There are shocks in the form of new ideas that are not a product of the normal process of response to past publications. These are one-time, idiosyncratic or 'abnormal', changes in  $\mathbf{y}_t$  reflecting extrinsic factors: a divine revelation might cause speculation in theology; discovery of a new continent opens up study of new scientific phenomena; an unexpected development in caselaw spurs debate on new constitutional structures.

Finally, there are secular changes in all elements of  $\mathbf{y}_t$ . In 16<sup>th</sup>- and 17<sup>th</sup>-century England, the overall attention in publications to ideas on religion, science, and institutions rose steadily (see Figure 3) due to a variety of factors. These include improvements in printing technology, an increasingly thriving vernacular print culture (Barnard 2002), population growth (Merton 1938: 570-575), improved access to ideas via international commerce (Palma 2016: fn. 25), an expanding influence of the merchant class (Erikson 2001), and early preindustrial economic development (Crafts and Mills 2017).

The structure described above fits a vector autoregressive (VAR) model, which captures the intertwined dynamics of multiple time series (see, e.g., Kilian and Lütkepohl 2017; Stock and Watson 2001; Sims 1980). A cornerstone of macroeconomic methods, VAR has been employed productively by economic historians.<sup>20</sup>

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<sup>20</sup> See, e.g., Møller and Sharp (2014), Jalil (2015), Ben Zeev et al. (2017), Quinn and Roberds (2019), Kenny et al. (2021), and Grajzl and Murrell (2023). A subset of recent empirical contributions in economic history instead uses local projections for estimation. These studies rely on data that provides a source of exogenous variation (see, e.g., Palma 2022; Brzezinski et al. 2022; Jordà et al. 2022). Importantly, if the underlying economic model is the same, VAR and local projections estimate the same population model (Plagborg-Møller and Wolf 2021).

We posit the following structural VAR:

$$\mathbf{A}\mathbf{y}_t = \mathbf{\Gamma}_0 + \sum_{i=1}^3 \mathbf{\Gamma}_i \mathbf{y}_{t-i} + \mathbf{D}t + \mathbf{u}_t, \quad (5)$$

where  $\mathbf{y}_t$  is defined above.  $\mathbf{\Gamma}_0$  is a  $3 \times 1$  vector of constants. The  $\mathbf{\Gamma}_i$ ,  $i \in \{1, 2, 3\}$ , are  $3 \times 3$  matrices of coefficients. The model with three lags was selected on the basis of conventional lag length criteria and tests (see, e.g., Kilian and Lütkepohl 2017).<sup>21</sup>  $t$  is a linear time trend, capturing the above-noted secular trends in  $\mathbf{y}_t$ .  $\mathbf{D}$  is the corresponding  $3 \times 1$  vector of coefficients. Importantly, the inclusion of the time trend (implicitly detrending the data) implies that our empirical analysis illuminates the variability in attention to each of the three cultural domains around their long-run trends. Finally,  $\mathbf{u}_t$  is a  $3 \times 1$  vector of orthogonal structural shocks, with  $E(\mathbf{u}_t \mathbf{u}_t') = \mathbf{I}_3$ .

#### *Identification assumptions*

In model (5), the  $3 \times 3$  coefficient matrix  $\mathbf{A}$  captures how shocks occurring in one domain can immediately affect attention in all domains. Thus, our model allows each element of  $\mathbf{y}_t$  to depend on the contemporaneous values of the other elements of  $\mathbf{y}_t$ . This possibility means that the parameters of (5) are not identified without additional assumptions. However, under reasonable assumptions, estimates of those parameters can be derived from OLS estimates of the following:

$$\mathbf{y}_t = \mathbf{A}^{-1}\mathbf{\Gamma}_0 + \mathbf{A}^{-1}\sum_{i=1}^3 \mathbf{\Gamma}_i \mathbf{y}_{t-i} + \mathbf{A}^{-1}\mathbf{D}t + \mathbf{e}_t, \quad (6)$$

where  $\mathbf{e}_t \equiv \mathbf{A}^{-1}\mathbf{u}_t$ .

Our approach to making the requisite assumptions rests on short-run restrictions, a bedrock of the VAR literature in macroeconomics (see, e.g., Ramey 2016; Christiano et al. 1999; Caldara and

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<sup>21</sup> The sequential modified likelihood-ratio, the final prediction error, the Akaike information criterion, and the Hannan-Quinn information criterion tests univocally dictate the choice of three lags. Only the Schwarz information criterion suggests a model with a single lag. We thus chose the model with three lags.

Iacoviello 2022).<sup>22</sup> Specifically, we make the following assumptions: (A1) shocks to  $sci_t$  or  $inst_t$  do not contemporaneously impact  $relig_t$ ; and (A2) shocks to  $inst_t$  do not contemporaneously affect  $sci_t$ . In Appendix F, we provide a detailed justification of these assumptions in light of the nature of our data and the workings of English society in the time period under consideration. But we do not claim to provide the last word on these issues. Issues of causality among multiple endogenous variables are notoriously difficult to solve, as attested by the experience of modern-day macroeconomics (Nakamura and Steinsson 2018). Our approach—the first ever applied to the coevolution of religion, science, and institutions in a historical setting—offers one route within a viable estimation framework.

Given assumptions (A1) and (A2),  $\mathbf{A}$  in (5) and, consequently,  $\mathbf{A}^{-1}$  in (6) are lower triangular and the residuals from the reduced-form VAR in expression (6) can be expressed as:

$$\mathbf{e}_t \equiv \begin{bmatrix} e_t^{relig} \\ e_t^{sci} \\ e_t^{inst} \end{bmatrix} = \begin{bmatrix} \tilde{a}_{11} & 0 & 0 \\ \tilde{a}_{21} & \tilde{a}_{22} & 0 \\ \tilde{a}_{31} & \tilde{a}_{32} & \tilde{a}_{33} \end{bmatrix} \begin{bmatrix} u_t^{relig} \\ u_t^{sci} \\ u_t^{inst} \end{bmatrix}. \quad (7)$$

With this form, estimates of the structural parameters of (5) can be derived from OLS estimates of (6). Importantly, one can readily obtain estimates of  $\mathbf{u}_t = \mathbf{A}\mathbf{e}_t$ , the vector of structural shocks. As we stress below, these estimated shocks add new information to the historical record on the occurrence of intellectual developments that our estimates suggest were not simply the product of reactions to earlier intellectual developments.

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<sup>22</sup> An alternative approach would be based on identifying a plausibly exogenous variation via the collection of external data and then using such variation to assess the effects on outcomes of interest (Nakamura and Steinsson 2018). For examples of innovative identification strategies of this kind in economic history, see Palma (2022), Brzezinski et al. (2022), and Jordà et al. (2022). Although this alternative approach has many advantages, it can only be implemented if one is successful in finding the external data that captures truly exogenous variation. We do not know of data that could play this role for attention to ideas on religion, science, and institutions.

### *Impulse-responses: a first look at coevolutionary dynamics*

We first investigate the coevolution of ideas about religion, science and institutions using impulse-response functions (IRF). The IRFs summarize the average expected response of each element of  $\mathbf{y}_{t+s}$  at time horizon  $s \geq 0$  following a one-time shock to one specific element of  $\mathbf{y}_t$ . We model the initial change as a one-time, one-standard-deviation structural shock (i.e., a shock of typical size) that elevates the attention to the pertinent theme (i.e., raises the value of the applicable element of  $\mathbf{y}_t$ ), a manifestation of an exogenous 'innovation' in culture. We estimate cumulative IRFs in attention to each of the three cultural areas over a 30-year period, reporting 90-percent confidence intervals.<sup>23,24</sup>

Figure 4 summarizes the results. In each of the nine subfigures, the horizontal axis shows the number of years since the shock. The vertical axis measures the cumulative change in the pertinent series at each horizon, expressed in proportions since our series are measured in natural logs (see expressions (3a)-(3c)). For interpretation of Figure 4, it is helpful to know that a typical shock to  $relig_t$  causes an immediate jump in  $relig_t$  (i.e., increases attention to ideas about religion) of 45%. Similarly, a typical shock to  $sci_t$  immediately increases  $sci_t$  by 75% and a typical shock to  $inst_t$  immediately elevates  $inst_t$  by 44%.

The subfigures along the main diagonal (Figure 4(a)(e)(i)) capture the extent to which a shock in one domain spurs subsequent developments in the same domain. The corresponding IRFs are positive and statistically significant at all horizons: innovations in a given cultural domain do not

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<sup>23</sup> Confidence-intervals are computed using Kilian's (1998) bootstrap method. The use of 90 percent is more conservative than is typical in the macroeconomics literature, which usually uses one-standard-deviation confidence intervals.

<sup>24</sup> In Appendix G we present a full set of impulse-responses obtained using the method of local projections (LP), an alternative approach to estimation. To generate the LP-estimated impulse-responses, we use the same identification assumptions as in our VAR. Appendix G shows that the VAR-based and the LP-based impulse-response estimates paint a qualitatively consistent picture of the coevolution of cultural ideas.

dissipate but rather lead to long-lasting elevated attention to that same domain. For example, following a shock to  $sci_t$ , the 30-year effect on  $sci_t$  is twice the size of the immediate rise in  $sci_t$  (Figure 4(e)). This effect corresponds to the mechanism alluded to in Merton's (1938: 436-469) theorizing, that "a fixed order must prevail in the appearance of scientific discoveries; each discovery must await certain prerequisite [scientific] developments".

The subfigures off the main diagonal show how innovations (shocks) in one cultural domain affect future developments in the other two domains. Most importantly, innovations in ideas on religion spur strong responses in attention to the other two cultural domains (Figure 4(d)(g)). The 30-year-effect of a shock to  $relig_t$  on  $sci_t$  is a 87% rise in  $sci_t$  (Figure 4(d)). Thus, religious thought was central in spurring developments in ideas about science as theorized by Merton (1938: 440): "It was precisely Puritanism which built a new bridge between the transcendental and human action, thus supplying a motive force for the new science".

Innovations in ideas about science elevate attention to ideas about religion (Figure 4(b)): the 30-year-effect of a shock to  $sci_t$  on  $relig_t$  is a 43% rise in  $relig_t$ . The coevolution between ideas on religion and ideas on science was therefore a "reciprocal interaction" (Merton 1938: 434), but especially strong from religion to science (Merton 1938; Shapin 1996).

Innovations in ideas about religion also stimulate ideas about institutions: the 30-year-effect of a shock to  $relig_t$  on  $inst_t$  is a 28% increase in  $inst_t$  (Figure 3(g)). This finding resonates with recent scholarship emphasizing the general relevance of religious ideas for long-run institutional development.<sup>25</sup>

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<sup>25</sup> For example, Kuran (2010) and Rubin (2017) illuminate the importance of religious ideas for the historical divergence in institutional development between the West and the Middle East. Similarly, Dittmar and Seabold (2021) document a positive relationship between Protestant ideas in print and city-level institutional change in German-speaking Europe in the 15<sup>th</sup> and 16<sup>th</sup> century.

----- [Figure 4: The accumulated impulse-responses] -----

In contrast, innovations in ideas about institutions lead to a relatively small and statistically insignificant increase in attention to ideas about religion (Figure 4(c)). There is no effect of innovations in ideas about institutions on attention to ideas about science (Figure 4(f)).<sup>26</sup>

### *The temporal incidence of shocks and the relevance of revolutions*

Shocks to  $\mathbf{y}_t$  (the  $\mathbf{u}_t$  in (5)) are one-time changes that cannot be predicted within the normal process of cultural evolution and coevolution. They might be due to acts of genius (Newton), a political event (Civil War), or a monarch changing religion (Henry VIII). An understanding of the timing of the shocks provides insight into the times when cultural evolution took (or did not take) an unexpected turn relative to what would have been predicted by the model's 'normal' dynamics.

Figure 5 plots the temporal paths of five-year centered moving averages of the estimated shocks to  $relig_t$ ,  $sci_t$ , and  $inst_t$ . The vertical axis measures the magnitude of the shocks. The absolute value of the typical moving average displayed in Figure 5 is approximately one-third.

The largest positive shocks to  $relig_t$  (Figure 5(a)) occur in the years 1547-1549, 1565-1567, 1579-1583, and 1650-1659. During these periods, attention to religion evidences positive shocks that are about three times as large as typical shocks during 1530-1700. The first period (1547-1549) is at the beginning of Edward VI's reign, when a more radical form of Protestantism was being introduced. The second period (1565-1567) is in Elizabeth's first decade, when Calvinist ideas were being strongly promoted by those outside the established church.<sup>27</sup> The third period (1579-

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<sup>26</sup> Recall that our corpus does not contain the reports of decisions in the English courts, and therefore the institutions theme does not reflect the fundamental informational source on developments in caselaw, the primary driver of legal developments in England at this time.

<sup>27</sup> In 1553, a large group of Protestant clergy fled England upon the accession of Mary I, a Catholic monarch. Many spent their exile in Calvin's Geneva. They returned on the accession of Elizabeth and thereafter struggled to change the tenor of English Protestantism. The Geneva Bible—in English produced by Calvinists—became available in 1560.



1583) coincides with a time when Elizabeth was facing internal and external challenges from Catholics, with Puritan ideas finding more favor.<sup>28</sup> The fourth period (1650-1659), the Interregnum when Puritans controlled the country, evidences the largest amount of unusual attention to religion.

In the last four decades of the 17<sup>th</sup> century, the only unusually large shocks to *relig<sub>t</sub>* are negative: in 1663-1668 and 1686-1689. During these times, attention to religion experiences negative shocks that are about two-and-a-half times the size of typical shocks occurring between 1530 and 1700. During the first of these periods (1663-1668), the country saw a backlash against the Puritan ideas that had been so prominent during the Interregnum, with pathways to the spread of such ideas largely blocked by the established church (MacCulloch 2004: 544). The latter period (1686-1689) coincides with the reign of an avowedly Catholic King, James II, who for a brief time threatened all flavors of Protestantism, discouraging attention to the corresponding ideas. Thus, echoing the conclusion of the previous paragraph, our religion variable clearly reflects the ebb and flow of the attention to Puritan ideas.

----- [Figure 5: The temporal incidence of structural shocks] -----

Large positive shocks to *inst<sub>t</sub>* occur in the 1580's (Figure 5(c)). This period is a particularly fecund one in caselaw, the reports of which are not contained in the EEBO-TCP corpus, but their reverberations would certainly enter that corpus.<sup>29</sup> After that, there are two time periods featuring prominent positive shocks to *inst<sub>t</sub>*: 1636-1647, the era before and during the Civil War; and 1679-1683, coinciding with the exclusion crisis that foreshadowed the Glorious Revolution. Our

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<sup>28</sup> "... at this moment of crisis, Elizabeth's Church needed the intellectual firepower of godly Protestantism" Marshall (2017: 738).

<sup>29</sup> The observation about the fecundity of caselaw in the 1580's comes from our ongoing work in which we draw on a separate caselaw corpus. The relevant results are available on request to the authors.

estimates are thus more consistent with the idea that debates on institutional development spurred revolutions than the notion that revolutions spurred debates on institutional development.

With regard to the Glorious Revolution (1688-1689), our evidence does not lend support to the North and Weingast (1989) view that it marked a critical juncture in English institutional history. The years 1688-1700 do not feature the kind of unusually large shocks (positive or negative) to  $inst_t$  that one would expect to observe had the Glorious Revolution fundamentally impacted ideas on institutions. Moreover, with the period leading up to the Glorious Revolution witnessing large negative shocks to  $relig_t$  (1686-1689; Figure 5(a)) and large positive shocks to  $inst_t$  (1679-1683; Figure 5(b)), our evidence indicates that the struggles leading up to the Glorious Revolution were not centered on religion, but rather on institutional, and especially constitutional, matters.<sup>30</sup>

Finally, the era from 1558 to 1610 saw a series of comparatively large positive shocks to  $sci_t$  (Figure 5(b)), an observation that locates the stirring of an English scientific revolution earlier than is conventional (Wootton 2015). In contrast, the negative shocks to  $sci_t$  from 1618 to 1650 can be explained by the existence of deep religious and political cleavages. An emphasis on coping with deep divisions within the nation and the accompanying instability would have naturally led to a decline in attention to science.

#### *What drove attention to science? The Royal Society and alternatives*

Did the founding of the Royal Society in 1660 elevate attention to science? And more generally, which shocks were particularly important as drivers of attention to science and when? To shed light on these questions, we investigate the  $sci_t$  series using historical decomposition, a VAR tool that allows us to apportion the overall fluctuation of  $sci_t$  among the effects of different

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<sup>30</sup> The topics Constitutional Rules and Parliamentary & Court Procedure, both of which are part of the institutions theme (see Table 1), have particularly high levels of attention during this time period. See Appendix C.

types of shocks (i.e., current and past exogenous events). This tool combines information from the pertinent IRFs (Figure 4(d)(e)(f)), which show how attention to science on average responded to specific types of shocks, and the timing of the different type of shocks (Figure 5).

Figure 6 presents a historical decomposition of the  $sci_t$  series for the 1650-1675 period, the era immediately preceding and following the 1660 founding of the Royal Society. In the figure, 'total' indicates the total deviation of  $sci_t$  from the long-run mean predicted by the model. This deviation is then apportioned among three possible sources: past and current shocks to  $sci_t$  (dark gray line),  $inst_t$  (light gray), and  $relig_t$  (black).

The central implication of Figure 6 is that the founding of the Royal Society leaves no visible trace in our results. Specifically, even though the years 1660-1663 exhibit a somewhat higher than expected attention to science (the total is positive), this is by and large an effect of positive cumulative shocks to  $relig_t$  (the black line). These religious shocks, which on average elevated attention to science (Figure 4(d)), occurred especially during the Interregnum (Figure 5(a)), when Puritan sentiments were particularly strong. In contrast, shocks to  $sci_t$ , which on average boosted subsequent attention to science (Figure 4(e)), were of limited size throughout the 1650s and the early 1660s (Figure 5(b)). As such, cumulative shocks to  $sci_t$  had little effect on attention to science during 1660-1663 (the dark gray line). The same is true of the shocks to  $inst_t$  (the light gray line).

----- [Figure 6: The historical decomposition of the science series, 1650-1675] -----

Our results are thus not consistent with the hypothesis that the founding of the Royal Society quickly led to an unusual outpouring of science.<sup>31</sup> Our estimates are more consistent with an interpretation that developments in religion during the Interregnum later heightened attention to ideas about science—ideas that were conceivably important for the founding of the Royal Society in 1660.

----- [Figure 7: The historical decomposition of the science series, 1560-1590] -----

Figure 7 shows an analogous historical decomposition of the  $sci_t$  series for an earlier period, 1560-1590. The figure reveals that between 1564 and 1587, shocks to  $relig_t$  boosted attention to science in all but one year (the black line is above zero). As discussed in the previous subsection, during that time the large positive shocks to  $relig_t$ , which on average increased  $sci_t$  (Figure 4(d)), plausibly arose from the rising influence of Puritanism.

Figure 7 therefore provides further direct evidence in support of the Merton thesis: ideas about religion stimulated attention to ideas about science. However, Figure 7 also contextualizes Merton's theory by providing novel insights regarding the timing of the pertinent influence. Merton (1938: 414-418) himself, as well as Mokyr (2016: Ch. 13), focused on the role of religious sentiments in spurring the development of science in the 17<sup>th</sup> century. Our results indicate that these effects were particularly strong already in the last half of the 16<sup>th</sup> century.

*Was there secularization of science and institutional thought?*

Finally, we draw on our estimated historical decompositions to assess changes over time in the importance of attention to religion for developments in scientific and institutional thought. If the

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<sup>31</sup> The original name was the 'College for the Promoting of Physico-Mathematical Experimental Learning'. Importantly, our results should not be interpreted as implying that the Royal Society had no effect on the nature of scientific output, for example, on how science was done.

influence of religion waned over time, this would be evidence of secularization of thought in these two areas.

----- [Figure 8: Importance for attention to science and institutions of shocks to ideas about religion] -----

Figure 8 shows five year moving-averages of the relative importance of cumulative shocks to religion as drivers of attention to science (part (a)) and institutions (part (b)). To construct the figure, we use the estimates of the historical decomposition for each of the  $sci_t$  and  $inst_t$  series. For example, for the  $sci_t$  series, we first calculate the effect on  $sci_t$  of each of the three types of cumulative shocks and sum the absolute values of these three effects. We then calculate the percentage share in that sum of the effects of the cumulative shocks in  $relig_t$ . This is a measure of the relative importance of  $relig_t$  for  $sci_t$ . An analogous procedure is followed to ascertain the relative importance of  $relig_t$  for  $inst_t$ .

The key finding implied by Figure 8 is that innovations in religious thought were an important driver of attention to both science and institutions throughout the period 1530-1700. There is no evidence of any diminishing relevance over time of shocks in religion to debates on science and institutions. In particular, our findings are inconsistent with those of Almelhem et al. (2023: 3) who claim that, in England, "as early as 1600, and certainly by the mid-17<sup>th</sup> century, there was little overlap of scientific and religious topics...".

### **Concluding discussion**

Our objective has been, first, to present a quantitative macroscope of English print culture during the pivotal 16<sup>th</sup> and 17<sup>th</sup> centuries and, second, to examine the coevolution of ideas on religion, science, and institutions. To this end, we analyzed a major corpus of early-modern

publications, combining unsupervised machine-learning methods for analysis of text-as-data with time-series econometrics.

Our analysis generated five main substantive findings. First, as the early-modern era unfolded, English religious and political discourse became less antagonistic and, in line with Erikson (2021), witnessed a rise in prominence of topics relevant to the economy and commerce. Within the economics discipline, the literature on early-modern England has highlighted institutional developments as the key to subsequent sustained economic progress (North et al. 2009; Acemoglu and Robinson 2012; Henriques and Palma 2023). Our inquiry provides a different perspective, suggesting that the 18<sup>th</sup>-century stability of the 'nation of shopkeepers' was foreshadowed by important 16<sup>th</sup>- and 17<sup>th</sup>-century cultural changes.

Second, the epistemology that came to be associated with Bacon was present in theological debates already before Bacon's epistemological contributions. Our analysis thus casts new light on an influential strand of recent research stressing the role that Francis Bacon played in defining a set of cultural beliefs that were conducive to later economic development (Mokyr 2005, 2016). Our evidence tends to support a view of Bacon as a "synthetic thinker" (Mokyr 2016: 74) or "an influential mouthpiece for a culture that already existed" (Grajzl and Murrell 2019) rather than a fully fledged "intellectual innovator" (Mokyr 2016: 68).

Third, congruent with Merton's (1938) seminal thesis, innovations in religious ideas stimulated attention to science, especially at times when Puritanism was prominent in religious discourse. We show that the link from religion to science was strong already in the latter half of the 16<sup>th</sup> century, that is, much earlier than stressed by Merton (1938: 414-416) or more recently by Mokyr (2016: Ch. 13), who both emphasized developments after the mid-17<sup>th</sup>-century. Moreover,

we demonstrate that the interplay between religion and science in early-modern English print culture was bidirectional.

Fourth, we find no evidence that either science or institutional thought became more secularized as the 17<sup>th</sup> century closes. Our evidence is thus not consistent with recent analysis by Almelhem et al. (2023) who use texts available with the Hathitrust Digital Library (HDI) to conclude that, in Britain, "the 'secularization' of science was entrenched from the beginning of the Enlightenment". Importantly, our analysis utilizes the EEBO-TCP corpus, which focuses on the pre-1700 era. This is not true of the HDI corpus available to Almelhem et al., where the coverage of the pre-1700 period is sparse. Moreover, unlike Almelhem et al.'s conclusion, our finding is based on an explicit VAR model that naturally lends itself to the study of coevolutionary patterns (see, e.g., Grajzl and Murrell 2022).

Fifth, the Civil War and the Glorious Revolution did not spur debates on institutions. Our empirical analysis thus provides a novel interpretation of major historical events during a crucial epoch of England's cultural history. We show that a focus on institutional debates preceded the Civil War. In addition, attention to institutions did not noticeably change around the time of the Glorious Revolution. Thus, rather than supporting the view that 1688-1689 was a pivotal moment in English institutional history, our evidence from print culture echoes recent research emphasizing the gradual character of England's institutional development (Murrell 2017; Ogilvie and Carus 2014; Hodgson 2017; Henriques and Palma 2023). We also find that the founding of the Royal Society did not markedly elevate attention to science. Instead, the emphasis on religion during the Interregnum led to an enhanced focus on science at the time of the formation of the Royal Society.

A core product of this research has been the creation of a machine-learning digest of 16<sup>th</sup>- and 17<sup>th</sup>-century English culture, a self-standing dataset available to researchers for further exploration.

Our construction and provision of data is analogous to many other data-producing exercises in social-science and cliometric research that combine large amounts of micro data to build a macro dataset that can be used as an input into further research (see, e.g., Broadberry et al. 2015). At the same time, the availability of our machine-learning-generated data allows others to easily reassess our findings by applying, for example, different assumptions about the construction of cultural aggregates, different identification assumptions, and, indeed, wholly different econometric approaches.



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Table 1: Topics and themes, with expected document-level prevalences

<i>history</i> (2.53)	<i>geography</i> (1.35)	<i>religion</i> (22.04)
Ecclesiastical History (0.23)	Voyages (0.83)	Holy Days (0.45)
Monarchs' Lives (0.84)	Africa & Asia (0.12)	Allaying Christian Doubt (1.38)
Biblical History (0.55)	Western Europe Surveyed (0.17)	Official Prayer (1.57)
Analyzing Ancient Thought (0.24)	Chorography (0.23)	Establishing Correct Doctrine (0.8)
French & Iberian History (0.31)	<i>literature</i> (9.77)	Salvation via Virtue (1.63)
British Isles History (0.13)	Early Literature, Secular (0.16)	Papacy (0.25)
Roman History (0.23)	Early Literature, Spiritual (0.45)	Salvation via Faith (0.68)
<i>institutions</i> (12.64)	Historical Romance (0.39)	Old Testament (0.29)
Constitutional Rules (0.74)	Jokes & Mishaps (2.29)	Attacking False Doctrine (2.37)
Ordinances (2.72)	Lusty Entertainments (1.95)	Apocalyptic Theology (0.63)
Parliamentary & Court Procedure (1.05)	Romance & Comedy Drama (0.69)	Counter-Reformation Scholarship (0.7)
Scottish Political Acts (0.88)	French Romance (0.29)	Catholics Under Protestant Rule (0.38)
Local Law (0.99)	Chivalric Literature (0.14)	Religious Love & Hope (1.43)
Scottish Law (0.17)	Poetic Laments (1.73)	Baconian Theology (1.81)
Autonomous Church Governance (0.84)	Comedy, Satire, Epigrams (0.59)	Transubstantiation (0.46)
Dignitary Law (0.07)	Political Poems (1.09)	Sin, Damnation, & Repentance (1.71)
Royal Proclamations (3.16)	<i>science</i> (3.14)	Dissent, Schism, & Toleration (1.21)
Lawfulness (1.37)	Mathematics (0.17)	Reasonable Religious Discourse (1.61)
Compilations of Laws (0.12)	Astronomy & Astrology (0.32)	Deductive Theology (1.61)
Hierarchical Church Governance (0.53)	Natural Philosophy (0.36)	Christian Mysticism (0.63)
<i>miscellany</i> (3.02)	Botany (0.05)	Holy Lives (0.44)
Art Catalogs (0.48)	Zoology (0.41)	<i>skills</i> (10.22)
Names Listed (1.19)	Medical Science (0.27)	Commercial Aids (0.59)
Listing City Facts (0.4)	Chemistry (0.24)	Equine Learning (0.17)
Not English (0.28)	Anatomy (0.09)	Military Training (0.53)
Non-Translated Latin (0.67)	Pharmacology (0.22)	Scholarly Learning Guides (0.6)
<i>philosophy</i> (5.37)	Physics (0.26)	Practical Geometry (0.23)
Republicanism (0.96)	Diet & Health (0.49)	Student & Practitioner Law (0.35)
Moral Philosophy: Interests (1.68)	Diseases & Cures (0.26)	Cookery (0.29)
Moral Philosophy: Passions (1.18)	<i>politics</i> (18.27)	Using Numbers (1.07)
Moral Philosophy: Virtues (0.77)	Military Campaigns (2.28)	Industrial Arts (0.39)
Deductive Reasoning (0.78)	Defending Monarchs (0.84)	Legal Practice Aids (0.44)
<i>relationships</i> (11.66)	Continental International Relations (0.56)	Bibliographical Practice (0.64)
Family Matters (0.69)	High Crimes (1.21)	Improving Soil & Its Products (0.53)
Authority Relationships (1.23)	Allegiance & Resistance (1.14)	Rural Recreations (0.1)
Emotional Relationships (2.32)	Fearing Catholicism (2.02)	Catechismal Compilations (1.66)
Expressing Loving & Loathing (0.77)	Economic Lobbying (2.02)	Christian Mental Exercises (1.19)
Self-Reflection (4.32)	Turkish International Politics (0.25)	Practicing Christianity (1.44)
Obloquy & Encomium (2.33)	Asserting Parliamentary Powers (2.88)	
	Political Uses of Religion (1.65)	
	Petitions, Protests, & Proposals (3.42)	

Notes: The table lists the 110 STM-estimated topics (non-italicized) as interpreted by the authors. (Appendix B provides the lists of keywords most prominently associated with each topic and a detailed justification for each topic name.) The topics have been grouped into 11 themes (italicized) using the process described in Section 3.3. The numbers in parentheses are expected document-level prevalences, computed as simple (non-weighted) report-level means of the STM-estimated topic and theme prevalences, all expressed in percentages.



Figure 1: The distribution of TCP texts over time

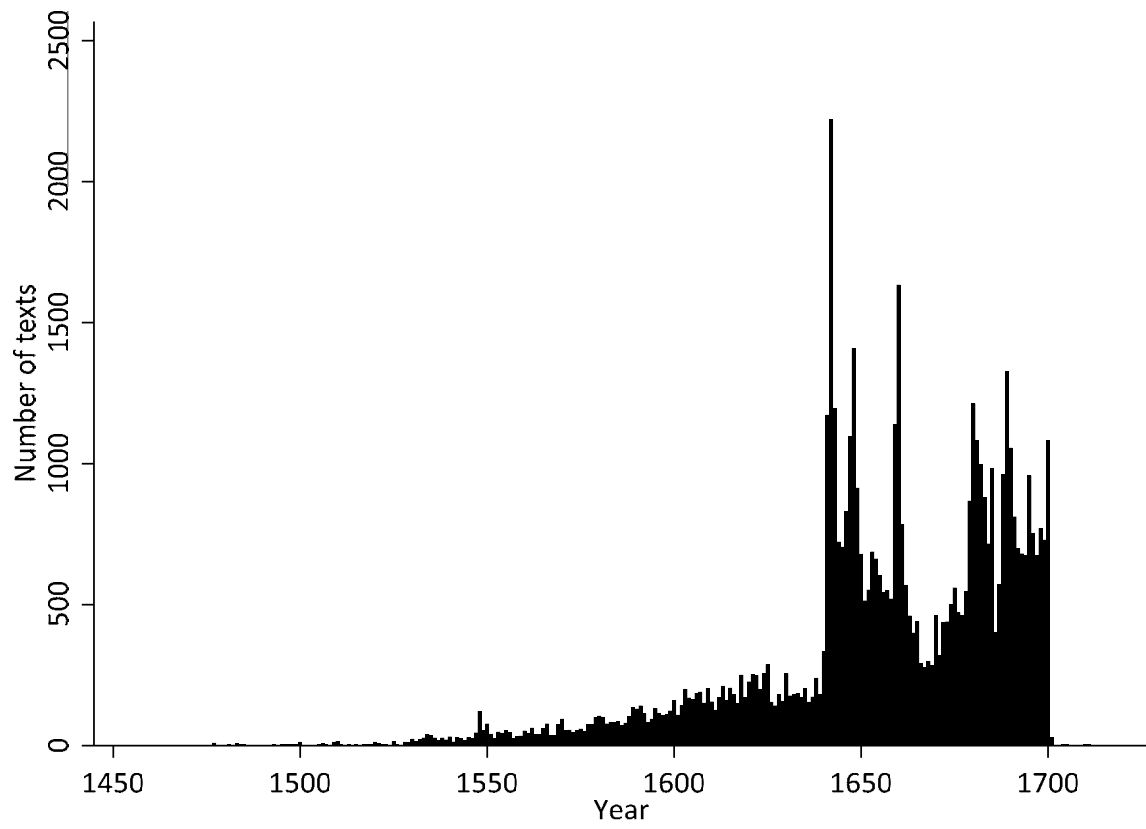


Figure 2. Selected topic timelines

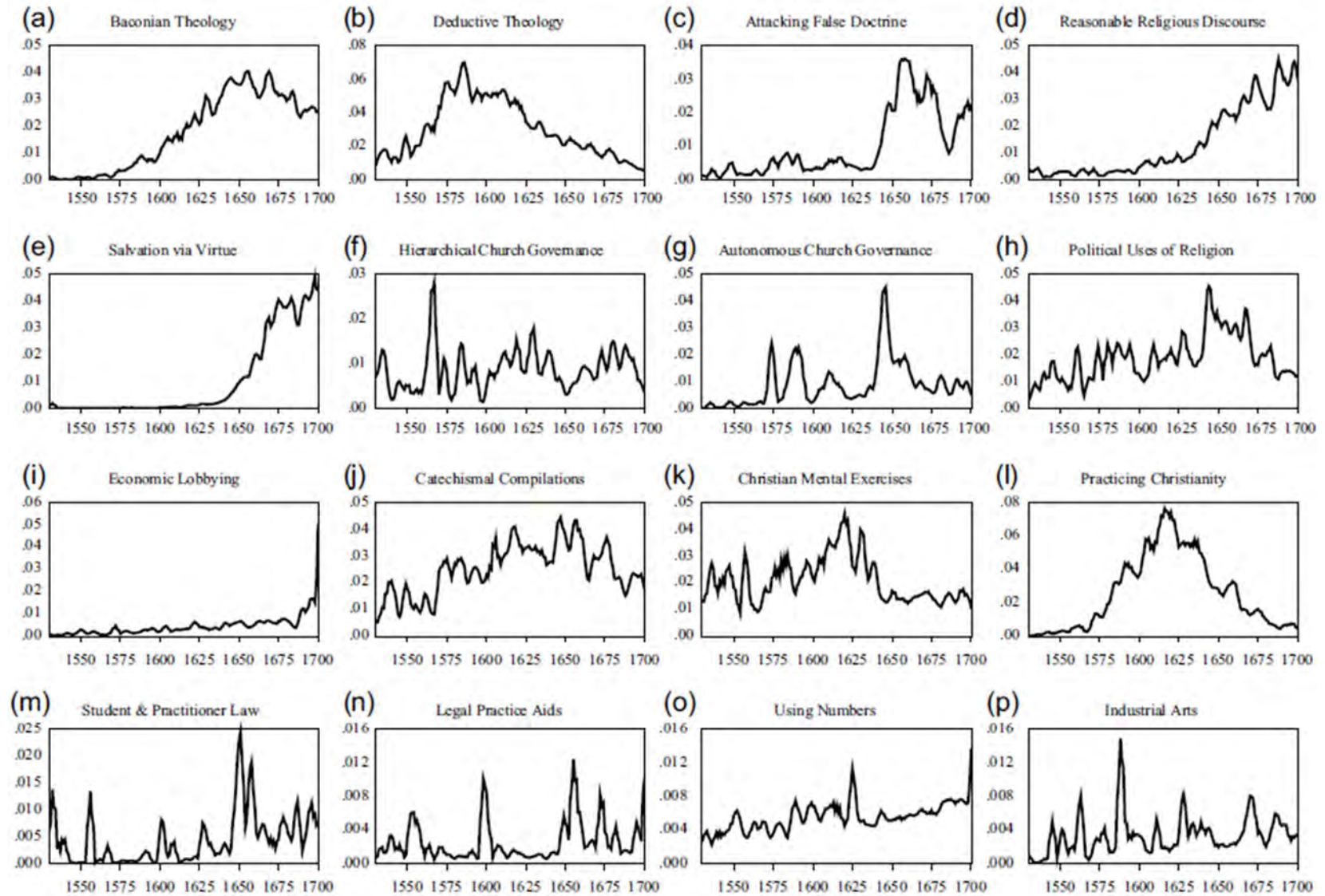
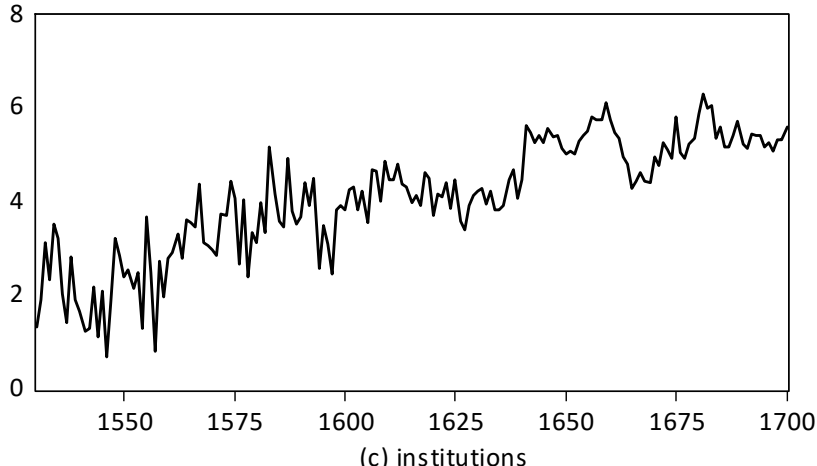
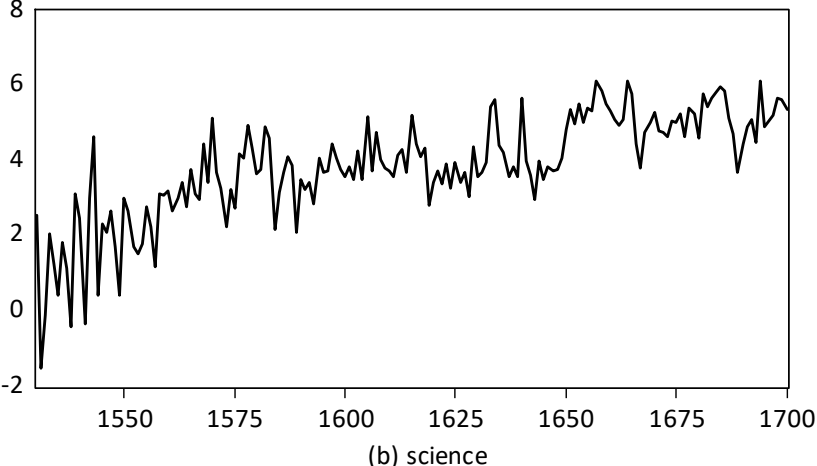
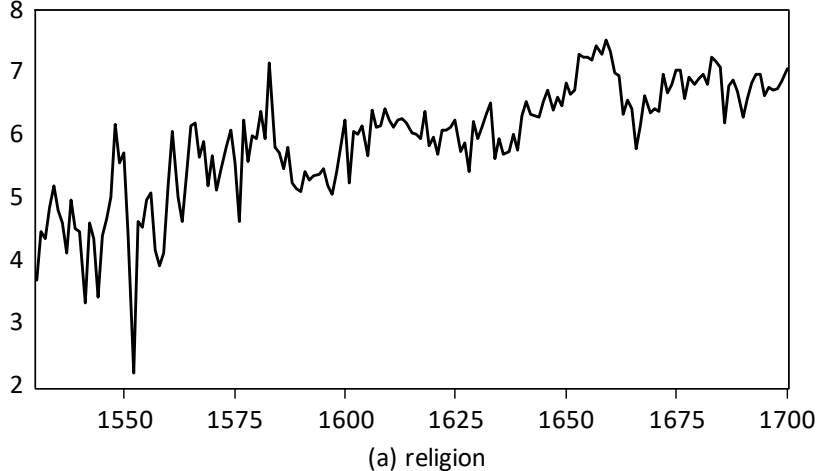
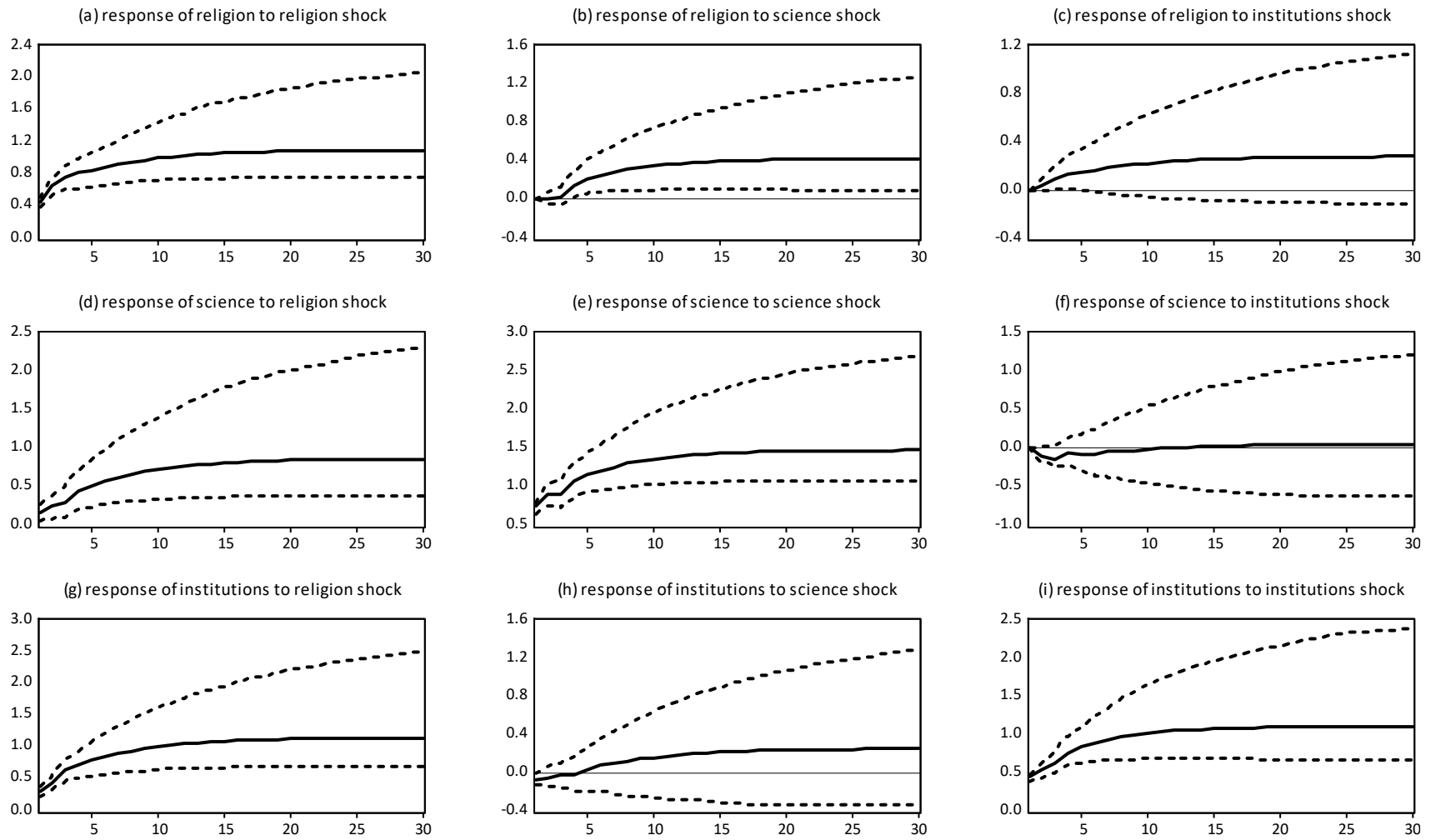


Figure 3: The time series of logged per-capita attention to religion, science, and institutions, used in the VAR



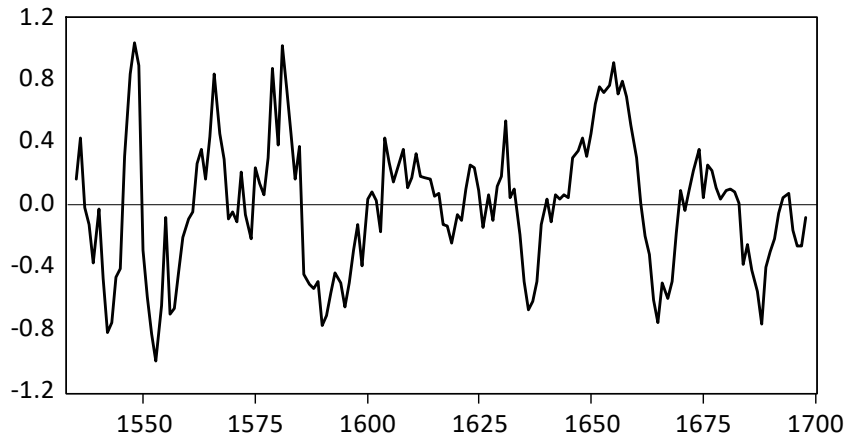
Notes: The figures show the time series of logged per-capita attention to religion, science, and institution, constructed using expression (3).

Figure 4: The accumulated impulse-responses

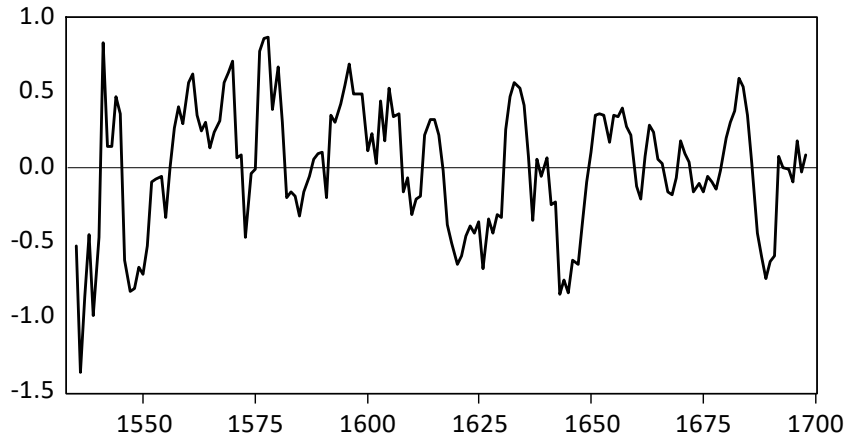


Notes: 90-percent confidence intervals computed using Kilian's (1998) bootstrap method.

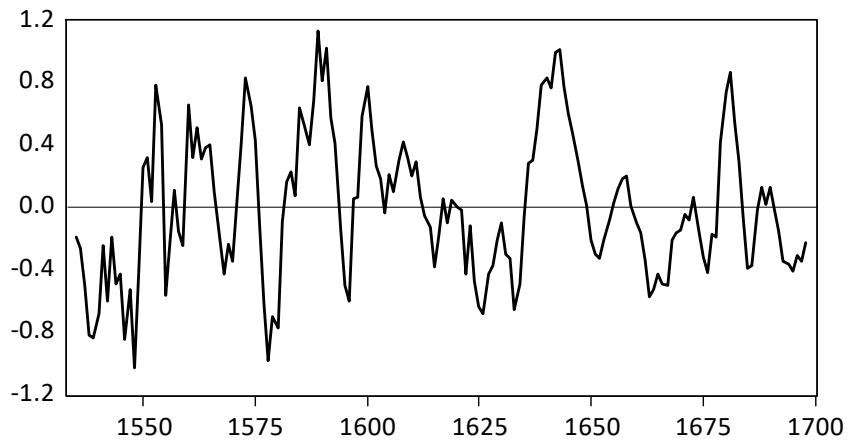
Figure 5: Structural shocks



(a) shocks to religion



(b) shocks to science



(c) shocks to institutions

Figure 6: Historical decomposition of the science series, 1650-1675

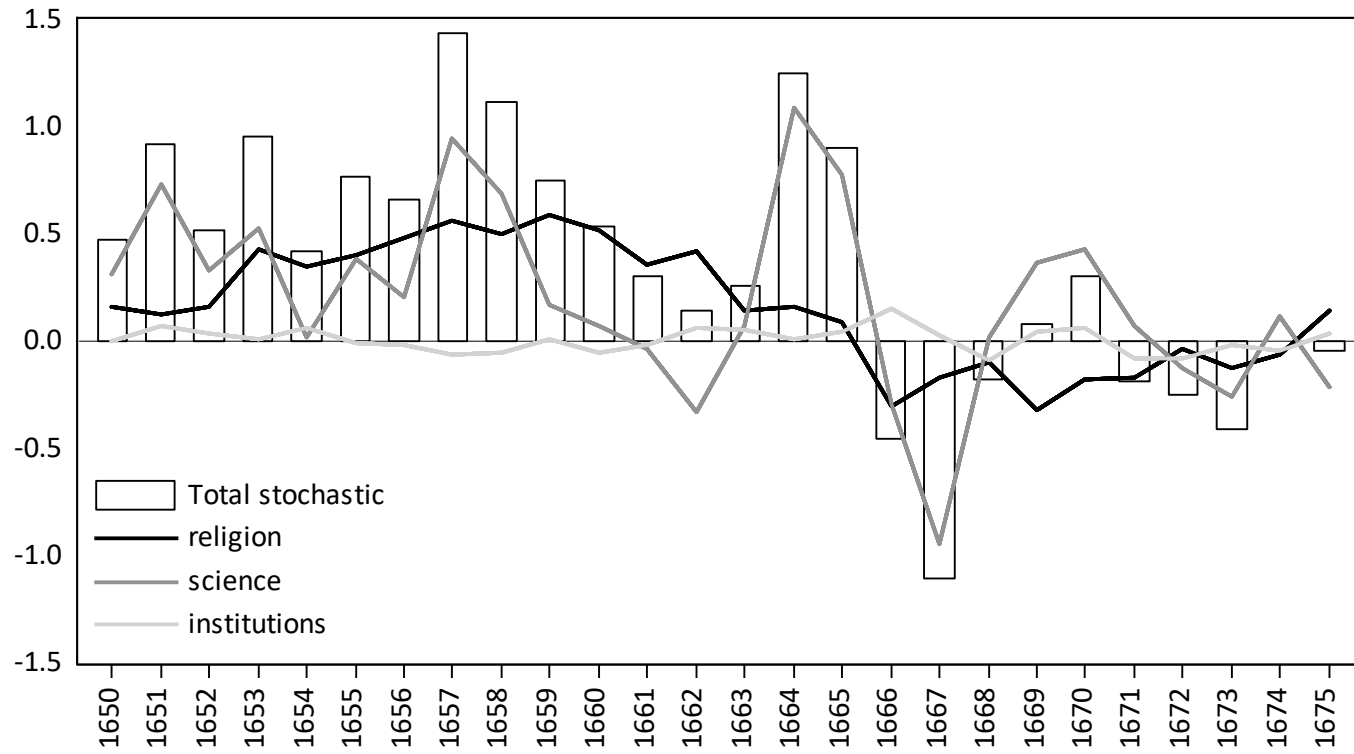


Figure 7: Historical decomposition of the science series, 1560-1590

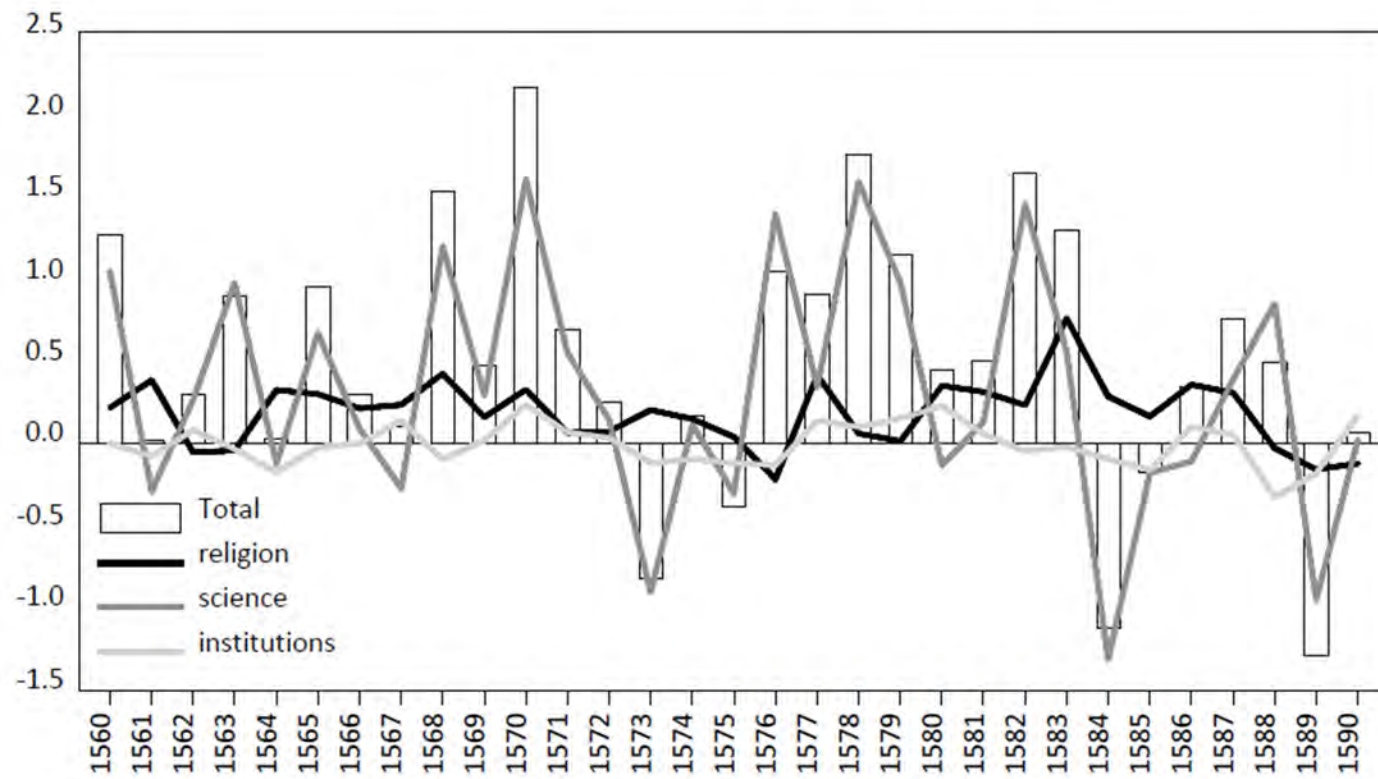
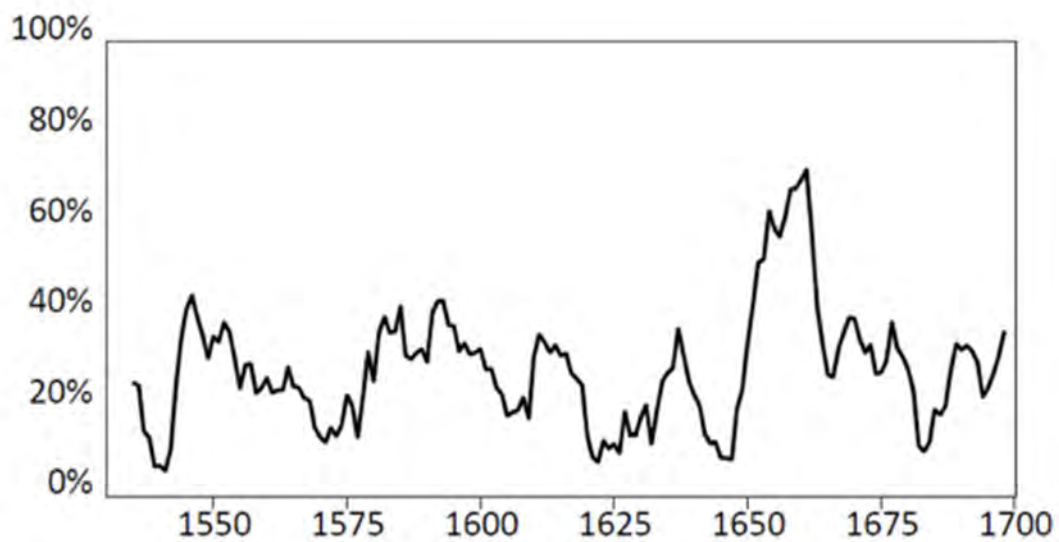
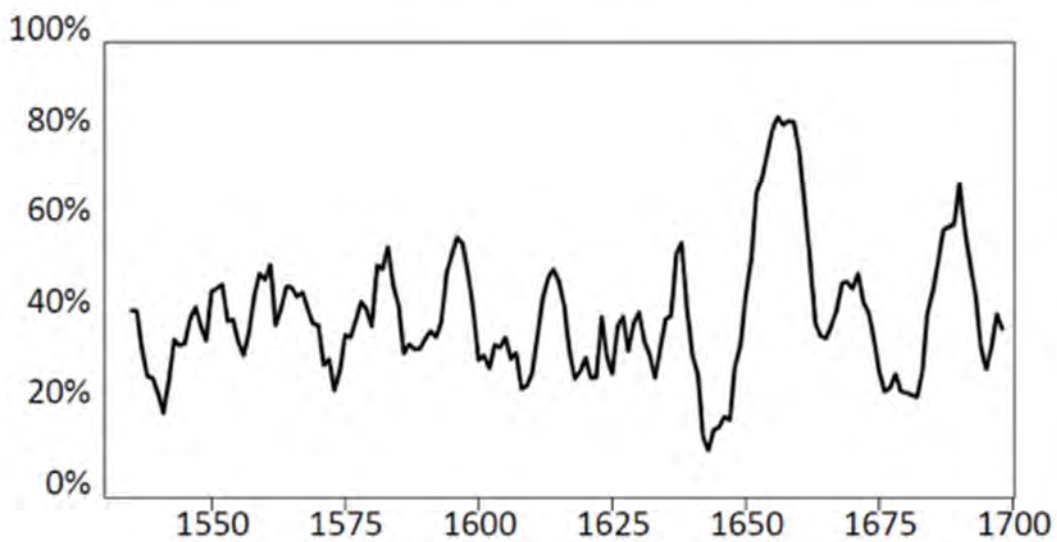


Figure 8: Relative importance of cumulative shocks to religion for attention to science and institutions



(a) Contribution of religion shocks to science



(b) Contribution of religion shocks to institutions

Note: five year moving-averages



# **Online Supplementary Appendixes**

**A Macroscope of English Print Culture, 1530-1700, Applied to the  
Coevolution of Ideas on Religion, Science, and Institutions**

## **Appendix A: The source of the corpus and the processing steps prior to topic modeling**

The starting point of our data processing was the corpus that was available from the Text Creation Partnership (2022; henceforth TCP) when this project began, in 2020.<sup>1</sup> These were the texts prepared by the TCP and that had been included in the collection in Early English Books Online (EEBO). No alternative machine-readable corpus of commensurate breadth and depth has been assembled that could be used as the basis of a quantitative approach to pre-1700 English culture covering a very broad spectrum of texts.

The EEBO-TCP corpus files we downloaded obviously already reflected a prior selection of texts by TCP. Thus our corpus of EEBO-TCP texts is a sample of all texts published in the relevant time period. TCP (2022) contains a wealth of information about the selection process.<sup>2</sup> Here we simply note key features.

The creation of the texts for the EEBO-TCP corpus began with the list of works contained in the prominent catalogs that "trace the history of English thought from the first book printed in English in 1475 through to 1700" (TCP 2022). The combined catalog comprises more than 125,000 volumes for which facsimiles of texts are available. Only a subset (60,331) of these have been rendered in machine-readable form, a process that effectively relied upon scholars volunteering to do manual translation from images to ASCII but with those scholars choosing from a set selected by the organizers of the process. In this selection process, there was a "series of deliberate attempts to cast a wider net...The intention was to supplement methodical selection with more or less random selection based on arbitrary criteria in order to expand the generic diversity of the corpus" (TCP 2022). But "A user willing and able to make a case for a given work almost always prevailed over other considerations" (TCP 2022). Other criteria came into play: the exclusion of serials; prioritizing first editions and including subsequent editions only if changes were significant; concentrating on texts that were dominated by words whose letters were in the Latin alphabet and that could be reliably deciphered. As a practical matter a decision was made to focus on English-language texts. The underlying vision was that "we aimed to key as many different works—as much different text—as possible" (TCP 2022).

One obviously cannot claim that the EEBO-TCP collection provides a random sample of English culture in the relevant time period. Much cultural output was not committed to text at the time. The texts do not reflect broad popular culture, but rather culture of the printed text in a country where only a minority were literate during the relevant era. However, some elements of popular culture were printed with the purpose of reading to the illiterate in popular meeting places. Moreover, some of the texts do contain elements of popular culture, perhaps via compendia to provide catalogs of information at the time. Additionally, the process of selection by the TCP itself would tend to sway the sample towards those aspects of culture in which modern scholars are more interested.

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<sup>1</sup> As of April 2022, the set of available texts has not expanded from those available in 2020.

<sup>2</sup> And clearly the selection of texts had begun before TCP in a process in which original texts either survived or were lost to history.

EEBO-TCP is more like a library than a bookshop, where the former includes only one copy of each work while the latter will contain information that reflects the relative popularity of works both within and over time. This aspect of document selection implies that our corpus captures new developments, together with the use of older culture within those new developments, rather than reflecting the stock of texts that is being used at any point in time. Thus our data set is more likely to reflect the production of culture than the consumption of culture. We do not regard this as a drawback at all, but rather as a positive element of the data, one that means our results focus on the development of culture over time.

Our reaction to these thorny selection issues and deciding to proceed nonetheless rested on two elements. First, nothing rivals the comprehensiveness of EEBO-TCP for the early-modern era. And all existing approaches in the literature to analyzing culture necessarily rely on analysis of a subset of documents that were produced in the relevant time period, sometimes an exceedingly narrow subset chosen by the researcher. Inclusion of all the texts in EEBO-TCP in an analysis offers the possibility that our study considers a more comprehensive set of works in the relevant time period than any existing study. Second, as we make clear in the text, the effect of selection on findings can be diminished if one is careful to make the right sort of comparisons in reaching these findings.

Of the over 125,000 texts listed in the catalogs with which the EEBO-TCP began, fully machine-readable versions are available for 60,331.<sup>3</sup> This was the corpus with which we began. The downloaded texts were in sgml format. Our objective was to begin with texts that were as close to the originals as possible (with the notable exception that many judgments had been made by the TCP contributors when undertaking the conversion to machine-readable format). We thus removed all characters and information that would not have been recognizable to somebody in the 17<sup>th</sup> century. After this process, one document contained no text and was removed.

Central to our analysis is the dating of texts, the time of first publication. For the overwhelming majority of texts, the EEBO-TCP provides exact dates. However, for a significant number of texts date ranges are given. Our approach to this problem was to keep as many texts as possible, but only those where dating was reasonably accurate. We settled for the pragmatic criterion that we would keep a text if we could pin down its year of publication within an interval of ten years or less. This required discarding a further 261 texts. Then, because our methods required that one single year be assigned to each text, we used a uniform distribution to assign a random single year within the interval to each separate document.

We then turned to a series of steps necessary to facilitate the application of topic modeling. The non-standardized orthography that was common before the 18<sup>th</sup> century was converted into standard modern orthography using the database available with MorphAdorner (2013). For words common in older variants of English, this database contains translations between spelling variants and standardized spelling (e.g. rhetoricke becomes rhetoric or weeld becomes wield). In the

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<sup>3</sup> <https://textcreationpartnership.org/tcp-texts/eebo-tcp-early-english-books-online/> as of April 15, 2022.

process of constructing our corpus many corrections and additions were made to the database included with MorphAdorner, resulting in translations being available for 361,071 spelling variants.

Given standardized spelling, word inflections were removed to the extent possible using the databases available with MorphAdorner, which addressed issues related to archaic inflections better than would be the case with a modern stemming program. Corrections and additions were made to these databases, resulting in the availability of translations between inflected words and lexical roots for 467,928 words. This step translated words into their standardized lexical roots for many non-standard spellings of inflected words that were not included in the database used at the first step of processing (e.g. wand'ring becomes wander and indowed becomes endow). It also removed inflections that are not standard in modern English (e.g. challengeth becomes challenge and replyde becomes reply). This processing step therefore increased the degree of standardization of spelling, as well as reduced the number of inflected words.

The next steps required the use of a comprehensive list of standard English spellings, names, abbreviations, and acronyms. The construction of this list initially relied on databases from Moby Word Lists (2002). With additions made during the processing of the corpus, the resultant word list contained 385,095 standard English words. If at this stage a word in the corpus matched a word in the English dictionary, then it was left in the texts and omitted from all subsequent steps of this initial processing.

Latin was the most frequent language that some authors interspersed in their English language texts. Thus, a significant proportion of the words in English-language texts that did not match standard English words were from Latin. Those words remaining in the corpus that were not in the English word list were then matched against a word list of 1,034,155 Latin spellings (including a large number of inflections of Latin lexical roots). This Latin spelling list was obtained from Whitaker's Words (2006). Any word in the Latin spelling list, but not in the English word list, was stemmed using a programmed version of the Schinke Latin stemming algorithm (Schinke et al., 1996). Through stemming, the variant forms of a word were transformed into standard forms, giving the inflectionless form of a Latin word.

Once the Latin words in the corpus were in their standard forms, they were translated into English using a Latin-English dictionary. This dictionary relied initially on the database available at Whitaker's Words (2006). Then, if a word in the corpus was simultaneously not in the English word list, within the Latin word list, and not in the Latin words in this initial Latin-English dictionary, a program searched for the word in the online Lewis and Short Latin Dictionary (Perseus, n.d.). The Latin words and their online translations were then added to the original Latin-English dictionary. The resultant dictionary database contained 77,316 Latin to English translations. This database used only the stemmed versions of Latin words that were produced by the Schinke algorithm. Hence, the number of distinct Latin words that could be translated in this overall process was in the millions. The processing also included the conversion of all Roman numerals to Arabic numerals.

After this intensive processing of the texts, we carried out several diagnostics in order to discover words that had not been adequately dealt with in the preceding steps. These diagnostics led to the implementation of a set of bespoke corrections, relying on a database with more than 49,000 entries. This additional database had been constructed from the diagnostics obtained from several projects processing early English texts, including the current project. Therefore, only some of the database entries were derived specifically from the diagnostics for the database used in the current project. Moreover, many of the words in the database were simply inflections of Latin terms that had not been translated in the previous processing steps. (The Latin spelling used before the 19<sup>th</sup> century was highly idiosyncratic.)

After implementing the above-described processing steps, we dropped an additional 2,202 processed documents designated as not suitable for inclusion in the data to be used within a machine-learning algorithm. These documents contained either an especially small number of words or an uncharacteristically high share of words that could not be matched to any word in the English dictionary even after all processing steps.<sup>4</sup> Topic modeling, our empirical method for analyzing the data, conceptualizes text documents as mixtures of topics. Therefore, dropping particularly short texts facilitates interpreting the topics by ensuring that the documents that heavily feature certain topics contain substantive information (and not simply a few meaningless words). Dropping documents with too many non-recognized words forestalls the possibility of obtaining topics that are not substantive and therefore not readily interpretable, but rather reflect idiosyncrasies of spelling, use of foreign of languages, or a tiny set of specialized documents, etc. In general, exclusion of processed documents containing a comparatively large share of words not contained in the English dictionary ensures a high degree of orthographic standardization and Latin translation across the corpus. This also minimizes the impact of parts of texts that were obscured in the original or where the transcriber had kept highly idiosyncratic orthography, perhaps used by only one text.

Inspection of the resultant data set of 57,867 files revealed that 7 documents had dates in the 19<sup>th</sup> century. After reading these documents, it was clear that the dates on 3 were wrong and could be corrected to within the 17<sup>th</sup> century, while 4 were correctly dated and therefore the texts had to be discarded, leaving 57,863 files that were used for all of the data analysis appearing in the paper.

Upon associating documents with metadata, the resultant corpus was imported into R and further processed using the standard procedures described in the application of STM (Roberts et al. 2019). Using R's `textProcessor` and `prepDocuments` functions, we converted all words to lower case, applied the Porter stemming algorithm, and removed standard English stop words (natural language words with little meaning, such as 'and', 'the', 'a', ), numbers, words with fewer than three characters, words included in only one document, and punctuation. After the resultant processing, the final corpus consisted of 57,863 documents, 981,000 distinct vocabulary items, and 83,337,912 letter-based strings (i.e., words).

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<sup>4</sup> The original data set did contain non-English-language texts and it is likely that most of the dropped documents were these texts.

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## **Appendix B: The topics: content, names, and justifying names**

This appendix provides a brief description of the content of each estimated topic, justifying the assigned topic name. Topic names are kept brief to fit into figures, tables, and text easily. But short names cannot convey precisely what is included in a topic, and nuances of content. Therefore, in the table below, the discussion of each topic begins with a longer, one-or-two-sentence, definition of the topic.

Recall that topics are distributions over vocabulary and documents are mixtures of topics. To assign topic names for each topic, we examined the Highest Probability and Score words, defined below, and studied the documents that feature the topic most prominently. In the descriptions of each topic below, we provide quotes from the associated top documents, often referred to below while omitting the word 'top', or referred to as the 'first document', 'second document', etc. The quotes are from the versions of the documents that have not had their orthography standardized, nor Latin translated, nor been subject to stemming. In contrast, the key words are from the versions of documents used in estimation, in which these three operations have been applied. Thus, for example, the stem 'vertu' will not appear in the lists of words since *vertue* will have been changed to *virtue* and *virtu* will appear as the stem. The titles of and quotes from documents, however, are from pre-processed texts and therefore would contain spellings such as '*vertue*'.

TW (top words) = a selection from the top 30 word-stems (Highest Probability stems) that are must used by the topic. These are the words that are most common for a topic, but are also non-exclusive, in the sense that they may be very common in many other topics.

DW (distinctive words) = a selection from the top 30 word-stems (Score stems) that are relatively distinctive of the topic. These are the words that are highly used by a particular topic relative to their use by other topics. These words score highest when comparing the frequency of the word in a given topic relative to the average frequency of the word across all topics.

In the text below, there are quotes from authors without mention of the particular author, simply referring to 'one top document', even though the author of the document might be well known. This was by design, because, as much as was possible, the idea was to name the topics without calling to mind the whole opus of well-known authors, but rather simply by relying on the documents themselves.

The percentages provided next to each topic name refer to the expected proportion of the corpus devoted to the topic.

The topic numbers are as produced by the STM algorithm. They are an artefact of the computational process, without further significance.

**Topic 1: Early Literature, Secular. 0.16%**

The topic captures two elements, an emphasis on secular topics, particularly non-religious history, and a use of language characteristic of the very earliest documents in the corpus. An alternative topic title might be Pre-Modern Ancient History.

TW: king, great, greek, troy, son, heart, right, trojan, slay, love, high, eke, hercul, achill

DW: trojan, eke, troilus, achill, bocha, troy, arcit, greek, diomed, priam, hector, venus, ulyss, menelaus, jason, quoth, hercul, delicias, telamonius, knigh, phebus, theseus, syrenus

The grouping by the topic model seems to be for two reasons, first because there are many references to non-religious topics, particularly history, and second because much of the orthography is somewhat unusual in this corpus, speaking of early 16<sup>th</sup> century or earlier origins. In the top documents, there are translations of Ovid and Homer.

Examples of documents are: "THE AVNCIENT HISTORIE AND onely trewe and syncere Cronicle of the warres betwixte the Grecians and the Troyans", "Here begynneth the boke calledde Iohn bochas descriuinge the falle of princis princessis [and] other nobles", history of Rome during the time of Julius Caesar, and "Henry ye vii of Cadwaladers line right full kyng of Britayne called Englonde" reminding readers of the Welsh heritage of Henry VII.

**Topic 2: Holy Days. 0.45%**

A theological topic focusing on the origins and justifications of the holy days, particularly on the sabbath and on which day of the week it should be celebrated.

TW: day, sabbath, law, worship, time, observ, rest, keep, ceremoni, week, fast, feast

DW: sabbath, day, worship, command, ceremoni, passov, law, seventhday, feast, week, observ

The top documents very much focus on the sabbath but it is clear that discussions of holy days in general are an element. Much discussion about whether the sabbath falls on Saturday or Sunday. The fifth document is "A TRACT ON THE Sabbath-Day. Wherein the keeping of the First-day of the Week a Sabbath is justified, BY A Divine COMMAND AND A Double EXAMPLE CONTAINED In the Old and New TESTAMENT. With Answers to the Chiefest Objections, made by the Jewish seventh-day Sabbatharians and others", while the sixth says "Now that the First day of the week is appointed and ordained of God to be the Christians holy Sabbath-day." The seventh document is on "the celebration of the feast of EASTER."

**Topic 3: Art Catalogs. 0.48%**

Listings of works of art, often in connection with auctions.

TW: saint, hous, build, citi, see, paint, gold, hand, head, white, piec, pictur, palac, templ

DW: loreto, landscap, paint, gold, pictur, medal, marbl, beauti, statu, figur, fruitpiec, seapiec, portico, hous, architectur, italian, templ, adorn, velvet

The documents are lists of works of art rather than discussions about them. A typical top document has the title of "A COLLECTION OF PAINTINGS By the best Masters. Will be Sold by Auction on..." and then provides a list of the objects for sale.

**Topic 4: Commercial Aids. 0.59%**

Before modern electronics, there were printed tables containing the results of calculations for specific purposes. They were called ready reckoners. The ones that use this topic heavily are for commercial purposes.

TW: pound, money, merchant, shill, silver, penni, weight, coin, gold, exchang, valu, commod, sell, pay, price, trade, good, account, per, piec, livr, ounce, custom, bill

DW: pound, shill, penni, rotolo, money, merchant, export, ounce, commod, bullion, silver, coin, sterl, exchang, gold, weight, quintar, pay, ditto, valu, livr, gallon, cent, merchandis, ducat, trade, payabl, marselia, per, price

The top documents are almost all tables of useful information for small business, containing worked-out calculations.

For example the top document has: "An Vseful Table for all Victuallers and others dealing in Beer and Ale. Beer at 12 shillings 6d the Barrel. Beer at 14 shillings the Barrel. Beer at 15 shillings the Barrel." Another document describes the typical content: "The use of the Booke in briefe is this, it containes 24 Columnes, over each Columne a title from the first to the last, exceeding one another a halfe penny, directing the buyer what to pay, as well as the seller to take, for ten, twenty, or thirty thousand ells, yards pounds and c. of any commodity whatsoever, supposing him to pay (for one) after any of these rates in the titles proposed. Take especiall notice that the first downright row of figures in each Columne, is the number of ells, yards, or pounds, and c. to be bought: the second, third, fourth, and fifth, stand for pounds, shillings, pence, halfe penny: as L. S. D. and c. at the heads of each"



**Topic 5: Allaying Christian Doubt. 1.38%**

A topic aimed at giving hope to those who might feel they have sinned or are in doubt about their beliefs. The topic does not focus on practical help, nor on theology, but rather on the nature of sin, doubt, and the fact that these are not unusual or nor will lead to eternal damnation.

TW: god, christ, will, heart, soul, grace, love, spirit, sin, faith, comfort, way, believ, promis, spiritu

DW: christ, god, soul, heart, grace, sin, love, spirit, jesus, faith, comfort, spiritu, sinner, righteous, temptat, satan, believ, duti, lust, salvat, carnal, glori, coven, merci, communion

Many of the top documents suggest that there is a way back to true belief and acceptance from doubt and from sin. The tone does not place large burdens of the doubter but rather offers assurances. Thus one top document has "CHRIST Inviting SINNERS To come to Him for REST", where burdens of sin are discussed, and then suggests "Christ Greciously offers to them that come to him, REST from al those Burdens [and] That Christ requires nothing but to come to him [and] That in coming to Christ God would have us have respect to our selves." This allaying seems even on the borders of antinomianism with "The deliverance from the Law by Christ is, 1 Privatively, 2 Positively.....The Rest Believers have from the Burden of the Law by coming to Christ....How Christ gives Rest from the Burden of Legal performances." Another top document mentions "Four sinful Distempers incident to believing Souls when doubtful of the truth of their Evidences of their Vnion with Christ, which do incapacitate for a just Trial and true examination of the evidences of their Vnion, Quest. If souls under the Dominion of impatency, rashness, irrational affections, prejudicial conceits against the truth of their evidence of their Vnion with Christ, and under decays of holiness be unsutable for a right Tryal of their Evidences, then what sutable means remains for such souls in these sad conditions, under fears that their Eaidences are delusions?" Another offers "Helps to the ASSURANCE OF GOD'S LOVE: Whereby a true Believer may, with the help of Gods good Spirit, know that he had a Being in the Love of God before he had a Being in the World." A further is a "A TREATISE OF Rejoycing in the Lord Jesus in all Cases and Conditions. Wherein is manifested, 1. What the Lord Jesus Christ is to, and doth for Believing Souls; which may be a constant ground of their Joy and Rejoycing. 2. What are the grounds of that Darkness which is upon Believers about their Interest in Christ, hindering this Rejoycing. 3. What Believers should do in the interim, until they can have the evidence of their Interest clear. 4. How Souls may know their Interest in Jesus Christ." Another offers "HEARTS-EASE IN HEART-TROUBLE. OR, A Sovereign Remedy against all Trouble of Heart that Christ's Disciples are subject to, under all kinds of Afflictions in this Life." One treatise offers "THREE THINGS. Viz. 1. A Discovery of the unsupportable Burthen of Sinne, to a heart that is Saint like sensible of Sin. 2. The restlesse Resolution of a Soule to returne to God, who is Saint-like sensible of his withdrawings. 3. A Discovery of the sweet and unexpected Entertainment that wandring hearts meet with in their returns to God."

**Topic 6: Official Prayer. 1.57%**

Prayers issued by the authorities, to mark particular occasions, especially to give thanksgiving for particular events.

TW: lord, god, prayer, pray, bless, father, holi, prais, hear, jesus, thank, servant, help, amen

DW: lord, prayer, god, merci, pray, bless, jesus, unto, amen, forgiv, father, holi, prais, beseech, thank, gracious, thanksgiv, hear, servant, humbl, almighti, supplic

Most of the top documents have exactly the form indicated by the three quotes that follow: Fourth document: "A FORM OF PRAYER AND Thanksgiving To Almighty GOD, To be Used throughout the Cities of London and Westminster, and else where within the Weekly Bills of Mortality, on Sunday the Second Day of December next ensuing: And in all other Places throughout the Kingdom of England, Dominion of Wales, and Town of Berwick upon Tweed, on Sunday the Sixteenth Day of the same Month: For the Preservation of His Majesty from the Dangers to which His Royal Person was exposed during His late Expedition: And for His safe Return to His People: And for the Success of His Forces by Sea and Land." Second document: "PRAYERS FOR THE KING; To be used in all Churches, and Chapels immediately before the Prayer of S. Chrysostom, both in the Morning and Evening-Service. during the sicknesse of King Charles the 2d." Sixth document: "A FORM OF PRAYER To be Used on Wednesday the Fifth day of June next ensuing, within the Cities of London and Westminster, and Ten Miles distance of the same. And on Wednesday the Nineteenth of the same June through the rest of the whole Kingdom; Being the Fast-Day appointed by the King and Queen's Proclamation to Implore the Blessing of Almighty God upon Their Majesties Forces by Sea and Land, and Success in the WAR now Declared against the French King."

**Topic 7: Military Campaigns. 2.28%**

Accounts of military campaigns with little or no discussion of the political context in which they are pursued.

TW: hors, take, enemi, march, armi, forc, captain, colonel, command, general, soldier, garrison, regiment

DW: colonel, dragoon, enemi, hors, lieuten, ammunit, regiment, garrison, armi, captain, major, march, detach, soldier, troop

The top document is "An Exact and Particular ACCOUNT Of the Defeat given to the Rebels in the County of Cork, by the Lord Justice Cox, and Coll. Hastings, with 2000 of the Army and Militia? And of the Lord Lisburn's cutting off a Party of the French and Irish Horse, near Lanesborough Pass.". The fifth document is "A RELATION Of the Late BATTAIL Between The Two Great Armies Of The CONFEDERATES and the KING of France, at the River Pieton, between Charleroy and Nieuell, on Saturday the 11. August N. S. 1674."

**Topic 8: Obloquy & Encomium. 2.33%**

Public statements of praise and condemnation made in epitaphs, funeral elegies, speeches, etc.

TW: great, honour, blood, princ, king, high, god, happi, glori, heaven, life, nobl, crown, divin, glorious, death, sacr, enemi

DW: blood, honour, heaven, glori, pious, victori, princ, cruelti, happi, throne, peac, god, glorious, sacr, courag, pieti, design, bloodi, enemi, murder, triumph, ruin, fatal, justic, innoc, reveng

The lists of top words contain many adjectives that can be used to describe people in either positive or negative ways.

The top documents are often very public indictments, funeral orations, speeches and poems in praise.

Examples of the top documents are: "ARGYLES ARRAIGNMENT; OR, TREACHERY DISPLAYED. ... Arch-Argyle, Whose horrid Crimes still added to thy pains, Thou ne're wert free till he was bound in chains: What Ruine, Murder, Sacriledge and Rapes, Vpon the Lives, Souls, Honor, and Estates", "A PANEGYRICK To His Renowed MAjESTIE, Charles the Second, King of Great Britaine, and c.", "THE CONFINEMENT Of the SEVEN BISHOPS. [which begins] WHere is there Faith, or Justice to be found? Sure, the World Trembles, Nature's in a sound, To see her Pious Sons, Design'd to Fall, A Victim, for Religion, Truth and All. The Charms of Piety, are no Defence, Against the New found Power, that can Dispencc With Laws, to Murder Innocence", "Religious Villany, An ELEGY on the Execrable Murder of King CHARLES, I", "AN EPITAPH. WWithin this sacred VAULT doth lie The Quintessence of MAjESTIE", "To Our trusty and welbeloved, the Lord Major, Aldermen, and Sheriffes of Our City of London", "An Injur'd Prince Vindicated, OR, A Scurrilous and Detracting Pamphlet answer'd", and "Perkin's Passing-Bell, OR THE TRAYTORS FUNERAL: BEING A New POEM on the REBELLS Overthrow".

**Topic 9: Family Matters. 0.69%**

Law and norms concerning how members of families should interact with each other.

TW: child, wife, woman, father, husband, marriag, son, marri, parent, mother, daughter, brother, famili, sister

DW: child, wife, woman, husband, marriag, father, marri, parent, son, mother, daughter, famili, brother, adulteri, sister, chastiti, matrimoni, divorc, love, fornic, vow, widow, virgin, lust, youth

The top documents are usually about which marriages are legal, how parents and children should treat each other, etc.

The levitical rules figure highly; so this is not only about laws, of which some are discussed, but also cultural admonitions. The titles of the top documents speak to the content of the topic "AN ADMONITION TO ALL SUCH AS SHALL INTEND HERE AFTER TO ENTER THE STATE OF MATRIMONY, GODLILY AND AGREEABLY TO LAWES", "Christian Oeconomie: OR, A SHORT SVRVEY OF THE RIGHT MANNER OF erecting and ordering a Familie, according to the Scriptures", "A TREATISE OF Hereditary Descents, Shewing The Rise, Progress and Successive Alterations thereof. AND Also the Laws of Descent as they are now in use.", "A Scheme of the Rates and Duties Granted to His Majesty upon Marriages, Births and Burials, and upon Batchelors and Widowers, for the Term of Five Years, from May 1. 1695 ", "The Married-womans Case: OR Good Counsell to Mayds, to be carefull of hastie Marriage, by the example of other Married-women.", "INVICTA VERITAS. An answer, That by no maner of lawe it maye be lawfull for the moste noble Kinge of englande Kinge Henry the ayght to be diuorsed fro the quenes grace his lawful and very wyfe." "JVS PRIMOGENITI.

OR, THE Dignity, Right, and Priviledge OF THE FIRST-BORN. Inquisited and Defended against the Impious Practice of some Fathers, in Disinheriting their First-Begotten Sons".

**Topic 10: Mathematics. 0.17%**

Mathematical techniques and concepts.

TW: line, number, angl, equal, one, squar, side, proport, two, figur, divid, measur, point, multipli, trianl, circl, base

DW: parallelogram, trianl, quotient, angl, line, divisor, rectanl, icosahedron, perpendicular, diamet, segment, binomial, cube, dodecahedron, squar, octohedron, equilat, logarithm, diagon, semidiamet, residual, proport, equianl, number, medial, parallelipipedon, equal

The top document provides "The explanation of such GEOMETRICAL PROBLEMS As are most useful and necessary, either for the construction of the CANONS of TRIANGLES." and the second is "THE ELEMENTS OF GEOMETRIE of the most auncient Philosopher EVCLIDE of Megara." There is, of course, a concentration on geometry, given the times, but references to other parts of mathematics also appear. For example, the 21<sup>st</sup> document is on "The ART of NUMBRING BY SPEAKING-RODS: Vulgarly termed Nepeirs Bones. By which The most difficult Parts of ARITHMETICK, As Multiplication, Division, and Extracting of Roots both Square and Cube, Are performed with incredible Celerity and Exactness (without any charge to the Memory) by Addition and Substraction only", while the 22<sup>nd</sup> informs the reader on "a plain and easie Introduction to Arithmetick, Vulgar and Decimal, the Extraction of the Square and Cube Roots, with a Table of 200 Square Roots, and their Use in the Resolution of Square Equations [and] Six Questions performed by aid of the Canon of Logarithms."

**Topic 11: Authority Relationships. 1.23%**

How individuals in different statuses in society do and should interact with each other, including the issuing of commands by the person with a higher status.

TW: say, shall, unto, come, answer, accord, manner, command

DW: say, shall, unto, answer, come, accord, manner, command, declar, demand, wherefor

The top document and several others are indenture contracts. The second document is a legal case about the payment of workman by a Lord. The third document and several others are the monarch's decisions on suspending activities according to the plague. "Willing and commanding them and euery of them to whome it doth appertaine, to obserue and keepe their apparances and assemblies..." The fifth document is a decree of the French court about what English merchants have to do. "The King in his Councell hath made, and doth make voyde the appellation, and that whereof appeale is made, and in mending the Iudgement, hath ordained, and doth ordaine..." Another document tells of witches, mothers, daughters, lords, etc. in many different situations involving interactions of those in authority with those who are inferior. A legal case remarks that "The Officers having a Power to enter by Night, must be of the utmost ill Consequence to the Subject; exposing his said House and Ware-House to be plunder'd, and his Family put in the utmost Surprize." There is a discussion of the treatment of prisoners of war.

**Topic 12: Voyages. 0.83%**

Descriptions of voyages plus also information about how to make the yoyages, that is, using navigation charts, etc.

TW: ship, sea, land, island, sail, captain, indian, eagu, wind, river, water, shore, coast

DW: ship, indian, island, leagu, sail, captain, spaniard, aboard, sea, panama, coast, southeast, fathom, southwest, frigat, viceadmir, cape, land, wind, shore, portug, fleet, voyag, anchor

The top documents have titles such as "THE RELATION OF a Wonderful Voiage made by WILLIAM CORNELISON SCHOV TEN of Horne", "Reportary of all occurrents hapning in the fleet of ships sent out by the King his most excellent Maiestie, as well against the Pirates of Algiers, as others", "THE IOVRNALL, OR Dayly Register, CONTAYNING A TRVE manifestation, and Historicall declaration of the voyage, accomplished by eight shippes of Amsterdam, vnder the conduct of Iacob Corneltszen Neck Admirall, and Wybrandt van Warwick Vice-Admirall, which sayled from Amsterdam the first day of March, 1598", and "A DESCRIPTION and PLAT OF THE Sea-Coasts of England, from London, up all the River of Thames, all along the Coasts to Newcastle, and so to Edinburgh, all along Scotland, the Orchades, and Hitland, where the DVTCH begin their Fishing. AS ALSO: All those parts over against us, as Norway, Denmarke, the Sound, Holland, and Zealand. VVith the Depths and Showlds about these places, in what Depths men may see the Land. Of the Tides and Courses of the streams about these foresaid places, with the Courses and Distances, and how these Lands doe lye one from the other, and from other Lands."

**Topic 13: Astronomy & Astrology. 0.32%**

Astronomy and astrology treated separately, but more often together.

TW: moon, sun, star, sign, year, planet, mark, saturn, jupit, astrolog, mercuri, conjunct, ascend, eclips, aspect, venus, comet

DW: saturn, saggitarius, planet, moon, aquarius, sextil, scorpio, astrolog, capricorn, jupit, sun, pisc, taurus, gemini, libra, star, venus, comet, mercuri, virgo, trine, cancer, leo, sign, rain, midheaven, quartil, conjunct, eclips

The top documents all focus on one or both of the two subjects. For example, the top document is an "ALMANACK For the Year of our Saviour's Incarnation, 1696. And from the Creation, according to the best of History, 5645....Wherein is contained, Astronomical, Astrological and Meteorological Observations, Lunations, Eclipses, the Diurnal Motions of the Planets, remarkable Conjunctions, Tables of the Sun's Rising, Length of Day and Break of Day..." The ninth document is a "PRACTICAL ASTROLOGY. In Two PARTS. The First Part containeth an easie Introduction to the whole Art of Astrologie, shewing the Number and Nature of the Signes, Planets, and Aspects....The Second Part sheweth the Resolution of all manner of Horary Questions which concern the Life of Man, his Estate, Brethren, or short Journeys. If the Querent shall ever have Children. Of Sickneses, and how to finde the Nature and kinde of the Disease. Also concerning Marriages, Law-suits, Publick Enemies: Of things lost or stoln; with all other necessary Questions whatsoever."

**Topic 14: Constitutional Rules. 0.74%**

The caselaw and statutes concerning the rights and duties of the highest-level actors in the nation, as well as the structure of the institutions within which these actors function.

TW: king, parliament, law, statut, england, act, lord, edward, common, realm, henri, court, power, land, crown, right, writ, reign, baron, cap, charter, treason

DW: parliament, king, realm, statut, law, england, edward, charter, act, commonlaw, treason, bracton, charta, lord, henri, sheriff, jurisdicth, baron, grant, enact, court, legal, repeal, fol, chancellor, archbishop, magnacarta, illeg, westminst, common

The top documents are all ones that define the powers and rules of the many major institutions and actors of the country. Examples are: "Lex Parliamentorum: OR, AN ABSTRACT OF THE Antiquity and Jurisdiction of the High Court of PARLIAMENT, According to the Lawes and Constitutions of this Realme", "A BRIEF AND EXACT TREATISE DECLARING How the Sheriffs, and all other the great Officers of this KINGDOME have been Anciently elected and chosen. Also how farr the KINGS Prerogative, and the Priviledges of PARLIAMENT, did extend in their election", "THE History, and Reasons, OF THE Dependency of IRELAND UPON THE Imperial Crown OF THE Kingdom of ENGLAND", "Briefe Collections OUT OF Magna Charta: OR, The Knowne good old LAWES OF ENGLAND", "THE RIGHTS Of the People of England, Concerning IMPOSITIONS", "THE LIBERTIES USAGES, AND CUSTOMES OF THE CITY OF LONDON; CONFIRMED", "Whether the Bishops make a Fundamental, and Essential part of the English PARLIAMENT", "Learning touching CUSTOMS, Tonnage, Poundage, And Impositions on MERCHANDIZES ASSERTED; As well from the Rules of the Common and Civil Law, As of Generall Reason and Policy OF STATE", "A SHORT HISTORICAL ACCOUNT TOUCHING THE Succession of the Crown", and "A DEBATE UPON THE QUAERIE, WHETHER A King Elected and Declared by the Lords Spiritual and Temporal, and Commons Assembled at Westminster 22 of January 1688. coming to and Consulting with the said Lords and Commons; doth not make as compleat a Parliament, and Legislative power, and authority; to all intents and purposes, as if the said King should cause new Summons to be given and new Elections to be made by Writs".

**Topic 15: Equine Learning. 0.17%**

Techniques for riding and caring for horses.

TW: hors, cure, hand, leg, foot

DW: hors, cavezon, glander, turpentin, pastern, hogsgreas, farrier, farcin, leg, corvet, foreleg, hoof, hinderlegg

Top documents are about, and often instructional guides to, the use and keeping of horses, riding, breeding, keeping them healthy, shoeing, etc. The top document is the "THE PERFECT HORSEMAN OR THE Experienced SECRETS OF Mr. MARKHAM'S Fifty Years Practice. Shewing how a man may come to be a General Horseman, By the knowledge of these Seven Offices; VIZ. The BREEDER, FEEDER, AMBLER, RIDER, KEEPER, BUYER, FARRIER."; the second is "THE COMPLETE FARRIAR, OR THE KINGS HIGH-WAY TO HORSMANSHIP" and the third is "THE Gentleman's Compleat Jockey. WITH THE Perfect Horseman, AND Experienc'd Farrier."

**Topic 16: Ecclesiastical History. 0.23%**

The wide span of the history of those elements of the Christian church that can be said to have led to the current English ecclesiastical arrangements, and debate over those arrangements from a historical perspective.

TW: bishop, saint, church, council, emperor, christian, letter, eusebius, father, rome, ancient, greek, constantinopl

DW: bishop, eusebius, baronius, chrysostom, vigilius, council, athanasius, emperor, antioch, arian, cyril, synod, church, irenaeus, alexandria, epiphanius, theodoret, saint, tertullian, constantinopl, constantin, photius, binus, patriarch, nicen, greek

The most used words for the topic show the general subject area, while the words that are particular to this topic show that the topic concerns the broad range of history of the church, rather than focusing just on the English church of the time. It is about the English church as a descendant of the earliest Christian churches. The titles of the top documents show how contemporaneous issues and historical ones both belong in this topic: "THE UNREASONABLENESS OF A SEPARATION From the New Bishops: OR, A TREATISE OUT OF Ecclesiastical History", "A New Ecclesiastical History. Containing an Account of the Authors of the severall Books of the Old and New Testament", "THE IUDGEMENT OF Doctor RAINOLDES touching the Originall of EPISCOPACY", "THE HISTORY OF THE CHURCH, From Our LORD's Incarnation, to the Twelfth Year of the Emperour MAURICIUS TIBERIUS, or the Year of CHRIST 594", "THE HISTORY OF Athanasius, WITH The RISE, GROWTH, and DOWN-FALL OF THE ARIAN HERESIE", "A DISSERTATION CONCERNING Patriarchal and Metropolitan AUTHORITY In Answer to what Edw. Stillingfleet DEAN of St. PAVLS Hath written in his BOOK OF THE BRITISH ANTIQUITIES".

**Topic 17: Natural Philosophy. 0.36%**

An alternative topic name might simply be Science, as all manner of scientific enquiries are included, but the wording of the top documents indicate that this topic uses the language of very early science.

TW: bodi, natur, thing, part, caus, soul, motion, reason, heat, spirit, matter, air, sens, form, move, light, fire, earth, water  
DW: natur, bodi, soul, heat, motion, thing, sensit, spirit, aristotl, generat, moistur, sens, air, element, anim, matter, caus, brain, humour, cold, seed, moist, creatur, faculti, vapour, qualiti, philosoph, action, humid

This topic is rather similar to the Physics topic, but the top documents cover a much wider range of science, perhaps reflective of times when physics, botany, zoology, anatomy, and chemistry were less separated. Thus, the name natural philosophy is appropriate. Among the top documents are: "GALENS BOOKES of Elementes", "THIRTEEN BOOKS OF NATURAL PHILOSOPHY: VIZ. I. Of the Principles, and common Adjuncts of all Natural Bodies. II. Of the Heavens, the World, and Elements. III. Of Action, Passion, Generation, and Corruption. IV. Of Meteors. V. Of Minerals and Metals. VI. Of the Soul in general, and of things Vegetable. VII. Of Animals or living Creatures.", and "NATURE'S CABINET UNLOCK'D. Wherein is Discovered The natural Causes of Metals, Stones, Precious Earths, Juyces, Humors, and Spirits, The nature of PLANTS in general; their Affections, Parts, and Kinds in Particular. Together with A Description of the Individual Parts and Species of all Animate Bodies, Similar and Dissimilar, Median and Organical, Perfect and Imperfect. With a compendious Anatomy of the Body of Man, As also the Manner of his Formation in the Womb."

**Topic 18: Defending Monarchs. 0.84%**

Statements supporting the monarch's position, sometimes by monarchs themselves, when facing rebellious situations.

TW: great, time, matter, caus, countri, common, princ, counsel

DW: bene, realm, matter, albeit, counsel, howbeit, deed, princ, devis, countri, peopl, enemi, caus

The top words do not give strong clues on what the topic is about. The top documents are all about the justification of the actions of monarchs against some type of opposition. Note that these are not defenses of monarchy in general but rather defenses of particular monarchs. They are often self-defenses. The top documents are often about defending the stance of monarchs in particular rebellious situations. The highest ranked document provides a strong example: "Here the Quenes most excellent Maiestie hath lately concluded a mariage to the honour of almightie God, and the weale and benefire of her graces realmes and subiectes, with the moste hyghe and mightye Prince, the Prince of Spayne: Her highnes consideryng the lightnes and euill disposition of diuerse lewde and sediciouse personnes, who sekyng alwayes nouelties, and beinge seldome contented with their presente state, might per aduventure at this time by their naughtie and disordred behauiour attempt to stirre discorde, and gyue occasion to breake the good and frendly agreement, that ought to be nourished and continued betwene the subiectes of thys realme." Statements and titles from other documents in support of this interpretation are: "A proclamacion set furth by the Kinges Maiestie with the aouise of his highnes most honorable priuy Counsaill, concernyng casters, and spreaders abrode of slaundetous and sedicious billes", "A Proclamation, set furth by the kynges Maiestie, with thassent of his detest vncler, Edward Duke of Somerset, Gouvernor of his moste royall persone, and of his realmes, dominions and subiectes Protector, and others of his moste honorable Counsaill, touchyng tale talers and sedicious runnagates", "A declaration and publication of the most worthy Prince of Orange, contaynyng the cause of his necessary defence against the Duke of Alba", "By the Queene. leaf A Proclamation agaynst maynteyners of seditious persons, and of trayterous bookes and writings. THE Queenes Maiestie consydering with her selfe, howe it hath pleased almightie God at this present to conserue her Realme in an vniuersall good peace", "AN ANSVVER And true discourse to a certain Letter lately sent by the Duke of Alba (in maner of a pardon) to those of Amsterdam, to be by them conueyed and distributed vnto the other Townes in Hollande. Set forth by certayn true louers of their natiue Country, namely desirous to liue vnder the due obeysance of the King of Spayne, according to the old customes and priuileges of their said Countrie", "An aduertisement and defence for Truth against her Backbiters, and specially against the whispring Fauourers, and Colourers of Campions, and the rest of his confederats treasons. 1581. God saue the Queene", and "It is not also vnknowne yt the said Scottish Queene hath ben the moste dangerous ennemy against the Queenes Maiestie our Soueraigne Lady, that liued, in that shee sought to haue the Crowne of England from her Maiestie, immediatlye after Queene Maryes death".

**Topic 19: Early Literature, Spiritual. 0.45%**

The topic captures two elements, an emphasis on spiritual matters and a use of language characteristic of the very earliest documents in the corpus.

TW: shall, man, say, may, good, god, great, nat, love, right, manner, gyve, soon, full, mani, wise, deed

DW: gyve, chapitr, hert, thelk, lete, god, richness, chapytr, royam, man, creseyd, conmaund, shall, coumseyl, relygyous, rightwis, tyndal, northumberlond

The grouping by the topic model seems to be for two reasons, first because there are many references to religious topics and second because much of the orthography is somewhat unusual in this corpus, speaking of early 16<sup>th</sup> century or even earlier origins. The topic does not appear to capture subjects that are specifically religious in their chief goals, but are rather religious in the sense that religious topics were a focal point of much of life when the documents were written.

Examples of documents are "The prouffitable boke for mannes soule And right comfortable to the body and specyally in aduersitee and trybulacyon whiche boke is called The Chastysing of goddes Chyldern", "The Dialoges of Creatures Moralyed. Applyably and edificatyfly to euery mery and iocounde mater of late translated out of latyn into our Englysshe tonge right profitable to the gouernaunce of man", "Here begynneth a matere spekyng of a place that is namid the abbaye of the holy ghost yt shall be fouded or groumded in a clene conscyence in whiche abbaye shall dwelle ladyes ghostly", "The Ploumans tale", "The Boke of comfort called in laten Boetius de Consolatione philosophie", "Here begynneth the lyf of saint katherin of senis the blessid virgin", and "Here be Certayne Questyons of Kyng Bocthus of the maners tokyns and condycions of man with the answeres made to the same by the Phylosopher Sydrac."

**Topic 20: Monarchs' Lives. 0.84%**

Straightforward retellings of the lives of a variety of monarchs, principally, but not only, English ones.

DW: king, queen, england, franc, scotland, henri, edward, york, lancast, crown, spain, parliament, elizabeth

TW: king, queen, england, franc, henri, english, crown, edward, death, scotland, die, richard

All the top documents are histories with most of them focusing on monarchs. The top document is "THE HISTORIE, AND LIVES, OF THE KINGS of England; From WILLIAM the CONQVEROR, vnto the end of the Raigne of King HENRIE the EIGHT." The second one is "An Exact EPITOME OF THE HISTORY OF ENGLAND, From WILLIAM the Conquerour to the Twelfth Year of the Reign of his Sacred Majesty CHARLS the Second, now flourishing." The sixth document is "A Brief ACCOUNT OF THE Royal Matches OR Matrimonial Alliances, VVhich the Kings of England have made from time to time since the year 800. to this present 1662." The eighth is "THE CRY OF Royal Innocent Blood, Heard and Answered: Being a True and Impartial Account of Gods extraordinary and Signal Judgments upon REGICIDES. With an Historical Relation of the Deposing, Murthering, and Assasinating of several Kings of England, Scotland, France, and c. for near 600 years last past."

**Topic 21: Ordinances. 2.72%**

The topic captures the style in which ordinances are written, using a language of authority even if it is not being used by an authority itself.

TW: shall, person, act, offic, citi, aforesaid, pay, commission, order, appoint, court, counti, accord, money, charg, herebi

DW: commission, shall, aforesaid, person, pay, enact, offic, counti, act, assess, deputi, excis, citi, committe, admiralti, court, herebi, ordin, pound, alderman, exchequ, appoint, payment, empow, collector, sheriff

The lists of top words all speak of official actions, involving orders and government officials. Many of the top documents, but not all, are government ordinances. For example, the top document is "ALL ORDINANCES AND ORDERS, For the better observation of the LORDS-DAY, and the FAST"; another is "An ordinance, made by the Lords and Commons in Parliament assembled, for the better and more speedy execution, of the late ordinance of the 29. of November, 1642". Examples of top documents that are not ordinances are "AN ACT For taking of the ACCOMPTS Belonging to the Navy and Customs", "The Reports and Reasons of the Trinity-House, and c. ACCording to Your Majesties Order in Council, bearing date August the 5th. We have considered of the Allegations of Sir Charles Adderly Knight, and John Crook Esquire, concerning the erecting of a Ballast-shoar at Jarrowes-Slake near South-Sheild in the county o Duresme; And do Humbly make our Report that we are of opinion, That a Ballast-Wharf at South-Sheilds will be of great use and benefit to all ships Trading in the River Tine or coals, for these Reasons", "By the Lords Justices, A PROCLAMATION Declaring the PARLIAMENT shall be Prorogued until the Twenty eighth Day of July next". But note that the top documents do not only come from the highest levels of government: "And forasmuch as the said Lord Maior and Citizens have by their Laws and Customs, Power and Authority to make Laws and Ordinances by their Common Council for Redress of the same"; nor even from government itself: "ORDERS, RULES AND ORDINANCES, Ordained, Devised and Made by the Master and Keepers or Wardens and Comminalty of the Mystery or Art of STATIONERS OF The City of LONDON, for the well Governing of that Society." And indeed one top document is not even from any type of official authority: "Patric-h's PROPHECY: OR A Prognostication of the Year 1690. WHEREIN The most considerable Mutations and Events like to befall the Kingdoms of Great Britain, France, and Ireland, and of the States of the Netherlands, and c. are foreshewed. ALSO An Account of the Proceedings of all the Twelve Months; and of the Happy Affairs of the King of Great Britain, and the States of Halland, and the great Damages likely to befall France and Ireland. By J. P. Prefessor of Astrology."

**Topic 22: Botany. 0.05%**

Study of plants from a scientific perspective.

TW: flower, leav, grow, root, seed, stalk, herb, plant, green, tree, branch

DW: dioscorid, bauhinus, lobel, clusius, flower, footestalk, tabermontanus, stalk, matthiolus, latifolia, purplish, seed, footstalk, thlaspi, clusij, cretica, whitish, dioscoridi, root, herb, angustifolia, threddi, hawkweed, cistus, daffodil, bulbous, matthioli, grow, ranunculus, anemon

The top documents are about plants in some way, sometimes scientific, sometimes medicinal, sometimes horticultural. The real choice about topic name is between horticulture and botany, where the former would indicate something more practical and the latter something more scientific. The latter is chosen because there is much discussion in the top documents about studying plants. Example titles are "THE HERBALL OR GENERALL Historie of Plantes", "Cochlearia CURIOSA: OR THE Curiosities of Scurvygrass. Being an exact Scrutiny and careful Description of the Nature and Medicinal Uertue of Scurvygrass", and " THE ANATOMY OF PLANTS. WITH AN IDEA OF A Philosophical History of Plants. And several other LECTURES, Read before the ROYAL SOCIETY. By NEHEMJAH GREW M.D. Fellow of the ROYAL SOCIETY, and of the COLLEGE of PHYSICIANS."



**Topic 23: Military Training. 0.53%**

This is the training pertinent to the acquisition of skills needed for lower-level troops, not of their leaders in strategy.  
TW: soldier, enemi, place, armi, leav, arm, battl, command, right, fight, captain, march, war, hand, order, rank, foot, hors, charg, camp, stand

DW: flank, soldier, enemi, musket, battalion, armi, battl, captain, camp, fight, pike, squadron, march, countermarch, horseman, command, war, file, rank, arm, phalang, filelead, cavalri, harquebusi, front, troop, colonel, hors

The top words are evocative of the assigned topic name and the top documents are thoroughly consistent with what appears in the lists of words. It should be noted that the topic is on the acquisition of practical, physical skills to be applied in war, and there is little about strategy. For example, the top document is "THE FRENCH Way of Exercizing THE INFANTRY: As it is now practis'd in the ARMIES OF HIS MOST Christian Majesty." The second document is entitled "Commands for the Exercise of Foot, Arm'd with Firelock-Muskets and Pikes" and goes on with "Commands for the Exercise of the Muskets. JOyn your Right Hands to your Muskets. Poise your Muskets. Joyn your Left hands to your Muskets. Cock your Muskets. Present. Fire. Recover your Muskets. Half bend your Cocks. Blow your Pans. Handle your Primers. Prime. Shut your Pans. Blow off your loose Corns. Cast about to Charge. Handle your Chargers. Open them with your Teeth. Charge with Powder. Charge with Ball...."

**Topic 24: Parliamentary & Court Procedure. 1.05%**

Procedural rules in the courts and parliament.

TW: lord, hous, court, lordship, bill, order, read, parliament, common, answer, petit, proceed, committe, matter, return, earl, council, caus, hear

DW: committe, parliament, lordship, court, lord, bill, petition, hous, petit, strafford, earl, speaker, order, chancellor, read, starchamb, clerk, attorney, answer, sergeant, chanceri, articl, council, commiss, sheriff, exchequ, commission, vote, danbi

The two lists of words have elements that refer to procedures pertinent to parliaments and courts. The words (and also the top documents) do not indicate any concentration on the substantive elements that come to the attention of the courts and parliaments. The focus on procedure, evident in the subject matter of the topic, is indicated by the titles of the top documents: "MEMORIALS OF THE Method and Maner OF Proceedings in Parliament in passing BILLS. Together with several Rules and Customs, which by long and constant practice have obtained the Name of Orders of the House", "THat on the fifth day of January next, this House will take into Consideration the Cases of all absent Members, and also how to supply the vacant Places, in order to the filling up of the House; and that in the mean time, it be referred to a Committee to consider of all Proceedings, and all Orders, and Cases touching absent Members, and make their Report at the same time", "THE MANNER HOW STATVTES Are enacted in PARLIAMENT BY Passing of Bills", "A Commandement that no suiters come to the Court for any priuate suite except their petitions be indorsed by the Master of Requests. 1594", "ORDERS OF THE HIGH COURT OF CHANCERY, FROM THE First Year of King Charles I. To this present Hillary Term, 1697. EXAMINED By the ORIGINAL ORDERS. To which is added the RULES and ORDERS Of the COURT of EXCHEQUER", "THE Grand-Jury-Man's OATH and OFFICE EXPLAINED: AND THE Rights of English-Men ASSERTED", "Ordinances made By The Right Honourable Sir Francis Bacon Knight, Lord Verulam, and Vicount of Saint Albans, being then Lord Chancellor. For the better and more regular Administration of Iustice in the Chancery, to be daily observed saving the Prerogative of this COVRT."

**Topic 25: Emotional Relationships. 2.32%**

Expressions of emotions about the relationships between small numbers of people, usually two.

TW: love, eye, heart, fair, sweet, beauti, die, must, joy, soul, heaven, life

DW: love, beauti, nymph, sweet, philli, joy, cupid, heart, sigh, eye, heaven, song, fate, soul, can, fair, charm, smile, lover, grief, delight, weep, bliss, swain, sorrow

Of the very top documents, many are poems and a majority are about lovers. Of the other top documents, one is about relationships with Christ, another is an elegy expressing emotions about a person who has just died, another is about the amorous exploits of Buckingham. There is a document about relationships with Satan, and a satirical love poem to Louis XIV. Some titles of top documents are "Innocent Love in Triumph: OR, The Joys of Wedlock made Manifest. Being a most pleasant Delightful New Play Song.", "The Lover's Tragedy: OR, PARENTS Cruelty", "The YOUNG-MANS Conquest Over the POWERS of DARKNESS. In a DIALOGUE, Between a Virtuous Young-Man, and the Subtile Insinuating Tempter Discovering the Baits of SATAN, and the Strength of TEMPTATION: With the Christians Fortitude, and only means of Overcoming, which is by Faith in Christ, and unwearied Perseverance", and "Love's Posie: OR, A COLLECTION OF Seven and Twenty LOVE-LETTERS, BOTH IN VERSE and PROSE; That lately pass'd betwixt a GENTLEMAN and a very Young LADY in FRANCE".

**Topic 26: Continental International Relations. 0.56%**

Relationships among the major powers of Europe, excluding England.

TW: king, princ, duke, french, town, state, war, holland, countri, franc, provinc, spain, treati, count, general, spaniard, forc, ambassador, elector, peac, dutch, citi, armi

DW: duke, holland, elector, sweden, french, swede, princ, imperialist, spaniard, treati, swedish, netherland, orang, spinola, brandenburg, archduk, provinc, town, lacedemonyan, spain, ambassador, king, nassau, bavaria, palatin, gustavus, poland, franc, dutch, hagu

Of the top 40 documents, 31 are specifically about continental European wars, peace, diplomatic interactions, etc.

Examples are: "His Holyness The Pope of Rome's DECLARATION AGAINST The French King. LOUIS the 14th.", "ARTICLES OF PEACE Between the EMPEROUR and EMPIRE, AND FRANCE, Concluded in the Royal Palace of RESWICK in Holland, October 30. 1697", "A Brief Account of CHARLEROY, Besieged by the FRENCH ARMY Under the Command of the Duke of Luxemburgh", "AN EXACT RELATION Of all the TRANSACTIONS AND PROCEEDINGS, BETWEEN The KING of DENMARK, AND The KING of SWEDEN, AND Their MINISTERS", "Good NEWS for England, OR THE Heads of a PEACE PROPOS'D by the FRENCH KING. THE Kings of Sweden and Denmark have lately had a Project of Peace presented them by the French Envoys at their Courts", and "ARTICLES PUBLISHED AT BERLIN, BETWEEN HIS Most Christian Majesty, THE King of Sweden, And His ELECTORAL HIGHNESSE of Brandenburgh"

**Topic 27: Scholarly Learning Guides. 0.6%**

Guides to the skills and knowledge needed to carry out activities that are more scholarly than practical in nature. There is no particular substantive area that unites the elements of this topic.

TW: first, second, three, word, two, one, part, place, note, rule, chapter, everi, answer, vers, exampl, follow

DW: second, word, first, three, chapter, vers, fourth, verb, signifi, two, note, rule, proposit, exampl, four, syllog, signif, vowel, videlicet, answer, substant, name, five

Introductions to many different skills of a more scholarly type: music, campanology, accidence, Latin and English grammar, singing, musical instruments, English pronunciation, logic, stenography. For example, one document is "A Posing-Book FOR SCHOLARS IN Short Questions and Answers. Containing A mixture of several things not commonly known among the meaner sort; and yet of great usefulness for all to understand that are willing to be Scholars. Being Only a rude Essay, by a Lover of Learning", another is "A CATALOGUE OF THE Philosophical BOOKS and TRACTS, Written by the Honourable ROBERT BOYLE", and another is "THE ARTE of Reason, rightly termed, Witcraft, teaching a perfect way to argue and dispute".

**Topic 28: Practical Geometry. 0.23%**

Geometrical principles used for practical purposes such as telling time, navigation, producing surveys, etc.

TW: degre, sun, point, line, find, place, hour, meridian, latitud, circl, pole, distanc, declin, north, star, horizon, south

DW: azimuth, deg, meridian, hourlin, latitud, horizont, equat, horizon, tangent, equinocti, longitud, cotang, eclipt, radius, rumb, hourcircl, quadrant, parallel, altitud, sun, semidiamet, circl, degr, centr, intersect, pole, degre, hipotenus, minut

As the top words indicate, this topic is a mixture of geometry, measurement and navigation. It is a topic that involves geometry, but geometry is not the central concern. Rather, the focus are the practical things that can be produced by using geometry. Top documents are about: "DIALLING Performed Instrumentally by our HEMISPHERE in PLANE", "THE ARTIFICERS PLAIN SCALE: OR, The Carpenters new Rule. In two Parts. The first, shewing how to measure all Superficies and Solids, as Timber, Stone, Board, Glasse, and c. Geometrically, without the help of Arithmetick: it being a new way not heretofore practised. The second shewing how to measure Board and Timber Instrumentally, upon the Scale it selfe, without Arithmetick or Geometry, but what is common to every man. ALSO, How to take Heights and Distances severall wayes, and to draw the Plot of a Town or City", "THE Longitude not found: OR, AN ANSWER TO A TREATISE, Written By Henry Bond Senior, shewing a way to find the LONGITUDE BY THE Magnetical Inclinary NEEDLE. WHEREIN Is proved, That the LONGITUDE is not, nor cannot be found by the Magnetical Inclinary NEEDLE", and "NINE GEOMETRICALL EXERCISES, FOR Young Sea-men, And others that are studious in MATHEMATICALL PRACTICES: Containing IX particular TREATISES, whose Contents follow in the next Pages. All which EXERCISES are Geometrically performed, by a Line of Chords and equal Parts, by waies not usually known or practised. Unto which the Analogies or Proportions are added, whereby they may be applied to the Chiliads of Logarithms, and Canons of Artificiall Sines and Tangents."

**Topic 29: High Crimes. 1.21%**

References to criminal acts that involve the highest-ranked people in the country.

TW: lord, wit, gentleman, king, evid, swear, inform, prison, juri, guilti, trial, examin, ask

DW: depon, cellier, dugdal, bedlo, fitzharri, goodenough, lord, braddon, juri, shaftsburi, indict, treason, serj, bedlow, bolron, langhorn, darrel, dangerfield, oat, gentleman, swear, bomeni, coleman, prison, edmundburi, powi, fenwick

Many of the names in the distinctive words are those of people involved, sometimes criminally, at the highest levels of politics, law, and government. The top documents chiefly cover crimes in high places, and are very often about trials or closely connected phenomena (e.g. indictments). The following are typical top documents: "An Exact Account of the PROCEEDINGS AT THE OLD-BAYLY this luly the 13, 1683 with a true survey of the TRYAL OF THE Lord Russel William Hone Ioyner John Rouse Capt. William Blage Who were Indicted for High Treason in Conspiring the, Kings death, and raising Arms to Subvert the Government and alter the Religeion, and conpsreing the death of his Royall Brother James Duke of Yorke", "THE TRYALL OF Richard Langhorn Esq; COUNSELLOR at LAW: FOR Conspiring the Death OF THE KING, Subversion of the Government, AND Protestant Religion Who upon Full Evidence was found Guilty of HIGH TREASON, And received Sentence accordingly, at the Sessions in the Old-Bayley, holden for London and Middlesex, on Saturday, being the 14th. of June 1679", "THE TRYAL OF ROGER EARL OF CASTLEMAINE FOR High Treason, In Conspiring the Death of the KING, The Subversion of the Government, and Introducing of Popery and Arbitrary Power", "The TRIALL OF Mr. John Gerhard, Mr. Peter Vowell, and Sommerset Fox, by the HIGH COURT of JUSTICE sitting in Westminster Hall on Friday 30 June, 1654. With their Charge, AND A DECLARATION of the particulars of the whole PLOT to have murdered His Highnesse the Lord Protector, and those of the Councill, Seized on the Guards, the Lord Mayor, and others, and proclaimed Charles Steuart King. With the names of each person chief in the Designe, and what each of them did act, and were to do therein", and "THE Arraignment, Tryal, and Condemnation OF Peter Cooke, Gent.FOR HIGH-TREASON, IN Endeavouring to procure FORCES from France to Invade this Kingdom, and Conspiring to Levy WAR in this Realm for Assisting and Abetting the said Invasion, in order to the Deposing of His Sacred Majesty, King WILLIAM, and Restoring the Late King. Who upon full Evidence was found Guilty at the Sessions-House in the Old-Baily, on Wednesday the 13th of May, 1696." But there are documents that do not involve trials. For example, one top ranked document is a ballad about all the injustices committed by the Rump parliament: "From a Rump insatiate as the Sea, Libera nos Domine. Here's the true reason of the Cities Infatuation: Ireton ha's made it Drunk with the Cup of Abomination: That is, the Cup of the Whore, after the Geneva Interpretation: Which, with the Juyce of Titchburn's Grapes, must needs cause Intoxication." There are also indications that the topic need not be about politics but about unlawful acts in the highest places: "The TRYAL between Henry Duke of Norfolk, Plaintiff, and John Jermaine, Defendant, in an Action of Trespass on the Case, at the Court of King's-Bench at Westminster, Novemb. 24. 1692. THE Declaration was in Trinity-Term, the Fourth of William and Mary, King and Queen. To which the Defendant pleaded, Not Guilty....May it please your Lordship, and you Gentlemen of the Jury, this is an Action brought by Henry, Duke of Norfolk, against one John Jermaine: The Plaintiff sets forth, That the First of April, in the Second Year of the Reign of the late King James, the Defendant did, by unlawful Ways and Means, Intice away his Dutchess, by which means he had not the benefit of her Society; and, by lascivious Conversation, committed Adultery with her, and caused her to commit Adultry: And this he layeth to his Dammage 100000 l."

**Topic 30: Establishing Correct Doctrine. 0.8%**

Stating the doctrine that the author considers as capturing religious truth, without much theological or historical justification. There is no emphasis on attacking or refuting other doctrines.

TW: god, christ, man, word, faith, holi, paul, law, sin, true, good, gospel, teach

DW: god, christ, faith, gospel, jesus, apostl, doctrin, sin, holi, scriptur, paul, word, righteous, preach, teach, conmaund, salvat, prophet, law, mam, pharisei

Notice that the topic 64 is Attacking False Doctrine, which is the complement of this topic. While the topic 64 is negative and has much venom, the topic 30 is mostly about ideas on what is wrong with what others do.

The top words, more than any other topic, contain items that have the tone of right/wrong. The top documents are not about debate, but are more about a statement of truth, as in the top-ranked document: "Thou must kepe therfore an order in thy iustification first consideringe what the lawe requireth on the which truly bindeth ye now". The third document introduces itself "To the reader. Some ther be that do defye; All that is newe, and euer do crye ; The olde is better, awaye with ye new ; Because it is false, and the olde is true: Let them this boke reade and beholde." Another document suggests "how Christem rulers ought to governe". Another states the author's aim: "Werefere I have takem in hande to exponnde this gospel and certaine other places of the newe testamemte and (as fer forth as god shall lemde me grace) to bringe the scripture vnto the right sence" and another offers "Wherin the holy scriptures...are restored to their owne true vnderstanding agayne." Another document introduces its object as "yt shalbe meete first to se what we call to be iustified by chryst or to be iuste through christ." One document offers to the reader "The summe of christianitie gatheryd out almoste of al placis of scripture", while a further document offers "A Verie plaine and well grownded treatise Concerninge BAPTISME. Wherein yt is verie clearlie shovven, and out of good growndes demonstrated that Baptisme was instituted and ordayned by the Lorde Christ for those that beleeve and repente, and was so taught and vsed by his Apostells and observed and followed by the Primative Churche."

**Topic 31: Student & Practitioner Law. 0.35%**

Intermediate-level law, not intended for clerks or lawyers handling the simplest cases. Rather, intended for more complicated uses of the law, but still not intended for those developing the law or at the highest levels.

TW: case, land, plaintiff, action, defend, court, writ, statut, tenant, judgement, law, seiz, heir, plead, estat

DW: plaintiff, lesse, lessor, feoff, case, disseize, feme, tenant, statut, attorn, grante, sheriff, conuse, copyhold, leas, action, obligor, formedon, devise, executor, court, avowri, replevin, conusor, manor, debt, land, facia, plea, browln

The lists of top words show the substance of the top documents well. The top documents are fairly technical but also obviously not aimed at the highest levels or aiming to produce any new theories of law: they are meant for law students or law practioners who are not likely to be in the high courts ("THE COMMON LAW EPITOMIZ'D: WITH Directions how to Prosecute and Defend Personal Actions. Very useful for all Lawyers, Justices of Peace, and Gentlemen"). Where there are volumes of cases they are usually abridgements ("AN ABRIDGEMENT OF The Lord COKE'S COMMENTARY on LITTLETON"). Examples of top documents are "THE TOUCHSTONE OF Precedents, Relating to JUDICIAL PROCEEDINGS AT Common Law", "A Supplement By way of ADDITIONS to and AMPLIFICATIONS of the foregoing TREATISE, CONCERNING COPY-HOLD and CUSTOMARY ESTATES", "MAXIMS AND RULES OF PLEADING; IN Actions Real, Personal and Mixt, Popular and Penal", and "A SURVEY OF THE LAW. CONTAINING DIRECTIONS how to Prosecute and Defend Personal Actions, usually brought at COMMON LAW". The content of top documents is typified by the following: "THE PREFACE TO THE READER. UPon the first View of the Title of this Treatise, I doubt not but many Persons will slight it, being upon a Topick well known and understood (as they imagine) by even every Pretender to the Law: There's not the least Sollicitor or Attorney in any Nook of Cornwall, or Corner of Cumberland, but thinks he is privy to the whole Learning of Ejectments. And yet if they would take the Pains to peruse the ensuing Sheets, they doubtless may be of another Opinion, and will find very useful and proper Matter relating to an Action which concerns the greatest Titles in the Kingdom."

**Topic 32: Cookery. 0.29%**

The topic is exactly as its name suggests.

TW: take, put, make, boil, water, littl, let, lie, togeth, white, half, sugar, egg, beat, pound, butter, wine, salt, fire, fine, hand

DW: nutmeg, yolk, boil, sugar, slice, pint, barberri, whitewin, butter, pound, beefsuet, put, ounce, rosewat, water, ginger, pepper, take, gravi, vnice, cinnamon, gooseberri, lemon, egg, quinc, spoon, bake, vinegar, pipkin, sippet

A typical title of a top document is "A BOOK OF COOKRYE. The English And FRENCH COOK, The good Huswiues handmaid, for Cookerie in her Kitchin, The Compleat ENGLISH and FRENCH COOK".

**Topic 33: Salvation via Virtue. 1.63%**

A different alternative topic title might be Justification by Works, that is, the modes of behavior and living—not necessarily religious—that will make the reader prepared when the reader comes before god.

TW: christian, good, duti, natur, person, mind, reason, self, concern, think, practic

DW: religion, christian, duti, apostl, principl, improv, righteous, temptat, sincer, practic

Many top documents are sermons, often delivered to high dignitaries. The focus is not on showing the erroneous teachings of other religions but rather on pointing out behavior that is not consistent with leading a good Christian life. The top document mentions that "The credit of any Institution of Religion, depends upon the happy Effects that it has upon the temper and lives of its Disciples." The second document focuses on matters "pressed upon the Clergy...that in their own lives, and the government of their own families, they would make themselves examples of a sober and regular conversation" and to persuade others to set "a pattern of regular living". The title of the fourth document is "Christianity best propagated by the good lives of Christians" and mentions "A good life is a reproof at large, and...the true way of Honouring God." The fifteenth states "Some indeed would make Religion to be a very short and easy business, and to consist onely in believing what Christ hath done for us...Which is so far from being the true Notion of Christian Faith...For the Bible plainly teacheth us, that unless our Faith work by Charity, and purify our hearts and reform our lives; unless like Abraham's Faith it be perfected by works, it is but a dead Faith, and will in no wise avail to our Justification and Salvation."

**Topic 34: Zoology. 0.41%**

Creatures of the world often from a scientific perspective.

TW: man, beast, water, head, dog, kind, bird, serpent, foot, eye, lion, fish

DW: beast, plini, serpent, dog, water, bird, wolf, fox, lion, tooth, hair, fab, fish, skin, worm, fli, crocodil, creatur

The 'plin' comes from "Pliny". Documents are "A DESCRIPTION Of the Nature OF FOUR-FOOTED BEASTS", "A DESCRIPTION OF THE RHINOCEROS", "HISTORIE OF SERPENTS. OR, The second Booke of liuing Creatures", and "Of Englishe Dogges, the diuersities, the names, the natures, and the properties."

**Topic 35: Using Numbers. 1.07%**

The use of numbers in varied substantive areas, often in the form of tables.

TW: year, three, hundr, two, four, one, five, six, thousand, twenti, day, ten, seven, eight, month, time, thirti, twelv, forti, nine, first, fifti, number, fifteen, pound, half

DW: year, hundr, thousand, three, four, twenti, six, five, two, month, eight, seven, ten, thirti, pound, forti, one, twelv, nine, fifti, fifteen, sixti, pay, seventi, eleven, week, eighti, shill, half

The subjects of the top documents vary a great deal, but all the documents involve using numbers to lay out what they are interested in. Examples are: "AN ACCOMPT Of all the Gold and Silver Coyned in His Majesties Mint, within the Tower of London, from the first of Octob. 1599. being the One and fortieth Year of the Reign of Queen Eliz. to this present November 1675", "A Profitable Adventure TO THE FORTUNATE, And can be UNFORTUNATE to NONE. BEING A PROPOSAL for Raising One Million of Money, by setling a Fund of One Hundred and Forty Thousand Pounds per Annum for Fifteen Years only for it", "A perfect and most usefull Table to compute the year of our Lord, with the several years of the Kings reigns, beginning with Henry the eight", "An Exact Account of the most Remarkable Fires which have happened in LONDON And other Places in England, from William the Conqueror, to the Reign of the Best of KINGS, CHARLES the Second".

**Topic 36: Names Listed. 1.19%**

The use of common names, often in the form of lists and often containing titles.

TW: john, william, thoma, richard, robert, esquir, georg, edward, henri, jame, lord, knight, mayor, franci, gentleman, smith, charl, nichola, roger, peter, master

DW: sir, john, william, thoma, esquir, richard, robert, georg, edward, mayor, stawel, jame, henri, knight, franci, alderman, carew, nichola, baronet, bristol, humphrey, hugh, ralph, roger, powel, smith, jone

Among the top documents are: "A LIST OF THE EARLS and LORDS That were Present In the House of PEERS; The List of the Names of all the Commanders, and other Gentlemen of note that were taken Prisoners in the late Battell at Winchester", "A TRUE AND EXACT List of those persons nominated and recommended by the House of Commons to his MAJESTIE", "HIS MAJESTIES MOST GRACIOUS AND FREE-PARDON, TO Several Prisoners in Newgate", and "A LIST OF THE DVKES, MARQVISSES, EARLS, VISCOVNTS, BARONS, BISHOPS, and JVDGES, summoned by Writ to the PARLIAMENT to be held at Oxford", "THE TRUE NARRATIVE OF THE PROCEEDINGS AT The Sessions-House IN THE OLD-BAYLY Which began on Monday the 17th of this instant October, and ended on Wednesday the 19th following. Giving an account of most of the Remarkable Trials there, viz, For Murder, Fellonies, and Burglaries, and c. with a particular Relation of their Names, and the places of their committing their Facts, with the number of those Condemned to die, Burn'd in the Hand, Transported and to be whipt", and "A Declaration how the monies (viz. seenty pound eight shillings sixe pence) were disposed, which was gathered (by M. Patrick Copland, Preacher in the Royall Iames) at the Cape of good hope, (towards the building of a free Schoole in Virginia) of the Gentlemen and Marriners in the said Ship: A list of whose names are vnder specified, for Gods glory, their comfort, and the encouragement of others to the furthering of the same, or the like pious worke."

**Topic 37: Papacy. 0.25%**

Information about popes and the papacy, and sometimes the history that surrounds popes and the papacy.

TW: pope, emperor, rome, cardin, franc, itali, empir, church, germani, john, bishop, charl

DW: pope, emperor, cardin, rome, empir, itali, franc, germani, luther, legat, bishop, milan, venetian, napl, frederick, ravenna, platina, florenc, sforza, charl, ambassador, popedom, papaci, florentin

The top words are highly indicative of subject matter. Not all documents are directly on popes but when they are not, their subjects become entangled with popes; most are histories, but some take us to the present ("THE INTRIGUES OF THE Court of Rome FOR THESE SEVEN or EIGHT YEARS past").

The titles of the top documents suggest the subject matter "THE TRVE MANER of Electing of Popes", "THE LIVES OF THE POPEs, From the time of our Saviour Jesus Christ, TO THE REIGN OF SIXTUS IV", "The MANNER of the CORONATION Of the PRESENT Pope ALEXANDER VIII", "THE Estate of the Church, With the discourse of times, from the Apostles vntill this present: Also of the liues of all the Emperours, Popes of Rome, and Turkes", and "THE New Politick Lights OF MODERN ROMES CHURCH-GOVERNMENT: OR THE NEW GOSPEL According to CARDINAL PALAVICINI; REVEALED BY HIM In his HISTORY of the COUNCIL of TRENT. Englished out of FRENCH".

**Topic 38: Scottish Political Acts. 0.88%**

Measures passed at the highest levels of Scottish political institutions, not only acts of parliament but also by assemblies, via proclamations, etc.

TW: scotland, assembl, act, kirk, parliament, edinburgh, minist, commission, scot, estat, kingdom, presbyteri, earl, king, council

DW: edinburgh, kirk, presbyteri, scotland, parliament, montros, wallac, commission, bothwel, laird, assembl, glasgow, hamilton, dougla, murray, burgh, argyl, angus, aberdeen, perth, stewartri, dunde, mercatcross, judicatori, scot, episcopaci, knox, covenant, sheriffdom

The list of top words contains a number of Scottish specific terms for insitutions and names. The measures referred to are all connected to the highest levels of power in Scotland, not to lower levels such as courts. Examples of the top documents are: "ACT Ordaining the Members of the Meeting of Estates to attend the Dyets thereof. Edinburgh, April 12th 1689", "An Act of the ESTATES OF SCOTLAND, In the Yeare 1643", "PROCLAMATION For calling down the French Three-Sons-Pieces to Three shillings Scots, and Appointing the Scots Fourtie-pennie-pieces to pass at Three shilling six pennies Scotsper Piece", "Act of the Meeting of the Estates, for Inbringing of the Publick Dues. Edinburgh, the Eighteenth Day of March, 1689", and "A Proclamation, Anent the opening of the Signet. at Edinburgh July 18, 1689. WHEREAS His Majesty, by His Letter dated the tenth of this instant July, directed to his High Commissioner, and the Lords of His Majesties Privy Council; Did Require them to emit a Proclamation in His Majesties Name, Signifying that His Majesty had considered how prejudicial it is to His Leidges, that the Courts of Justice should continue so long silent, and that he had thought fit to name some of the Colledge of Justice, And therefore to Declare, that the Signet is now opened, That all Persons who are any ways concerned therein, may have due notice of the same, To the end that Law may have its due course. Therefore the Lord High Commissioner, and Lords of Privy Council, Do Ordain a publick Proclamation to be made, Declaring the Signet to be open; But in regard of the present Rebellion, They stop all personal Execution until the first day of November next; Likeas in His Majesties Name and Authority, They do publish and declare the same, And Ordains this Proclamation to be published at the Mercat Cross of Edinburgh."

**Topic 39: Allegiance & Resistance. 1.14%**

Expressions of allegiance or of resistance to those in power.

TW: king, power, god, law, subject, princ, oath, govern, kingdom, right, swear, command, obedi, resist, bind, sovereign

DW: king, god, power, law, oath, subject, princ, kingdom, govern, swear, magistr, peopl, allegi, obedi, coven, resist, religion, sovereign, suprem, author, obey, legal, oblig, rebellion, conscienc, anoint, depos, must, command, rebel

This is one topic where the lists of top words do provide extremely strong clues. This is the only topic where the following stems appear in the word lists: allegi, obedi, resist, obey, oblig, depos, must, command, rebel. The tenor of the top documents is consistent: "A VINDICATION OF THE Case of Allegiance DUE TO Sovereign Powers", "THE Doctrine of Passive Obedience AND JURE DIVINO disproved, And Obedience to the present Government, proved from Scripture, Law, and Reason", "Stand up Smectymnuus, and hear thy tryal; Thy monstrous Title puts me to a pause: Was ever any Non-Conformist Loyal? Love he the King that disobeys his Laws?", "THE LETTER Which was sent to the AUTHOR of the DOCTRINE OF Passive Obedience AND JURE DIVINO Disproved, and c. ANSWERED and REFUTED", "AN EXAMINATION OF THE ARGUMENTS Drawn from Scripture and Reason, In Dr. SHERLOCK's CASE OF ALLEGIANCE, And his Vindication of it". Of course some documents are about very official acts of allegiance: "I A. B. do sincerely Promise and Swear, That I will be Faithful, and bear True Allegiance to His Majesty King WILLIAM" but in these same acts there are also elements of I resistance: "And I do Declare, That no Foreign Prince, Person, Prelate, State, or Potentate, hath, or ought to have any Jurisdiction, Power, Superiority, Pre-eminence, or Authority Ecclesiastical or Spiritual within this Realm. So help me God." But sometimes similar notions appear in lighter fora: "The SECOND PART Of the Nevv Ballad Of the Late and Terrible Fight on St. James's day One Thousand 666... Bow then to Charles distressed States...For Ballads made of the old Fashion Should still conclude with Supplication For King and Queen, and the whole Nation."

**Topic 40: Industrial Arts. 0.39%**

The manual and technical skills, falling short of science, required to work with tools, designs, and simple calculations to make objects directly of use to all manner of citizens.

TW: make, foot, piec, part, inch, water, side, end, half, length, work, mark, height, set, long, draw, weight

DW: inch, piec, foot, diamet, cornic, water, rocket, powder, pound, breadth, half, height, gunner, bullet, figur, thick, side, saltpet, trunnion, stationlin, leadsheath, cartredg, yard, column

The top documents are all about the skills needed to engage in building, making, etc. that is, activities sometimes verging on science but mostly about much more practical things. Examples are "The Compleat MODELLIST: SHEWING The true and exact way of Raising the Model of any Ship or Vessel, small or great, either in Proportion, or out of Proportion.", "MECHANICK EXERCISES: OR, THE DOCTRINE OF Handy-Works. Applied to the ART of SMITHING in General", "THE ART OF GUNNERY. Wherein is described the true way to make all sorts of Gunpowder, Gun-match, the Art of shooting in great and small Ordnance: Excellent ways to take Heights, Depths, Distances, accessible, or inaccessible, either single or divers distances at one operation: to draw the Map or Plot of any City, Town, Castle, or other fortified place", "The First Book of Architecture", and "A BOOK OF Perspective and Geometry, BEING The ABC, and first degree of all good ART. THE Learning of which comprehendeth in it many Notable Arts, needfull and necessary for every Artificer and Workman."



**Topic 41: Fearing Catholicism. 2.02%**

The topic is a political as well as a religious one in which the dangers or other religions, particularly Catholicism, are laid out. These dangers are theological as well as political, but theological arguments are not used in support. The topic mainly reflects establishment views.

TW: protest, england, papist, church, popish, poperi, jesuit

DW: papist, popish, protest, poperi, jesuit, cathol, clergi, libel, persecut, pamphlet, romish, faction, heret, rebellion

The top words indicate that the topic is focused on the role of Catholicism. The presence of both 'romish' and 'poperi' is unique to this topic. Note that theology is almost absent from the top documents: they are all about political struggles between proponents of different religions, and about the plots and rebellions arising therefrom. Twenty-five of the top forty documents are specifically anti-Catholic in their sentiments. The top document provides a good example: "THE Loyal Protestants VINDICATION, FAIRLY Offered to All those Sober Minds WHO Have the Art of Using REASON, AND The Power of Suppressing PASSION. By a Queen Elizabeth Protestant....The Old weather-beaten course which the Jesuits used to make us Protestants hateful to, and hating one of another, was to cast upon some the name and character of Calvinists, upon some Arminians, upon some Socinians, upon some Pelagians, upon some Cavaliers and Malignants, upon some Covenanters and Round-heads after the old style; but now Churchmen and Fanaticks, or Court and Countrey party, after the style of the newest fashions. But now since the Jesuit perceives that We Protestants begin to smell the device of these Nick-names, and that we are growing so skilful as to discern that these are only bones thrown in amongst us, merely to make us snarl, and bite, and devour one another; Therefore the Jesuits (to perpetuate and continue the Protestant fray and scuffle, which is the only advantage to their Cause) have now at this time (if not invented) yet at least set on foot a Form and mode of Petitioning, which must inevitably run us into fearful Broyles, if not timely prevented." The second comment is "THE True Protestants WATCH-WORD, INSTRUCTING All True Protestants what they ought to do in a Peaceable Way of Opposition against POPERY, at this Juncture of Time", while another document discusses "THE Present STATE OF ENGLAND In Relation to POPERY Manifesting the Absolute Impossibility of Introducing POPERY and ARBITRARY POWER into this Kingdom."

**Topic 42: Biblical History. 0.55%**

Bibles, extracts thereof, or summaries thereof treated as plain history without commentary.

TW: son, god, man, israel, peopl, david, land, child, jerusalem, father, mose

DW: israel, judah, lord, david, son, god, jerusalem, mose, saul, king, jew, peopl, egypt, philistin, priest, abraham, father, prophet, herod, brother, jeroboam, joseph, israelit, ahab, joshua, child, moab

The documents are either complete Bibles, both Old and New Testaments, or sections thereof or summaries of certain parts, focusing on particular type of people. There is no theology here apart from the word Bible itself. Examples of documents are "The fyrst boke of Moses called Genesis", "The Byble in Englyshe, that is to saye, the content of all the holye scrypture, bothe of the olde and newe Testament", "THE lyues of holy Sainctes, Prophetes, Patriarches, and others, contayned in holye Scripture", "THE MOST SACRED BIBLE, Whiche is the holy scripture, conteyning the old and new testament", and "THE HOLY HISTORY IN BRIEF: OR, AN ABRIDGMENT OF THE Historical Parts OF THE Old and New Testament."

**Topic 43: Legal Practice Aids. 0.44%**

Information for those who want to practice law at the lower levels of the profession, producing wills, contracts, conveyance documents, etc.

TW: heir, assign, land, executor, grant, premis, law, administr, rend, pay, tenement, manor, estat, leas, coven

DW: aforesaid, tenement, heredita, executor, heir, demis, indentur, manor, administr, premis, assign, appurten, coven, leas, grant, acr, assigne, estat, rend, truste, payment, land, annuiti

The subject matter is indicated in the two word lists. The type of information conveyed by the topic is conveyed well by the titles of top documents: "The first part of THE YOUNG. CLERKS GUIDE: OR, An exact Collection of choice ENGLISH PRESIDENTS, accordig to the best forms now used. For all sorts of Indentures, Letters of Attorney, Releases, Conditions, and c.", "THE COMPLEAT CLARK, AND SCRIVENERS GUIDE. Containing Exact DRAUGHTS AND PRESIDENTS Of all manner of Assurances and Instruments now in use: As they were penned and perfected by divers Learned Judges, Eminent Lawyers, and Great Conveyancers, both Ancient and Modern. WHERUNTO IS ALSO ADDED A CONCORDANCE of years, from the time of King Richard the third untill this present; very usefull for Conveyancers and others", "A Choice COLLECTION of Modern PRESIDENTS, According to The best FORMS extant, and such as have not formerly been Printed. Containing all sorts of Bargains and Sales, Leases, Mortgages, Grants, Covenants, Surrenders, and c. Usefull for all persons that have relation to the Practick part of the Common Law, or desire to be exquisitely qualified therein."

**Topic 44: Medical Science. 0.27%**

The topic is concerned with the knowledge that exists relevant to the treatment of all illnesses, injuries, etc. It is oriented to practice, but it is less in a textbook style than in the form of references to the current stock of knowledge as would appear in treatises.

TW: cure, wound, caus, medicin, patient, pain, humour, diseases, blood, ulcer, bodi, bone, natur

DW: ulcer, cure, tumour, phlegmon, suppur, galen, ounce, medicin, humour, wound, fractur, inflamm, urin, patient, emplast, decoct, diseases, cataplasm, pulv, hippocr, luxat, scirrhus, distempur

The documents are all concerned with medicine but they tend more to theory or accumulated practice rather than being instructional guides as to how to do medicine or of the nature of textbooks. Typical top documents are "A TREATISE OF Wounds", "SEVERALL CHIRURGICALL TREATISES", "A TREATISE OF Lithotomy", "Ars Chirurgica. A COMPENDIUM OF THE THEORY and PRACTICE OF CHIRURGERY", "Gulielm. Fabricius Hildamus, HIS EXPERIMENTS IN CHYRURGERIE: Concerning Combustions or Burnings, made with Gun powder, Iron shot, Hot-water, Lightning, or any other fiery matter whatsoever. In which is excellently described the differences, Signs, Prognostication and cures, of all accidents and burning themselves. Very necessary and useful for all Gentlemen, and Soldiers as well of the Trayned Bands, as others; especially upon sudden occasions".

**Topic 45: Expressing Loving & Loathing. 0.77%**

Love or hate of people, countries, cities, historical figures, etc

TW: thou, shall, art, will, self, let, heart, know, unto, give, say, may, thing, take, see, word, come, lie, make, son, lord, now, hand, therefor, away, one, father, hear, speak, poor

DW: thou, art, shall, self, will, unto, heart, let, behold, son, know, father, word, lord, soul, wretch, ala, hate, speak, thing, eat, say, poor, drink, blood, hear, sin, flesh, hell, heed

The lists of top words only provide the clue that the topic is not about religion. The top documents cover a broad range of subject matters, religious and personal love, for example. But the element that runs through all of them is rumination on a person's devotion, either to God, or to a human, or criticism of somebody else's devotion. For example the top-ranked document contains the following: "Doth so thy heart to God? if there be grace in truth It will; if yet it do not, do not thou Conclude it never will; no, do not so. The Lord may seize upon thy heart, and make Thy heart to him, as follows, Eccho back.....God speaketh. I Chusing did chuse thee, Thou chusing did'st chuse me. Thousands I passed by, I pitch'd my love on thee. Thousands thou passedst by, And sett'st thy love on me. Thousands I might have lov'd, And might have past by thee. Thousands thou might'st have lov'd, And might'st have past by me. Precious I do think thee, Precious thou do'st think me. Alone I let not thee, Alone thou lett'st not me. I have took hold on thee, Thou hast took hold on me. Seized on thee have I, Seized on me hast thou. I ioyn my selfe to thee, Thou ioyn'st thy self to me." But the third ranked is about personal love: " The two kinde Louers: OR, The Maydens resolution and will, To be like her true Louer still," while the fifth ranked expresses emotion about country "O England! England! To thee I do direct my speech, against thee I do complaine. Then heare mee thou filthy adulteresse, hast thou no other pretext, but me to authorize thy treacheries? None else but me to colour thy Treasons? Shall I beare the blame of thy disobediences to God and thy lawfull King? Say strumpet wilt thou make mee a mother to thy whoredomes, wilt thou that I support thy shamelesse Apostasies, art thou not ashamed to say, that it is for my cause that thou committest such robberies? Is it for my honour (as thou sayest) that thou commit such murthers, and bloodshed? Have I been at any time, the mother of oppressions? Or the upholder of Seditions? Or the consenter to Conspiracies, dost thou not know the contrary? That all these things bee against my heart?". Another document expresses love for a city "GODS LOVE TO LONDON: OR, Londons Comforter. Beloved City". Hate is also prominent in this topic: "To thy fylthy carkase, thou hast suche dely e That thou louest it more, then god or his lawe What thyng can bynd the, from thy e apety e Can scripture cause the, lust to withdraw From the fowle fedy ge, of thy beestly Nay truely, th dost thou reason peruarte A beeste and thou, doth not dyffer a stra Remembre I say, tho man what thou arte.....".

As indicated by titles of, subjects in, and excerpts from documents, the emotions also cover families, groupings, mythical creatures, historical personalities, and ordinary people: "See next that thy parents, thou loue and obey, Be rul'd by their counsells beleeeue what they say: If so thou perseuer, in thy tender spring, Thy age will be blessed: take heed's a faire thing", "SIR Walter Raleighs INSTRVCTIONS TO HIS SONNE And to POSTERITY". There is a defense of the quakers, Cromwell's fall from devotion, "cupids wrongs vindicated: Wherein he that Cupids wiles did discover, Is proved a false dissembling Lover. The Mayd shewes such cause that none can her condemne, But on the contrary the fault's layd on hi", "AN EPISTLE IN THE PERSON OF CHRIST TO THE FAITHFVLL soule...Hence Venus idle ympes, hence, hence in haste, Here is no place for Cupids fancies blinde: All wanton eyes and eares which are vnchaste...Let them draw nere this Pamphlet to peruse, And they shall see the lawes of perfect loue", "A pleasant new Song, betwixt The Saylor and is Loue. to the tune of Dulcina", and "A short Relation of the Vnjust sufferings of the People of God, called Quakers, by those unreasonable cursing Priests, who covet after innocent blood".

**Topic 46: Historical Romance. 0.39%**

In the topic name, romance should be interpreted in the broadest as not only about love but also invoking a broader set of emotions, sparked by heroic and chivalrous adventures.

TW: self, love, princ, desir, ladi, life, fortun, death, knight, king

DW: polexand, olivair, zelman, princess, ladi, alcidiana, belliani, fortun, blanchardin, palmendo, iphigen, beauti, claridiano, love, pollipus, knight, philoclea, princ, belcar, combat, knemon, amphialus, sorrow, clarisel, doriclea, theagen, elisena, montelyon, cleocreton

There are many fictional characters in the list of words that are used relatively often in this topic, and where these characters are real ones, they are from history and treated in a manner that would be called historical fiction today. It is clear from a reading of the top documents that the works are about love, chivalry, and romance. Among the top documents are: "The famous History of PALMENDOS SON to the most Renowned Palmerin D' Oliva, EMPEROUR of CONSTANTINOPLE, And the Heroick Queen of THARSUS. Wherein is likewise A most pleasant Discourse of Prince Rifarano, the Son of Trineus Emperour of Almain, and Aurecinda, Sister to the Soldane of Persia. With their Knightly Deeds, and Acts of Chivalry; Their Famous Adventures, and most Worthy Resolutions", "The flovver of fidelity", "The honour of chivalrie", "THE FAMOVVS HISTORIE OF MONTELYON, KNIGHT of the Oracle, and Sonne to the Renowned PERSICLES King of ASSYRIA. SHEWING His strange Birth, Vnfortunate Love, Perilous Adventures in Armes, and how he came to the knowledge of his Parents. Interlaced, with much variety of Pleasant and delightfull Discourse", "PARISMENOS: THE SECOND PART OF THE most famous, delectable, and pleasant Historie of Parismus, the renowned Prince of Bohemia. The aduenturous trauels and Noble Chivalrie of Parismenos, the Knight of Fame, in diuers Countries", "THE DELIGTFVL HISTORY of Celestina the Faire. Daughter to the king of Thessalie. Shewing how she was inchaunted by the three Fairies: with the strange Aduentures, Trauels, Chivalries, Tournies, Combats, Victories, and Loues of diuers wandring Princes and knights errant, but especially of Sir Marcomyr of Tharsus, who did conquest hir by the sword, and enioied her afterwards in mariage, with the Thessalian kingdome for hir dowrie, and his perpetuall inheritance", and "THE Famous and Delectable HISTORY OF Don Bellianis of Greece, OR, THE HONOUR OF CHIVALRY: Containing His Valiant Exploits strange and dangerous Adventures, with his admirable love to the Princesses FLORISBELLA, Daughter to the SOULDAN of BABILOND."

**Topic 47: Bibliographical Practice. 0.64%**

Bibliography together with the techniques of bibliography.

TW: book, write, learn, letter, print, year, author, read, publish, translat, latin, colleg, school

DW: book, learn, write, letter, print, coll, oxon, fol, latin, quarto, colleg, english, octavo, univers, edit, publish, translat, scholar, school, bibl, year

Many of the top documents are in fact catalogs of works themselves, but with detailed organization, and other top documents are ones that indicate that this topic is more than about conveying lists, but rather about the knowledge useful in making those lists: "To the Reader. THE Catalogues of Books Printed in London that have been Published of late Years, relating the Titles of the Books only, are not sufficient to give the Reader a due Knowledge of what they contain. The intent therefore of this Catalogue is not only to give the Titles of all the Books that shall from time to time be printed; but also a particular and impartial Account of the Design of each (if they have any) and wherein they differ from others on the same Subject, and the Texts of all Sermons. By this means Persons especially that are distant from London, and have not an Opportunity of seeing the Books themselves, may be the better informed of their Vse: and this not only of the Books printed here in England, but also of those printed beyond Sea in France, Germany, Holland, and c. Together with an Account of what Books are printing or preparing for the Press, there as well as here in England, as far as we can have knowledge", "AN EXACT COLLECTION OR CATALOGUE OF our ENGLISH WRITERS On the Old and New TESTAMENT, Either in Whole, or in Part: Whether Commentators, Elucidators, Adnotators, or Expositors, At large, or in Single Sermons. Very usefull for any ones Information as to what hath been Writ upon any part of the Holy Scriptures, and "AN ACCOUNT OF THE English Dramatick POETS. OR, Some OBSERVATIONS And REMARKS On the Lives and Writings, of all those that have Publish'd either Comedies, Tragedies, Tragi-Comedies, Pastorals, Masques, Interludes, Farces, or Opera's in the ENGLISH TONGUE."

**Topic 48: Improving Soil & Its Products. 0.53%**

Agronomy, with arboreal, arable, and horticultural farming and gardening.

TW: tree, fruit, plant, ground, grow, root, earth, sow, water, seed, corn, cut, land, garden

DW: tree, fruit, plant, seed, root, sow, grow, ground, graft, earth, corn, must, garden, husbandman, water, sap, dung, vine, branch, soil, winter, barren, grape, dri, acr, fruittre, husbandri

Top documents are "Certaine plaine and easie DEMONSTRATIONS Of divers Easie wayes and meanes for the Improving of any manner of barren Land", "The orchard, and the garden", "Certaine rare and nevv inventions for the manuring and improving of all sorts of ground", "The country-mans recreation, or The art of [brace] planting, graffing, and gardening, [brace] in three books", "The fruiterers secrets", and "Markhams farwell to HVS BANDRY OR, The inriching of all sorts of Barren and Sterrill Grounds in our Kingdome, to be as fruitfull in all manner of Graine, Pulse, and Grasse as the best Grounds whatsoeuer: Together with the anoyances, and preseruacion of all Graine and Seede, from one yeare to many yeares."

**Topic 49: Jokes & Mishaps. 2.29%**

Tall tales, jokes, real-life horror, unfortunate happenings, all in the service of entertaining the reader with light fare.

TW: man, tell, hous, see, good, friend, lie, hear, master, poor, hand, night, leav, away, send

DW: friend, hous, night, money, poor, gentleman, wife, hear, master, siuqila, woman, devil, bed, prison, pay, repli, scogin

There is a huge variety of subjects in the top topics, but all the top documents are out to entertain and do this by humor, or horror, or tales from places with which the readers are not likely to be familiar. Among the top documents are: "PASQVILS IESTES, Mixed with Mother Bunches Merriments. Whereunto is added a Bakers doozen of Gulles. Very prettie and pleasant, to driue away the tediousnesse of a Winters EVENING", "A New and Pleasant HISTORY OF unfortunate Hodg OF THE SOVTH: Very pleasant and delightfull to be read. Ful of honest Mirth and Wit, The merriest book that e're was writ", "A New Booke of Mistakes. OR, Bulls with Tales, and Buls without Tales. But no lyes by any meanes", "A pill to purge melancholy: or merry newes from Newgate", "No jest like a true jest", and "Cruel and Barbarous News From CHEAPSIDE in LONDON: Being a True and Faithful RELATION Of an horid Fact, acted by an unhuman Mistriss upon the body of her Apprentice, who for want of the fear of God, hired two men to strip him naked and bind him to a Spit, intending to Roast him alive, but by the providence of Almighty God was prevented, for having stoped his mouth with a clout, turning him about until he was very much scorched, with striving for life the clout draped out, and then crying out murder the Neighbors by violence broak open the door, and delivered the poor wrech from the unmercyful Flames, from which the Lord deliver us."

**Topic 50: Local Law. 0.99%**

Statements of law relevant to the lowest levels of administration, containing both the formal statements of the law and digests of relevant laws.

TW: justic, peac, parish, offic, counti, statut, offenc, constabl, hous, prison, commit, feloni, session, sheriff

DW: justic, churchwarden, sheriff, constabl, peac, feloni, counti, statut, parish, session, indict, assiz, convict, bailiff, aforesaid, juror, parson, prison, parishion, offenc, stat

As indicated by the lists of top words, this topic is all about the law that is relevant to local issues. It is mostly concerned with non-urban ones. The top documents are items like royal proclamations or statutes but they are always relevant to what citizens have to do at the lowest administrative levels. It would be tempting to call this rural law, but a significant number touch on issues relevant to urban environments. Examples of documents are: "THE COMPLETE JUSTICE. A COMPENDIUM of the particulars incident to Justices of the Peace, either in Sessions or out of Sessions: Gathered out of the Statutes, Reports, late Resolutions of the Judges, and other approved Authorities", "The great Designs of Parliaments, have ever been, when Duties are Granted, That the Subjects may have as little Trouble and Disturbance from the Officers and Collectors as is possible: And therefore, the Consideration of what followeth, is Humbly Offered and Presented to the Honourable House of COMMONS, before Passing the Act for a Duty to be laid upon Houses and Windows", "Articles to be diligently enquired of, and particularly answered unto in writing by the High Constables in every Hundred, and by the petty Constables and Tithingmen in every several Parish, Town and Hamlet, at the Assises to be holden", "A brieve SUMMARY OF THE LAVVES and STATUTES OF ENGLAND, So far forth as the same do concerne the Office of Justices of the Peace, Sheriffs, Bayliffs, Constables, Churchwardens, and other Officers and Ministers of the Commonwealth" and "The Exact Constable: WITH HIS ORIGINAL and POWER IN THE OFFICES. Of Church wardens, Overseers of the Poor, Surveyors of the Highwayes, Treasurers of the County Stock, and other inferior Officers as they are established, both by the Common Laws and Statutes of this Realm".

**Topic 51: Economic Lobbying. 2.02%**

Petitions to Parliament or government or general proposals made by some economic interest in pursuit of their own gains.

TW: trade, money, pay, poor, good, make, nation, england, land, countri, peopl, interest, sell, rich, increas, compani, employ

DW: trade, manufactur, money, usuri, pay, export, tith, interest, england, annum, usur, nation, will, eastindia, commod, poor, revenu, manufactori, creditor, improv, pound, estat, rich, merchant, cent, jointstock, kingdom, plantat, debt

The word lists all speak of economic activities and national matters. The top documents are dominated by proposals to do something that affects commercial activities or even petitions to the central government. The term "economic lobbying" is rather anachronistic and might be somewhat of an exaggeration in the sense that many of the top documents are not formal proposals, but the information on the topic is consistent with the wider interpretations of the modern term. Examples of top documents are: "TO PREVENT The Export of Bullion, FOR PURCHASING FLAX, HEMP, and LINNEN. ...It being conceived to be the Interest of both Kingdoms to propagate the Linnen Manufactory in Ireland, I humbly propose, That all Flax, Hemp, and the Manufactures thereof of the Growth of Ireland, may be Imported into England Duty-Free, which will be of many Advantages to England", "AN ANSWER TO THE Eleven QUERIES Humbly tender'd, Relating to the BILL for prohibiting the Wearing of East-India Silks, and Printed and Dyed Callicoes", "THE CASE OF THE Petitioners of making the River Dun more Navigable, in the West Rideing of the County of YORK", "CONSIDERATIONS Humbly Offer'd To the Honourable HOUSE of COMMONS, BY THE Planters, and Others, trading to our British Plantations, in Relation to the African Company's Petition, now before this Honourable HOUSE", "THE CASE OF THE Rope-makers of London, And other Ports in the Kingdom of England", "REASONS Humbly offered by the Six-Clerks of the Court of Chancery, to Repeal or Explain the Latter Part of a Clause, in an Act of the last Sessions of Parliament, made for the Amendment of the Law, and the better Advancement of Justice", "REASONS Against Establishing an East-India Company, With a Joynt-Stock exclusive to all others", and "THE CASE OF The Owners of Ships concerned in the Coal-Trade. Humbly offered to the Consideration of the Honourable the Commons in Parliament Assembled."

**Topic 52: Africa & Asia. 0.12%**

Descriptions of the peoples, places, objects, terrain, customs, religions, languages of Africa and Asia.

TW: king, citi, place, countri, peopl, river, provinc, kingdom

DW: picarro, mandarin, cozco, china, portugues, aurengzeb, ispahan, chines, roupi, raja, siames, tartar, portug, mutezuma, chahjehan, mahometan, carvaj, surat, king, mogul, omrah, indian, almagro, pagod, japan, nangesaqu, persia, pegu, goncalo

Many of the top documents are descriptions of places and some are based on somebody's travel, but they are not about the travel itself but about what is seen on the travels. The very top document is very typical: "ASIA, THE FIRST PART. BEING An Accurate Description OF PERSIA, And the Several PROVINCES thereof. The Vast Empire OF THE GREAT MOGOL, And other Parts of INDIA: And their Several Kingdoms and Regions: WITH The Denominations and Descriptions of the Cities, Towns, and Places of Remark therein contain'd. The Various Customs, Habits, Religion, and Languages of the Inhabitants. Their Political Governments, and way of Commerce. ALSO The Plants and Animals peculiar to each Country." Similarly for Africa one has: "AFRICA: BEING AN ACCURATE DESCRIPTION OF THE REGIONS OF Aegypt, Barbary, Lybia, and Billedulgerid, The LAND of Negroes, Guinee, Aethiopia, and the Abyssines, With all the Adjacent Islands, either in the Mediterranean, Atlantick, Southern, or Oriental Sea, belonging thereunto. With the several Denominations of their Coasts, Harbors, Creeks, Rivers, Lakes, Cities, Towns, Castles, and Villages. THEIR Customs, Modes, and Manners, Languages, Religions, and Inexhaustible Treasure; With their Governments and Policy, variety of Trade and Barter, And also of their Wonderful Plants, Beasts, Birds, and Serpents." Other examples of top documents are: "THE SIX VOYAGES OF JOHN BAPTISTA TAVERNIER, BARON OF AUBONNE; THROUGH Turky, INTO Persia AND THE EAST-INDIES, For the space of Forty Years. GIVING An Account of the present STATE of those Countries, Viz. Of the RELIGION, GOVERNMENT, CUSTOMS, and COMMERCE of every Country; and the Figures, Weight, and Value of the MONEY currant all over ASIA. TO WHICH IS ADDED, A new Description of the SERAGLIO", "Remarkable Addresses BY WAY OF EMBASSY FROM THE East-India Company OF THE UNITED PROVINCES, TO THE EMPEROR of JAPAN. CONTAINING A DESCRIPTION OF THEIR SEVERAL Territories, Cities, Temples, and Fortresses; THEIR Religions, Laws, and Customs; THEIR Prodigious VVealth, and Gorgeous Habits; THE Nature of their Soil, Plants, Beasts, Hills, Rivers, and Fountains: WITH The Character of the Ancient and Modern JAPANERS", and "GEOGRAPHICAL HISTORIE of AFRICA, Written in Arabicke and Italian by IOHN LEO a More, borne in Granada, and brought vp in Barbarie. Wherein he hath at large described, not onely the qualities, situations, and true distances of the regions, cities, townes, mountaines, riuers, and other places throughout all the north and principall partes of Africa; but also the descents and families of their kings, the causes and euent of their warres, with their manners, customes, religions, and ciuile government, and many other memorable matters: gathered partly out of his owne diligent obseruations, and partly out of the ancient records and Chronicles of the Arabians and Mores."

**Topic 53: Analyzing Ancient Thought. 0.24%**

Many different cultures are reflected in the topic but all before 500CE, and analysis of the relevant texts is central.

TW: cap, poet, ancient, god, greek, plato, roman, philosoph, plutarch, jupit, art, author, plini, templ

DW: poet, plutarch, cap, plini, plato, hist, plut, greek, herodotus, aristotl, philosoph, jupit, laert, homer, diodorus, eusebius, squinter, seneca, ovid, virgil, lat, pythagora, egyptian, euripid, daemon, olympiad, arist

The lists of words contain many that are from ancient works, or their authors. In the documents Greek, Roman, Biblical, and other ancient works are represented. The top documents are not only about simply recounting the history or reprinting the works but also contain analysis. Examples of top documents are: "THE COVRT OF THE GENTILES: OR A Discourse touching the Original of HUMAN LITERATURE, both Philologie and Philosophie, from the SCRIPTURES, and JEWISH CHURCH", "THE HISTORY OF THE CHALDAICK PHILOSOPHY", "A VIEW OF THE DISSERTATION UPON THE EPISTLES OF PHALARIS, THEMISTOCLES", "A LOOKING-GLASSE OF THE FATHERS, WHEREIN, You may see each of them drawn, Characterized, and Displayed in their colours. To which are added, The Characters of some of the Chief Philosophers, Historians, Grammarians, Orators, and Poets", "A DISCOURSE Concerning SANCHONIATHON's Phoenician History", "A DISSERTATION UPON THE EPISTLES OF PHALARIS, THEMISTOCLES, SOCRATES, EURIPIDES, and Others; And the FABLES of AESOP", "AN ATTEMPT TOWARDS AN EXPLANATION OF THE THEOLOGY AND MYTHOLOGY OF THE Antient Pagans", "THE COMPARISON OF PINDAR and HORACE", and "A DISQUISITION Touching the SIBYLLS And the Sibylline VVritings. IN WHICH Their Number, Antiquity, and by what Spirit they were Inspired, are succinctly discussed. The Objections made by Opsopaeus, Isaac Casaubon, David Blondel, and others, are examined; as also the Authority of those Writings asserted. Which may serve as an Appendix to the foregoing Learned Discourse touching the Truth and Certainty of Christian Religion."

**Topic 54: Listing City Facts. 0.4%**

Enumeration of facts about cities.

TW: bishop, london, church, saint, archbishop, place, colleg, canterburi, citi, build, parish, oxford

DW: archbishop, bishop, canterburi, london, cranmer, church, winchest, colleg, oxford, dean, sheriff, cathedr, westminst, saint, durham, lincoln, mayor, chancellor, rochest, cambridg, parish, archdeacon

The lists of words are dominated by references to people/positions/things that are associated with the names of cities, as well as actual cities. However, the top documents are in many different substantive areas, with the only thing that unites them is the fact that a single city is central to the document. Many of the top documents are simply lists. Examples are the top document itself, which is a list of Oxford colleges and streets, "Cambridge. 1638. From the 6 of July to the 20 of the same. All the colledges (God be praised) are and have continued without any infection of the plague, except Jesus colledge, where onely one died of the plague the 12 of June last past, and is mentioned in the former bill", "A MAP or GROUNDPLOTT OF THE CITY OF LONDON WITH THE SVBVRBES THEREOF", "A SVRVAY OF LONDON. Contayning the Originall, Antiquity, Increase, Moderne estate, and description of that Citie, written in the yeare 1598. by John Stow Citizen of London", "A Catalog of the Bishops of Excester, with the description of the antiquitie and first foundation of the Cathedrall Church of the same", and "Flagellum Dei: OR, A Collection of the several Fires, Plagues, and Pestilential Diseases that have hapned in London especially, and other parts of this Nation, from the Norman Conquest to this present, 1668."

**Topic 55: Salvation via Faith. 0.68%**

An alternative title might be Justification through Faith, in which salvation will be attained by following appropriate religious rules and carrying out ordained religious practices.

TW: faith, coven, grace, believ, baptism, justifi, law, elect

DW: coven, righteous, baptism, justif, faith, believ, circumcis, salvat, sanctif

How one can be saved by following various biblical rules such as baptism, or circumcision, emphasizing attaining salvation thereby. The title of the first document is "The Orthodox Doctrine concerning justification by Faith Asserted and Vindicated". The tenth document pronounces "I affirm that we are Justified for or by Christ's Righteousness alone, and not by Works. That we are Justified as soon as we truly Believe." The eighteenth document pronounces "Concerning Iustification: That altho the express Word of God doth assert the necessity of Regeneration to our entring into the Kingdom of God...yet that none of these, or any Work done by Men...is, under any Denomination whatsoever, any part of the Righteousness...without them imputed to them, and received by Faith alone." The 25<sup>th</sup> document states "We are only reputed Righteous before God, for the merit of our Lord and Saviour Jesus Christ by Faith, not for our works and merits. For which cause the Doctrine of our being Iustified by Faith alone, is most wholsome, and full of consolation..."

**Topic 56: Lusty Entertainments. 1.95%**

The topic captures sentiment that is lusty in two senses of the word: lustful and rousing. Poems are songs use this topic a great deal.

TW: like, sir, never, old, come, let, good, devil, play, fool, know, ladi, wit, say, lie

DW: cuckold, prithe, damnd, mrs, devil, whig, fop, cheat, fool, rogu, whore, jilt, ladi, tom, nonsens, pimp, madam, intrigu, knave

In the top documents there are may poems and songs. The works are lusty in two senses of the word: lustful and rousing. Some quotes from the top documents: "Ise got in a gude merry Mude, He thought it was time then to be Rude; He kindly stroakt my Downy Wem, And farther proceeded, O then, O then", "There was a Knight was wine drunke, as he rode on the way, And there he spide a bonny Lasse, among the Cocks of Hay", "WHAT silly senseless Countrey Clown has put this wit in Print? To abuse the Dames of London Town though there is nothing in it". Among the titles of top documents are "DICK the Plow-man Turn'd Doctor, OR, The Love-Sick Maiden Cured", "An Excellent New Ballad, To the Tune of, How Vnhappy is Phillis in Love", "A Broad-Side against Marriage Directed to that Inconsiderable Annimal, Called, A HUSBAND", and "The Scotch Lasses Constancy OR Jenny's Lamentation for the loss of Jockey: Who for her sake was Vnfortunately Kill'd by SAWNEY in a Duel. Being a most pleasant New Song, to a New Tune."

<p><b>Topic 57: Chemistry. 0.24%</b></p> <p>The science of chemistry, not chemistry for application in practical activities.  TW: water, salt, spirit, fire, mercuri, sulphur, oil, distil, metal, liquor, prepar, colour, dissolv, gold, bodi, glass, stone, miner, mix  DW: vitriol, acid, alkali, menstruum, antimoni, cucurbit, sulphur, volatil, calcin, alcali, armoniac, salt, calx, tinctur, nitr, distil, mercuri, liquor, water, spirit, ferment, tartar, miner, filtrat, cohob, coagul, metal, sublim, veget, crucibl  Typical titles of top documents are "Observations on the mineral waters", "The art of chymistry", "Chymical secrets and rare experiments", "A discourse of the sulphur-bath", "The curious distillatory", "The marrow of chymical physick", "The potable balsome of life", and "The art of metals".</p>
<p><b>Topic 58: Old Testament. 0.29%</b></p> <p>Commentaries on and excerpts from various parts of the Hebrew Bible or the Protestant, Catholic, or Orthodox Old Testaments.  TW: ver, word, chap, mose, hebrew, jew, king, peopl, sacrific, exodus, vers, translat, law, israel  DW: ver, exodus, hebrew, mose, maimoni, chap, levit, ezek, israel, abraham, josh, god, jehovah, vers, ezra, jew, priest, israelit, chalde, word, judah, canaan, psalm, septuagint, tabernacl, sacrific, calvin, kimchi, signifi  The titles of documents are consistent with the large number of words that refer to various parts of the Hebrew Bible or the Protestant, Catholic, or Orthodox Old Testaments. The documents are either commentaries or excerpts from various books of the Bible. Examples of titles are "A COMMENTARY ON THE Five Books of MOSES: WITH A DISSERTATION Concerning the Author or Writer of the said Books; AND A General Argument to each of them", "A Few, and New OBSERVATIONS VPON THE BOOKE OF GENESIS", "CHOICE OBSERVATIONS AND EXPLANATIONS Upon the Old Testament", "A HELP FOR THE UNDERSTANDING OF THE HOLY SCRIPTURE. Intended chiefly for the assistance and information of those that use constantly every day to reade some part of the Bible, and would gladly alwayes understand what they reade if they had some man to help them. The first part. Containing certain short notes of exposition upon the five books of Moses, to wit, Genesis, Exodus, Leviticus, Numbers, and Deuteronomie", "A COMMENTARY UPON THE Second Book of MOSES, CALLED EXODUS", "A few, and new observations, vpon the booke of Genesis", "The booke of Psalmes", and "Moses and Aaron".</p>
<p><b>Topic 59: French &amp; Iberian History. 0.31%</b></p> <p>French and Iberian History.  TW: king, duke, franc, princ, french, monsieur, armi, cardin, war, spain, forc, saint, time  DW: monsieur, duke, king, castill, navarr, franc, sieur, cardin, huguenot, cathol, portug, princ, mazarin, french, lewi, svvizzer, aragon, sancho, esperton, alphonso, spain, lorrain, spaniard, dauphin, armi, realm, bouillon  The lists of top words and the top documents are consistent. The only thing that cannot be resolved from the words is whether the works are about contemporary developments or historical ones, and it is most often the latter. Top documents are: "THE GENERALL HISTORIE OF SPAINE, Containing all the memorable things that haue past in the Realmes of Castille, Leon, Nauarre, Arragon, Portugall, Granado, and c. and by what meanes they were vnited, and so continue vnder Philip the third, King of Spaine, now raigning", "A GENERAL INVENTORIE OF THE HISTORY OF FRANCE", "A Genealogical History OF THE KINGS OF PORTUGAL", "THE HISTORIE OF THE VNITING OF THE KINGDOM OF PORTVGALL TO THE Crowne of Castill", "A Chronologicall History of the KINGS of FRANCE By the Sieur de Mezeray", and "THE HISTORY OF HENRY IV. SURNAMED The Great, King of France and Navarre."</p>
<p><b>Topic 60: Romance &amp; Comedy Drama. 0.69%</b></p> <p>Romance and comedy, usually in the form of plays, but not neccesarily.  TW: enter, love, ladi, good, madam, lord, exit, self, gentleman, speak  DW: exeunt, sir, madam, exit, prithe, ladi, love, enter, sirrah, ordella, scene, ifaith, lov, jacinta, wench, gentleman, petruchio  In the top 20 documents, 16 are plays, 14 of them are comedies, and 14 of the 16 are about love entanglements. Typical titles are "Rule a vvife and have a wife", "The maides revenge, "The wild-goose chase", "The humorous lieutenant", "The amorous bigotte", "Loves crueltie", "The country innocence, or, The chamber-maid turn'd Quaker", "The Dutch lover", "Comedies and tragedies", " THE Comical Revenge; OR, LOVE IN A TUB."</p>



**Topic 61: Scottish Law. 0.17%**

Scottish law.

TW: act, right, lord, contra, heir, case, law, land, oblig, parti, contract, testament, possess, bind, creditor, defend

DW: annualr, infeft, decreet, teind, lifer, wodset, tailzi, poind, absolvitor, warrandic, laird, wodsett, appriz, appris, liferent, pannal, testat, creditor, donatar, legatari, section, spuizli, comprys, contra, tocher, dispon, assigne, pursuer, feuduti, sponsal

Many of the top words have legal connotations, with many of the distinctive words being specific to Scottish law or being Scottish spelling of legal terms. For example, 'tailzi' is a term relevant to the inheritance of property. Examples of top documents are "SOME Doubts and Questions, IN THE LAW; Especially of SCOTLAND", "IT is ordered by the Lords of His Majesties most honourable Privie Council, That none shall Re-Print, or Import into this Kingdom, the Book intituled, The Institutions of the Laws of SCOTLAND", "ACT, Concerning Summons of VVakening. At Edinburgh". "MODUS LITIGANDI, OR FORM OF PROCESS OBSERVED BEFORE THE LORDS OF COUNCIL AND SESSION IN SCOTLAND", and "The institutions of the law of Scotland".

**Topic 62: Self-Reflection. 4.32%**

An alternative for the topic would possibly be Questioning Beliefs. It is about dialogs with oneself about fundamental questions that define a person.

TW: man, know, see, think, good, self, find

DW: will, shall, must, think, know, see, speak, tell, self, good, believ, world, sure, enough

This is one of the topics where the words in the lists do not give much information, and much more information is provided by reading the top documents. The very top document has new translations of some psalms, in which lines such as the following occur: "To my Complaints, Almighty Lord, Incline thy ever-gracious Ear...On those shall thy sharp Judgments fall...Be therefore Thou, O Lord, my Guide...Correct me not in Anger, Lord, My hateful Crimes pursue...My Soul alas! with dread is struck, Of what's already past...My Body feeble wears...In Sighs it with the Day consumes...". Another document is "The EARLE of PEMBROKE'S SPEECH Jn the House of PEERES, Upon debate of the Citie's Petition for a Personall Treaty, to be had with His MAJESTY in London" in which the following statements are made: "I can say no more for my self then a dog, I hope the door is fast, that the Citizens do not hear me, because I'll speak my minde: What though I do not know my own minde? Yet I'll speak it as well as I can. 'Tis known I am a true Englishman, though I cannot speak good English...But I was a mad man, I knew not what I did then; for, if the Army had not had the more mercy, I had been a Traitor as well as the rest, for ought I know. Doe ye think then I'll Vote the King home again? no I warrant you, I am an old Bird, and scorne Chaffe, or to be made a Traitor any more for any King in Christendome. I am an old thing made new now: My man Michael tels me I am an Independent. I think I am a good Christian, I;...You may bring in Popery, and break the Covenant (if you please my Lords) but I dare not. I am sure we have reason to regard it; For my part, I'll keep to my Oathes, and rather then part with them, Dam me I'll swear down all this Personall Treaty." A third document is "A Dialogue between Master No-Body, and Doctor Somebody", in which No-Body states "...I have so fortunately met with thee, to make thee acquainted with my sad condition; for I protest, that above this three moneths together, I have been so sad, so troubled in mind, and so perplexed with melancholy thoughts, that it hath almost brought me into despair.". Another document is "Know thy self. (an ode to studying oneself before one can really try to understand the world)" in which the following statements are made: "Poor man look back, look on thy self...Study thy self, and all thou canst is study...First know thy self, then shalt thou know the power That gave this Knowledge, 'tis the strongest Tower Man can repair to; This being truly known, Makes man entitled man, and all his own. Man cannot Know himself, how can he then Presume to Know, what God shall act, or when?". A non-religious tract states: "You maides and wives and women kind, Give eare, and you shall heare my minds...I love where I have cause to hate, Such is my foolish fickle state, My time I spend in grieve and woe, Which sure will be mine overthrow. I sigh, and sob, and then doe weepe, For that false men no faith can keepe." The long title of one document is "THE COVRTE of Ciuill Courtesie: Fitly furnished with a pleasant porte of stately phrases and pithie precepts: assembled in the behalfe of all younge Gentlemen, and others, that are desirous to frame their behaiour according to their estates, at all times, and in all companies." Another document states: "Doth he who saith this, understand what he saith? If he do not, he is a fool for saying he knows not what. Doth he know what the word [GOD] signifies? If he do not, he saith he knows not what...." The "CHARACTER OF A believing Christian" includes such facets as "He believeth himselfe to be precious in Gods sight, and yet loaths himselfe in his own, hee dares not justifie himselfe (even in those things wherein hee can finde no fault with himselfe) and yet believeth God accepts him in those services, wherein he is able to finde many faults....He beareth a lofty spirit in a mean condition, when he is ablest he thinks meanest of himselfe..." Less serious are the lines from a song "A Batchelour I haue beene long, and had no minde to marry, But now I finde it did me wrong that I so long did tarry,...So many sinnes are incident unto a single life, That I all danger to pruent with speede will seeke a Wife...What shall I doe to chuse a wife in euery thing compleate? Should I in searching spend my life, i'would prooue a taske to great, Some men perhaps may wonder, why my minde runnes so on Marriage, To him that askes me, I reply, 'tis for my honest carriage:... You that my resolution hear iudge whether I deserue To haue a Wife that loue and would my will observe."

**Topic 63: Autonomous Church Governance. 0.84%**

Discussion and debates on how to organize churches that are seeking independence from the national system of church government.

TW: church, minist, offic, ordin, power, call, pastor, preach, ministri, peopl, govern, elder, congreg, place

DW: church, presbyt, ministri, minist, presbyteri, ordin, pastor, preach, congreg, synod, episcopaci, magistr, offic, presbyterian, churchmemb, independ, deacon, cor, ecclesiast, elder, ministeri, assembl

Many of the top words are the names of positions in the church or of types of organizations of the church. This is the only topic where 'congreg' is in the top words and this topic has more variants on 'presbyt' than any other topic. The subjects covered by the top documents are consistent: "THE Judgment Of Several Eminent Divines OF THE Congregational VVay. Concerning A PASTORS POWER", "An EXAMINATION Of SUNDRY SCRIPTURES alleadged by our BRETHREN, In Defence of some Particulars Of their CHURCH-WAY", "A DISCUSSION Of the Lawfulness of a Pastor's Acting as an OFFICER", "QVESTIONS Propounded to the Assembly of Divines By the House of COMMONS,... TOUCHING THE POINT OF JVS DIVINVM In the matter of Church-Government", [a subtitle] "I cannot but conceive it will conduce very much to the ending of our Vnchristian Contentions concerning Church-Government, the settling of some that waver, and reclaiming of some that are mis-lead, and appose", "THE GOSPEL-PATTERN For the Government of GOSPEL-CHURCHES". Sometimes the documents are about more specific aspects of governamce: "The Officers of the Church. 2. As a Congregation is called a Church, as afore; so sometimes the Officers not only distinguished, but as separated into a Court, are called the Church: Our Saviour alluding to that custome amongst the Jews; and not relating to a Congregationall Church not yet known, nor yet in being: And now the question returns upon us, To what Church of all these, the keys were committed. Some say one thing, some another: you say, to the particular Congregation, which we shall consider, when we have added that", and "A Plea for Mr Strong's Church-Members; Shewing they ought not implicately to submit to his unnecessary and doubtful Rules, although for it he threaten to debar them from the Lords Table, or leave them altogether."

There is almost no discussion (outside the interregnum) of government of the national church itself.

**Topic 64: Attacking False Doctrine. 2.37%**

This topic expresses dislike, even venom or hatred, for the beliefs of others. It is focused on attack rather than defenses and on name-calling rather than any nuanced theology. An alternative name might be Intolerance.

TW: god, christ, light, truth, lord, scriptur, word, know, power, speak, see,

DW: quaker, christ, god, spirit, scriptur, jesus, apostl, righteous, light, truth, doctrin, antichrist, prophet, persecut, conscienc

There are many examples of others being called false prophets. One segment of a top document is typical: "Now the Apostles that were here in the Spirit of Jesus knew the Spirit that went about to deceive and seduce, and that Spirit which was against Christs Spirit Antichrist, and that Prophet which was false, which was out of the light the truth which came from Christ the true Prophet, who saith, Learne of me I am the way to the Father. Now he that did not abide in the truth, the false Prophets have their power from him, and the seducers and the Antichrists, which the Children of light ever judged and bid them take heed of the Anoynting in them". There is very little about doctrine and theology. Quakers are often the center of attention, whether as authors or subjects. The top document has "TRUTH DEFENDED. OR, Certain Accusations answered, cast upon us who are called Quakers; by the Teachers of the World, and the People of this Generation. With a cleare discovery, who are the false Prophets, and when they came in. And who they are that deny Christ, and that Preach another Gospel. And who deny the Scriptures, Churches, Ministers, and Magistrates, whereby the Magistrates and People of this Nation may see they justifie that which the Scripture condemns, and condemne that which the holy Men of God justified." A long quote from the seventh document typifies this topic, in terms of its suggestion of access to truth, venom against opponents, and absence of reasoned argument from theology: "A Hue and Cry AFTER THE FALSE PROPHETS AND DECEIVERS Of Our Age; AND A DISCOVERY of them by their Works and Fruits, and who they are in this Age that follow the same spirit, and act the same things as did the false Prophets in former Generations. FORasmuch as in the World at this day, and through all Christian Nations, there is a great Cry concerning false Prophets and Deceivers...And the World, and Nations, and multitudes have been deceived into the way of Error through the means of the Deceivers, who have done much hurt in the world by their Divinations and Antichristian wayes...Therefore come out Papists, Protestants, Anabaptists, Quakers, and all others, come forth and hear your Tryal, and receive your Iudgment...That were greedy dumb Dogs...And that cryed Peace to them that walked wickedly, and prophesied lyes, and used their tongues, and said, the Lord saith it, when as the Lord had not spoken to them; and that seduced the people by crying Peace, when there was no Peace; and saw Vanity, and spoke Vanity and Lyes in the dayes of the true Prophets: I say, such were false Prophets and Deceivers....Let all people bring in their Witness; For whosoever are such at this day, whether they be Papists or Protestants, Anabaptists or Quakers (so called) or whosoever, Such (I say) are led by the spirit of the false Prophets, and are in their way and practices, and all such are to be judged, deemed and taken for Antichrists Ministers, false Prophets and Deceivers".

**Topic 65: Dignitary Law. 0.07%**

Features of law relating to the highest ranks of England's subjects, except for the royal family itself.

TW: king, earl, son, henri, edward, knight, daughter, heir, william, land, lord, wife, manor

DW: knightscompanion, gueull, earl, scoc, manor, dargent, knight, dazur, froi, heir, scutag, freewarren, daughter, rot, king

Although the top documents are rather general in nature, even if they are pure histories they include features of institutions that explain who inherits, legal status, etc. Among the top 40 documents, those on legal issues are in the plurality. Examples of top documents are: "A TREATISE OF THE NOBILITIE Of the Realme. COLLECTED OV'T OF THE BODY Of the Common Law, with mention of such Statutes as are incidet hereunto, upon a debate of the Barony of Aburgavenny", "To the KINGS Most Excellent MAJESTY, AND TO THE Right Honourable the Lords Spiritual and Temporal in Parliament, THE PEDIGREE OF JAMES PERCY, Who hath by Infancy, Potency, Priviledges, and fowl Practises been kept out of his Birth-right, Title and Inheritance above fifteen years. Now as God hath wonderfully Preserved, Restored and Confirmed our King upon the Royal Throne of his Ancestors (in Peace) therefore a Loyal Subject in right of Succession, Humbly Prays for a fair Hearing, and for speedy Justice", "A TREATISE OF Honour and Nobility, According to the LAWS and CUSTOMES OF ENGLAND. Collected out of the most Authentick Authors, both Ancient and Modern. In Two Parts. THE FIRST Containing Honour Military, and relateth to War. THE SECOND Honour Civil, and relateth to Court and City", "An Exact CATALOGUE OF THE Nobility of England, AND LORDS SPIRITUAL, According to their Respective Precedencies; With all their TITLES OF HONOR, (Whether by Creation, Succession, or Office.) And the Particular Times of their SEVERAL PROMOTIONS", "The humble Petition of James Percy, Esq Right Heir-Male unto, and lawfully claiming the Earldom of Northumberland", "ERRORS Appearing in the PROCEEDINGS IN THE HOUSE OF PEERS IN PARLIAMENT In the First and Second Years of the Reign of King CHARLES the First, In the Case betwixt Robert De Vere Earl of Oxford, and the Lord Willoughby of Eresby, Concerning the Office of Great Chamberlain of England", "A BRIEF DISCOURSE TOUCHING THE OFFICE OF Lord Chancellor OF ENGLAND. WRITTEN BY The Learned John Selden of the Inner Temple, Esq and Dedicated by him to Sir Francis Bacon Knight, then Lord Keeper of the Great Seal of ENGLAND", "A CATALOGUE OF THE NOBILITY OF ENGLAND According to their respective Precedencies, as it was presented to His MAJESTY by John Dugdale" and "THE CASE OF CHARLES Earl of BANBURY THE Right Honourable William Knollis, Created Lord Knollis and Viscount Wallingford, and Knight of the most Noble Order of the Garter by King James the First; and by Letters Patents of the 18th of August 2 Car. I. Created Earl of Banbury, To hold to him and the Heirs Males of his Body, with a Clause of Precedence, to take place next after Francis then Earl of Westmerland, and before Henry then Viscount Mandevil, and afterwards Earl of Manchester".

**Topic 66: Anatomy. 0.09%**

Anatomical knowledge.

TW: muscl, bone, arteri, vein, blood, nerv, membran, vessel, bodi, brain, heart, figur, head

DW: muscl, membran, caviti, ventricl, arteri, tendon, vertebra, glandul, intercost, peritonaenum, nerv, cartileg, vertebr, fibril, spinal, parenchyma, aorta, lympheduct, flexor, bloodvessel, cerebellum, larynx, mesenteri, sharebon, testicl, excretori, oblongata, chyle, tendin, pancrea

Typical titles of top documents are "The anatomy of the humane body abridged", "A compleat treatise of the muscles", "The anatomy of the brain", "An anatomical account of the elephant" and "The anatomy of human bodies". There is a complete consistency between the top words and the top documents.

**Topic 67: French Romance. 0.29%**

Romance literature written in the style of contemporary French romance novels, and quite often simply translations of such novels.

TW: love, self, tell, madam, princ, princess, great, time, yet, without, day

DW: madam, aronc, sylvand, melintus, aglatida, philoxyp, princess, martesia, arpasia, madamoisell, love, celadon, mandana, polema, meliant, doralisa, oroond, artamen, leonisa, herminius, repli, artaban, araminta, lindamor, axiamira, ragotin, clidimira, lindamira, clarimond, dorind

Many of the top documents are translations from the French. Some are written by English authors, but they are very much in the same style. The topic is epitomized by the title of the highest ranked document: "THE Count of Amboise; OR, THE GENEROUS LOVER. A NOVEL. Written Originally In French by Madam \* \* \* AND Rendred into English". Of the top ten documents, 8 are originally in French, 7 are novels, and 8 are romance. Other titles of top documents are: "ARTAMENES, OR THE GRAND CYRUS, AN EXCELLENT NEW ROMANCE. Written by that famous Wit of FRANCE, MONSIEVR de SCVDERY Governour of NOSTRE-DAME. And now ENGLISHED". "ZAYDE, A Spanish History. Being a Pleasant and Witty NOVEL. The Second and Last Part. Originally Written in French, By Monsieur SEGRAY. Done into English", and "AMICO ROSA INIMICO SPINA THE NOBLE INGRATITUDE. A PASTORAL-TRAGI-COMEDY. By Sr. WILLIAM LOWER Knight."

**Topic 68: Turkish International Politics. 0.25%**

Histories and contemporary descriptions of the interaction of the Turks with other nations, including wars, peace, and diplomatic initiatives.

TW: great, turk, armi, take, christian, citi, emperor, enemi, king, war, princ, venetian, soldier, command, grand, countri  
DW: vizier, turk, bassa, venetian, suleman, mustapha, sultan, bajazet, scanderbag, amurath, pasha, armi, signior, emperor, janissari, mahomet, ottoman, constantinopl, ibrahim, christian, haiduck, hungari, buda, vaivod, belgrad, turkish

Both historical and contemporary events are covered in the top documents. The documents have either the Turks as central or the Turks interacting with other countries. There is very little about Turkish internal matters. Examples of top documents are: "A Compendious HISTORY OF THE TURKS: CONTAINING An Exact Account OF The Originall of that People; the Rise of the Othoman Family; and the Valiant Undertakings of the Christians against Them: WITH Their Various Events", "A Vaunting, Daring, and a Menacing Letter, Sent from Sultan Morat the great Turke, from his Court at Constantinople, by his Embassadour Gobam, to Vladisllaus King of Poland, and c. Which Letter was sent to the Christian King, since the Truce concluded betweene the Turke and the Persian in March last; as by many Copies whereof, may appeare, as it was sent out of Poland. Wherein he declares himselfe a mortall Enemy to the said Christian King, threatening to invade his Kingdomes and Territories, with all manner of Hostility. Whereunto is annexed a briefe Relation of the Turkish present strength, both of Horse and Foote: with al the Victories the Turkes have prevailed against the Christians these last three hundred yeares. As also what glorious Victories the Christians have wonne against the Turkes, till this present yeare.", "A True and Particular RELATION OF THE VICTORY Obtained by the Christian Armies against the Turks, At Barkan, the Ninth of October, 1683", and "AN ACCOUNT of the Defeat of Count Teckely, and of his being Slain. Together with a Total Rout, given to the Turkish Army, by the United Forces of the Christian Emperour and the KING of POLAND."

**Topic 69: Apocalyptic Theology. 0.63%**

The topic name describes the subject matter well, with copious references to existing theology relevant to the apocalypse that will accompany the second coming. The information conveyed is informative rather than having a wider purpose.

TW: time, christ, come, kingdom, jew, prophet, antichrist, propheci, angel, nation, heaven

DW: antichrist, christ, rev, jew, propheci, messiah, prophet, kingdom, babylon, church, beast, antichristian, jerusalem, prophesi, messia, apocalyps, apostl, gospel, resurrect, vision, revel, daniel, templ

The following words are highly indicative of the topic and do not appear anywhere else in the top words of other topics: messiah, antichristian, messia, apocalyps, revel.

The use of the word theology in the topic name is justified because there are copious references to the scriptures and logical arguments are used to show interconnections between different ideas. In the texts one can find lots of terms that come from

Revelations and the Greek Apocalypse of Daniel: "seven seals", "times of the restitution of all things", "tenth part of Babylon", "beast of the sea", "beast from the earth", "whore of Babylon". The titles of the top documents are indicative: "A scheme of the whole book of the Revelations", "An exclamation against the whore of Babylon", "The meaning of the Revelation", "A calendar of prophetick time", "Apocalypsis Apocalypseos", "The propheticall history of the reformation", "The book of the Revelation paraphrased; with annotations on each chapter.", "A new systeme of the Apocalypse".

**Topic 70: Counter-Reformation Scholarship. 0.7%**

The topic includes scholarly discussion of counter-reformation tracts, usually not the tracts themselves, but the reactions and counter-reactions to them. The texts engage in debate, use logic and scriptures, and without much invective.

TW: church, faith, scriptur, cathol, true, doctrin, apostl, pope, rome, heret, believ, truth

DW: church, cathol, scriptur, apostl, bellarmin, pope, doctrin, augustin, heresi, hierom, rome, tradit, donatist

The documents are written in a learned and sober fashion, usually, engaging in debate and using logic. The documents are not all pro-Catholic but a significant majority are. A typical title would be "A TREATISE CONCERNING THE CHVRCH. WHEREIN It is shewed, by the Signes, Offices, and Properties therof, that the Church of Rome (and consequently such particuler Churches as liue in her Communion) is the only true Church of CHRIST." Bellarmine is much cited, as are Augustin and Hierome (St. Jerome). The documents often take up arguments of the past, particularly from the counter-reformation, and debate them. Documents state "Although wee haue no certaintie of the writings of Ignatius which are extant, yet is there nothing in them that fauoreth the Papists religion", "Behould the drift of Bel, to make vs thinke that Charles became Emperour, not by creation of the Pope, but by graunt of Grecian Emperors: so loath he is to confesse the Pope had so great authority about 800. years agoe", "Stapleton and his followers beleeeue That the Pope and his determinations are the Churches foundation also. And this is also the Doctrine of Bellarmine". The extent to which the documents are conducted in debate form is often indicated in the titles: "AN ANSWER TO MR. FISHER THE IESVITE, HIS FIVE PROPOSITIONS CONCERNING LVTHER. By Mr. ROGERS, that wor Oxford Diuine. VVith some passages also of the said Mr. Rogers with the said Mr. Fisher. Hereunto is annexed Mr. VV. C. his Dialogue of the said Argument, wherein is disco d FISHERS FOLLY." And: "A CHRISTIAN DIALOGVE, BETWEENE THEOPHILVS A DEFORMED CATHOLIKE IN ROME, AND Remigius a reformed Catholike in the Church of England. Containing. A plaine and succinct resolution, of sundry very intricate and important points of religion, which doe mightily assaile the weake consciences of the vulgar sort of people; penned for the solace of all true hearted English subjects, and for the vtter confusion of all seditious Iesuites and Iesuited Popelings in England or else where, so long as they shall persist inordinately in their nouelties, heresies, errors, and most grosse and palpable superstions."

**Topic 71: Asserting Parliamentary Powers. 2.88%**

Asserting in both senses of the word—claiming and using. Powers in both singular and plural in the sense of meaning the exerting of power by Parliament and in the sense of what powers Parliament can exert.

TW: parliament, hous, armi, king, kingdom, common, england, declar, war, lord, peopl, london, member, forc, take, vote, citi, petit, committe, scotland, act, order, liberti, nation, power

DW: parliament, committe, armi, lilburn, cromwel, vote, kingdom, fairfax, hous, militia, strafford, commission, scotland, england, disband, scot, colonel, ireland, illeg, king, ireton, engag, petit, shipmoney, pym, fairfax, proposit, cavali, war, major, remonstr

The word lists contain many names of important actors in the civil war. Parliament is the top word in both word lists and does not have the same significant presence for any other topic. A large majority of the top documents are declarations by Parliament of its rights and powers: "TWO VOTES OF The COMMONS assembled in Parliament, DECLARING The Forces that are now come out of Scotland into England under the Command of Duke Hamilton, Enemies to this Kingdom; And that all persons of the English or Irish Nation that have invited, or voluntarily ayded or assisted them, are Traytors and Rebels", "SEVERALL VOTES, ORDERS and ORDINANCES OF THE Lords and Commons assembled in Parliament: For the setting of the Peace of the Kingdom, and bringing to JUSTICE the late Impeached MEMBERS", "Ordered by the Lords and Commons assembled in Parliament, That the severall Orders made by the Committee of Lords and Commons for the safety of the Kingdome, for the Listing and drawing together of any of the Forces of the severall Counties, be and are hereby adnulled and made void", "Resolved upon the Question by the Lords and Commons assembled in Parliament. That they do declare, That no Officer or Souldier of the Army, from and after the publication of this Order in the Army, shall leave the Army without the particular licence and discharge of the Generall", "Ordered by the Parliament, THat no Forces shall be Raised, but by Authority of this Present Parliament: And, That all such Forces as have been, or shall bee Raised without Authority of Parliament, be forthwith disbanded, provided that this Vote Extend not to any the Forces raised by General Monck", "ARTICLES OF HIGH TREASON, And other high Misdemeanors, Against....That they have traiterously endeavoured to subvert the fundamentall Lawes and Government of the Kingdom of England, To deprive the King of his Regall Power, and to place in Subjects an Arbitrary and Tyrannicall power over the Lives, Liberties, and Estates of His Majesties leige people....That they have traiterously indevoured to subvert the Rights and very Being of Parliaments...That for the compleating of their traiterous designes they have endeavoured (as far as in them lay) by Force and Terrour to compell the Parliament to joyn with them in their traiterous designes, and to that end have actually raised and countenanced Tumults against the King and Parliament."

**Topic 72: Catholics Under Protestant Rule. 0.38%**

The arguments and counter-arguments concerning reactions of Protestants to the Catholics living under Protestant rule, and the views of Catholics concerning how they should behave under such circumstances.

TW: page, answer, pag, book, word, ibidem, sect, author, jesuit, reader, affirm, opinion, prove, point, doctrin

DW: page, pag, jesuit, section, ibidem, bellarmin, doctrin, answer, replier, book, proposit, beza, alleg, word, morton, fol, schulckenius, cap, reader

The top words are significant because they are suggestive of a series of replies and refutations in which people are referring to each other's works. Of the top 10 documents, 8 are actually refutations of the works of others. The titles of the top documents tell this story well: "AN ANSWER TO THE Provinciall Letters Published by the JANSENISTS", "THE COPIE OF A LETTER SENT FROM PARIS TO THE REVEREND FATHERS of the Society of IESVS, who liue in England. CONTAYNING An Answere to the calumniationes of the Anti-Coton against the same Society in generall, and Fa. COTON in particular.", "PREAMBLE VNTO AN INCOVNTER WITH P. R. THE AVTHOR of the deceitfull Treatise of Mitigation: concerning the Romish doctrine both in question of Rebellion and of Aequiocation". These works do much more arguing about specific parts of the works in question than confronting with any alternative theological arguments. Many of the arguments are about about what Catholics should be allowed to do in England, as indicated by the fact that the word equivocation appears in many documents. Jansenists feature somewhat in the top documents, perhaps because their status in France was similar to the status of Catholics in England. The word mitigation frequently occurs in its meaning of tolerance towards Catholics. But this is not about tolerance as indicated by the following title: "THE ANATOMIE OF POPISH TYRANNIE: Wherein is conteyned a plaine declaration and Christian censure, of all the principall parts, of the Libels, Letters, Edictes, Pamphlets, and Bookes, lately published by the Secular priests and English hispanized Iesuites, with their Iesuited Arch-priest."

**Topic 73: Royal Proclamations. 3.16%**

The topic captures the style in which proclamations on any subject were made by the monarch, but a document containing a high proportion of this topic does not have to be one that is actually a royal proclamation

TW: majesti, subject, kingdom, king, royal, shall, person, command, declar, law, letter, religion, proclam, ireland, gracious, princ, england, day, god, humbl, excel

DW: majesti, kingdom, subject, proclam, ireland, royal, realm, religion, gracious, king, cathol, command, protest, person, whitehal, declar, recus, loyal, honi, england, letter, dublin, duti, loyalti, peac, law, soit, sovereign, articl, popish

The very top distinctive words, majesti, kingdom, subject, proclaim, tell the story of a majesty proclaiming about his kingdom to his subjects. There is little variation among the top documents in terms of the nature of the documents, they are virtually all proclamations and virtually all by a King: "A PROCLAMATION Prohibiting His Majesties Subjects to go out of this Kingdom into the Service of any Forreign Prince or State without Licence", "By the King. A Proclamation for the well ordering of His Maiesties Court and Traine, as well in His present Iourney intended towards His Kingdome of Scotland, and returne from thence, as in all other His Maiesties Iourneys and Progresses hereafter", "By the King. A Proclamation prohibiting the vse of Snaffles, and commanding the vse of Bittes for Riding", "By the King. A Proclamation for putting the Laws against Popish Recusants in due execution", and "By the King. A PROCLAMATION Forbidding Foreign Trade and Commerce". As can be seen by the above examples, the substance covered is very different in different documents—it is the form of the conveyed substance that is distinctive to this topic.

**Topic 74: Political Uses of Religion. 1.65%**

Highly judgmental views on politicians from a religious stance, using the Bible, particularly the Old Testament, to frame these views. The tenor is that the political classes will be doomed if they continue behaving as they have done.

TW: god, lord, peopl, psalm, wick, sin, judgement, fear, righteous, job, evil, enemi, afflict, israel

DW: god, psalm, righteous, isa, job, jer, israel, ezek, prov, wick, afflict, sin, wrath, iniqu, david, vers, isaiah, evil, exodus, enemi, rev

The top words contain many references to biblical figures and to highly judgmental words all over: wick, sin, judgement, fear, righteous, job, evil, good, enemi, afflict, merci. One well represented type of document is sermon to Parliament. There are many admonitions to the political classes. The top document has "Inhabitants of the earth, hear the Word of the Lord, his powerful Word, concerning his purpose and decree against the Rulers and Governours of this Nation, and against the Inhabitants thereof, who hath rejected the Counsel of the Lord". Another document is "GODS VOICE FROM HEAVEN, FOR Direction and consolation to distressed ENGLAND" and yet another has "The Quaker's Prophesie, of the terrible Judgment that will befall this Land, being Englands sad Estate and Condition lamented, in this Just Complaint, taken up against the greatest part of her Inhabitants, because of their great Abominations, and treacherous dealings both with God and Man: For which cause the terrible and Righteous Judgments of the Lord, are coming upon the Land of England." Another author has "A word to the Royalists, or Cavaliers, and c. GIVE ear ye sons of Sodom, and draw neer and harken ye wanton daughters of Babylon; for the Lords controversie is against you." Much of the invective is done with the help of the Bible, for example, "A cup for the Citie, AND Her ADHERENTS. For thus saith the Lord, I will even do with thee as thou hast done, which hast despised the Oath, and broken the Covenant. Ezek. 16.59. Who makest mention of the God of Israel, but not in truth nor in righteousness. Isa. 48.1" And there is invective from and about all sides: "BOANERGES [sons of thunder], OR The Parliament of Thunder WITH Their sharp Declarations against those rebellious Malignants that revolt and fall away from them. For which they are Voted evill members of the COMMON-VVEALTH, Rebels, and such who are the cause of all our present and bleeding miseries. .... The Parliament of thunder. IT is usuall in time of publique calamity, for carnall men to seeke redresse for themselves alone by carnallmeanes, but if we would demean our selves like faithfull servants to the Lord, we should examine our selves, and find out the accursed thing that provokes God to anger."

But not all is negative: "Psalmes of Inuocation vpon God, To preserue her Maiestie and the people of this lande, from the power of our enemies.". Or "Gods Work of Mercy, IN Sions Misery; Laid out in a SERMON Preached before the honourable House of COMMONS."



<p><b>Topic 75: Rural Recreations. 0.1%</b></p> <p>The types of leisure activities that a gentleman might undertake, especially one in the countryside.</p> <p>TW: bear, colour, hawk, head, black, bird, feather, fish, wing, gule, red</p> <p>DW: argent, cheveron, gule, hawk, azur, boncretien, engrail, bordur, cider, covertfeath, bear, dwarftre, fess, feather, coatarmour, sparrowhawk, escutcheon, blazon, bird, thornpear, aldrovandus</p> <p>The titles of the document reflecting the variety of subjects but also what these subjects have in common: "The academy of armory", "The true art of angling", "The art of heraldry", "Havvking, hunting, fouling, and fishing", "The booke of falconrie or havvking", "The gard'ners kalendar", "The plain dealing poulterer".</p>
<p><b>Topic 76: Republicanism. 0.96%</b></p> <p>The topic reflects ideas usually associated with the name Republicanism, but the use of these ideas can be negative or postive.</p> <p>TW: peopl, govern, law, princ, power, state, nation, commonwealth, right, war, great, kingdom, civil, king, subject, common, time, elect, liberti</p> <p>DW: govern, peopl, commonwealth, princ, law, monarchi, nation, state, power, civil, kingdom, magistr, empir, elect, legisl, commonw, senat, public, monarch, estat, republ, peac, interest, nobil, sovereignti, popular, polit, famili, subject</p> <p>More or less all the distinctive words for the topic are governance and politics. Among the top-ranked documents are Harrington's "The Common-Wealth Of Oceana", " Aphorisms Political", and "A Discourse Upon This Saying: The Spirit of the Nation is not yet to be trusted with Liberty; lest it introduce Monarchy, or invade the Liberty of Conscience". Filmer's negative arguments appear in another top document "THE ANARCHY OF A LIMITED OR MIXED MONARCHY. OR, A succinct Examination of the Fundamentals of Monarchy, both in this and other Kingdoms, as well about the Right of Power in Kings, as of the Originall or Naturall Liberty of the People." Another document uses Machiavelli freely to debate Harrington's ideas: "MONARCHY ASSERTED OR The STATE Of MONARCHICALL and POPULAR Government IN Vindication of the Considerations Upon Mr HARRINGTON'S OCEANA." Another top document, much earlier in time, also debates similar issues: " THE PRINCE, OR MAXIMS OF STATE. Written By Sir WALTER RAWLEY.</p> <p>But not all top documents are well known contributions to the debates on republicanism. Some are contributions to parliamentary sessions at the time, or discourses between private individuals, or by lesser known figures. Thus the top document is by Streater arguing for "THE CONTINUATION OF THIS Session of Parliament, JUSTIFIED; OF THE ARMY Touching that Affair Defended: AND Objections to both answered; according to the best Rules of Law, Reason, and just-preserving POLICIE", in which is argued "THE Good Old Cause was comprehended in these three particulars, viz. Security of Life, Liberty, and Estate. The Laws of this Nation speake no other Language. Contrary to which the People were invaded in most miserable sort by the late K. and his Ministers of Church and State...They now being in that Supream Assembly, are capable and of Right are the proper Judges of King, Kingdome, and Lawes, of all Affairs, of Peace, of War, and other matters, as a Legislative Power; the King being entrusted but with the Executive power, dwelleth highly upon his Prerogative, in which all the Liberties of the People were upon the mater swallowed up. The One, to defend his Prerogative, repairs to Arms. The Other, to Rescue their Just Liberties, do the like. There is not a person under Heaven but will say, That the Wart that is made is defence of a People's Liberty, is a Just War." Another pushes in a ballad the idea of monarchy in opposition to the ideas that have become widespread during the interregnum: "THE Excellency of MONARCHY: A PANEGYRICK, Written Anno 1658. by a Learned and truly Loyal Gentleman, for Information of the miserably misled Commonwealths-men (falsly so called) of that deceitful Age; and now reviv'd by a Friend to the Author, and an Honourer of the Establish'd Government of these Nations."</p>
<p><b>Topic 77: Not English. 0.28%</b></p> <p>A non-consequential topic that isolates the elements of documents that have foreign, not-Latin words and English misspellings and badly OCR'ed words.</p> <p>TW: ing, ion, par, livr, ent</p> <p>DW: ing, con, eth, redg, livr, par, ion, sse, leur, vous, foe, cion, tout, pro, uva, aith, ent, hich, nous, hrist, chr, cett, avec, bien</p> <p>The top documents have in common that they have lots of foreign words or they have highly non-standard ways of presenting English (e.g. a spelling dictionary). "Containing all the different Words, Syllables, and Letters, in the old English Character, of the three first Usual School-Books", "Reading and Spelling ENGLISH MADE EASIE. WHEREIN All the Words of our English BIBLE are set down in an Alphabetical order and divided into their distinct Syllabls", "The Best plainest English spelling", "Thesaurus musicus", "The Psalmes of Daud in meter", amd "Cantvs. Of Thomas Morley the first booke of canzonets to two voyces."</p>

**Topic 78: Moral Philosophy: Interests. 1.68%**

Precepts on and about behavior, mainly in politics, and mainly focusing on the importance of interests in understanding why behaviors occurred.

TW: great, design, oblig, find, reason, order, occas, appear, though, never, always

DW: design, oblig, sentiment, engag, interest, person, intrigu, reflect, monsieur, believ, consider, remark, resent, propos, particular, affair, advantag, extraordinari, happen, pretent, generous, attack, occas

Notice the terms in the distinctive words that can be used to describe appropriate ways of behavior: design(s), oblig, sentiment, engag, interest, person, intrigu, reflect, believ, consider, resent, propos, affair, advantag, pretent, generous, attack. This alone suggests the moral element of moral philosophy and that this is not just a topic that describes political behavior, even though many of the top documents are about political conduct. No other topic has the stems 'design', 'interest', and 'advantag' collectively so prominently in its lists of words. At least one of these three terms appears in 38 of the top 40 documents.

One quote from a top document summarizes rather well what many of the top documents focus upon: "The Ancient Philosophers who left certain Methods, how we ought to regulate our Conduct and Manners for the whole Course of our Lives, have consider'd Men relatively to their different Stations; either in themselves, and as private Persons; or in a Family, as making part of it; or in the State, as Members thereof. They have consider'd 'em, either as living privately, or rais'd to some Dignity; either studying their own proper Interest, and managing their particular Affairs, or engaged in the Publick, and intrusted with Affairs of State. For indeed these two Occupations employ the greatest part of Mankind." Some of the top documents do focus on particular historical episodes or personages but even then are much more interested in issues of character. This is captured well in "Monsieur RAPIN'S Comparison OF THUCYDIDES AND LIVY. AUTHOR'S Preface. MY Design in Comparing these Two Authors, is only to make their Value better known; since I take them to be the most Proper of all others, to form a Man's Sense and Reason, in an Age, where both are better Cultivated and Improv'd, than in any other. Wherein, this may be said to the Commendation of our own Times, That we understand the Character of Ancient Authors better, and are more intimately Acquainted with their Mind and Meaning than our Predecessors." And then other documents give the wisdom of great statesmen. For example, "The Compleat Statesman: OR, THE Political Will AND Testament, OF THAT Great Minister of STATE, Cardinal Duke de Richilieu" has much to say about the importance of interests: "There are others, who having nothing but the good of the State in their Mouth, have so extravagant an Ambition in their Heart, that no End can stop their Desires, and nothing can satisfie or content them. Others proceeding farther, not contented with never being so, convert, under specious Pretences, Publick Interests to their own; and instead of guiding Particular Interest by that which is Publick, they do the contrary, with as much Injustice as Boldness. Such Men are not only destitute of the Integrity which is necessary in the Employment of Publick Affairs, but they are moreover true Plagues to a State; they are the wild Boars of the Scripture, in the Vineyard, in a full Vintage, who do not only fill their Bellies with it, but spoil and destroy all the rest. Those who are of a wilful Temper, and follow their Passions more than Reason, and who, instead of chusing Men barely upon the account of their Capacity, in those things in which they are to be employ'd, chuse them only because they are sensible that they have an Affection for them, and that they are link'd to their Interest, cannot neither be reckon'd Men of the Integrity which is requir'd in the Administration of States. If a Man be Revengeful, to put him in Authority, is to put a Sword in the hand of a Fury: if he follows his Appetite, and not Reason in his Elections, it is exposing the State to be serv'd by Men of Favour, rather than of Merit; which will occasion many Inconveniences."

The top documents contain much of Rochefoucault (Rochefoucauld), with a focus in interests: "Vertues are lost in Interest, as Rivers are swallowed up in the Sea. We are so strongly possess'd with a good Opinion of our selves, that we take those things for Vertues, which are no other than Vices that look like them, and such as the Love of our selves imposes upon us with." The preface from one of the top documents, "The Falshood Of Human Virtue. A Moral Essay", captures the tone of many sections of the top documents for this topic: "Man naturally becomes his own Flatterer, and being sensible that all other Animals are overcome, either by his Wit or Strength, easily enclines to despise those Beings as inferior, and arrogates to himself the Empire of this small spot of Earth. And though constantly put in mind of his Defects, by the Weakness and Narrowness of his Senses, and consequently of his Understanding, by the irregularity of his Inclinations, the Disorder of his Passions, and innumerable Inconveniences to which he is subject, nevertheless, assuming a false Bravery he affects to seem above these Things, and to appear self-sufficient. With the counterfeit Wings of imaginary Virtue, he soars towards Heaven, and pretends to partake of the Divine Nature; notwithstanding that the Spring and first Motion, even of the best of his Actions, as the subsequent Treatise fully proves, is nothing but Pride, Self-love, and Interest." Consistently, "A COPY Of the LATE King James's Letter, Sent by the Earle of MELFORT to the FRENCH KING" contains remarks that state: "This plainly tells us the True Principle of the French Kings Assistance and Friendship to the late King. and that tis Interest and only Interest is the Powerful Motive."

Many of the top documents contain statements of the following tenor, which are taken from just one of the documents, on the maxims of morality: "Vices enter into the composition of Virtues, as Poisons do into that of Physical Remedies;

the intermixture thereof is made by Prudence, which by that allay makes an advantageous use of them, against the Evils and inconveniences of humane life. The Virtue observable in the ordinary sort of men is only a Phantasm, fram'd by our Passions, on which we bestow a plausible name, that we may pursue our own inclinations, without any fear of punishment. All the Virtues men so much pretend to, are swallow'd up in Interest... Clemency is an intermixture of Repute, Sloth, and Fear, of which we make up a Virtue; and among Princes, it is only a political Intrigue, whereof they make their advantage to cajol the affection of the people... The Constancy of the wiser sort, is but a certain Artifice, wherewith they know how to repress the agitation of their Souls... Gravity of deportment is a mysterious carriage of the Body, found out to eclipse the imperfections of the Mind... It is one of the most pleasant humours in the world to see two men met together, one to receive advice, the other to give it. The one demeans himself with a respectful and compliant indifference, and says, that he comes to receive directions, and to submit his sentiments to the other's; and yet for the most part he comes to have his own confirm'd, and to get the other's warranty of his advice upon the affair he proposes to him. On the contrary, he who is consulted seems to requite the sincerity of his Friend with an earnest and dis-interested zeal to serve him, and in the mean time examines his own Concerns, for rules whereby to advise him; so that his Counsel becomes more advantageous to himself, than to him who receives it... Humility is a counterfeit submission, whereby we endeavour to bring all others into a compliance with our humours. It is a slight sally of Pride, whereby it humbles it self before men, out of a design to advance it self above them... Fidelity is a rare invention of Self-Love, whereby a man advancing himself to be a Depository of precious things, enhances himself to a more extraordinary value... The most sacred and most sincere friendship is but a kind of Commerce, whereby we imagine there is still some advantage to be made".

**Topic 79: Moral Philosophy: Passions. 1.18%**

Moral injunctions on the passions, how the passions affect behaviors, and how the passions can be controlled.

TW: affect, good, natur, honour, passion, better, best, vertu

DW: affect, passion, action, rather, pride, vaniti, humour, natur, self, conceit, moral, fanci, ambit, modesti, weak, reveng, censur, entertain, appetit, hate, lust, contempt, beauti, fear, spirit, honour, wisdom

The number of terms that can have a connotation linked to passions is very high: affect, passion, pride, vaniti, humour, self, conceit, ambit, modesti, weak, reveng, appetit, hate, lust, contempt, beauti, spirit, honour. 'passion' does not appear in the word lists for any other topic, nor does 'vaniti' or 'pride' or 'ambit' or 'conceit', while 'appetit' only appears elsewhere in a topic on diet. 'affect' appears most often as the root in such statements as "settle his affections, and bridle the appetites of pleasure and raging extrauagant humors that rule in his nature", or "Wrastle with your affections, entertaine bounty, affect hospitality, so in time yee shall become weaned from base and servile Parcimony."

There are no great political figures in the top documents; they are not about history.

One quote from one of the oldest top documents captures much of the tenor of many of the top documents of this topic "So I thinke there is no Christian so much his minds master, as to keepe precisely all his resolutions. They may better shewe what hee would be, then what he is. Nature hath too slow afoote, to follow Religion close at the heele. Who can expect, our dull flesh should wing it with the flights of the soule? He is not a good man that liues perfect; but hee that liues as well as he can, and as humane fraileties will let him. He that thus farre striues not, neuer began to bee vertuous; nor knowes he those transcending ioyes, that continually feast in the noble-minded man. All the externall pleasures that mortality is capable of, can neuer enkindle a flame, that shall so brauely warme the soule, as the loue of vertue, and the certaine knowledge of the rule we haue ouer our own wild passions. That I might curbe those, I haue writ these: and if in them, thou find'st a line may mend thee; I shall thinke I haue diuuld' d it to purpose."

Among the statements within the top documents are ones such as the following: "It is the part of a wise Commander to read Books, not so much as Men; nor Men so much as Nations: He that can discern the Inclinations, Conditions, and Passions, of a Kingdom, gains his Prince a great advantage both in Peace and War", "All Passions are good and bad, according to their Objects: Where the Object is absolutely good, there the greatest Passion is too little; where absolutely evil, there the least Passion is too much; where indifferent, there a little is enough", "ome arrive at Honors by serving the Pride and other irregular Passions of the Great", "But of all the fallies or excursions which are made by the tongue, none in my conceit lesse beseeming a Gentleman, than in giving reines to passions, to slave himselve to illimited fury: much more profit should he finde in expostulating with passion...", "But in my conceit, there is no one motive more effectuall, or divinely powerfull, to bring us to a true and perfect knowledge of our selves, than to observe with what passions or perturbations we are encountred; especially when through immoderate excesse, wee are in the cup of forgetfulnesse drowned. Which Saint Basil confirmeth, saying: That passions rise up in a drunken man, like a Swarme of Bees buzzing on every side. Which passions are not such as are prevented by reason, and directed by vertue: for these are not altogether to bee extinguished, as the Stoicks supposed, but to bee provoked as movers of vertue, as Plutarch teacheth", and

The classification into moral philosophy rather than something more practical is indicated by the titles of a number of top documents: "MORALL DISCOURSES AND ESSAYES, UPON Severall Select Subjects", "Wisdom's better than Money: OR, THE Whole ART OF KNOWLEDGE, AND THE ART to know Men. IN Four Hundred Sentencious Essays, Political and Moral.", "CHARACTERS OF VERTVES AND VICES: In two Bookes", "Deo Amicisque Amor Innocentia Prudentia Resolues Diuine, Morall Politicall", "A SIXE-FOLDE Politician. Together with a Sixe-folde Precept of Policy." and "INSTITUTIONS, Essays and Maxims, POLITICAL, Moral and Divine", "ESSAIES, OR Rather Imperfect Offers", "EUPHUIA, OR THE ACTS, AND CHARACTERS OF A GOOD NATURE.", "ESSAIES VPON THE FIVE SENSES, with a pithie one vpon DETRACTION. Continued VVith sundry Christian Resolues, full of passion and deuotion, purposely composed for the zealously-disposed", as well as a number of documents that are essentially cases studies of similar phenomena: "THE SECOND BOOKE OF QVESTIONS AND ANSWERS VPON GENESIS", "A SERMON Preached at the FUNERALL OF M. CHRISTOPHER LOVE", "A SURVEY OF HISTORY. OR. A Nursery for GENTRY", "SEVERAL SERMONS AGAINST Evil-Speaking", "ACHITOPHEL, OR, THE PICTVRE OF A Wicked POLITICIAN. Diuided into three PARTS.", Orthodox State-Queries, Presented to all those who retain any Sparks of their ANCIENT LOYALTY", and "SATYRICAL ESSAYES CHARACTERS AND OTHERS. OR Accurate and quick Descriptions, fitted to the life of their Subjects".

**Topic 80: Chivalric Literature. 0.14%**

Works of literature dedicated to telling the stories of heroic knights, often laced with romance.

TW: knight, king, sir, lord, good, lady, duke, arm, emperor, horse, castle, fair, sancho

DW: Reynold, Sancho, knight, Quixote, Galahad, Palomides, Gandalf, Mawgi, Florendo, Therl, Lisuart, Amadi, Esplandian, Huon, Dynadan, Oriana, Rosicler, Palmerin, Mabilla, Dulcinea, Sir, Albayzar, Dramusiand, Arcalaus, Frandalo, Targiana, Miragarda, Quoth, Bretayn, Florestan

The top and distinctive words are in general very indicative of the content of the documents. The documents are very much for entertainment rather than about the elements/techniques/theory of chivalry. The top document relates "How a damoyse sought helpe to helpe... and how syr Trystram fought with them". The second top document is a history of many skirmishes between knights, kings, etc., in many different countries. The third document is "Arthur of Brytayne. The hystory of the moost noble and valyaunt knyght Arthur of lytell brytayne, translated out of frensshe in to englushe". Another is "THE ANCIENT, Honorable, Famous, and delightfull Historie of Huon of Bourdeaux, one of the Peeres of Fraunce, and Duke of Guyenne. Enterlaced with the loue of many Ladies, as also the fortunes and adventures of Knights errant, their amorous Seruants". Two more document titles are "THE GALLANT HISTORY OF THE Life and Death Of that most Noble Knight, SIR, BEVIS OF Southampton. Wherein is contained much Variety of pleasant and delightful Reading" and "A pleasant ballad shewing how two valliant knights, Sir John Armstrong, and Sir Michael Musgrave, fell in love with the beautiful daughter of the Lady Dacres, in the north; and of the great strife that happen'd between them for her, and how they wrought the death of one hundred men. To an excellent new northers tune..."

**Topic 81: Pharmacology. 0.22%**

Chemical and physical remedies for the curing of diseases.

TW: ounce, dram, half, water, oil, powder, root, wine, juice, seed, mix, apply, boil, dry, cause, part, white, drink, syrup

DW: ounce, dram, decoct, syrup, bugloss, turpentine, betony, mucilage, powder, oil, marshmallow, fennel, agrimony, electuary, mastich, juice, ammoniacum, birthwort, tormentil, troch, nutmeg, mugwort, seed, endive, fumitory, ulcer, melilot, syrupus

A typical top document would contain information such as the following: "A TREATISE OF The Diseases of Children; WITH Their Causes, Signs, Prognosticks, and Cures, for the benefit of such as do not understand the Latine Tongue, and very useful for all such as are House-keepers, and have Children. With the Contents of the several Chapters, as also an Alphabetical Table of all the Diseases mentioned herein....First, for the prevention of lice, and to hinder the breeding of them, it will be very necessary to keep the child often changed, and to comb often the head, and to avoid all meats of ill juice. If the child be of any bignesse the body may be purged in this manner. Take of Sene and Polipodium of each two drachmes. Fumitory one drachme and a half, Cream of Tartar a drach. Licorice and Anniseed, of each a drachme; bruise the Polipodium and Licorice, then infuse or steep them all in half a pint of water on hot embers, and afterwards gently boyl them; strain it, and to the clear add of sirup of Roses one ounce: let the child take every morning two or three spoonfuls fasting, and fast one hour after it, then to take some warm posset-drink or broth. Make a bath as followeth. A Bath. Take of Elecampane root bruised two ounces, white Briony root bruised half an ounce, Beets, Mercury, Sopewort, Centory the lesser, of each a handfull, Lupines bruised one ounce, Nitre half an ounce; boyl these in water and make a bath for the head, with which let the head be bathed morning and evening warm. After bathing anoint the head once or twice a day (if a strong child twice, if a weak child but once,) with this ointment following." Other documents include "A PHYSICALL DIRECTORY OR A translation of the LONDON DISPENSATORY Made by the Colledge of Physicians in London. Being that book by which all Apothecaries are strictly commanded to make all their Physick", "Thesaurus and Armamentarium Medico-Chymicum OR A Treasury of Physick. WITH THE Most secret Way of Preparing REMEDIES Against all DISEASES", and "Prepositas his Practise, A Worke very necessary to be vsed for the better preseruacion of the Health of Man. Wherein are not onely most excellent and approued Medicines, Receiptes, and Ointmentes of great vertue, but also most pretious Waters, against many infirmities of the body. The way how to make euery the said seuerall Medicines, Receiptes, and Ointments."

**Topic 82: Poetic Laments. 1.73%**

The topic name really does convey the essence of the topic.

TW: heart, life, good, fear, love, foe, death, fall, grace

DW: deer, heart, woe, foe, mind, grief, love, nought, deed, fear, grace, thrall, joy, hate, wretch, sorrow, lust, life, shame

The words for this topic contain a large share that refer to emotions. 18 of the top 20 documents are poems. The top documents all contain sadness, even though they are about love. A top document says "Shall soone perceyue, that euery worldly ioye, Short pleasures yeelds, imixte with long anye." Another is "The translation of the blessed S. Barnards Verses, conteining the vnstable felicitie of this wayfaring world." Some "Newe Sonets, and pretie Pamphlets" relate "I lie alas through greeping grieffe, and thought so sore oprest, That from my goyng to bead, vntill the time I rise, Sleape once hath skarse the powre to close my weeping wakefull eyes." One document title is "A Loue-sick maids song, lately beguild, By a run-away Louer that left her with Childe", while another tells of "The lamentable louer abiding in the bitter bale of direfull doubts towards his Ladyes loyalty."

**Topic 83: Religious Love & Hope. 1.43%**

Expressions of optimism and of good feeling towards all peoples (presumably just English), especially using songs and poems. The tone is always religious rather than secular.

TW: heaven, lord, glori, soul, bless, joy, love, heart, saint, holi, light, psalm, prais

DW: heaven, glori, righteous, psalm, joy, soul, bless, holi, prais, love, sing, sweet, angel, glorious, beauti, peac, heart, spous

Very many positive terms on the top words. The top document is "AN Epistle of Love, AND OF CONSOLATION UNTO ISRAEL, From the pouring forth of the SPIRIT, AND HOLY ANOINTING Of the FATHER: Sent in Bowels of tender Love." A top document is an elegy to Salisbury. Another is a "A SUPPLEMENT to the New Version of Psalms." One document speaks of "Glorious Glimmerings OF THE LIFE OF LOVE, UNITY, And pure JOY." Among the titles of the top documents are "The meditations of a humble heart", " A TENDER GREETING AND SALUTATION OF Perfect Love and Life of truth, to the Children of the Kingdom.", "Spiritual hymns upon Solomons song", "A psalm of thanksgiving to God", "A FEAST OF Fat Things Full of MARROW. Containing several Scripture SONGS taken out of the Old and New Testament....Let the Word of Christ dwell in you richly, in all Wisdom, teaching and admonishing one another in Psalms, and Hymns, and spiritual Songs, singing with Grace in your Hearts to the Lord."

**Topic 84: Lawfulness. 1.37%**

Whether actions of governments or individuals are lawful, both from the perspective of the law itself and higher principles of justice and conscience.

TW: law, punish, judg, justic, caus, conscienc, judgement, reason, command, bind, therefor, liberti, action

DW: law, punish, justic, conscienc, judg, magistr, condemn, accus, case, command, judgement, action, unjust, crime, sentenc, execut, sin, guilti, liberti, just, forbid, caus, innoc, evil, person, act, commit, reason, injustic

Notice that the lists of top words contain legal terms but also terms that can refer to rights and wrongs in connection with the law. This is the only topic that has the stems 'unjust' and 'injustic' in the two word lists. A number of top documents are about religious issues, but that is because a lot of religious issues were appearing in legal forums. The second ranked document is typical of those where religion is part of legal discussion: "The CASE of Present DISTRESSES ON Non-Conformists, EXAMINED: In the Execution of an Act, Entitled, An Act against Seditious Conventicles (whereof large Experience hath manifested, that no Dissenters are guilty): this Practice hath been of late taken up, that upon the Oath of some Informers, Convictions are clancularly made, and Executions granted on the Goods of those informed against, a first, second, third time, and c. without Notice, Warning or Summons, or any intimation of Procedure against them, or allowance for them to make their own Defence. 1. THis Practice is as contrary to the original Pattern of all Government, as unto the execution of Law in criminal Cases". The debates in the top documents are not only about the law and how it is applied, but whether actions, and laws themselves, are consistent with lawfulness, in its broader sense. Examples of relevant top documents are: "THE Great Obiection Concerning the QUAKERS MEETINGS Fully Answered. Wherein, in several Particulars, it is pro That although the said People do meet together they are not transgressors of the Law, according to Reason, which is the Ground and Foundation thereof; and therefore according to Equity and good Conscience, ought not to suffer for so doing, neither ought their MEETINGS to be supprest. By a lover of all righteous Laws, and just Government, and one unto whom such Laws are not a terror", "THE POWER and PRIVILEGE OF JURIES ASSERTED: In Opposition to the Willfully Blind, and Malitious Humour of some Ill and Vncharitable MEN..... REASONS why the Court can neither Fine or Imprison JVRIES, and c. for Delivering a Verdict according to Law and Their own Consciences. BEcause such Commitment being without Process and Judicial Trial is against Law (viz.) Magna Charta, and the Stat. of 28 Edw. 3", and "A FEW PROPOSITIONS SHEWING THE LAWFULLNESSE OF DEFENCE Against the injurious attempts of outrageous violence". In "A SPEECH made by the Honourable DENZEL HOLLIS Esquire; at that time (when the Judges had their Charge) concerning Sir RANDOL GREW", the following comments were made: "When the Charge went up against the Judges, I was appointed to carry up the desire of the House Concerning, S. R. C. My Lords, These Gentlemen have represented unto your Lordships the sad object of justice perverted, liberty oppressed, of judgement turned into wormewood, the lawes which should be the barres of our gates, to protect us, keepe us, and all that is ours in safety, made weake and impotent, to betray us into the hands of violence, instead of props to support us, become broken reeds to deceive us, and runne into our sides when we leane upon them, even so many snares to entrap and entangle us. And all this by the perfidiousnesse of those, who are entrusted with our lawes, who call themselves the Guardians and the Interpreters of the Law, but by their accursed glosses have confounded the Text, and made it speake another language, and another sence, then ever our Ancestors the Law-makers intended."

**Topic 85: Catechismal Compilations. 1.66%**

Works in the style of catechisms, in the sense of summaries, questions-and-answers, and lists. Concerned with religion, but not always catechisms themselves.

TW: christ, john, faith, father, jesus, sin, son, rome, apostl, holi, life, spirit, believ, work, love, psalm

DW: christ, god, jesus, apostl, cor, luk, eph, sin, john, isa, father, rev, psalm, salvat, faith, gospel, rome, holi, son, believ, luke, saviour, ghost, resurrect, pet, ephesus, spirit

Most of the biblical words are from the Christian Bible. The top documents are usually in the form of questions and answers or listed exercises for learning that are characteristic of catechisms. As is typical of many catechisms, there are biblical references to key the reader to the source of the listed element. These are both Catholic and Protestant.

However, it should be noted that it is the style of catechisms rather than catechisms themselves that is most present in the top documents, as in the following document: "A Table briefly pointing out such places of Scripture, as either plainely or by good consequence condemne the principall points of Popery; gathered by I. W. for the use and benefit of God's people." More typical is: "Catholick Terms of Communion FOR A PARTICULAR CHURCH: OR, The Sum of RELIGION: Being a Form of Sound Words, whereby the Baptismal Covenant may be renew'd by Catechumens when they pass from Infant to Adult Church-membership." Among the titles are: "The sincere milk of the Word, for the children of Barmuda In a short and plain catechism", "The summe of the Christian religion", "A body of divinity with fundamentall scriptures, drawn into a table", "A short Christian catechisme", "A brief summe of Christian religion", "Articles of religion; or, The fourteen pillars of the Church of England" "Catechistical guide to sinners", and "So shorte a catechisme".

**Topic 86: Comedy, Satire, Epigrams. 0.59%**

Works of literature to provide entertainment, but often social commentary as well.

TW: like, good, wit, play, quoth, think, know, see, sir, love, fool, learn, name, master, sweet, tongu

DW: quoth, epigram, pharicl, phylautus, euphu, philaleth, fool, play, tarlton, wench, faustus, erostrato, melibea, knave, poet, narbonus, cuckold, pasiphilo, mamillia, parmeno, wit, conycatch

The words that are specific to this topic contain few hints of tragedy and few hints of humor: fool, play, wench, knave, cuckold, wit, conycatch [to trick]. Phylautus is a playboy in a play; Tarlton was an Elizabethan actor, a clown; Erostrato is a character in a comedy; Melibea is wooed in a play; Narbonus is the title of a play; Mamillia is the title of a book about lives of debauchery. Titles of documents are "SKIALETHEIA. OR, A shadowe of Truth, in certaine Epigrams and Satyres", "ODCOMBS Complaint: OR CORIATS funerall Epicedium: or Death-song, vpon his late reported drowning. WITH His Epitaph in the Barmuda, and Utopian tongues. And translated into English by Iohn Taylor. Printed for merrie recreation, and are to be told at the salutation in Vtopia", "A QVIP FOR AN VPstart Courtier: Or, A quaint dispute between Veluet breeches and Clothbreeches. Wherein is plainly set downe the disorders in all Estates and Trades", "THE SCOVRGE OF Villanie. Three Bookes of Satyres", and "THE FOVNTAINE OF SELFE-LOVE. Or CYNTHIAS REVELS". The authors of top documents are often still well-known satirists, playwrights, novelists, etc.

**Topic 87: Western Europe Surveyed. 0.17%**

Descriptions of places in England or near England, focusing especially on landscapes and geographical situation.

TW: river, town, place, name, part, mile, ancient, counti, near, west, church, sea, citi, north, east, two, countri, island

DW: counti, river, town, fenground, mile, british, britain, saxon, furlong, south, shire, island, north, scray, west, east, severn, bailiwick, build, church, southeast, seat, camden, inhabit, mercian, ancient

The lists of top words indicate everything about what is in the documents except that places outside the British Isles are included. The focus is on England, but in the top documents there is enough about Ireland, the United Provinces, France, and Scotland that a more general topic name is warranted ("A DESCRIPTION OF THE Seven UNITED PROVINCES OF NETHERLAND. WHEREIN IS SET FORTH. The Quality of the Country. The Productions of the Soyl. The Trade, Manufactures, Customs, Manners, and Dispositions of the People. The Constitution of their Laws. The Number of the Towns, Cities, and Fortifications. The Original, Strength, Greatness; and Riches of each City. Together with an Exact Map of the whole wherein is laid down the Scituation of every City, Town, Village, Castle, Fort, and every other Ramarkable of the whole LAND"). Moreover, although some of the top documents are simply maps or gazeteers there are several examples where more details of landscapes appear ("THE DESIGNE For the perfect DRAINING of the Great LEVEL of the FENS, (called Bedford Level) Lying in Norfolk, Suffolk, Cambridgeshire, Huntingtonshire, Northamptonshire, Lincolnshire, and the Isle of Ely" and "Laws, Ordinances and Decrees, made upon Friday the twentieth day of July, in the Year of our Lord 1666: That is to say, INprimis, It is hereby Declared, Ordered, Adjudged and Decreed, That the Rivers, Drains, Wear-Dykes, Water-Courses, Banks, Fore-lands, Sasses, Sluces, Tunnels, Bridges and Works hereafter particularly mentioned, are, and shall be for ever hereafter, declared and taken to be the Common and Publick Rivers, Drains, Sewers, Wear-Dykes, Water-courses, Banks, Fore-lands, Sasses, Sluces, Tunnels, Bridges, and Works of the said Great Level of the Fens"). Thus, a survey, in the geographical sense, is warranted as part of the topic title. Examples of top documents are "BRITANNIA, Volume the First: OR, AN ILLUSTRATION OF THE KINGDOM OF ENGLAND AND Dominion of Wales: a Geographical and Historical DESCRIPTION OF THE Principal Roads thereof", "The Infallible Guide TO TRAVELLERS, OR Direct Independants. Giving a most Exact Account of the four Principal Roads of England, beginning at the Standard in Cornhill, and extending to the Sea-Shore, and Branching to most of the Cities, Corporations, and Market-Towns in England and Wales, with their true distance of Miles and Furlongs, according to Mr. Oglesby's Dimensuration", "Seale of Englishe Myles. The true description or draffte of that famous Ile of WIGHTE, with Some parte of the Englishe or Britaine coaste and inwarde Countreie of HAMPSHIRE and SUSSEX", and "CASE OF THE TOWN and PORT of King's-Lynn IN NORFOLK, As to their Navigation."



**Topic 88: Moral Philosophy: Virtues. 0.77%**

What a virtuous life is, how to live it, and what are the opposites of virtuousness.

TW: good, great, life, vertu, mind, wise, rich, honour, learn, live, speak, wisdom, friend, evil, pleasur, desir, reason

DW: man, vertu, rich, good, wisdom, philosoph, wise, life, evil, mind, fortun, great, virtuous, vice, socrat, learn, plato, profit, friend, speak, world, wealth, pleasur, honour, love, princ, delight, friendship

The number of terms that can have a connotation linked to virtues (or the opposite) is very high: vertu, good, wisdom, wise, evil, virtuous, vice, learn, friend, world, wealth, honour, love, delight, friendship. 'virtuous' does not appear in the word lists for any other topic. 'virtu' does not appear in the distinctive word lists for any other topic, and it is the second most distinctive word for this topic.

Examples of top documents are: (the top-ranked document) "The Nosegay of Morall Philosophie. What is that which most pricketh a man to liue well and godly? To think stil that he is at the last end of his life. What is a court or city without vertuous men? A darke night without any Satres. What are the most enemies to mans life? Anger, excesse, colde, corrupted ayre, sorrow, trauell, vrgent affaires, and a greate familie. What is vertue? It is an harmonie of nature, wherein all good thinges accorde, and a true ladder to mount to happines. What is the greatest want that an humane creature can haue? Want of discretion and veritie. Wherein consisteth true philosophie? In vertuous liuing." The "precepts of Cato with annotations by Erasmus" contains "Delight not in slouth, but from slepe soone arise. For reste and idlenes is mother of all vice. Erasmus. Seing (as Plinie saieth) that our life is but a waking time, them lose not that time by slepe, considering also that slouth is noifull bothe vnto the bodie and vnto the soule. Cato The chief of al vertues is, thy toung to repress. He is nexte vnto God, that wel can holde his peace. Erasmus. The chiefest of al vertues is, to refraine thy tounge, and to speake nothing vnaduisedly, for god the father of al wisdom speaketh but seldome, and that is necessarie, therefore he is accompted nerte vnto God, whiche can ordre his speache by soche discretion."

Other top documents are "The mirroure of friendship: both hovv to knowve a Perfect friend, and how to choose him. With a briefe treatise, or caueat, not to trust in worldly prosperitie", "THE Banket of Sapiencie", "The Ethiques of Aristotle, that is to saye, preceptes of good behauoure and perfighte honestie", "A President for Parentes, Teaching the vertuous training vp of Children and holesome information of yongmen", "The Gouvernement of all estates, wherein is contayned the perfect way to an honest life, gathered out of many learned Authors, a boke right profitable for all estates, but especially for the trayning and bringing vp of the yonger sort", "THE COVNSELLOR. Exactly pourtraited in two Bookes. WHEREIN THE OFFICES OF Magistrates, The happie life of Subiectes, and the felicitie of Common-weales is pleasantly and pithilie discoursed", "A GOLDEN WORKE, REPLENISHED with the chiefe learning of the most excellent Philosophers and Lawgiuers, and not onely profitable, but verie necessarie for all those that be admitted to the administration of a well-gouerned Common-weale", "THE LORD MARQVES IDLENES: Conteyning manifold matters of acceptable deuise; as sage sentences, prudent precepts, morall examples, sweete similitudes, proper comparisons, and other remembrances of speciall choise", "THE ROYAL EXCHANGE. Contayning sundry Aphorismes of Phylosophie, and golden principles of Morrall and naturall Quadruplicities. Vnder pleasant and effectuall sentences, dyscouering such strange definitions, deuisions, and distinctions of vertue and vice, as may please the grauest Cittizens, or youngest Courtiers", "THE Prouerbes of the noble and woorthy souldier Sir Iames Lopez de Mendoza Marques of Santillana, with the Paraphrase of D. Peter Diaz of Toledo: Wherin is contained whatsoever is necessarie to the leading of an honest and vertuous life", "THE PRAISE of Solitarinesse, Set down in the form of a Dialogue, Wherein is conteyned, a Discourse Philosophical, of the lyfe Actiue, and Contemplatiue", "A DISpraise of the life of a Courtier, and a commendacion of the life of the labouryng man", "THE DIALL OF PRINCES: CONTAINING THE GOLDEN AND FAMOVVS BOOKE OF MARCVS AVRELIVS, Sometime Emperour of Rome. DECLARING What Excellency consisteth in a Prince that is a good Christian: And what euils attend on him that is a cruell Tirant", "MARCVS Tullius Ciceroes thre bokes of duties, to Marcus his sonne", and "The Gouvernement of all estates, wherein is contayned the perfect way to an honest life, gathered out of many learned Authors".

**Topic 89: Baconian Theology. 1.81%**

The topic expresses views from a wide variety of religious perspectives, using logical arguments and united by an emphasis on observations, from the Bible and personal experience, with those observations playing a role equivalent to experiments in enabling the writer to draw conclusions about religious and theological issues. It is this use of 'experimental' observation used in an inductive manner to draw conclusions that makes the topic very Baconian in spirit.

TW: upon, yet, though, will, thus, find, mean, inde [thereunto], speak

DW: upon, yet, inde, though, particular, speak, thus, case, even, notic, former, express, observ, mean, espec, impli, look, also

The top words only contain small clues—there are more logical connectives than in most topics and the use of 'observ' and 'notic' is unusual. A large majority of the top documents concern religion, but from many different perspectives, quakers, fifth monarchists, Cambridge Platonists, Anglicans, nonconforming clergymen, Calvinist, Presbyterian, Arminians, Church of Scotland, Baptists. The top documents do not focus on one particular religious topic nor on one set of conclusions. Therefore it is the form of argument that unites them. This is epitomized in the frequent use of the word 'experiment', which is highly unusual in religious topics. (It is of course used more in scientific topics.) The importance of method is probably indicated by the presence of a non-religious top documents: "Advertisements about the experiments and notes relating to chymical qualities".

Given the wide variety of subjects and authors for the documents, together with the few indications of subject matter that are in the top words, it is likely that it is the form of argument that is captured by this topic. This is amply shown in a reading of the top documents. Document 1: "As it is in the works of Nature, where there are many common things of excellent beauty, which for their littleness do not fall under our sence; they that have experimented the use of Microscopes; can tell, how in the parts of the most minute creatures, there may be discerned such gildings and embroderies, and such curious varietie as another would scarce believe. If a man were but well read in the story and various passages of his life, he might be able to make an experimentall divinitie of his own. He that is observant of Gods former dealings and dispensations." Document 2: "yea, how it is to the most dismal Tryals and Extremity the Lord hath reserved the greatest Experiments of his distinguishing respects to Christians, and where his leading into the one by an immediate Conduct, hath been made so observable to make way for the other, and some more extraordinary appearance of himself in such a case....I confess it is one of the most astonishing Mysteries of our Religion, which is wholly unaccountable to the Spirit of this World; and it hath been matter of Wonder to me, in how ordinary a way such a Subject is oft spoken of, and what length is come in the Notion and Theory, when so little of the experimental Light hereof, seems to be found on the Earth in this day: But where it is known in Truth, it is surely one of the greatest Demonstrations of God, and of his immediate Power and working...How we are to apprehend aright, so great an Attainment of Grace as this is, and to have our Judgment settled, and clear about so wonderful an Experiment."

Document 3: "As Mans body was but formed of the dust; so his fall hath brought him so experimentally to know that his base original, as may make him sober in his quarrellings with God; It is no small mercy when the truth of a Promise is experimentally confirmed to us That Job's life and theirs being so short and transitory, like one day, or a passing shadow (See Psal. 102.11. and 144 4.) they could not attain to so much knowledge as their Fathers, who lived long, no could they know experimental conclusions otherwise, than by consulting with their experience also who had lived before them."

Document 8: "Is it not a clear truth, which not onely is found upon the exactest tryal; but is witnessed by such who ever tryed it in their most pressing straits and extremity; for its in the darkest night this truth hath most brightly shined, and these more remarkable ventorious acts of faith, have they not still brought forth most convincing experiments thereanent?" Document 9: "...for indeed this truth is so manifest, proved by such innumerable experiments, amidst the various changes of a Christians condition". Document 10: For though Solomon wrote this Book as an extraordinary Man; yet in his study to edifie the Church, and in his pains for acquiring much of that experimental knowledge communicate to the Church in it..." Document 20: "So Christians which study their own hearts, they are from hence so much the abler to apply themselves to the counselling of their Brethren. They will be from hence able to speak more experimentally about the nature of Sin, about the corruption of Nature, about the work of Grace, about the comforts of the Spirit, and such Points as these are: Their own experience will help them in this particular. Now for the issue and effect of it, we may further observe concerning this knowledge, that it is not meerly notional and speculative, but also practical and experimental. It is a knowledge with some savour and spiritual life added to it." Document 17: "Acquaintance with the cases of others, either by reading or mutual fellowship; but most of all it is requisite, that one have some experimental knowledge of the way of God towards his own heart." Document 16: "Let us improve this Experiment to a Dependance upon God for time to come, as to all deliverances of the like Nature with it, which we may ever at any time stand in need of....And so 'tis one thing for a man to say, that Gods favour is precious because he hears so in the Preaching and Ministry of the word, and another thing to say, because he finds it so upon his own Tryal and Experiment. Now this latter is that which is here commended unto us....When Christians do thus mutually impart and communicate their Experiments to each other, they do hereby wonderfully establish and confirm each other in good,

whether as to point of Grace or of Comfort. And then further, Not onely by imparting, but by comparing these Experiences together, one with another."

**Topic 90: Non-Translated Latin. 0.67%**

A non-consequential topic that isolates the elements of documents that have foreign words, mostly Latin.

TW: non, quod, cum, hoc, haec, quo, cap, pro, quid, etian, deus

DW: non, quod, cum, hoc, autem, etian, deus, ergo, ecclesia, haec, quo, christum, chrysostom, quid, spiritus, modus, secundum

Because the Latin used in the texts was highly idiosyncratic, the translations are far less than perfect, as shown by the lists of most important words. A large proportion of the top documents have an unusually high percentage of words that cannot be found in an English dictionary.

**Topic 91: Transubstantiation. 0.46%**

Arguments for and against the doctrine of transubstantiation.

TW: christ, sacrament, bodi, bread, sacrific, blood, eat, wine, priest, flesh, drink, supper, consecr, church, spiritu

DW: sacrament, christ, bread, eucharist, sacrific, blood, bodi, transubstanti, supper, baptism, priest, flesh, communion

This topic is the only one that has the stem transubstanti in its key words.

Examples of titles of top documents are "The Anatomy of transubstantiation", "The supper of our Lord set foorth", "The history of Popish transubstantion", "An instruction for all thos that intend to goe to the blessed sacrament of the Lords Supper.", "A discourse of the communion in one", "Transubstantiation contrary to Scripture", "An answer to A discourse against transubstantiation", "AN HISTORICAL TREATISE WRITTEN By an AUTHOR of the Communion of the CHURCH of ROME. TOUCHING Transubstantiation.", "The boke of Barthram Priest intreatinge of the bodye and bloude of Christ wryten to greate Charles the Emperoure", "A DEFENCE OF THE TRVE AND Catholike doctrine of the sacrament of the body and bloud of our sauieur CHRIST", "A DISCOURSE OF THE SACRIFICE OF THE MASS."

**Topic 92: Sin, Damnation, & Repentance. 1.71%**

Admonishments and warnings, as opposed to theology, on the wages of sin, and the hopes that can be held if a good life is lived.

TW: sin, death, soul, life, die, repent, heaven, hell, sinner, etern, merci, fear, never

DW: sin, sinner, death, soul, hell, repent, heaven, merci, sorrow, die, etern, miseri, torment, devil, forgiv, wrath, damnat, punish, resurrect, salvat, wick, lust, righteous

The top wods are highly indicative of the subject matter, with this being the only topic in which 'repent' and 'damnat' are in the top words. A top document is "A SERMON, SHEWING The Meanes how we may Escape the Damnation of HELL" Another alerts readers to " Sighs from Hell: OR, THE Groans of the Damned". Yet another warns "Live not in peril of eternal damnation: ....Tis here that sinners prepare for their never ending horror in the other world; be not you guilty of this folly and madness....1. That most do sow for Hell and destruction, and accordingly will reap the doleful harvest thereof to all eternity; most are in the broad way leading to the chambers of everlasting death; ...There are many that pray and fast, and in some sort mourn for and repent of their sins, and live in the exercise of much holy duty; that yet remain in the gall of bitterness, and at length groan under the insupportable wrath of God for evermore. 'Tis but a very little flock, even among Professours, that effectually take heed of the seed of Hell, and eternal damnation." And, "That which makes Heaven so full of Joy, is, that it is above all fear: And that which makes Hell so full of Horror, is, that it is below all hope. ....", while "The vngodly shall assuredly receiue the punishment of eternall damnation at the day of iudgement", with asking "DID you sorrow for their Sin while they lived, as you do for their Damnation (dying impenitently) now they are dead?"

**Topic 93: Petitions, Protests, & Proposals. 3.42%**

The topic captures entreaties by some to others and the answers in reply to those entreaties.

TW: desir, present, peac, hope, public, endeavour, concern, expect, power, caus, secur, state, answer

DW: peac, engag, desir, interest, secur, public, resolut, hope, expect, design, endeavour, propos, resolv, concern, parti, promis, present, declar, satisfact, consider, proposit, safeti, affair

The combination in the word lists of words plans, proposals, desires, etc. is unique to this topic: peac, desir, interest, resolut, hope, expect, design, endeavour, propos, resolv, concern, promis, declar, proposit.

The large majority of top documents are actually petitions. But some are answers to petitions or responses to protests.

The following document is typical: "THE PETITION OF 8000 Reduced Officers and Souldiers, Amongst whom Are many Knights, Collonels, and other Officers of note, that have faithfully served the Parliament. Read in both Houses of Parliament, on Tuesday the 8th of August 1648. For a speedy settlement of Religion, the King, Parliament and Kingdome, in a Parliamentary way, according to the late Just and modest desires of the City of London. And for payment and security for their Arreares. AND The Answer of both Houses of Parliament Delivered to the said Petition." Among other titles are: "To the supream authority of England, the representors of the people in Parliament assembled; the humble petition of Richard Overton", "To the general council of officers. The representation of divers citizens of London, and others well-affected to the peace and tranquility of the Common-wealth", "A true copy of the humble desires of the Commissioners of the General Assembly", "A letter sent from the Parliament of Scotland to the severall Presbyteries within the kingdome", "A letter declaratorie, to the disturbers of the peace of the county of Kent occasioned by a petition tending to an accommodation", "To the right honourable the Lord Maior, aldermen, and citizens, in Common-Council assembled.\$bThe humble petition of the youngmen and apprentices of the city of London and the liberties thereof", and "A letter written to a Christian friend, and one of the Parliament men : Proposing the groundlessness of the plea for tyths, impropriat tyths, or tyth as a revenue due to the magistrat".

An example where the domain is outside English politics is "His MAJESTY THE King of Swedens LETTER TO THE STATES GENERALL OF THE UNITED PROVINCES", in which it is stated: "We Appeal to your own Justice. Nor can the pains, which we have impartially taken, for the restoring of Peace to the World, and to You, seem to merit at your hands, that any such Counsels should find place with you, as may endanger either our Security, or the diminution of our Honour and Safety. That passage of yours is indeed praise-worthy, where you profess your care of your Alliances and Confederates; But while you perswade others by your own Example, that mutual Faith is not to be broken; you must also needs determine it to be unjust, that others should therefore Arm against us, because we neither can, nor will be wanting to our Confederate, or to the Treaty, to which we are Sworn...And truly if the Obligations of Oaths in Treaties, may pass for any security to the Allies, it is to be hoped, you will esteem your selves engaged, so to understand the cause of your other Confederates, that at the same time you take care, it be not to our prejudice, since we, who have merited nothing of this nature from you, are likewise in Alliance with you, and have Treaties between us ancient, and frequently renewed." Similarly with a satirical entertainment: "THE New-Years-GIFT: BEING A PARAPHRASE ON A Fable in AESOP, and c. In Times when Brutes cou'd well express their Mind, And Froggs did Commonwealths a Burden find, They jointly did Petition Greatest Jove, To send them down a Ruler from above; This Ruler must be KING. For weary quite With their Intestine Jealousies, and Spite, They One desir'd, to whom they All might stand, And pay Obedience to his Just Command."

**Topic 94: Christian Mental Exercises. 1.19%**

Instructions and examples of how to live a good Christian life and the temptations that might arise in such a life. This topic concerns, practical ways to practice religion and obtain salvation, often focusing on processes internal to the person, rather than interactions with the outside world.

TW: good, life, self, soul, grace, heart, sin, heaven, perfect, true, faith, vertu, work, glori, chariti, mind, spirit, live

DW: grace, life, heaven, afflict, saviour, chariti, self, heart, spiritu, world, good, prayer, salvat, comfort, joy, merci, desir, glori, etern, faith, medit, temptat, concupisc, humil

The words are highly indicative of temptations and ways to resist; these are much more common in this topic than any others. 'Medit' (meditation) is a top word in this topic and in no others. One document offers "Spiritually exercyses and goodly meditacions, and a neare waye to come to perfection and lyfe contemplatyue, very profytable for Religyous, and generally for al other that desyre to come to the perfecte loue of god, and to the contempe of the worlde", whiel another gives "A SHORT INSTRUCTION FOR THE BETTER UNDERSTANDING AND PERFORMING OF MENTAL PRAYER". Titles of documents reflect that practical, individual spirit: "A breefe methode or way teachinge", "The interiour Christian", "A short treatise of the quiet of the soul", "Spiritually exercyses", "A short instruction for the better understanding and performing of mental prayer", "Christian rvles proposed to a vertuous soule aspiring to holy perfection", "A treatise of mental prayer", "A dayly exercise of the devout Christian", "The practise of Christian workes", and "A method of conversing with God". Top documents are often instructional: "A BREEFE METHODE OR WAY Teachinge all sortes of Christian people, how to serue God in a moste perfect manner", "A Short Interpretation of the Lords Praier: Necessary for all Housholders to learne, and to teach their Children and Seruants", "A Short TREATISE of the QUIET of the SOUL...Of the natural Conditions of our heart, and how it must be Governed", and "A TREATISE OF MENTAL PRAYER. IN VVHICH Is briefly declared the manner how to exercise the inward Actes of Vertues".

**Topic 95: Compilations of Laws. 0.12%**

General collections of statutes and caselaw, often in user-friendly forms and addressed to a highly specific legal issue.

TW: king, per, quod, year, cum, pro, fol, england, royal, ibidem, non, speech, cap, domini, power, writ, pillag

DW: quod, per, fol, bracton, pillag, ibidem, cum, imperpetuum, gavelkynd, bromton, tunc, pro, domini, infra, king, england, praemunient, hovenen, omnibus

Many of the top documents are legal compilations and when they are not they are about one particular situation and list many of the laws that are relevant in that situation. Examples are: "The FIRST PART of a Brief Register, Kalendar and Survey of the several Kinds, Forms of all Parliamentary Writs", "A Short DEMURRER To the JEWES Long discontinued barred Remitter into ENGLAND. Comprising, An exact Chronological Relation of their first Admission into, their ill Deportment, Misdemeanors, Condition, Sufferings, Oppressions, Slaughters, Plunders, by popular Insurrections, and regal Exactions in; and their total, final Banishment by Iudgment and Edict of Parliament, out of England, never to return again: collected out of the best Historians and Records. With a Brief Collection of such English Laws, Scriptures, Reasons, as seem strongly to plead, and conclude against their Readmission into England, especially at this season, and against the General calling of the Jewish Nation", "THE SECOND PART OF SYMBOLEOGRAPHY, Newly corrected and amended, and very much enlarged in all the foure seuerall Treatises. 1. Of Fines and Concordes. 2. Of Common Recoueries. 3. Of Offences and Indictments. 4. Of Compromises and Arbitrements.", "A BREFE COLLECTION of the Lawes of the Forest: Collected and gathered together, aswell out of the Statutes and Common Lawes of this Realme, as also out of sundrie auncient Presidents and Records, concerning matters of the Forest", and "THE Filacer's Office IN THE COURT OF King's-Bench. Setting forth. The Practice by Original Writ, with several Precedents and other Matters relating thereunto; and also a Presentment of the Fees of all the Officers in the said Court. Very usefull for the Filacers, and all other Practicers in that Court."

**Topic 96: Hierarchical Church Governance. 0.53%**

Discussions of varieties of topics all connected to the governance of intergrated systems of churches. Subjects can be on tithes, organization, supremacy, etc. The documents are mostly sober and scholarly.

TW: bishop, church, pope, council, priest, rome, canon, power, ecclesiast, clergi, law, archbishop, jurisdic, tith, excommun, synod, see, tempor

DW: bishop, pope, church, ecclesiast, council, clergi, tith, priest, synod, canon, archbishop, excommun, jurisdic, section, rome, prelat, dioces, episcop, tempor, supremaci, power, presbyt, patriarch, episcopi

Many of the top words are the names of positions in the church or of types of organizations of the church. The documents are about the organization and running of the national church or the Catholic church. There is little or no discussion of decentralized church governance, removed from the power of central authorities. The titles of many top documents are indicative of the issues: "THE Nature and Kinds OF SIMONY DISCUSSED. Wherein it is Argued, Whether Letting an Ecclesiastical Jurisdiction to a Lay-Surrogate, under a Yearly Pension reserved out of the Profits, be reducible to that Head. And a Sentence in a Cause depending about it near Six Years in the Court of Arches, is Examined", "THE HISTORY OF THE Original and Progress OF Ecclesiastical Revenues", "A SCHOLASTICALL DISCOURSE, Demonstrating this Conclusion, That...neither the Pope, nor those called Bishops in the Church of Rome, are Bishops either in Order or Jurisdiction", "THE Ancient LIBERTY OF THE Britannick Church, AND THE Legitimate Exemption thereof from the Roman Patriarchate, Discoursed on four Positions, and asserted", "THE SECOND and THIRD TREATISES Of the First Part of Ancient CHURCH-GOVERNMENT. THE SECOND TREATISE Containing a Discourse of the SUCCESSION OF CLERGY", "THE ENGLISH IARRE. OR DISAGREEMENT AMONGST the Ministers of great Brittain, CONCERNING the KINGES Supremacy", "ANIMADVERSIONS ON THE EIGHT THESES Laid down, and the INFERENCES, Deduced from them, in a DISCOURSE ENTITL'D Church-Government", and "Select Discourses, concerning 1. Councils, the Pope, Schism. 2. The Priviledges of the Isle of Great Britain. 3. The Popes Primacy, and the Supream Power of Kings, both in Temporals, and also Spiritualls, accordingly as they put on the quality of Temporals, and are means for the hindring, or procuring, the safety of the Republick".

**Topic 97: Political Poems. 1.09%**

Poems that are reportage on contemporary or ancient events, which have a great relevance for politics.

TW: now, heaven, thus, sea, shall, arm, lie, hand, bear, stand, see, like, fli, god, fall, make, fire, fear, earth, fate, great, still, first, night, can, wind, head, eye, flame, yet

DW: jove, panurg, fate, heaven, phoebus, pantagruel, telemachus, flame, brave, sky, nymph, fli, sea, neptun, thunder, hell, god, muse, psych, wind, gargantua, theti, shore, cloud, arm, rage, shade, vast, eumaeus, night

Both sets of top words are unhelpful because they reflect the tone rather than the subject matter of the topic. The top documents are mostly poems, but with subjects that are very serious and aim to tell a story. There are several ancient stories of the Aenid, which contains much political commentary. Examples of the titles of documents that do not refer to ancient politics are "A POEM Occasioned by the Report of the OWNERS bravely setting Fire to the RYE HOUSE AS THE KING came from NEW MARKET", "A POEM ON THE Prince of Orange HIS EXPEDITION AND SUCCESS IN ENGLAND", "A POEM, Occasioned by His Majesty's Voyage TO HOLLAND, THE Congress at the Hague, AND Present SIEGE of MONS", "SYPHILIS: OR, A POETICAL HISTORY OF THE French Disease", "THE Dreadful Burning OF LONDON: Described in a POEM" "A POEM. BEING An Essay upon the present VVar with THE DUTCH, Since the first Battel and Victory obtained by His Highness Royal, June 3. 1665", and "A POEM UPON HIS SACRED MAJESTIES DISTRESSES, AND LATE HAPPY RESTAVRATION."

**Topic 98: Dissent, Schism, & Toleration. 1.21%**

This a topic that is on the borderline of religion and politics. It is how to treat, within the political and the religious systems, people who are unwilling to conform to the establishment religion, and its practices. It is not theology, mainly. And it considers all types of dissenters, and there are different opinions on how they should be treated.

TW: church, worship, communion, reform, prayer, doctrin, minist, ceremoni, bishop, separ, england

DW: church, communion, liturgi, worship, schism, doctrin, prayer, nonconformist, ceremoni, reform, cathol, sacrament, uniti, bishop, minist, articl, papist, preach, baptism, idolatri, schismat, conformist

There are many top words that refer to particular aspects of church practice and many that refer to people who would have disagreements on these issues. The top documents focus on which particular practices are in conformity with establishment doctrine and how these practices should be undertaken. Thus one top document is "The Judgment of Mr. BAXTER, concerning Ceremonies and Conformity in the Points in Difference betwixt the Church of England, and the Dissenters. Now Published in Vindication of the Moderate and Learned Part of the Presbyterians, to let the world see that they are not so irreconcilable to the Discipline of the Church of England, as some People would have us believe." But the documents are not all written from an establishment perspective: "POSITIONS concerning the Differences between the True English Liturgy, and the deformed disordered Cranmerian Changeling, by which it was Supplanted." Several top documents focus upon which particular behaviors are irreconcilable with reasonable practice: "QVERIES. I. Whether a Separation at any time whatsoever, and on what Pretence soever, made by any Part or Member of the whole Church, from the known Faith and Vnity of the same Church, be not opposite and destructive to the Fundamental Grounds of Religion establish'd by Christ?"; "THE CASE OF Lay-Communion WITH THE CHURCH OF ENGLAND CONSIDERED; And the Lawfulness of it shew'd from the Testimony of above an hundred eminent Non-Conformists of several Perswasions." The grounds for toleration is also considered: "THE DIFFERENCE Of the CASE, Between the Separation of Protestants from the Church of Rome, And the Separation of Dissenters from the Church of England."; "A RESOLUTION Of some CASES OF CONSCIENCE Which respect Church-Communion. VIZ. I. Whether to Communicate with some Church, especially in such a divided State of the Church, be a necessary Duty, Incumbent on all Christians. II. Whether constant Communion be a necessary Duty, where occasional Communion is Lawful. III. Whether it be Lawful to Communicate with two Churches, which are in a State of Separation from each other."

**Topic 99: British Isles History. 0.13%**

British Isles History

TW: king, britain, england, earl, lord, son, land, bishop, slay, edward, reign, henri, castl, scot, duke, first, countri

DW: king, britain, earl, realm, saxon, scotland, pict, england, scot, archbishop, bishop, cnute, slay, normandi, scotland, duke, harold, briton, british, englishmen, dane, mercia, edward, son, gruffydh, pope, malcolm, hengist, egbert

The lists of the top words indicate attention to the whole of the British Isles. Examples of the titles are: "The historie of Cambria", "A summarie of Englyshe chronicles", "The history of Wales", "A memorial of all the English monarchs", "The history of Britain", "The Cronycles of Englonde", "The abridgement or summarie of the Scots chronicles", "Philadelphus, or a defence of Brutes, and the Brutans history", "Two histories of Ireland", and "The historie of Great Britannie".

**Topic 100: Physics. 0.26%**

Physics.

TW: bodi, water, air, earth, motion, observ, experi, natur, appear, suppos, caus

DW: section, atmospher, corpuscl, hypothesi, cylind, phenomenon, air, particl, descart, water, motion, caviti, vortex, theorist, earth, tube, objectglass, densiti, effluvia, microscop, telescop, refract, hydrostat, fluid, surfac, bodi, pressur, veloc

Among those mentioned in documents are Boyle, Hooke, Bacon, Descartes, Torricelli, and Kepler. The top documents have titles such as "Of the cause of attraction by suction", "A discourse of gravity and gravitation", "Hydrostatical paradoxes", "Observations touching the Torricellian experiment, and the various solutions of the same, especially touching the weight and elasticity of the air", "New experiments physico-mechanical", "A discourse of local motion", "An essay concerning a vacuum", and "Essayes of natural experiments".

**Topic 101: Reasonable Religious Discourse. 1.61%**

There is a dual meaning in the topic name: in the 17<sup>th</sup> century the word reasonable could have two meanings, the first is the more modern one, sensible, wise, fair, and the second, which is rarer now, is rational. This is religious debate conducted in both senses.

TW: say, word, may, author, scriptur, reason, believ, prove, answer, argument, true, suppos, think, express, know, doctrin truth

DW: scriptur, doctrin, believ, argument, text, videlicet, word, sens, assert, socinian, answer, apostl, author, prove, evid, suppos, reason, consequ, express, grotius, question, tradit

The topic title has been taken from the highest ranked document "OBSERVATIONS ON THE Animadversions (Lately Printed at OXFORD) ON A Late BOOK, ENTITLED, THE Reasonableness of Christianity." There are many top words indicating debate. The discourse does not primarily focus on the more radical forms of Protestantism, but rather on varieties of Anglicanism and even Catholicism. Thus, one document is "Between a New Catholick Convert AND A PROTESTANT. Shewing why he cannot believe the Doctrine of Transubstantiation, Though he do firmly believe the Doctrine Of the Trinity." Similar in tone, but from the opposite perspective is "AN ANSWER TO Dr. SHERLOCK's PRESERVATIVE AGAINST POPERY. SHEWING, That Protestancy cannot be Defended, nor Catholic Faith Opposed, but by Principles which make void all Reason, Faith, Fathers, Councils, Scripture, Moral Honesty." The spirit if reasonable interchange is seen in the title of another top ranked document "A REPLY TO Mr. EDWARDS's Brief REFLECTIONS ON A Short Discourse of the True Knowledg of Christ Jesus, and c. To which is prefixed A PREFACE, Wherein something is said concerning Reason and Antiquity, in the chief Controversies with the Socinians."

**Topic 102: Roman History. 0.23%**

Roman history.

TW: roman, citi, king, war, armi, rome, caesar, enemi, soldier, peopl, senat, consul,

DW: roman, consul, caesar, pompey, war, armi, aetolian, senat, citi, athenian, hannib, rome, scipio, carthaginian, antigonus, antiochus, enemi, slay, lacedaemonian, eumen, ptolemi, soldier, antipat, king, victori, cyrus, asdrub, darius, tiberius, sylla

The titles of top documents are: "A breviary of Roman history", "The lives of the illustrious Romans", "The life & death of Julius Caesar", "The life and death of Pompey", "The history of Iustine", "The Roman history", "Velleius Paterculus his Romane history", "The life death of Hannibal", "The history of the triumvirates", and "The annales of Cornelius Tacitus".

**Topic 103: Diet & Health. 0.49%**

The links between diet and health from a perspective that includes the science of the day.

TW: drink, good, meat, eat, wine, sick, health, diseas, stomach, water, physician, cold, bodi, natur, hot, physic, flesh, food, well, nourish

DW: drink, meat, stomach, eat, wine, sick, diseas, health, physician, cold, tobacco, food, physic, diet, flesh, water, hot, melancholi, concoct, appetit, moist, drunken, nourish, chocolata, good, wholesom, sleep, digest

The combination of food items, digestion, and health is transparent in the two lists of distinctive words. The top documents make it clear that this topic is not simply about home-style recipes for health, but also involves the science of the day. "VIA RECTA AD Vitam longam, OR A PLAINE PHILOSOPHICAL DISCOVERSE OF THE Nature, faculties, and effects, of all such things, as by way of nourishments, and Dieteticall obseruations, make for the preservation of Health, with their iust applications vnto euery age, constitution of bodie, and time of YEARE", "A TREASURE OF HEALTH. BY Castor Durante Da Gualdo, Physician and Citizen of ROME. WHEREIN Is shewn how to preserve Health, and prolong Life. ALSO The Nature of all sorts of Meats and Drinks, with the way to prevent all Hurt that attends the Use of either of them", and "Hereafter foloweth a compendyouy Regyment or a dyetary of Helth, made in Moumtpyllier, compyled by Andrew Boorde of Physycke doctour"



**Topic 104: Deductive Theology. 1.61%**

The use of logical arguments, or at least the vocabulary of logic, to make theological arguments.

TW: unto, also, thereof, thing, mean, therefor, even, caus, whereof, neither, wherebi, yet, wherein, although, upon, use, therein, reason

DW: unto, also, thereof, yea, shall, wherebi, whereof, although, thereunto, therein, albeit, even, whatsoever, notwithstanding, therebi, wherefor, therefor, neither, wherea, concern, whereunto, wherein

More than any other topic, by far, the top words are dominated by logical connectives. A large majority of the top documents concern religion, mostly by Calvinists, but by no means all. Anglicanism and Lutheranism are also present. The top documents do not focus on one particular religious topic nor one set of conclusions. Therefore the form of argument seems to be the common thread. This is indicated even in the titles of some of the documents: Document ranked 3<sup>rd</sup>: "PROPOSITIONS AND PRINCIPLES of Diuinitie, propounded and disputed in the vniuersitie of Geneua... WHEREIN IS CONtained a Methodicall summarie, or Epitome of the common places of Diuinitie." Document ranked 6<sup>th</sup>: "An ANALYTICALL EXPOSITION Of both the Epistles of the Apostle PETER". Document ranked 23<sup>rd</sup>: "A CHRISTIAN AND LEARNED EXPOSITION, vpon certaine verses of that eight chapter of the Episile of that blessed Apostle PAVLE to the Romanes". The top documents contain many passages that read, in tone, similarly to the following from document ranked 28<sup>th</sup>: "THERE are almost as many different Analyses given of this Chapter, as there are Commentators upon it. ... All of them endeavour to reduce the whole Discourse of the Apostle unto such a Method as they judge most Artificial and Argumentative. But, as I have else-where Observed, the Force of the Apostles Reasonings doth not absolutely depend on any such Method of Arguing as we have framed unto our selves.... For this Reason I shall not insist on the Reducing of this Discourse unto any precise Logical Analysis, which none of the Ancients do attempt. But whereas those Methods which are proposed by Learned Men, whereunto, in their Judgment, the Apostles Arguing is reducible, are onely Diverse, and not Contradictory unto one another: The Consideration of all, or any of them, may be of good Use to give Light unto sundry passages in the Context."

**Topic 105: Diseases & Cures. 0.26%**

Manuals of the symptoms, causes, and cures of all types of illnesses.

TW: blood, diseas, caus, spirit, fever, cure, medicin, humour, bodi, reason, salt, distemp

DW: acid, morbif, cerebel, ferment, blood, vitriol, symptom, diseas, ventricl, viscid, scorbut, convuls, effervesc, nervous, diaphoret, diuret, fever, vesicatori, serous, archeus, volatil, serum, distemp, sulphur, febril, particl, antiscorbut, glandul, acrid

Quite similar to topic 44 Medical Science. However this topic focuses more on treatment and cure and less on the science of the times. Thus, for example, titles of top documents are "DR WILLIS'S Practice of Physick", "A Treatise of the RICKETS: Being a Diseas common to CHILDREN. Wherin (among many other things) is shewed, 1. The Essence 2. The Causes 3. The Signs 4. The Remedies of the Diseas", "A GUIDE TO THE PRACTICAL PHYSICIAN: SHEWING, From the most Approved Authors, both Ancient and Modern, The truest and safest way of Curing all DISEASES, INTERNAL and EXTERNAL, Whether by Medicine, Surgery, or Diet", "A Rational Account OF THE CAUSE and CURE OF AGUES, With their SIGNES Diagnostick and Prognostick. ALSO Some specifick MEDICINES prescribed for the Cure of all sorts of AGUES; With an Account of a successful Method of the Authors for the Cure of the most Tedious and Dangerous QUARTANS. Likewise some OBSERVATIONS of CURES performed by the aforesaid Method. Whereunto is added A short Account of the Cause and Cure of FEAVERS, and the GRIPING in the GUTS, agreeable to Nature's Rules and Method of HEALING", and "THE SICK-MANS RARE JEWEL, WHEREIN Is discovered a speedy way how every Man may recover lost Health, and prolong Life, how he may know what Disease he hath, and how he himself may apply proper Remedies to every Disease, with the Description, Definition, Signs and Syptoms of those Diseases. (VIZ.) The Scurvy, Leues Venerea, Gonorrhæa, Dropsies, Catarrhs, Chollick, Gouts, Madness, Frensiess of all sorts, Fever, Jaundise... with the whole Troop of Diseases most afflicting the Bodies, of Men, Women and Children; with a supply of suitable Medicines".

**Topic 106: Practicing Christianity. 1.44%**

This topic informs the reader on how to be a good Christian, from the perspective of musings about the temptations that might arise, how to ward them off, and thus prepare for religious events, such as the sacrament, as well as for salvation itself. This topic is not theology, but rather instruction.

TW: god, man, sin, good, word, see, conscienc, duti, true, christian

DW: sin, apostl, satan, conscienc, luk, devil, david, psalm, evil, duti, prou, wick, saviour, doctrin, godli, pharise

Analysis of the top words gives few hints concerning the central content of this topic. It is about how to be a good Christian but not about the internal mental aspects of that but rather about how to behave within a Christian environment. Thus, a top document is "THE House-holders HELPE, For Domesticall Discipline: OR A Familiar Conference of House-hold instruction and correction, fit for the godly government of Christian FAMILIES. Dedicated to all religious House-holders", while another instructs on "THE APPLICATION OF SCRIPTVRE. OR The maner how to vse the Word to most edifying." The tone is often on how to obtain salvation, but in very practical ways, and when the scriptures are referred to, it is not for any subtle points of theology but rather for simple support of basic points. Thus a top document is about "A Profitable and Familiar Exposition of the Commandements, directing vs in the whole course of our life, according to the Rule of Gods Word, whereby we must bee iudged at the last day". This document takes the reader through each of the ten commandments and highlights the errors of living that might indicate the commandment not being followed: Thus, "THE FIRST COMMANDEMENT. Thou shalt haue none other Gods but mee. THE occasion of this Commandement is our lusting after false Gods. The principall vertues herein commanded are sixe. First, The knowledge of God, Iohn 17. 2. Secondly, The loue of God aboue all, Deut. 6. 5., Fiue signes of the true loue of God. ...Thirdly, trust and affiance in God, Ier. 17. 7. Fiue signes of true confidence in God. ...Fourthly, Feare of God, Ps. 128. 1. Deut. 28. 59. 1. Sam. 12. 24. Two signes of the feare of God. ...Fifthly, Humility, Gen. 32. 10. Gen. 28. 27. Psal. 131. Mica. 6. 8. 4 Signes of Humility. ...Sixthly, Worship of God in Spirit and truth, Ioh. 422. 23. Vices or sinnes forbidden....Fiue signes of secret Atheisme....Foure signes of Distrust."

**Topic 107: Christian Mysticism. 0.63%**

This topic name expresses the content of the topic as clearly as more elaboration would, given the mysticity of mysticism.

TW: god, man, spirit, devil, will, world, earth, power, natur, heaven, soul, bodi, angel

DW: god, devil, spirit, heaven, angel, adam, creatur, soul, etern, christ, satan, witch

Undoubtedly a religious topic. Number words occur very frequently, in important ways. Typical is the title of the first section of one document "A Manifestation concerning the Eight Worlds, or Regions, Allotted to Human Souls, and c. A Further Manifestation concerning the Four Heavenly Worlds." The Christian mystic Jakob Böhme appears a great deal, as author or mentioned in 26 of the top 40 documents. One document praises Böhme in exactly the tone and allusions that is typical of many documents "For certainty, this blessed man...was a burning light, and it is likely, that new wonderfull starre Mystically, and miraculously appearing in the skie; which in the yeare 1572 (beeing two yeares before his birth, did remarkeably shew it selfe, in the Cassiopaea and via lacto , or Saint Jacobs white path, unto the European Nations, for a speciall pregnant signe of a Totall New birth [and manifestation] out of the upper fiery Christalline waters; to the stirring up of many profound, learned, and deep searching mindes: And as one effect thereof, he happily finished his last Mysticall Booke, which as he often told me by word of mouth, was most worthy the reading: Viz. the Mysterium Magnum [or Commentary] upon Genesis, in the yeare 1623. (being from the yeare 1604. and 1607. (when the New starres appeared againe) the Exit of the seaven or seaventh Trigonall Conjunction, and the eighth from the seventh Centrall Beginning) Whereupon in the yeare following, namely, 1624. in the Jubilee, or fiftieth yeare of his Age, according to the Mystery, he returned unto his Grave, or re-entred into the Magicall, and Mentall Principle." Document ranked 39<sup>th</sup> has the indicative title "THEOLOGIA MYSTICA, OR The Mystic Divinitie Of the AETERNAL INVISIBLES". Document ranked 38<sup>th</sup> has a title written in the style of many of the documents: "A DISCOURSE OF THE SOULS OF Men, Women, and Children; and of the Holy and Blessed Angels in Heaven, and of the Evil and Damned Spirits in Hell: SHEWING That they are Immortal, Spiritual substances, as well as the Angels in Heaven. Written because this Author met with Four willfull Ignorant men at one time, which said, the Souls of Men, Women, and Children, were nothing but breath, and vanished into air, when as the Body went to the Grave. These unfaithful people ought to be answered and reproved."

**Topic 108: Deductive Reasoning. 0.78%**

Reasoning about any substantial matter using logical (not empirical) techniques and the rules and methods of such techniques.

TW: reason, power, perfect, act, object, good, soul, must, self, knowledg, true, infinit, yet, understand, truth, caus  
DW: god, natur, idea, divin, essenc, exist, thing, notion, object, essenti, moral, can, infinit, man, soul, etern, creatur,  
principl, human, sensat, power, sens, act, socinian, perfect, subsist, deiti, must, distinct, finit

Note that in the list of top words it is not substance of specific items that appears but rather logical and mathematical terms. This is the only topic where 'infinit' and 'finit' are in the word lists, suggesting its dependence on mathematical reasoning.

Examples of top documents are "Transnatural Philosophy, OR METAPHYSICKS: Demonstrating the Essences and Operations of all BEINGS whatever, which gives the Principles to all other Sciences. AND Shewing the Perfect Conformity of Christian Faith to Right Reason, and the Unreasonableness of Atheists, Deists, Anti-trinitarians, and other Sectaries. With an Appendix, Giving a Rational Explication of the Mystery of the most B. TRINITY", "THE METHOD TO Science", "A Seventh LETTER, Concerning the Sacred Trinity; Occasioned by a Second Letter From W. I. By JOHN WALLIS, D. D. Professor of Geometry, in Oxford", "THE True Intellectual System OF THE UNIVERSE: THE FIRST PART; WHEREIN, All the REASON and PHILOSOPHY OF ATHEISM is Confuted; AND Its IMPOSSIBILITY Demonstrated", "The Danger of corrupting the Faith by Philosophy. A SERMON Preach'd before the Right Honble the Lord-Mayor, AND Court of Aldermen, At GUILDHALL-CHAPPEL, On SUNDAY, APRIL 25. 1697", "Organum Vetus and Novum: OR, A DISCOURSE OF REASON AND TRUTH. WHERE IN The Natural Logick common to Mankind is briefly and plainly described", " THE COURT OF THE GENTILES. PART IV. Of Reformed Philosophie. Wherein Plato's Moral, and Metaphysic or prime Philosophie is reduced to an useful Forme and Method", "God or nothing OR A Logickall Method, comprised in twelve Propositions, deducing from the Actual Being of what we evidently experience, the unavoidable necessity of a GOD, Against the ATHEISTS of our Age and Nation", "Reason and Religion: OR, THE Grounds and Measures OF DEVOTION, Consider'd from the NATURE of GOD, AND THE Nature of Man". A somewhat typical quote from one of the top documents is "From the Essences of things slow all their Attributes and Perfections. Having therefore in the preceding Contemplation fix'd the Essence and Idea of God in Being it self, I shall now in the first place hence deduce that he is a Being absolutely perfect. This has been hitherto taken for the very formal conception and Idea of God, and accordingly has been made the ultimate ground and foundation to prove all his other Perfections, but has rather been supposed than proved it self. But now I make this the first general Attribute of God, to be a Being absolutely Perfect: The proof and deduction of which from his Idea is the concern of the present Contemplation. Let us therefore reassume the Idea of God, which if we attend to, we shall discern that absolute perfection is virtually involv'd in it, and consequently that God is a Being absolutely Perfect. The Idea of God, as we have shewn, is Being it self. Now I consider in the first place that Being it self contains in it all the degrees of Being, and consequently all possible Perfection. The Argument in form runs thus. Whatever has all the degrees of Being has all Perfection. But Being it self has all the degrees of Being. Therefore Being it self has all Perfection. The proof of the first proposition will depend upon this, that Perfection is nothing else but degree of Being. If this be once made out, then it plainly follows that whatever has all the degrees of Being has all Perfection. Now to prove that Perfection is nothing else but degree of Being, I consider first that all Perfection is by Addition. For the more Perfect any thing is, the more it has. But now all Addition is by the Accession of something that really is. For nothing, though never so often repeated, will add nothing. And therefore Perfection is nothing else but a further degree of Being."

**Topic 109: Chorography. 0.23%**

Descriptions of places, where subject matter is determined solely by location and the substance can be about anything in that location.

TW: countri, citi, sea, part, river, name, place, land, mile, island, town, inhabit, mountain, peopl, provinc

DW: countri, citi, sea, river, island, mile, inhabit, mountain, provinc, town, africa, region, south, north, east, america, ocean, land, kingdom, portug, europ, asia, spain, egypt

The lists of top words describe the content of the topic well. The particular topic name follows from the fifth highest ranked document, which is "The worke of Pomponius Mela. The Cosmographer, concerning the Situation of the world, wherein euery parte, is deuided by it selfe in most perfect manner, as appeareth in the Table at the ende of the booke. A booke right plesant and profitable for all sortes of men: but speciallie for Gentlemen, Marchants, Mariners, and Trauellers, translated out of Latine", where Pomponius Mela was one of the earliest known Roman chorographers emphasizing geographical descriptions of regions. These are not surveys focusing on landscapes or topography but rather broader descriptions of places: "A new and accurate map of the world drawne according to the truest descriptions, latest discoueries, and best obseruations that haue been made by English or strangers. With briefe and most plaine notes vpon the vvhole body of cosmographie, for the easie vnderstanding thereof: pleasant and vsefull for all such as desire to know further then of their owne home. The topic documents have a world-wide span and broad in scope in the information they offer, as in "A GEOGRAPHICALL AND Anthologicall description of all the Empires and Kingdomes, both of Continent and Ilands in this terrestriall Globe. Relating their scituations, manners, Customes, Prouinces, and Gouvernements", "COSMOGRAPHIE in foure Bookes. Contayning the CHOROGRAPHE and HISTORIE of the whole WORLD, and all the Principall Kingdomes, Provinces, Seas, and Isles, Thereof", and "A Geographically Description Of all the COUNTRIES In the known VVORLD. AS ALSO Of the greatest and famousest Cities and Fabricks which have been, or are now remaining: Together with The greatest Rivers, the strangest Fountains, the various Minerals, Stones, Trees, Hearbs, Plants, Fruits, Gums, and c. which are to bee found in every Country. Unto which is added, a Description of The rarest Beasts, Fowls, Birds, Fishes, and Serpents which are least known amongst us. Collected out of the most approved Authors, and from such as were eye-witnesses of most of the things contained herein."

**Topic 110: Holy Lives. 0.44%**

The lives and deeds of religious people, particularly the saints, focusing on their works and miracles rather than any deeper elements of their theological contributions.

TW: saint, holi, god, christ, father, virgin, jesus, mother, miracl, mari

DW: holi, jesus, christ, saint, god, priest, miracl, virgin, martyr, apostl, pope, monk, mari, friar

Most of the top documents focus on a particular person and lay out that person's life. Examples of titles are "THE HISTORIE, LIFE, AND MIRACLES, EXTASIES AND REVELATIONS of the blessed virgin, sister IOANE, OF THE CROSSE", "THE LIFE OF THE GLORIOVS VIRGIN S. CLARE", "THE CHRONICLE AND INSTITVTION OF THE ORDER OF THE SERAPHICALL FATHER S. FRANCIS. CONTEYNING His life, his death, and his miracles...", "THE LIFE OF THE GLORIOVS BISHOP S. PATRICKE APOSTLE AND PRIMATE OF IRELAND. TOGEATHER WITH THE LIVES OF THE HOLY VIRGIN S. BRIDGIT AND OF THE GLORIOVS ABBOT SAINT COLVMBE PATRONS OF IRELAND", "The Virgin Maries life", But other documents range over, several, sometimes many holy lives "...the ROMAN MARTYROLOGE...the dayly Memory of so many and eminent SAINTS read, and renewed", "purgatory Prov'd BY MIRACLES: Collected out of Roman-Catholick Authors. With some Remarkable HISTORIES Relating to British, English, and Irish Saints". Not all the documents praise their subjects, some are negative commentaries on people who are viewed as holy by other religious groups: "THE PAPISTS St. Dominick and his Rosary: OR, A Full Discovery of all the Cheats and Forgeries imposed by him on the People, which the politick Contrivance of his Successors have continued to this day in the Church of Rome"

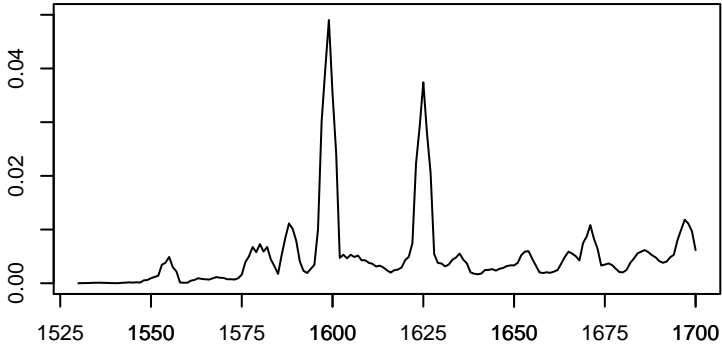
### **Appendix C: The timelines of the 110 topics**

The table on the next page provides the key to the locations of the timelines figures for the 110 topics, which are on the following 18 pages. The numbers to the left of the topic names indicate which of those 18 pages contain the pertinent figures.

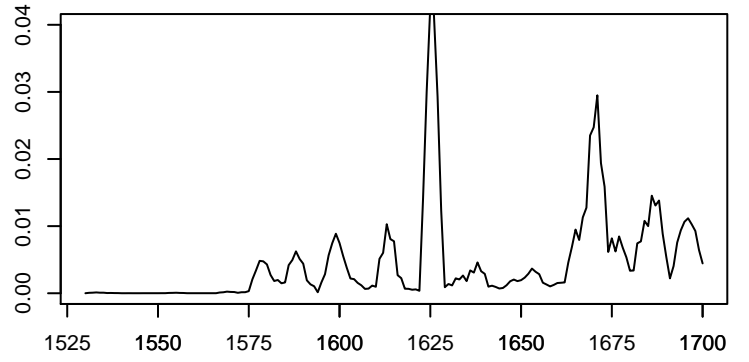
	<b>Geography</b>		<b>Philosophy</b>		<b>Religion (continued)</b>
1	Voyages	8	Republicanism	14	Salvation via Faith
1	Africa & Asia	8	Moral Philosophy: Interests	14	Baconian Theology
1	Western Europe Surveyed	8	Moral Philosophy: Passions	14	Deductive Theology
1	Chorography	8	Moral Philosophy: Virtues	14	Reasonable Religious Discourse
	<b>History</b>		<b>Politics</b>		<b>Science</b>
2	Ecclesiastical History	9	Defending Monarchs	15	Mathematics
2	Monarchs' Lives	9	High Crimes	15	Astronomy & Astrology
2	Biblical History	9	Allegiance & Resistance	15	Natural Philosophy
2	Analyzing Ancient Thought	9	Fearing Catholicism	15	Botany
2	French & Iberian History	9	Political Uses of Religion	15	Chemistry
2	British Isles History	9	Petitions, Protests, & Proposals	16	Physics
2	Roman History	10	Military Campaigns	16	Zoology
	<b>Institutions</b>	10	Continental International Relations	16	Medical Science
3	Parliamentary & Court Procedure	10	Economic Lobbying	16	Anatomy
3	Local Law	10	Turkish International Politics	16	Pharmacology
3	Scottish Law	10	Asserting Parliamentary Powers	16	Diet & Health
3	Dignitary Law		<b>Relationships</b>	16	Diseases & Cures
3	Lawfulness	11	Obloquy & Encomium		<b>Skills</b>
3	Compilations of Laws	11	Family Matters	17	Commercial Aids
4	Constitutional Rules	11	Authority Relationships	17	Scholarly Learning Guides
4	Ordinances	11	Emotional Relationships	17	Practical Geometry
4	Scottish Political Acts	11	Expressing Loving & Loathing	17	Student & Practitioner Law
4	Autonomous Church Governance	11	Self-Reflection	17	Using Numbers
4	Royal Proclamations		<b>Religion</b>	17	Industrial Arts
	<b>Literature</b>	12	Holy Days	17	Legal Practice Aids
5	Early Literature, Secular	12	Official Prayer	17	Bibliographical Practice
5	Early Literature, Spiritual	12	Establishing Correct Doctrine	18	Equine Learning
5	Jokes & Mishaps	12	Papacy	18	Military Training
5	Lusty Entertainments	12	Counter-Reformation Scholarship	18	Cookery
5	Chivalric Literature	12	Religious Love & Hope	18	Improving Soil & Its Products
5	Comedy, Satire, Epigrams	12	Transubstantiation	18	Rural Recreations
6	Historical Romance	12	Holy Lives	18	Catechismal Compilations
6	Romance & Comedy Drama	13	Allaying Christian Doubt	18	Christian Mental Exercises
6	French Romance	13	Old Testament	18	Practicing Christianity
6	Poetic Laments	13	Attacking False Doctrine		
6	Political Poems	13	Apocalyptic Theology		
	<b>Miscellany</b>	13	Catholics Under Protestant Rule		
7	Art Catalogs	13	Dissent, Schism, & Toleration		
7	Names Listed	13	Sin, Damnation, & Repentance		
7	Listing City Facts	13	Christian Mysticism		
7	Not English	14	Salvation via Virtue		
7	Non-Translated Latin				

# Topic Timelines, page 1 – Geography

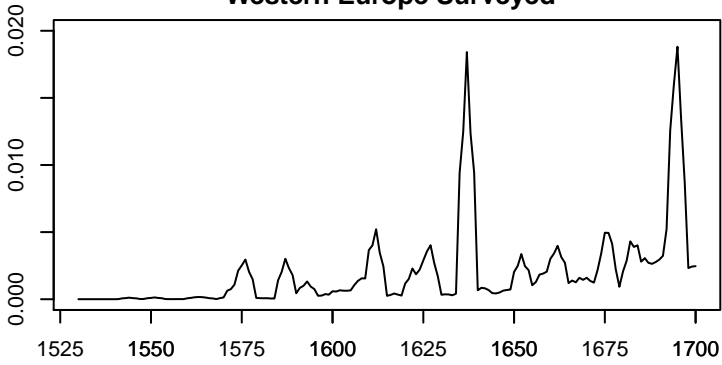
## Voyages



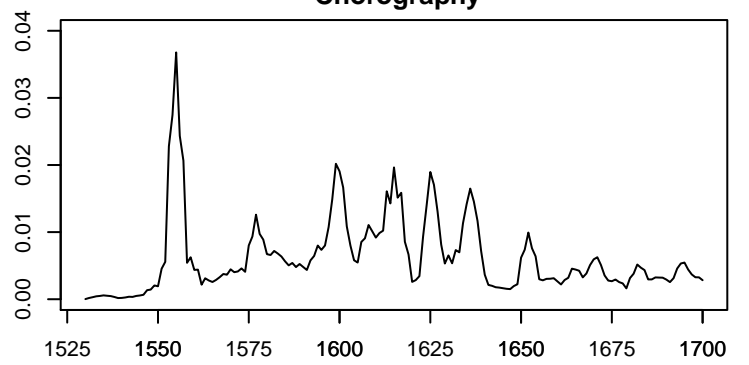
## Africa & Asia



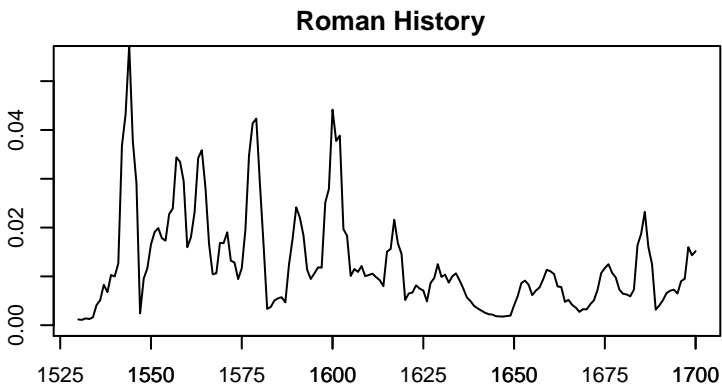
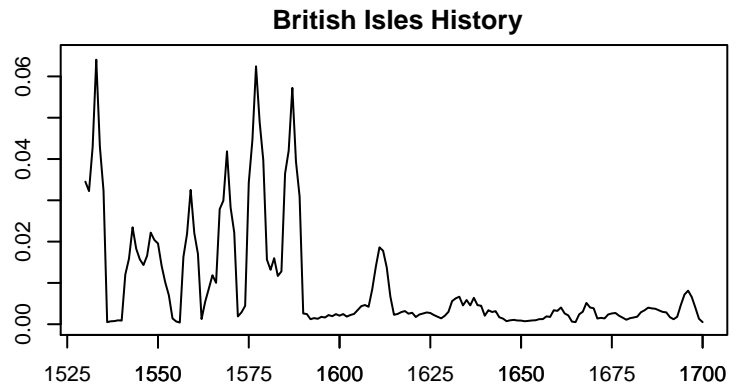
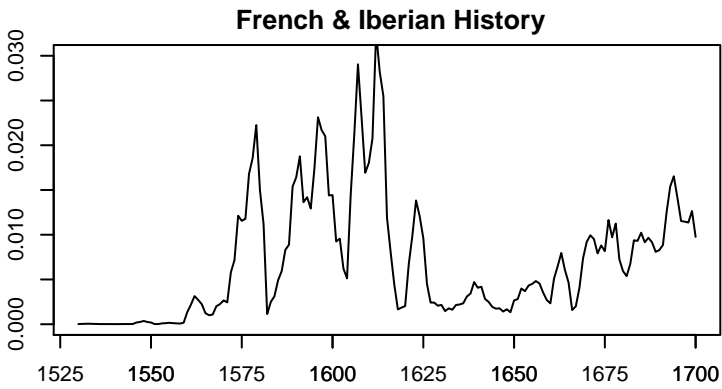
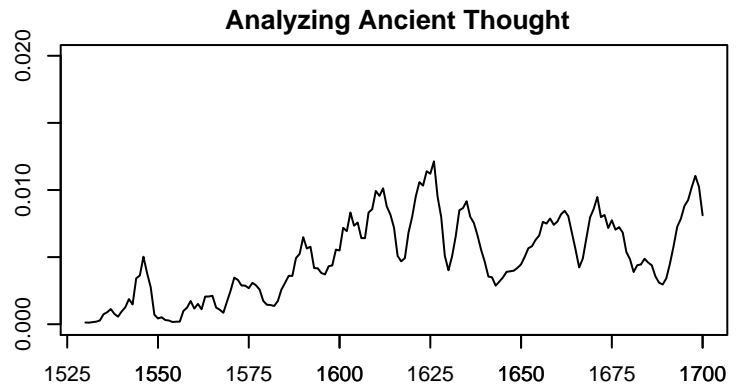
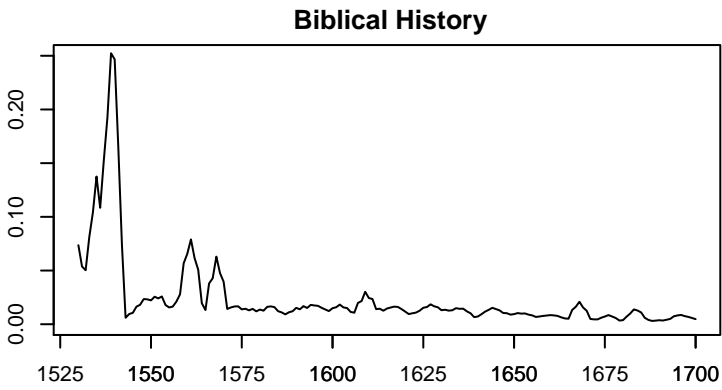
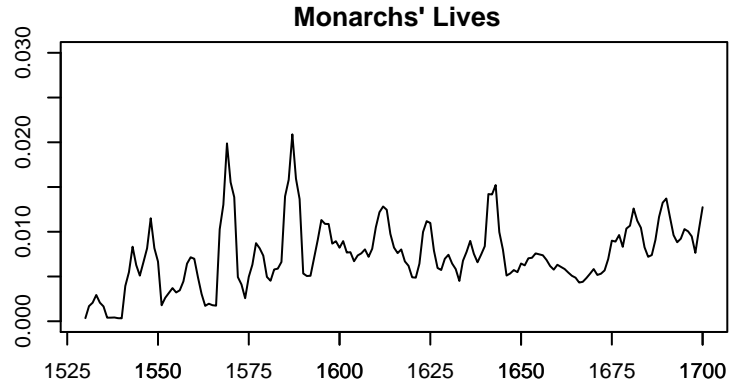
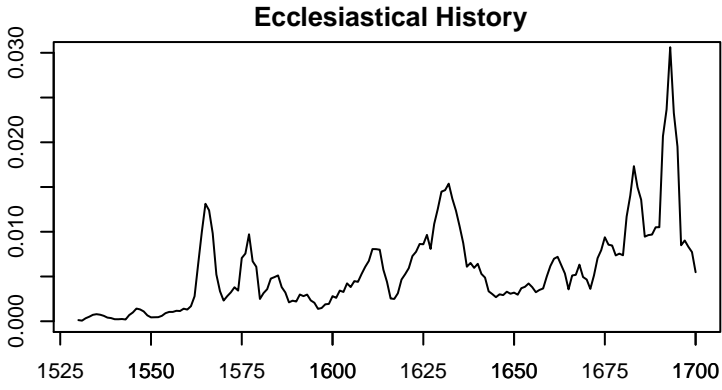
## Western Europe Surveyed



## Chorography

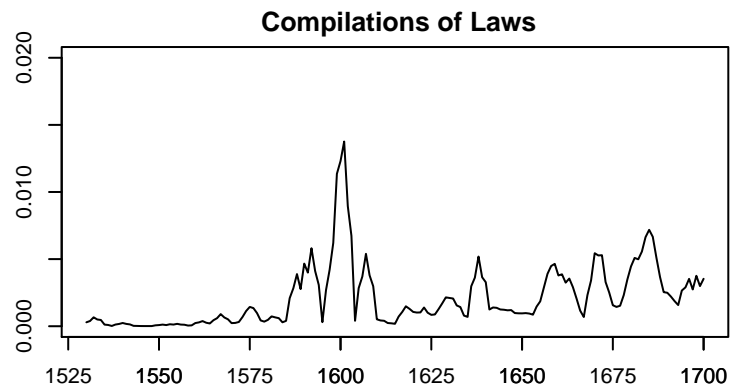
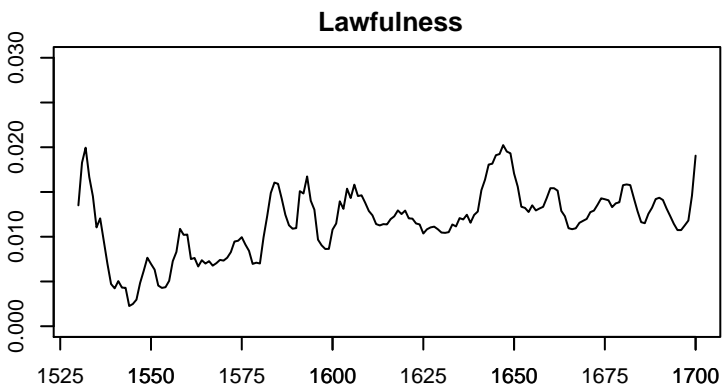
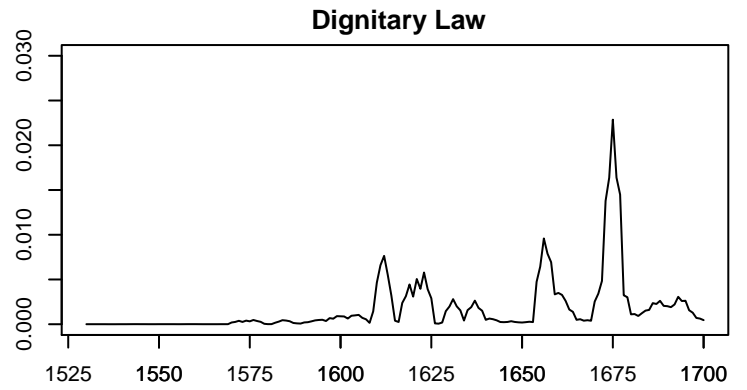
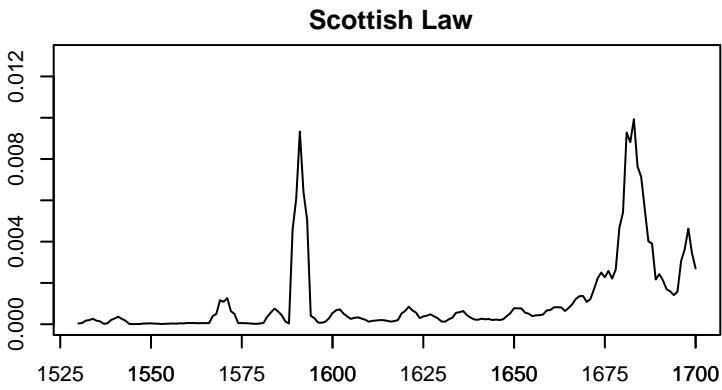
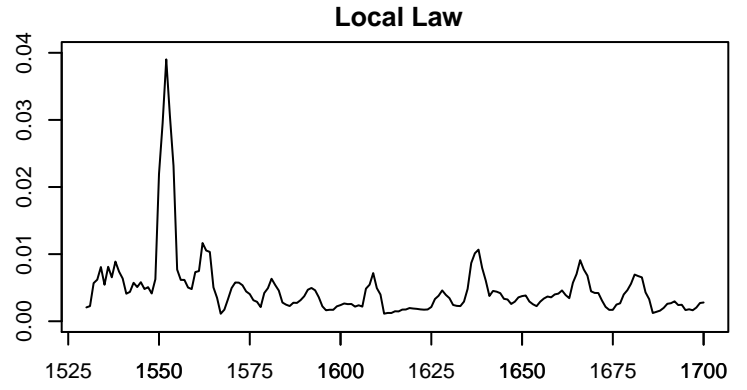
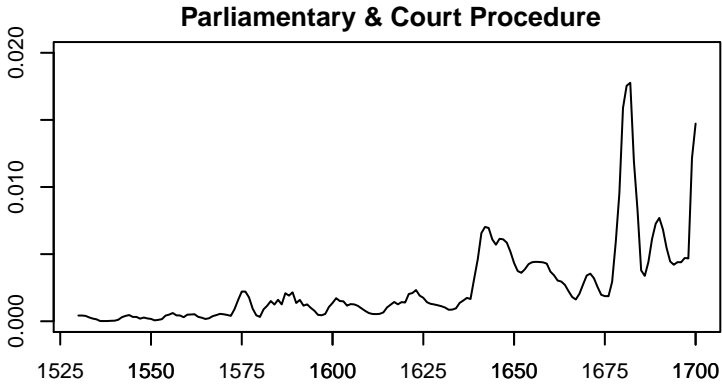


# Topic Timelines, page 2 – History



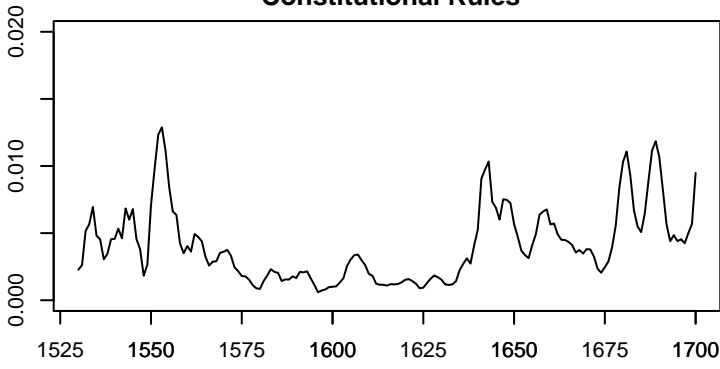


# Topic Timelines, page 3 – Institutions, Part 1

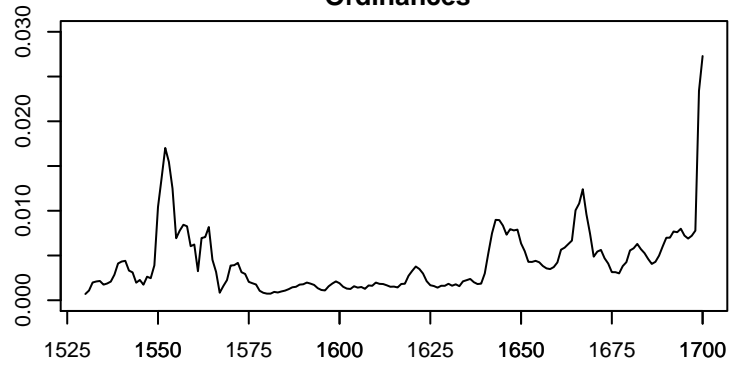


# Topic Timelines, page 4 – Institutions, Part 2

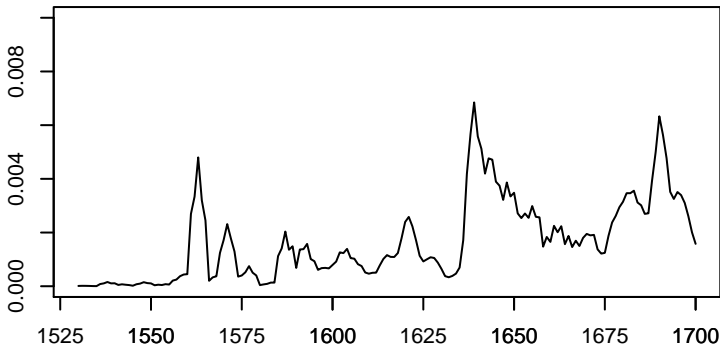
### Constitutional Rules



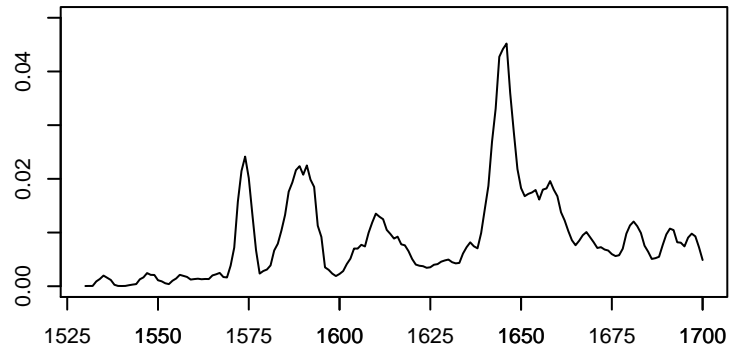
### Ordinances



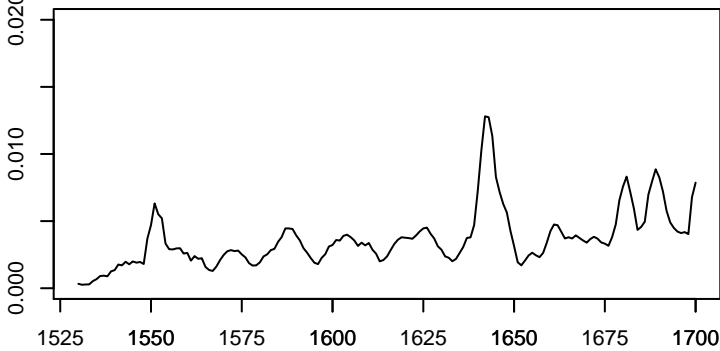
### Scottish Political Acts



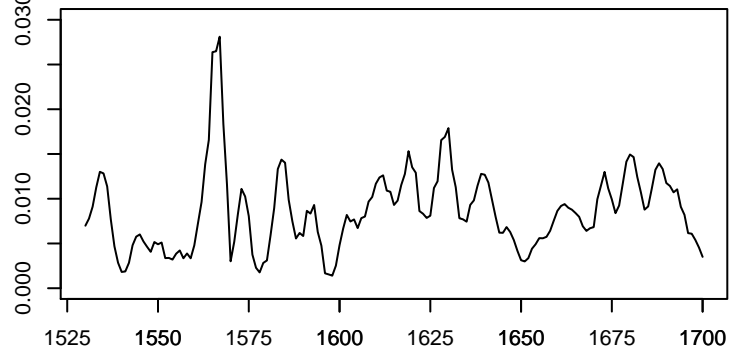
### Autonomous Church Governance



### Royal Proclamations

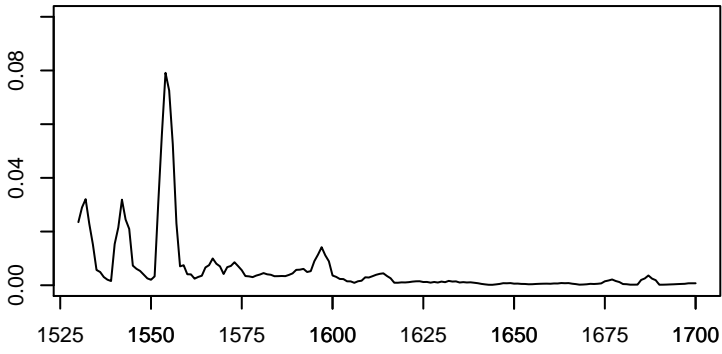


### Hierarchical Church Governance

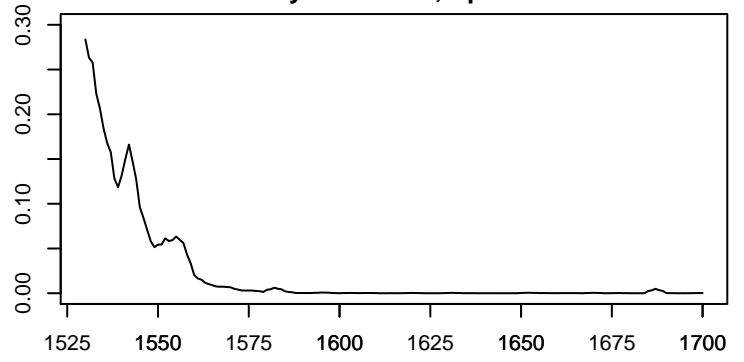


# Topic Timelines, page 5 – Literature, Part 1

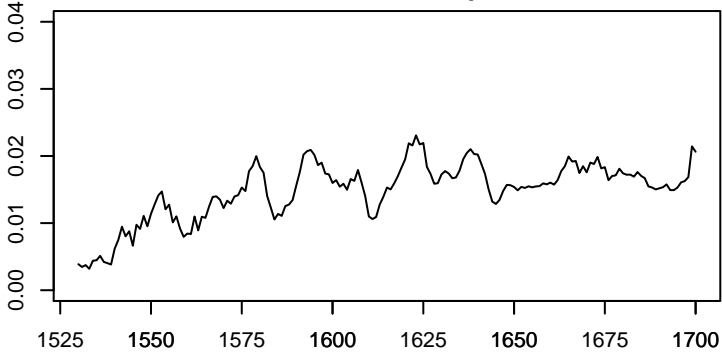
### Early Literature, Secular



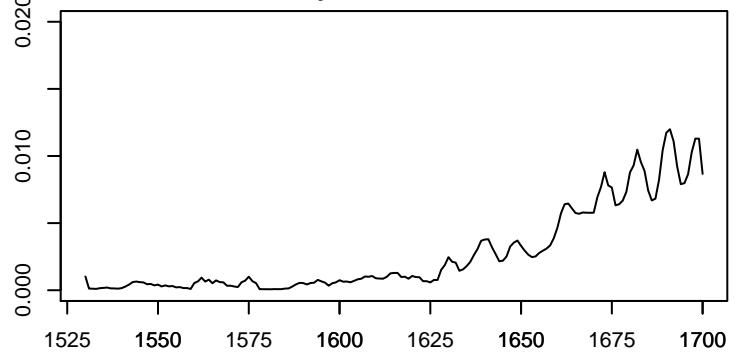
### Early Literature, Spiritual



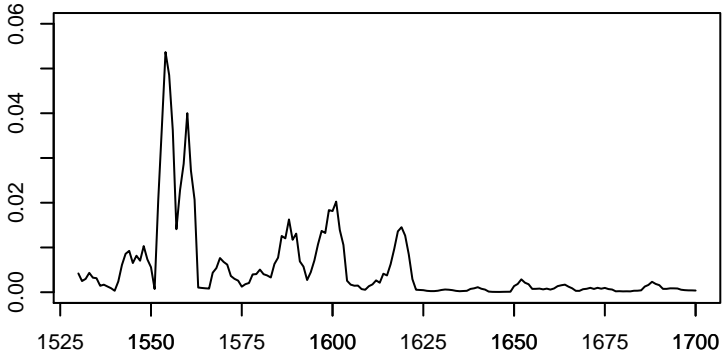
### Jokes & Mishaps



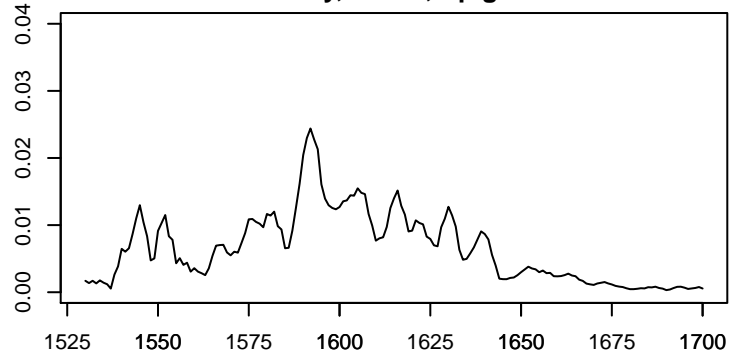
### Lusty Entertainments



### Chivalric Literature

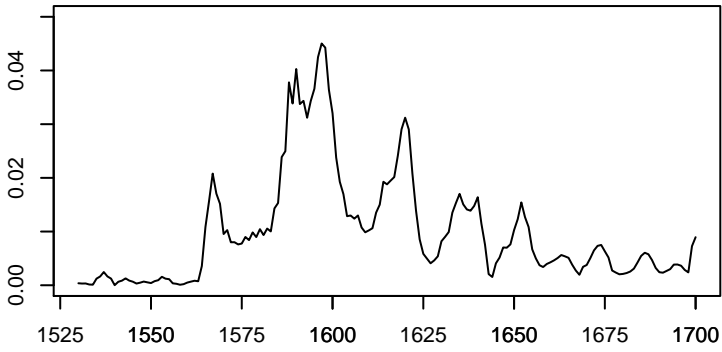


### Comedy, Satire, Epigrams

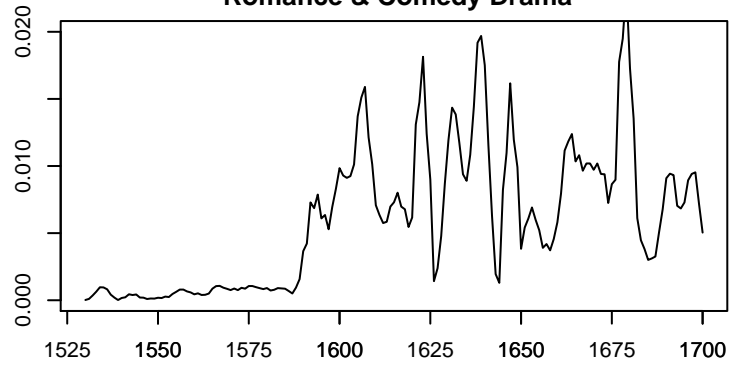


# Topic Timelines, page 6 – Literature, Part 2

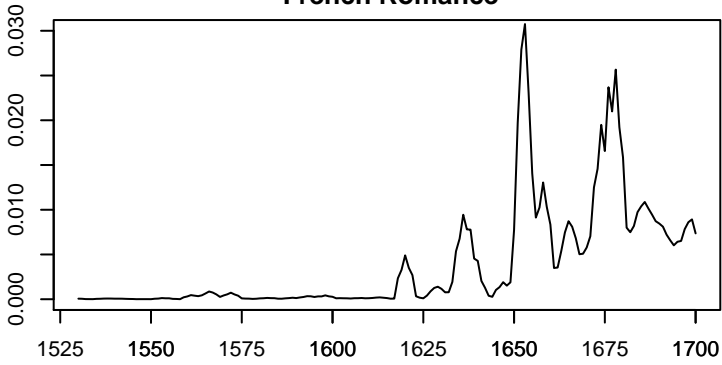
### Historical Romance



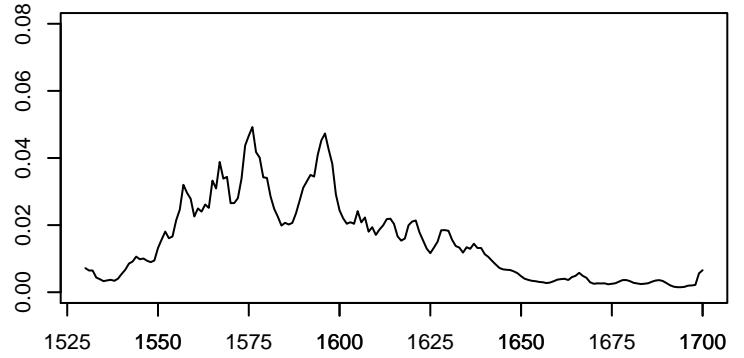
### Romance & Comedy Drama



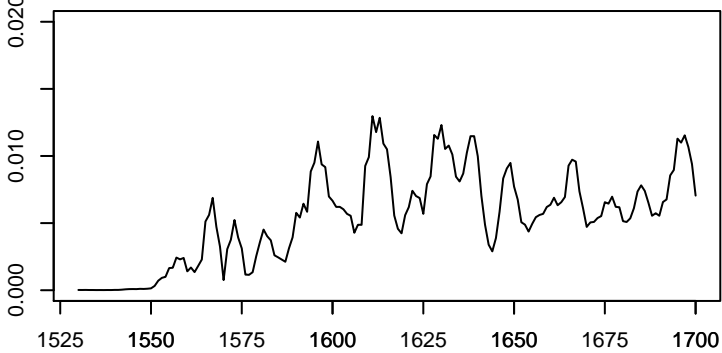
### French Romance



### Poetic Laments

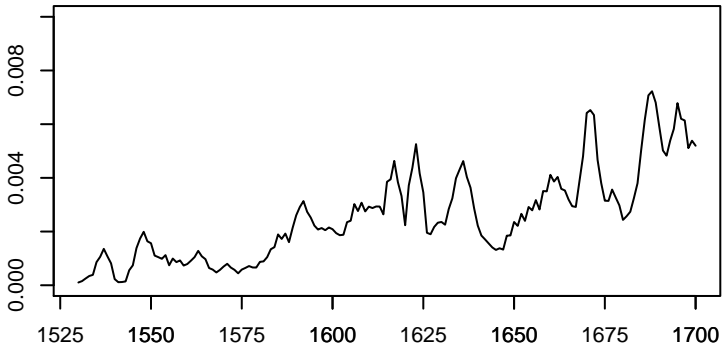


### Political Poems

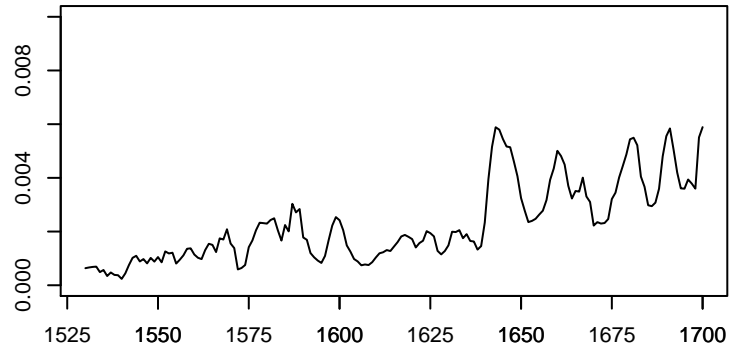


# Topic Timelines, page 7 – Miscellany

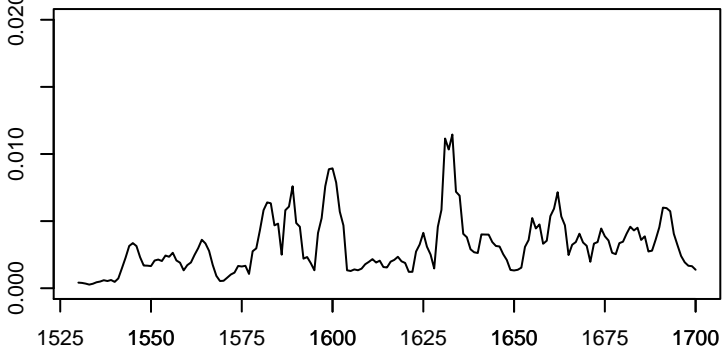
### Art Catalogs



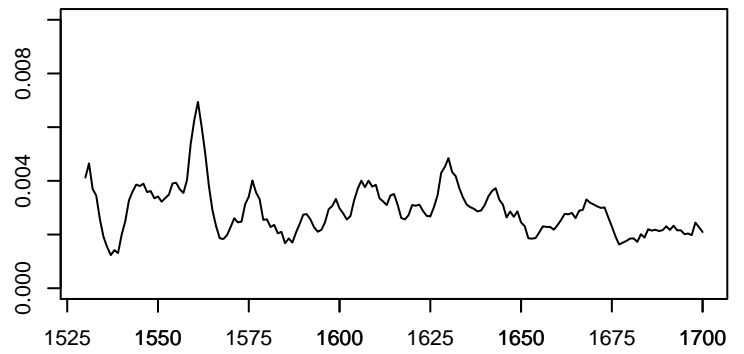
### Names Listed



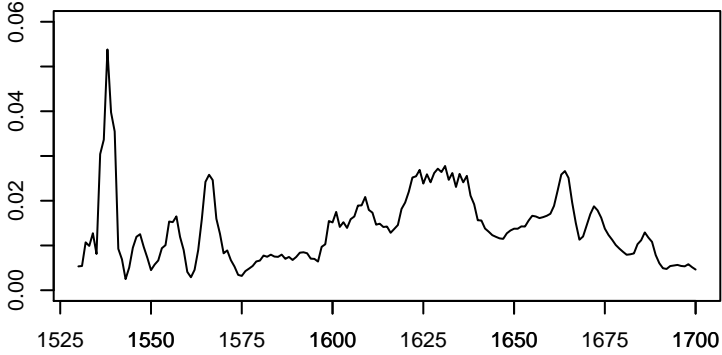
### Listing City Facts



### Not English

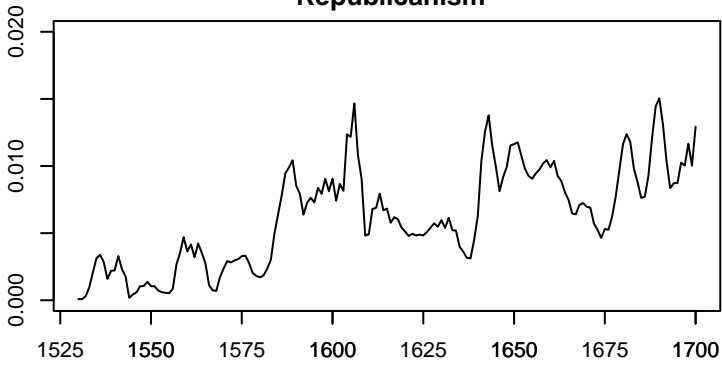


### Non-Translated Latin

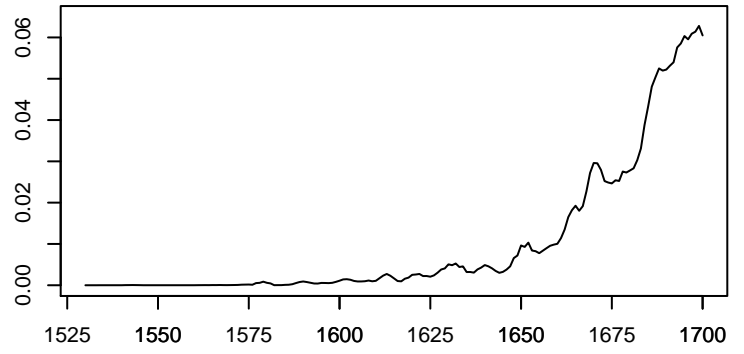


# Topic Timelines, page 8 – Philosophy

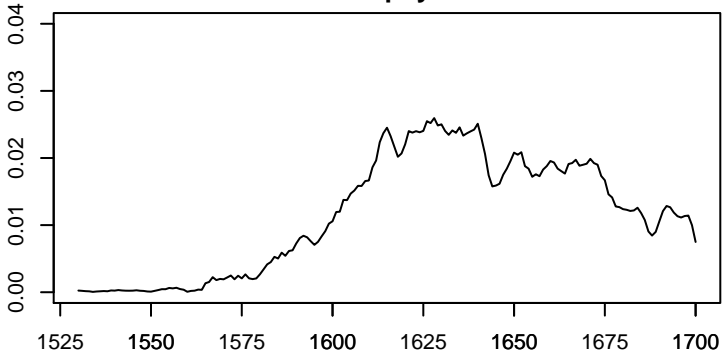
### Republicanism



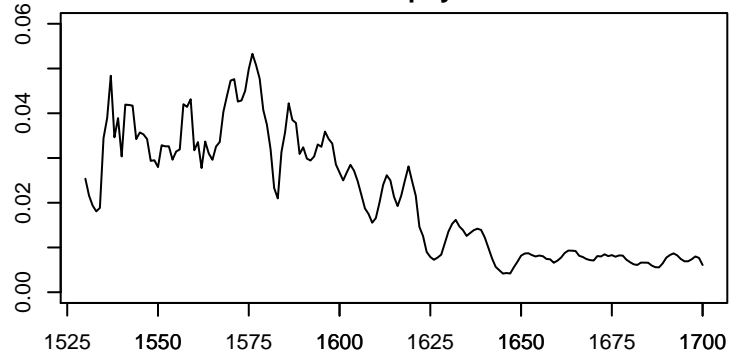
### Moral Philosophy: Interests



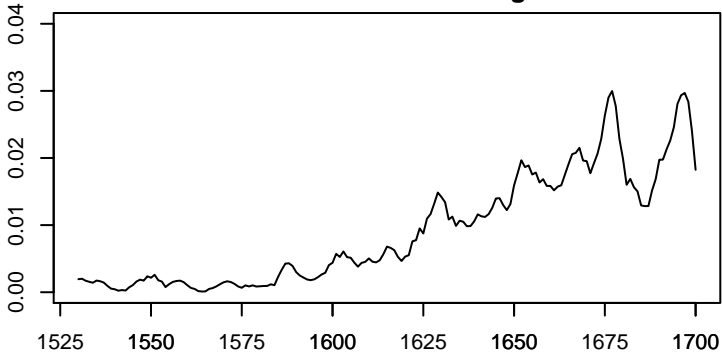
### Moral Philosophy: Passions



### Moral Philosophy: Virtues

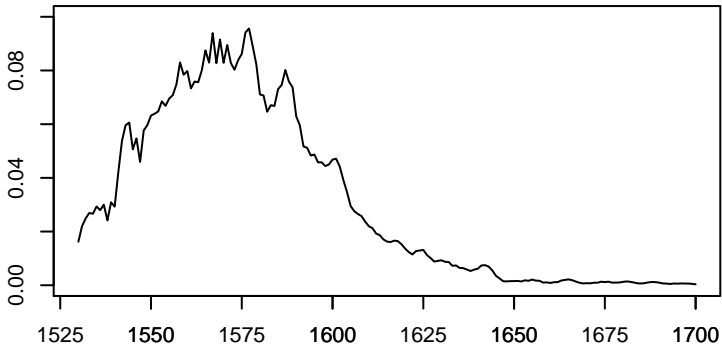


### Deductive Reasoning

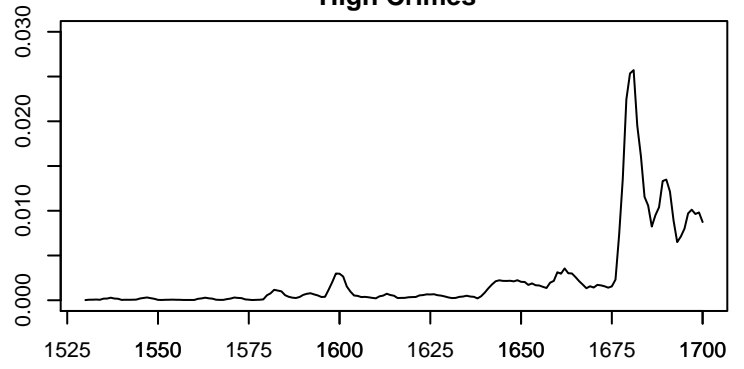


# Topic Timelines, page 9 – Politics, Part 1

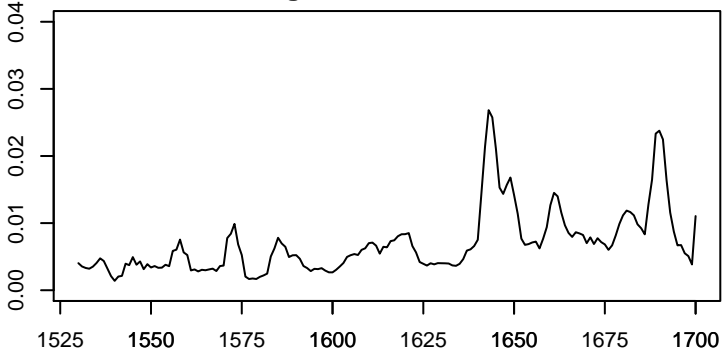
### Defending Monarchs



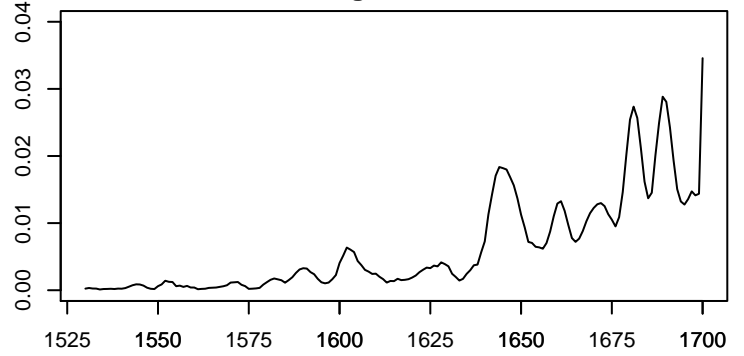
### High Crimes



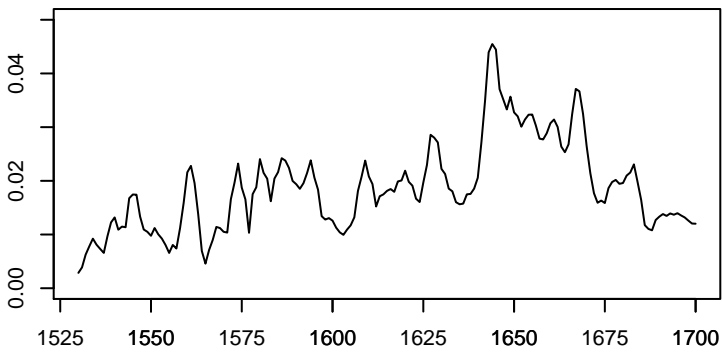
### Allegiance & Resistance



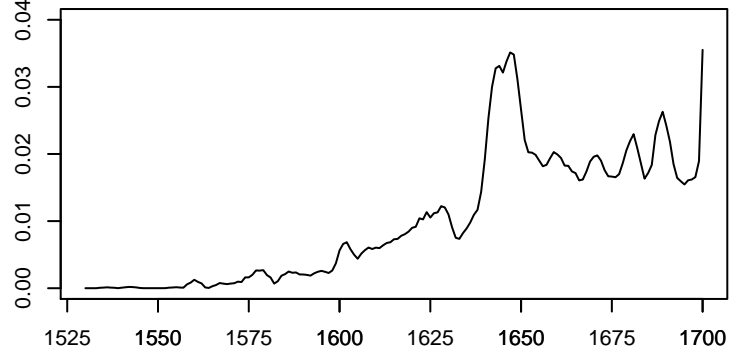
### Fearing Catholicism



### Political Uses of Religion

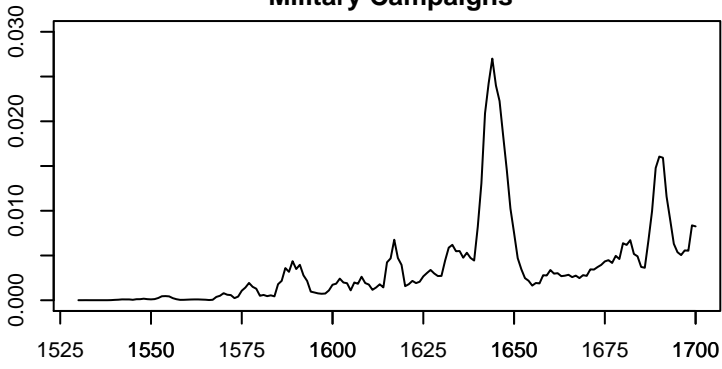


### Petitions, Protests, & Proposals

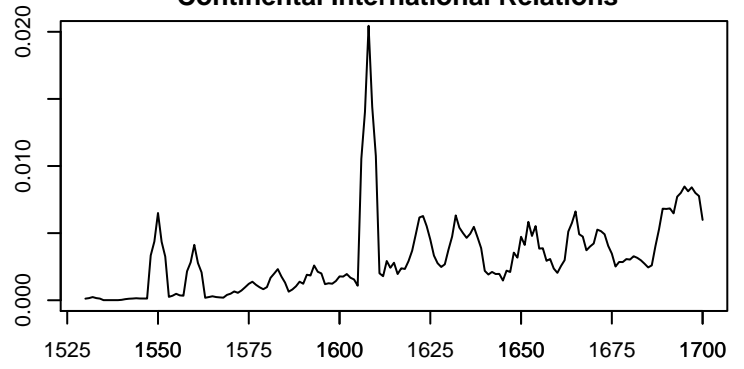


# Topic Timelines, page 10 – Politics, Part 2

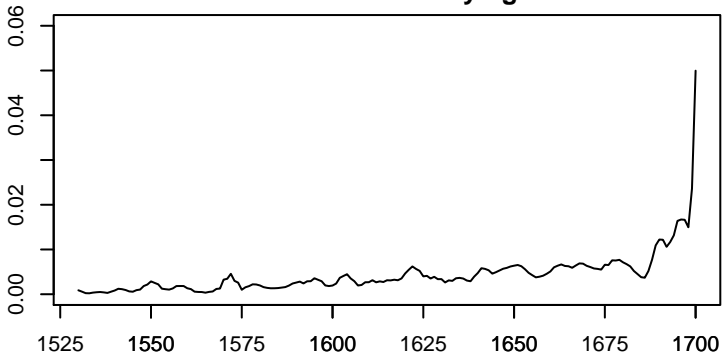
### Military Campaigns



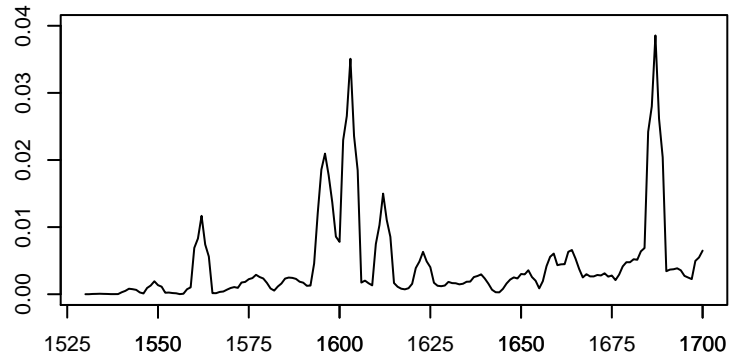
### Continental International Relations



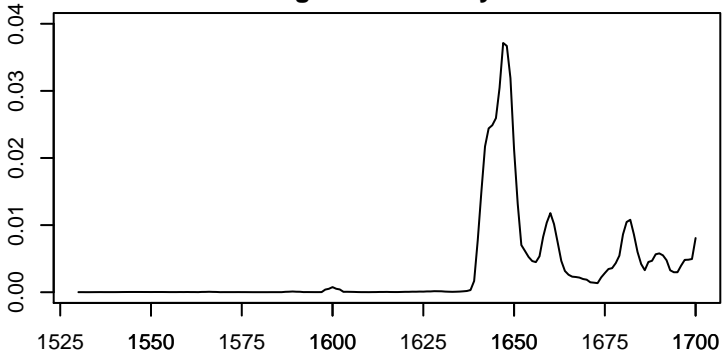
### Economic Lobbying



### Turkish International Politics



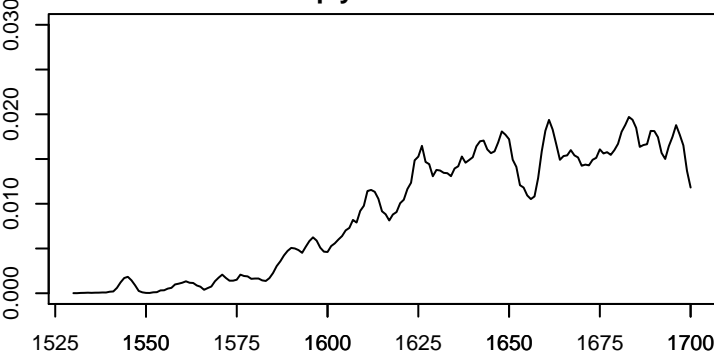
### Asserting Parliamentary Powers



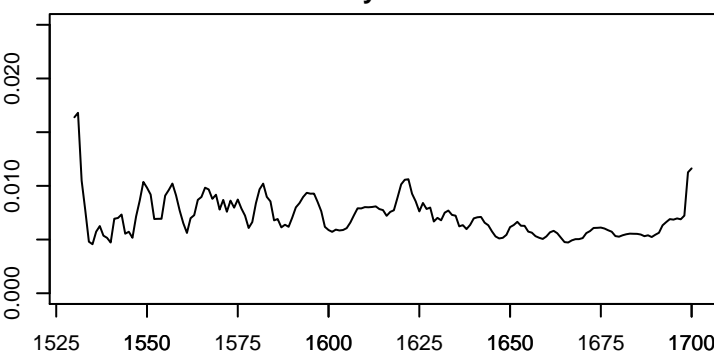


# Topic Timelines, page 11 – Relationships

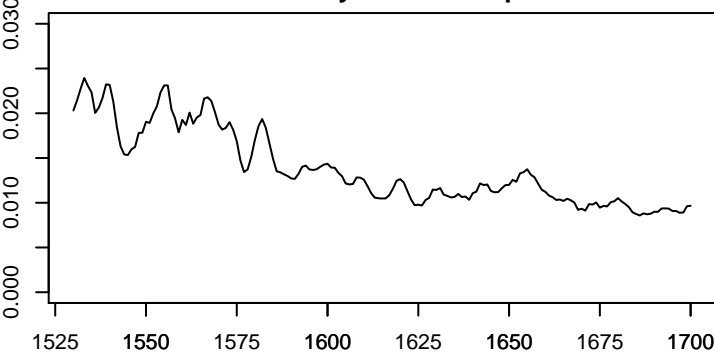
### Obloquy & Encomium



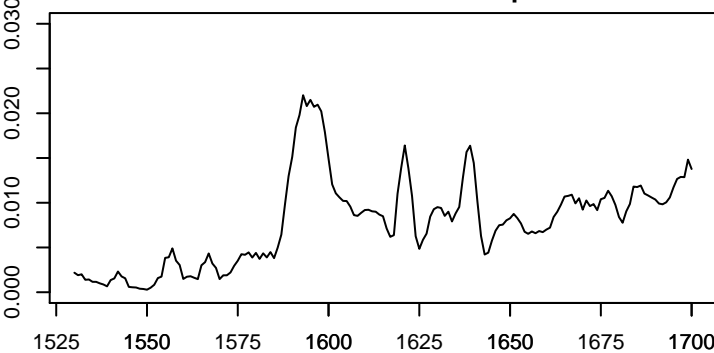
### Family Matters



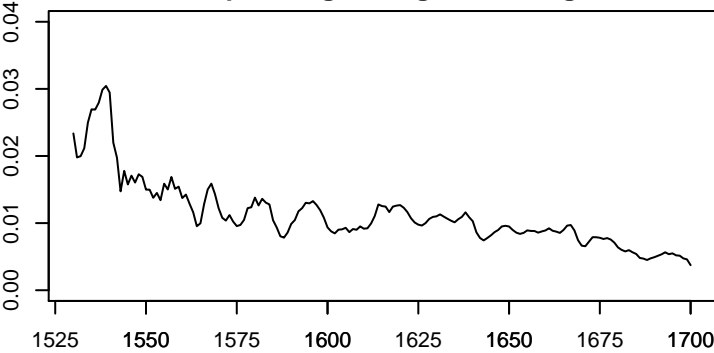
### Authority Relationships



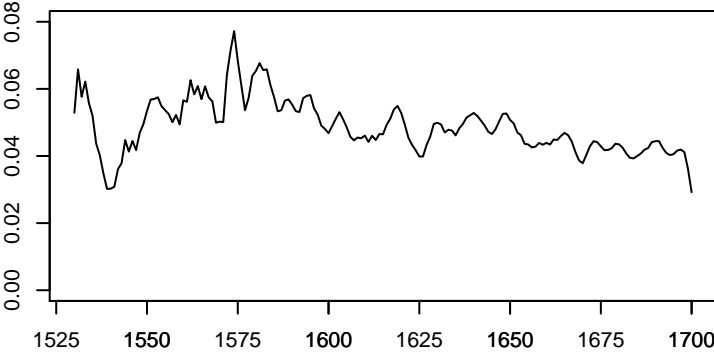
### Emotional Relationships



### Expressing Loving & Loathing

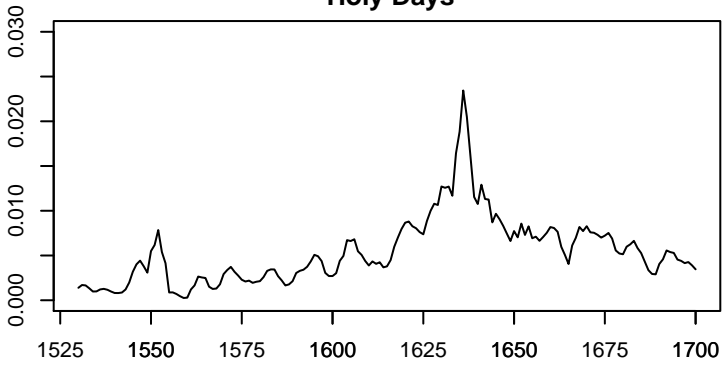


### Self-Reflection

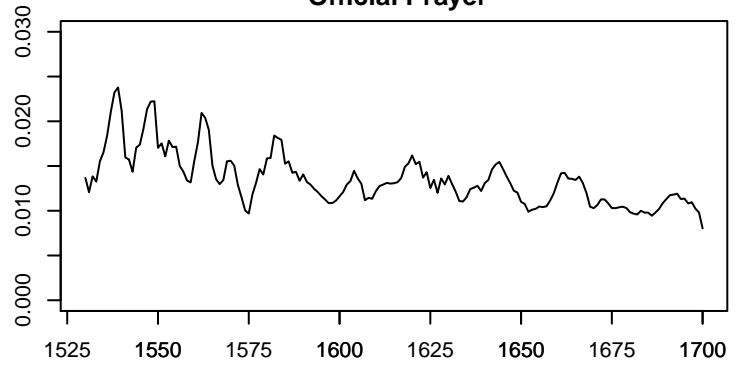


# Topic Timelines, page 12 – Religion, Part 1

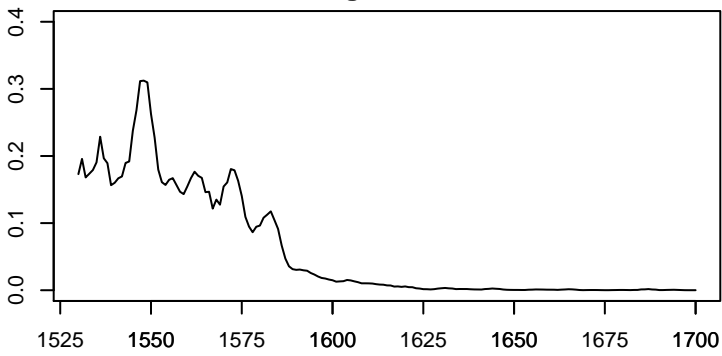
### Holy Days



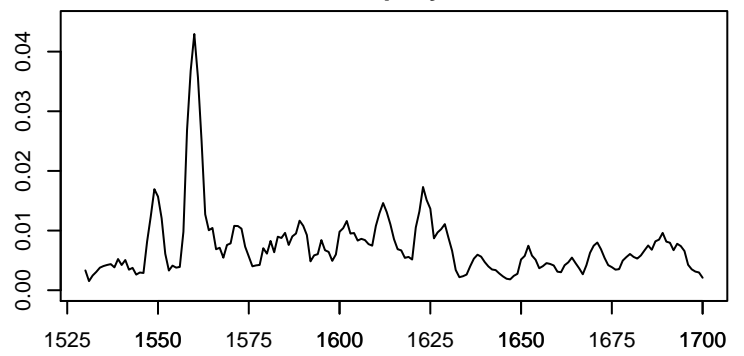
### Official Prayer



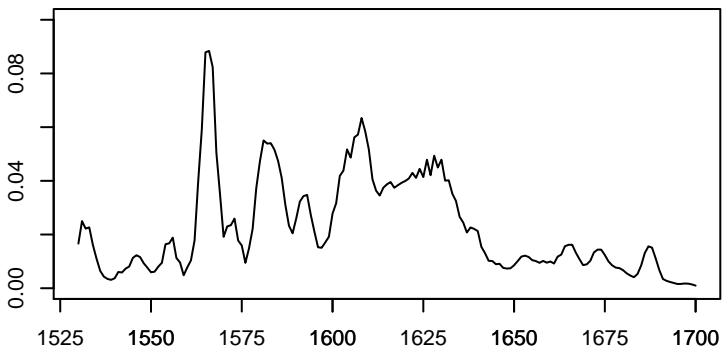
### Establishing Correct Doctrine



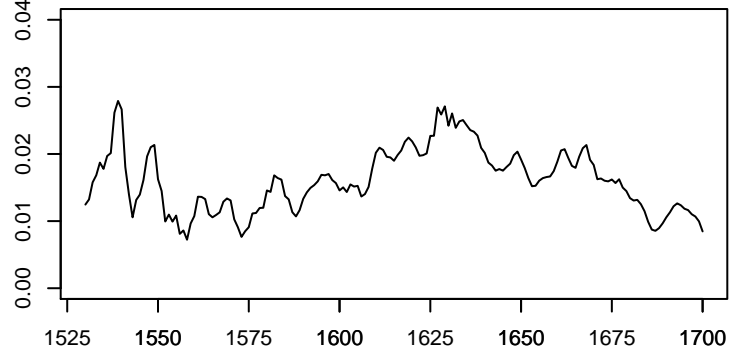
### Papacy



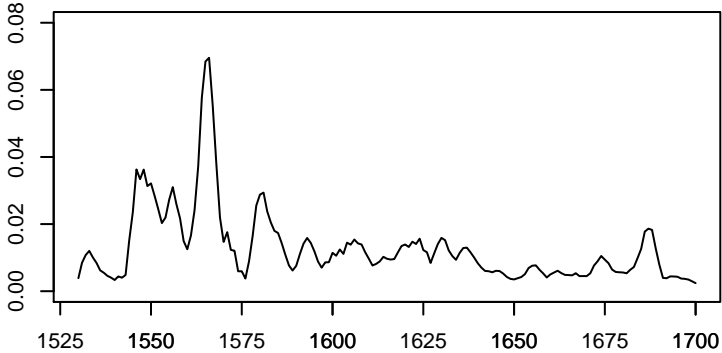
### Counter-Reformation Scholarship



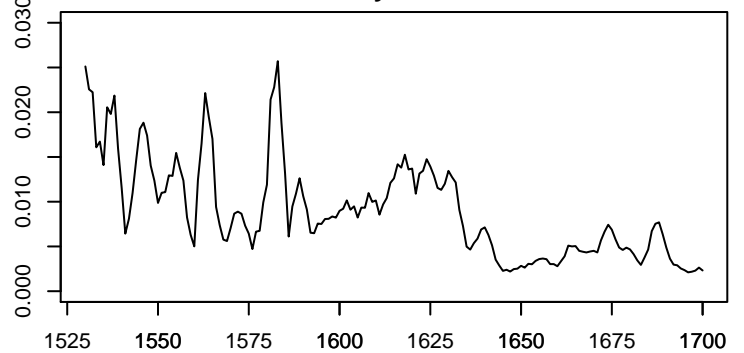
### Religious Love & Hope



### Transubstantiation

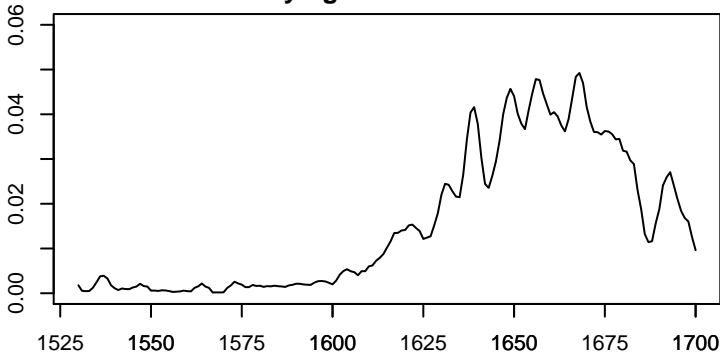


### Holy Lives

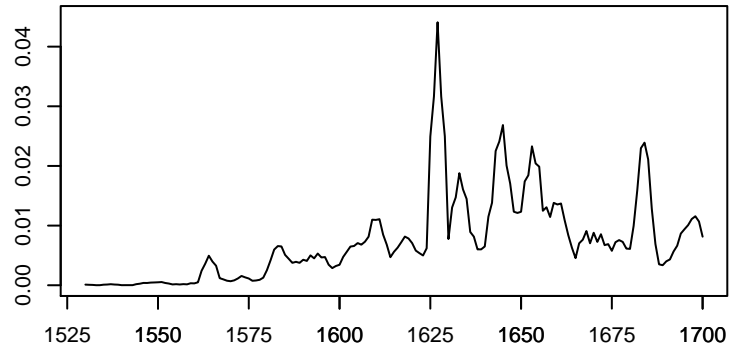


# Topic Timelines, page 13 – Religion, Part 2

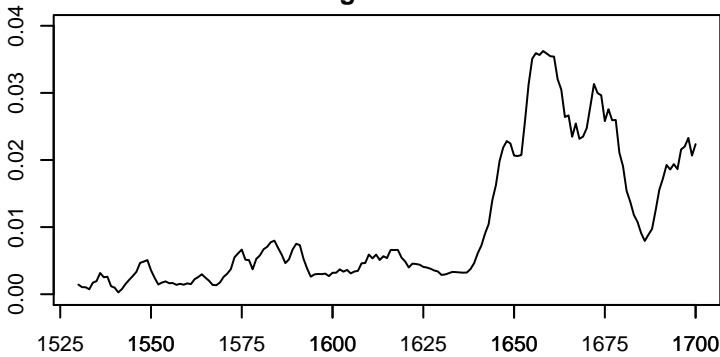
### Allaying Christian Doubt



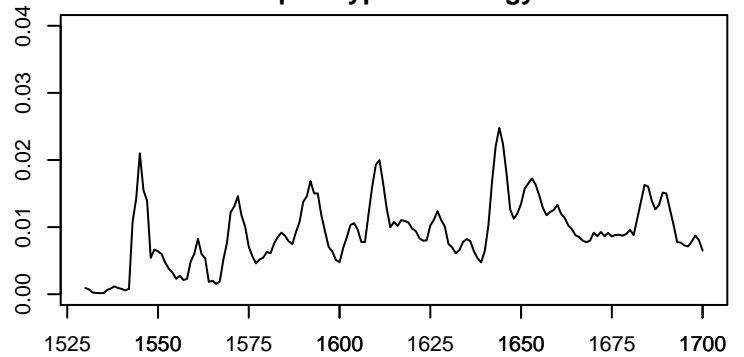
### Old Testament



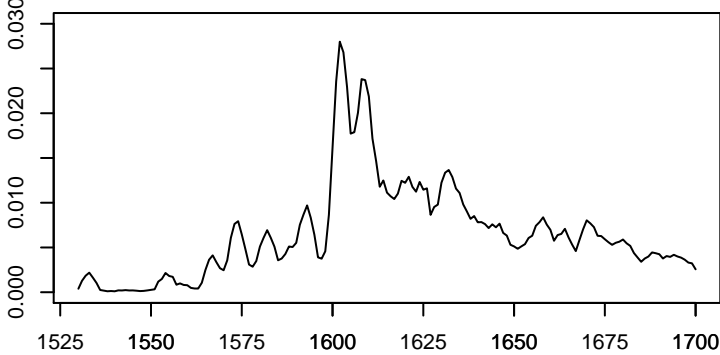
### Attacking False Doctrine



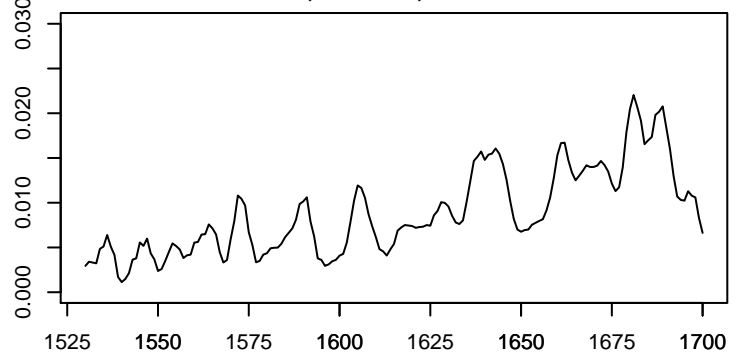
### Apocalyptic Theology



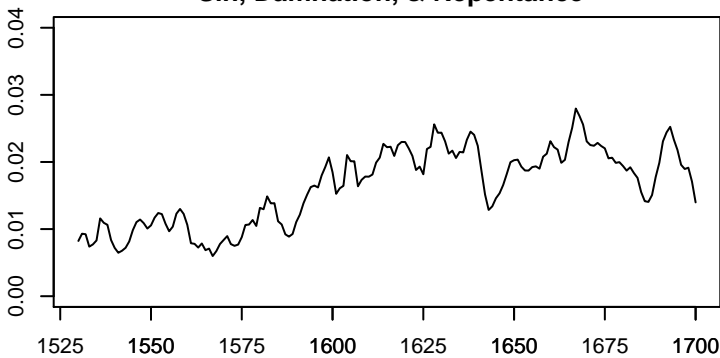
### Catholics Under Protestant Rule



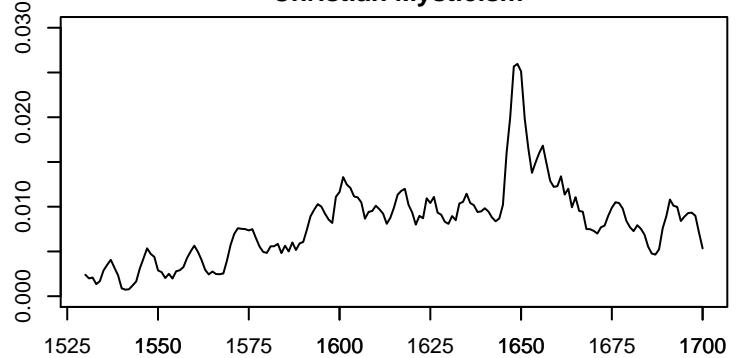
### Dissent, Schism, & Toleration



### Sin, Damnation, & Repentance

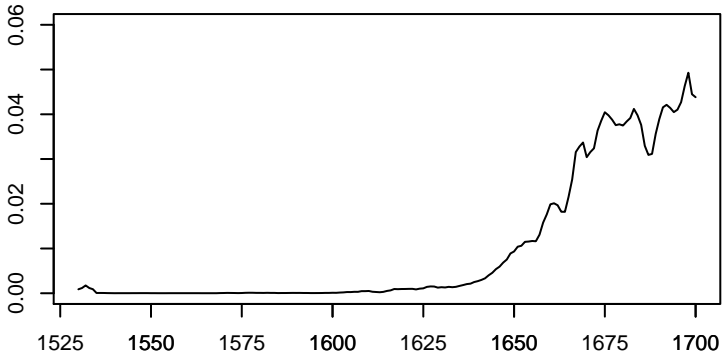


### Christian Mysticism

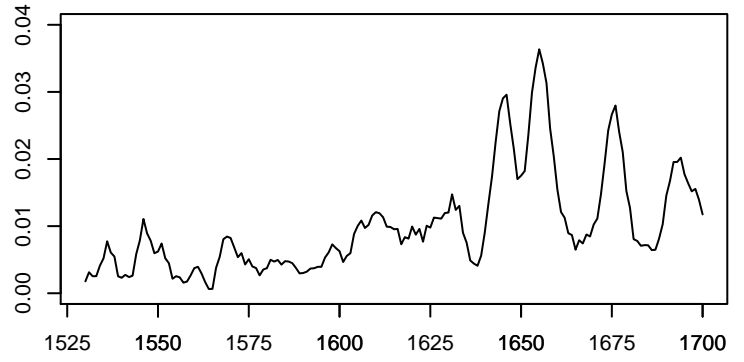


# Topic Timelines, page 14 – Religion, Part 3

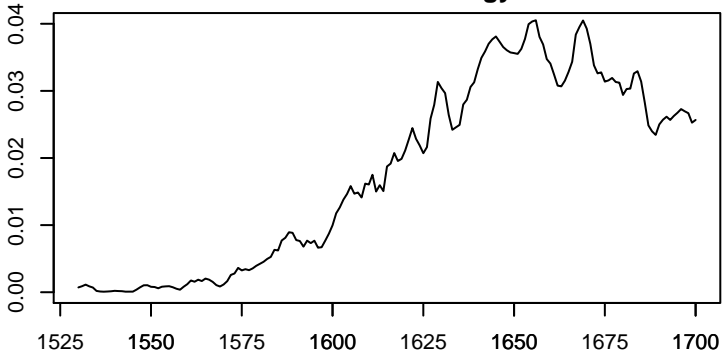
### Salvation via Virtue



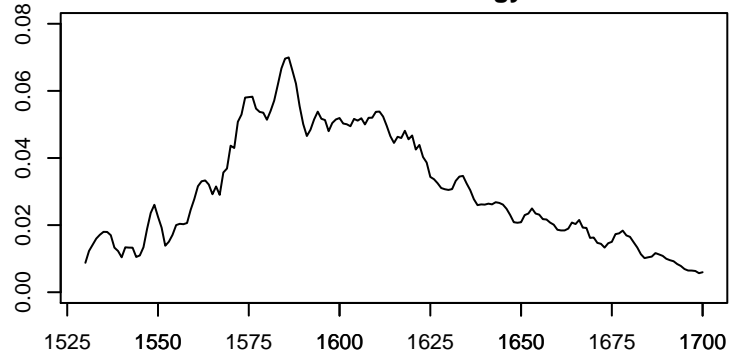
### Salvation via Faith



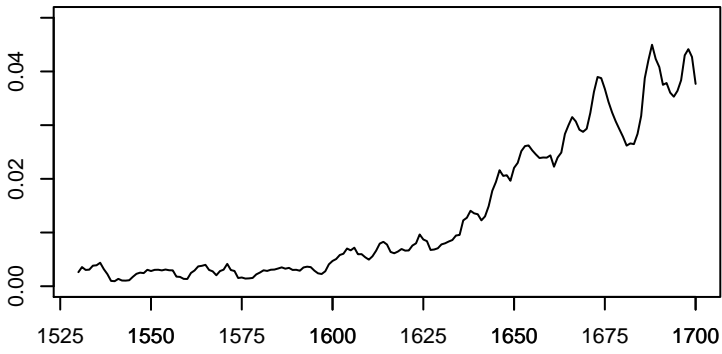
### Baconian Theology



### Deductive Theology

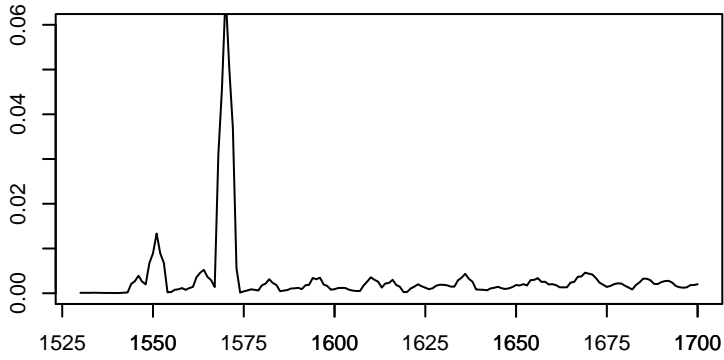


### Reasonable Religious Discourse

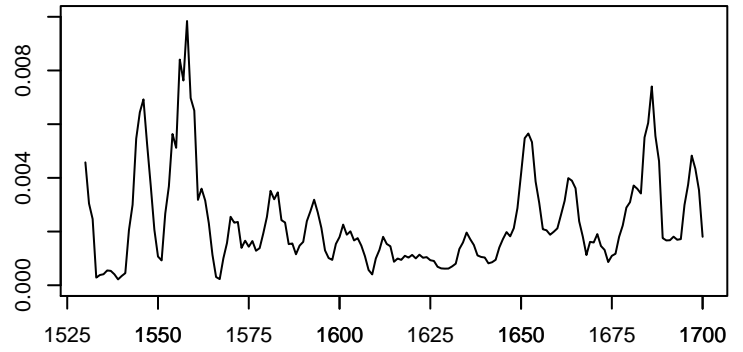


# Topic Timelines, page 15 – Science, Part 1

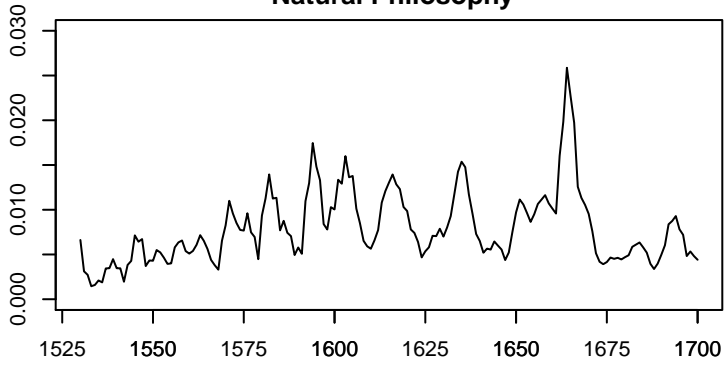
### Mathematics



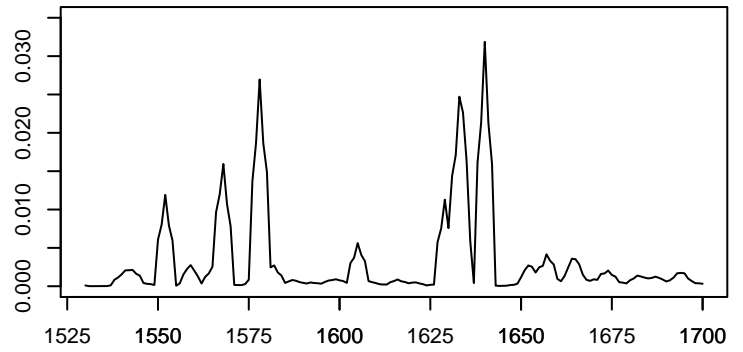
### Astronomy & Astrology



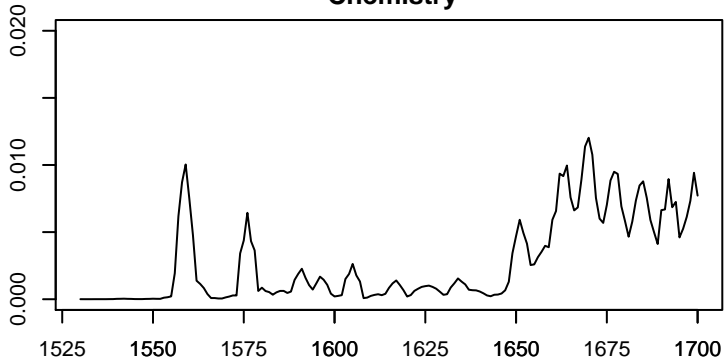
### Natural Philosophy



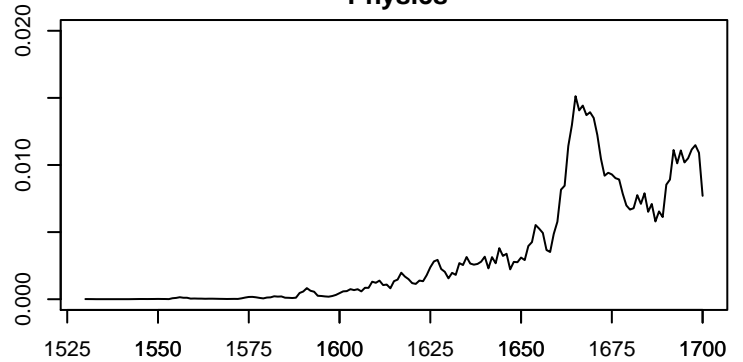
### Botany



### Chemistry

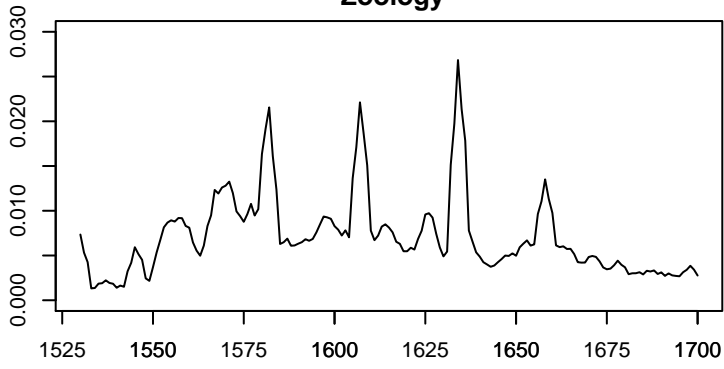


### Physics

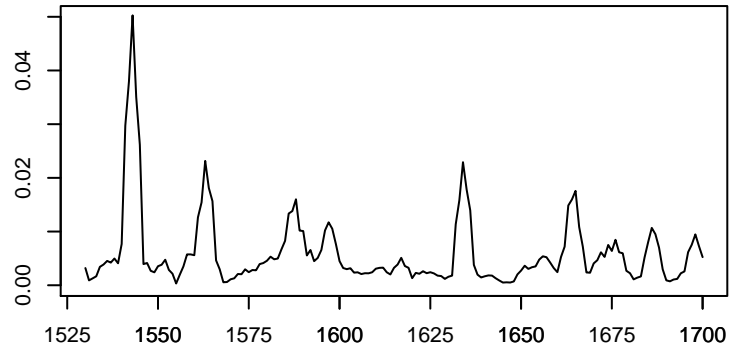


# Topic Timelines, page 16 – Science, Part 2

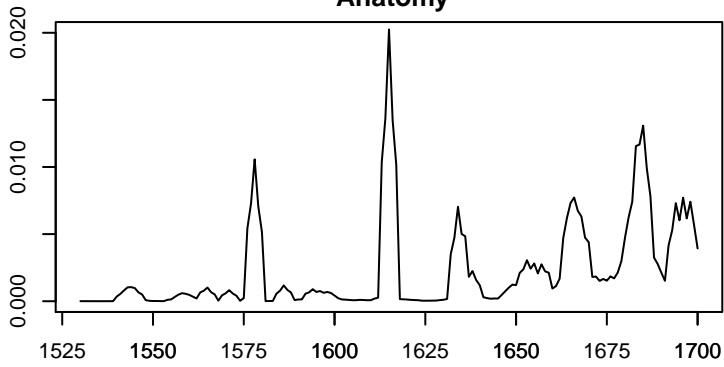
## Zoology



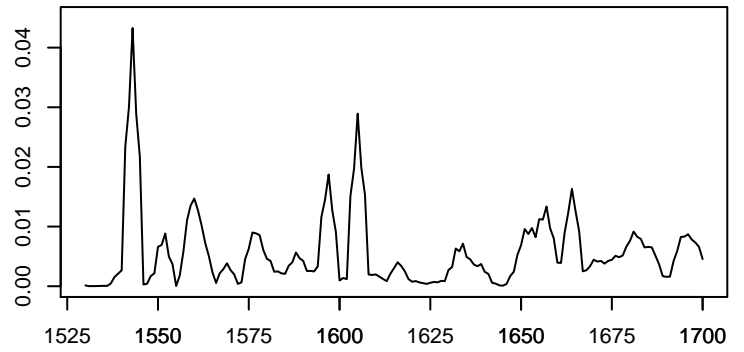
## Medical Science



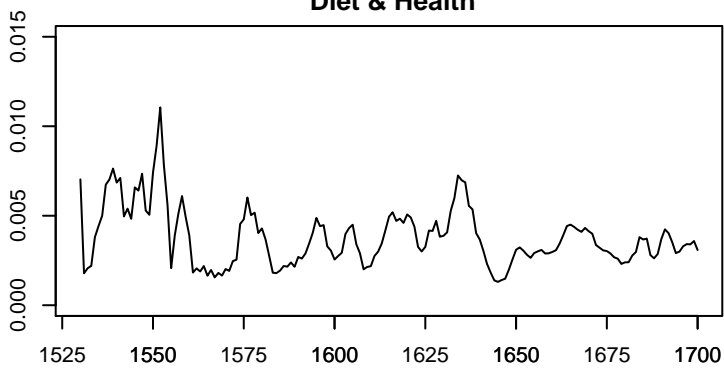
## Anatomy



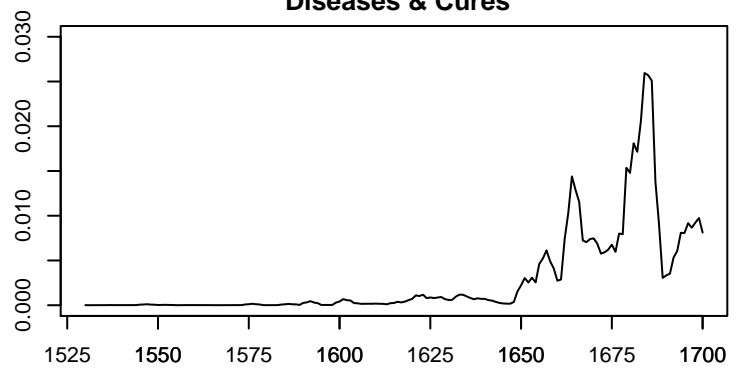
## Pharmacology



## Diet & Health

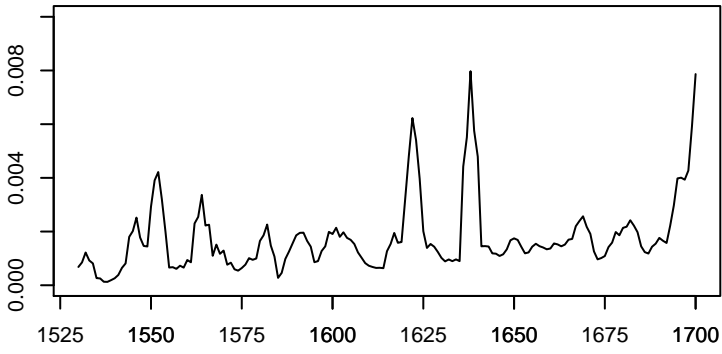


## Diseases & Cures

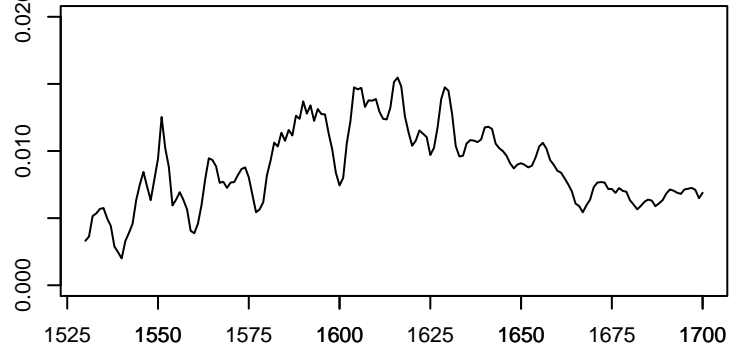


# Topic Timelines, page 17 – Skills, Part 1

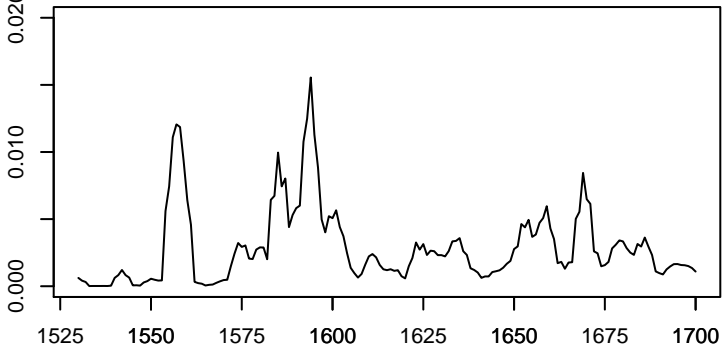
### Commercial Aids



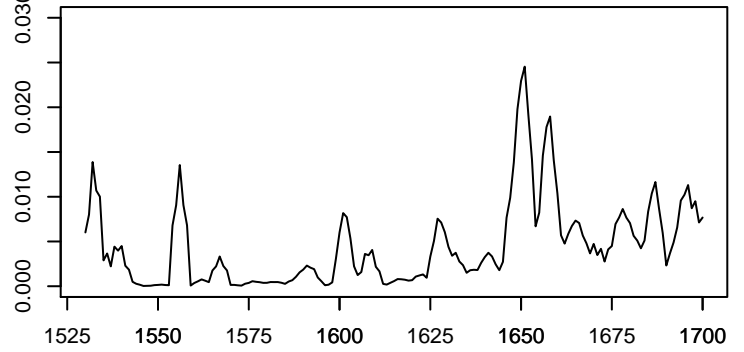
### Scholarly Learning Guides



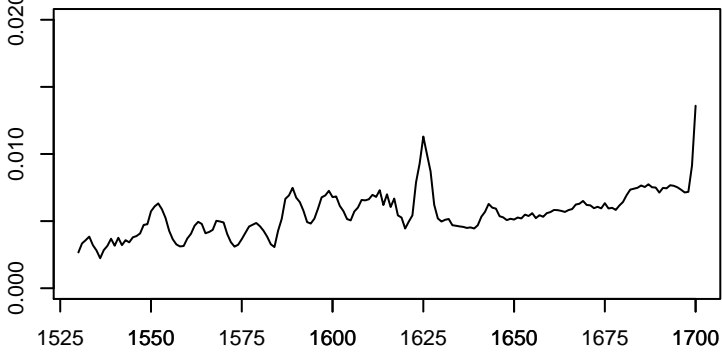
### Practical Geometry



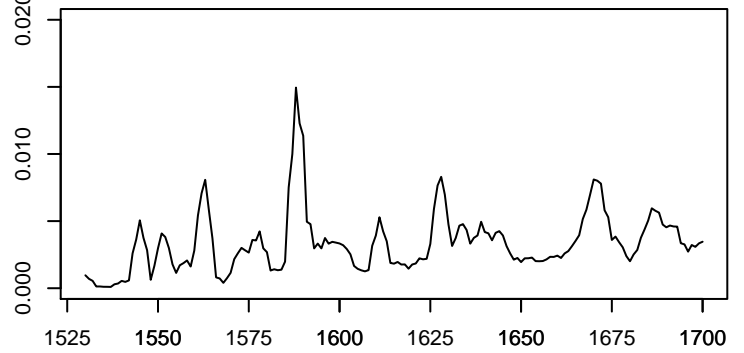
### Student & Practitioner Law



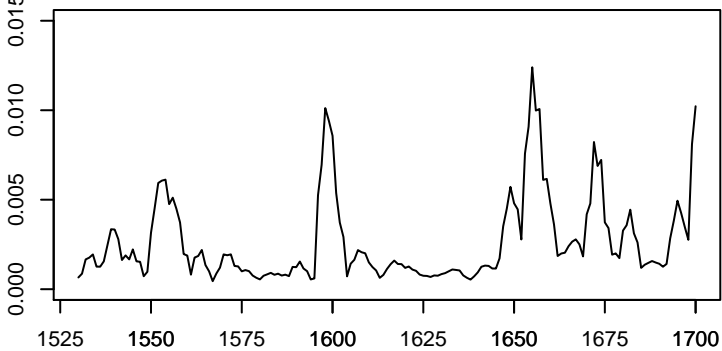
### Using Numbers



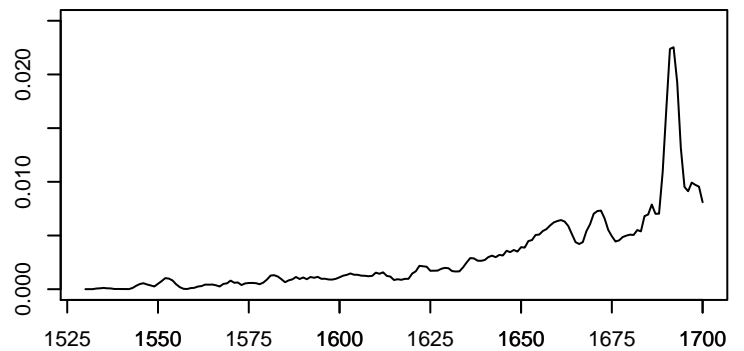
### Industrial Arts



### Legal Practice Aids

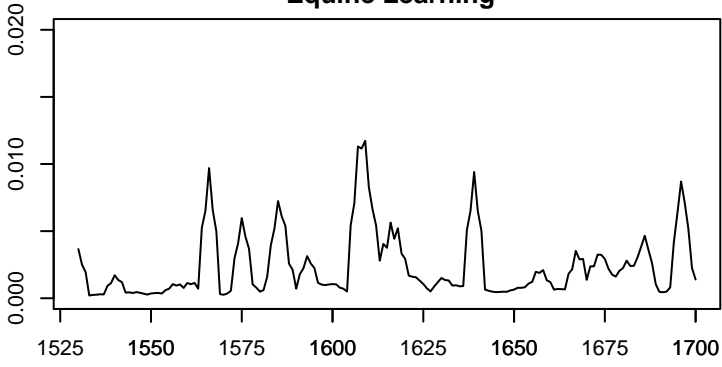


### Bibliographical Practice

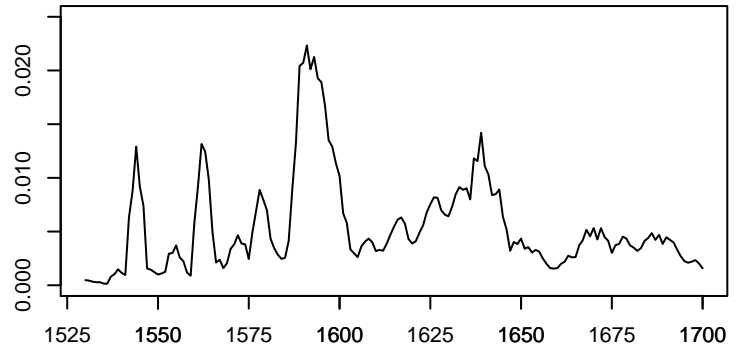


# Topic Timelines, page 18 – Skills, Part 2

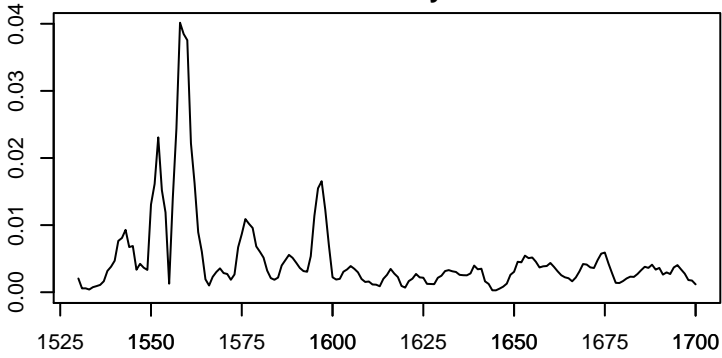
### Equine Learning



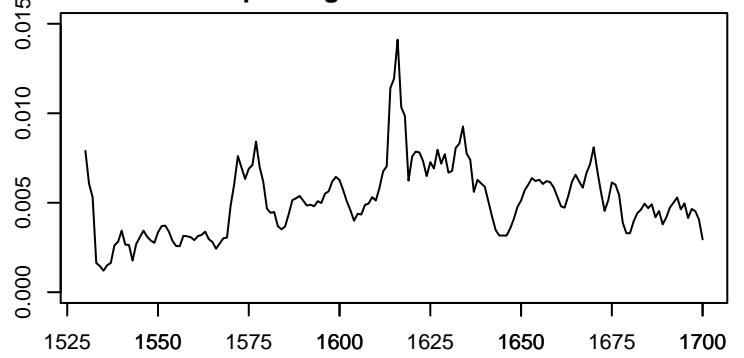
### Military Training



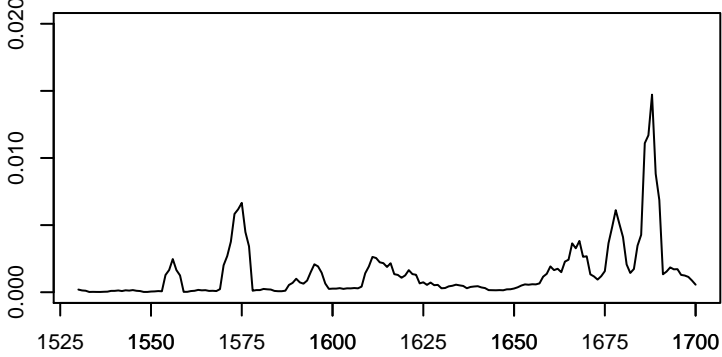
### Cookery



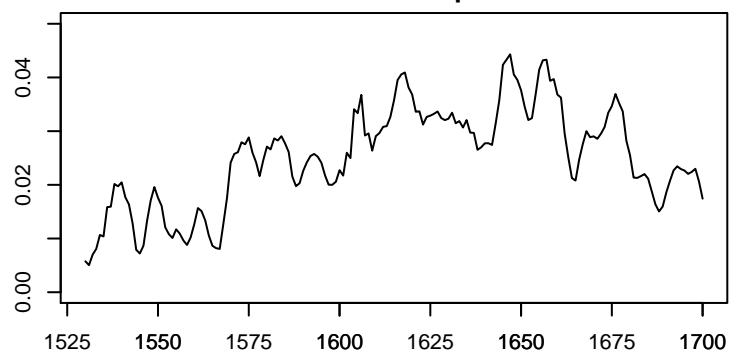
### Improving Soil & Its Products



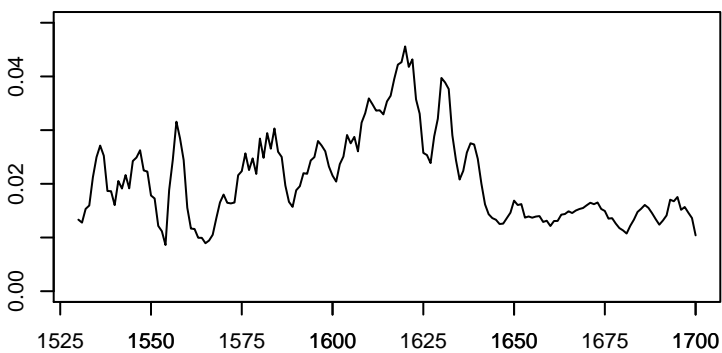
### Rural Recreations



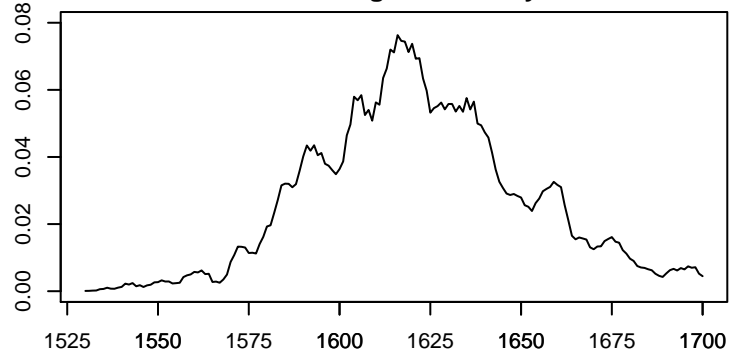
### Catechismal Compilations



### Christian Mental Exercises



### Practicing Christianity





## **Appendix D: The timelines for the 11 themes**

The table below provides the key to the locations of the timelines figures for the 11 themes, which follow on the next 2 pages.

Theme timelines on page I

Religion

Science

Institutions

Politics

Philosophy

Skills

Theme timelines on page II

Geography

History

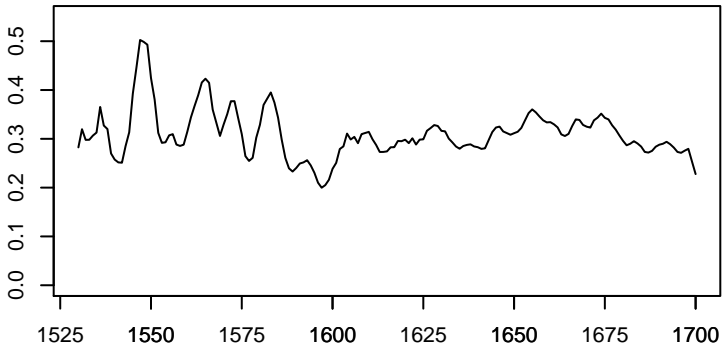
Literature

Relationships

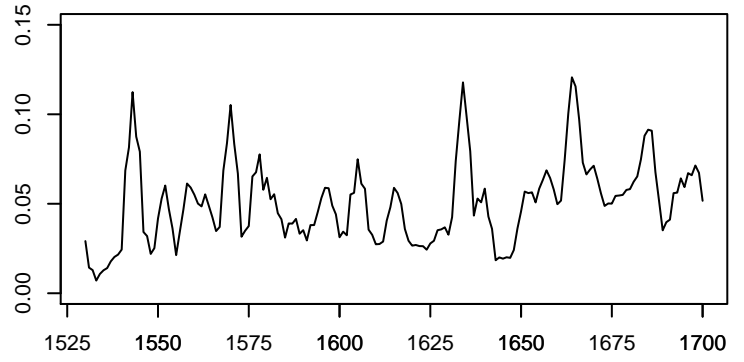
Miscellany

# Timelines of Themes, page I

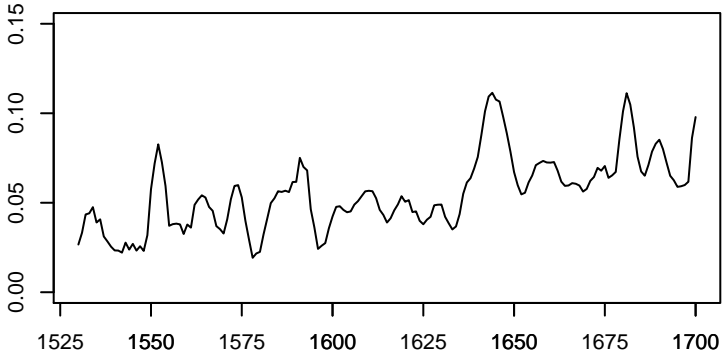
## Religion



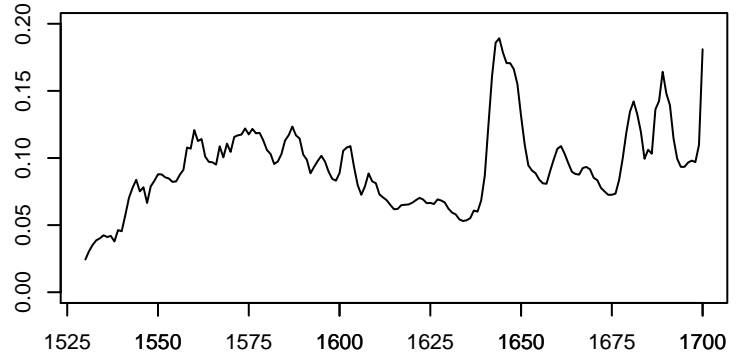
## Science



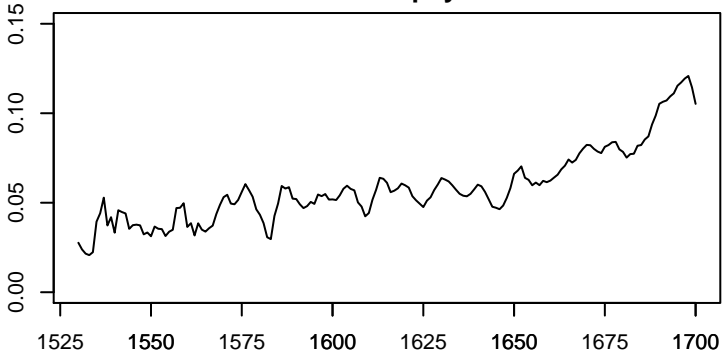
## Institutions



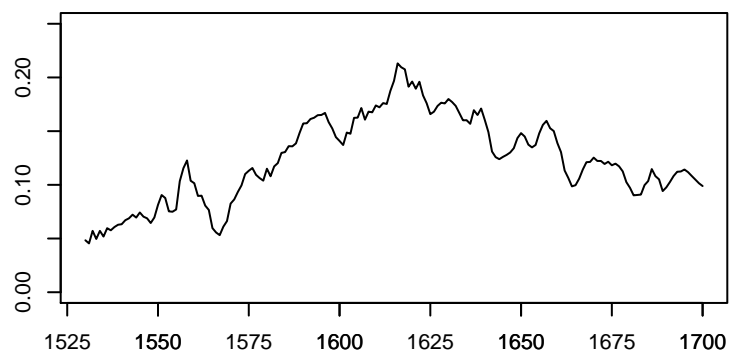
## Politics



## Philosophy

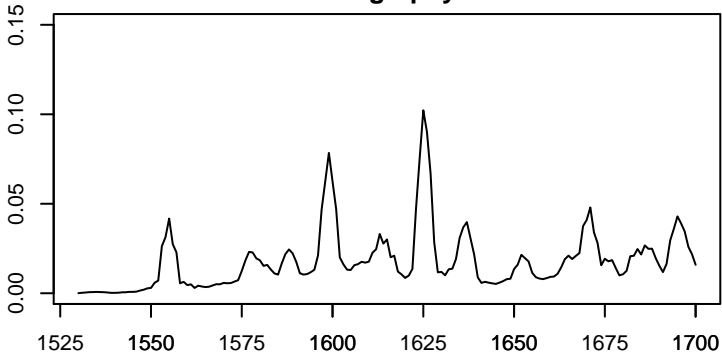


## Skills

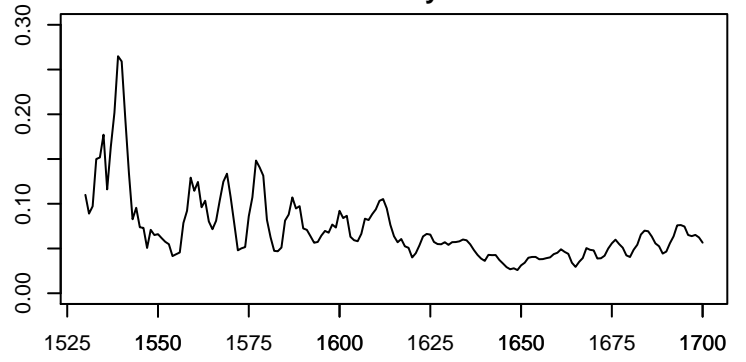


# Timelines of Themes, page II

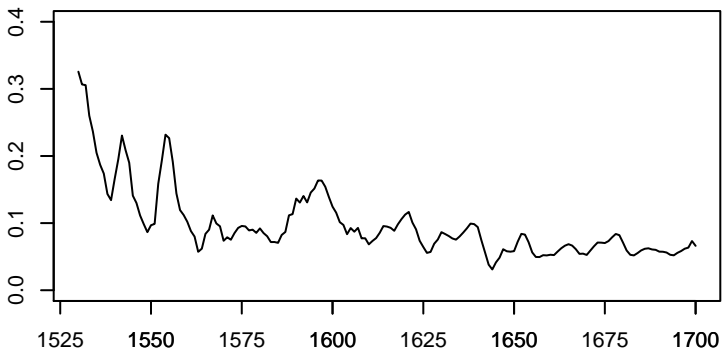
### Geography



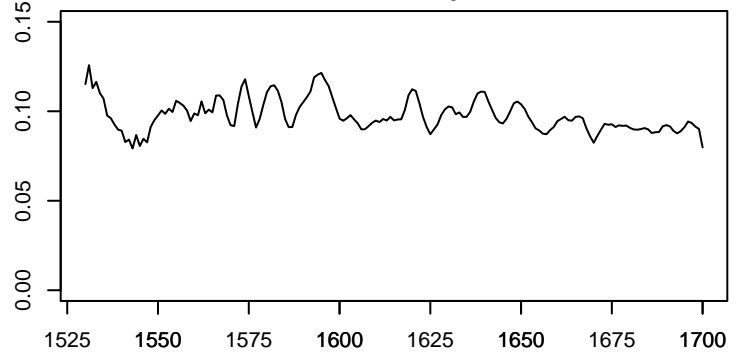
### History



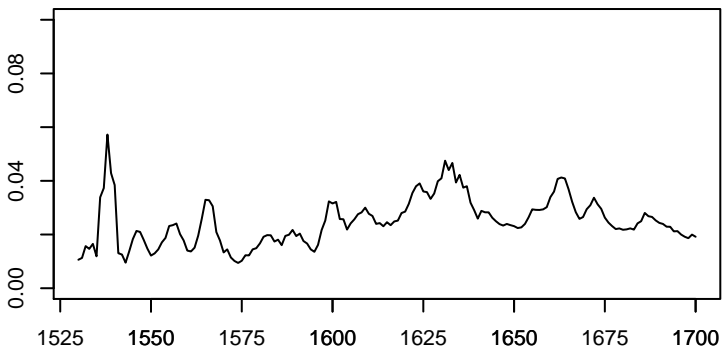
### Literature



### Relationships



### Miscellany



## Appendix E: Descriptive statistics for the religion, science, and institutions series

Table E.1

Variable	Obs.	Mean	S.D.	Min.	Max.
religion	171	5.93	0.92	2.21	7.53
science	171	3.84	1.39	-1.51	6.13
institutions	171	4.08	1.25	0.69	6.32

Notes: The table shows the descriptive statistics for the yearly time series of logged per-capita attention to religion, science, and institutions themes, constructed by applying expressions (3a)-(3c). The sample period is 1530-1700.

## Appendix F: Justifying the VAR identification assumptions

In this Appendix, we justify our VAR identification assumptions: (A1) shocks to  $sci_t$  or  $inst_t$  do not contemporaneously impact  $relig_t$  and (A2) shocks to  $inst_t$  do not contemporaneously affect  $sci_t$ . As emphasized in the pertinent subsection of the paper, these assumptions ensure that  $\mathbf{A}$  in (5) and, consequently,  $\mathbf{A}^{-1}$  in (6) are lower triangular. Then, the estimates of the structural parameters of (5) can be derived from OLS estimates of (6).

Recall that our data are mainly the content of books, not the letters and newsletters that could completely avoid censorship and be produced and diffused quickly. In England, censorship was in place for a large part of the period under study (Walker 1950). Self-censorship for publications was always in place, given that habeas corpus rules were only gradually strengthened during the 17<sup>th</sup> century and were easily suspended even after a Bill of Rights (Cust 1986; Crawford 1915; Emsley 1985). Publishers' printing and financing capacities were limited (Johns 2002), means of communication were few, and transportation was slow.

Importantly, if our data reflected solely the processes of reaction and counter-reaction in print to ideas appearing in previous publications, then all contemporaneous cross-effects involving  $relig_t$ ,  $sci_t$ , and  $inst_t$  would be equal to zero and the system (5) would be trivially identified:  $\mathbf{A}$  in (5), and thus  $\mathbf{A}^{-1}$  in (6), would be diagonal matrices. But our data reflect more than the processes of reaction and counter-reaction. Documents are mixtures of topics—for example, a document introducing new ideas about theology could touch upon elements of science. Therefore, our data certainly could reflect some contemporaneous cross-effects from shocks in one element of  $\mathbf{y}_t$  (e.g.,  $relig_t$ ) to a different element of  $\mathbf{y}_t$  (e.g.,  $sci_t$ ), rendering the corresponding off-diagonal elements of  $\mathbf{A}$  in (5) non-zero. However, as we argue below, aspects of the early-modern English social and political context readily suggest that a specific subset of these contemporaneous cross-effects will be of no importance (i.e., specific off-diagonal elements of  $\mathbf{A}$  in (5) can be set to zero), justifying our assumptions (A1) and (A2).

Consider, first, the possibility of contemporaneous cross-effects from  $sci_t$  to  $relig_t$ . In early-modern England, religious considerations critically shaped what was published (Collinson et al. 2002; Green and Peters 2002). Censors would always have focused on challenges to the accepted theology. Heresy was a crime and a civil offense that was enforced not only officially but also informally, reflecting a general concern with maintaining social harmony (Cust 1986). Divisive theological topics would usually be reserved for private communications.

Given these characteristics of the publication process, scientists hoping to disseminate their findings would have avoided any implications for religion. Newton's writings are paradigmatic (Snobelen 1999). An antitrinitarian—and therefore with views outside the scope of the Toleration Act—he believed that scientific and theological progress went hand in glove. Nevertheless, in the public sphere he appeared to be a typical Anglican conformist. Even after the enormous prestige following the publication of the *Principia* (1687), Newton's *Optics* (1704) included only the most brief, allusive reference to his religious views (Henry 2017). Accordingly, echoing our assumption

(A1), the emergence of new ideas pertinent to  $sci_t$  would not have led to a contemporaneous increased emphasis on ideas included in  $relig_t$ .

Consider next the scope for contemporaneous cross-effects from  $inst_t$  to  $relig_t$ . Topics contributing to the data on  $inst_t$  primarily reflect text that discusses technical aspects of the law (e.g., Parliamentary & Court Procedure), reports on legal developments (e.g., Scottish Law), and presents compilations of rules (e.g., Compilations of Laws). For most of these topics, there is little or no mention of religion. There are two topics on church governance (Autonomous Church Governance; Hierarchical Church Governance) that are included in the data on  $inst_t$ . However, these two topics reflect text that takes existing theological views as given and considers repercussions for church organization. Such text does not use new institutional arguments to reach new conclusions about theology. Indeed, authors promoting new ideas on the organization of institutions would avoid challenging existing ideas on theology, since additionally raising questions about theological matters would have attracted immaterial challenges to their arguments. Thus, in line with our assumption (A1), the emergence of new ideas pertinent to  $inst_t$  would not have typically entailed a contemporaneous increased emphasis on ideas included in  $relig_t$ .

Finally, consider the possibility of contemporaneous cross-effects from  $inst_t$  to  $sci_t$ . In our reading of the documents for a variety of topics, when mention of institutional ideas borders on scientific topics, it usually entails at most a mundane reference to the latter, for example, in the context of a royal ordinance on evacuation of cities (an element related to institutions) because of the plague (an element related to medical science). There are similar juxtapositions in documents that refer to the duties of local officials during plague outbreaks.<sup>5</sup> As Shapiro (1994) pointed out, the form of argument and debate in law contributed to the epistemology of science. However, this was an effect that took place over decades. Congruent with our assumption (A2), therefore, new ideas relevant to  $inst_t$  would not have typically entailed a contemporaneous effect on  $sci_t$ .

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<sup>5</sup> For example, one document referring to the legal calendar states "Whereas the Quenes Maiestie by her Proclamation dyd adiourne the Terme of Saint Michaell last past, vntyll the fyrst day of Hyllary Terme nexte commyng, then to begyn at Westminster, as in tymes past hath ben accustomed, hauing then good hope that before that tyme the plague in the Cities of London and Westminster woulde haue ceased." Similarly, "The Compleat Constable" states that: "...such persons as are sick of the Plague, or infected therewith, and wilfully go abroad in Company, against the command of Officers" are to be treated as vagabonds.

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## Appendix G: Comparisons of impulse-responses estimated by VAR and by local projections

In this appendix, we present the full set of impulse-responses obtained using the method of local projections (LP), an alternative approach to estimating impulse-responses. To generate the LP-estimated impulse-responses, we follow standard procedures (see Jordà n.d.: 12, Ramey 2016: 84). We impose the same variable-ordering-with-Cholesky-decomposition identification assumptions as specified in the pertinent subsection of the main text. Without such assumptions, or analogous ones, the LP system would not be identified and could not be estimated

As in the body of the paper, we model the initial change as a one-time, one-standard-deviation structural shock in attention to the pertinent theme. In this appendix, for computational reasons, we focus on non-accumulated responses. For ease of comparison, Figure G.1 first shows the non-accumulated version of the impulse-responses that appear in Figure 4. Figure G.2 then contrasts the VAR-based non-accumulated impulse-responses as shown in Figure F.1 with LP-based non-accumulated impulse-responses. In each subpart of Figure G.2, the VAR-based impulse responses are shown in green. The LP-based impulse-responses are displayed in blue, with the corresponding 90% Scheffe confidence bands in dashed-red.

The key finding implied by Figure G.2 is that the VAR-based and the LP-based impulse-responses are nearly identical at shorter horizon and remain qualitatively similar at longer horizons. At longer horizons, the LP-based impulse-responses sometimes exceed the VAR-based impulse-responses (e.g., Figure 4(b)(c)(f)(h)), an indication of even larger effects than those discussed in the main body of the paper. However, the LP-based impulse-responses at longer horizons also feature comparatively wider confidence intervals. In sum, under the variable-ordering-Cholesky-based identification approach, the VAR-based and the LP-based impulse-responses paint a qualitatively consistent picture about the coevolution of cultural ideas.

Jordà, Òscar. 2016. Impulse Responses by Local Projections: Practical Issues. URL:

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Figure G.1: Non-accumulated VAR-based impulse-responses, with 90% confidence intervals computed using Kilian's (1998) bootstrap method

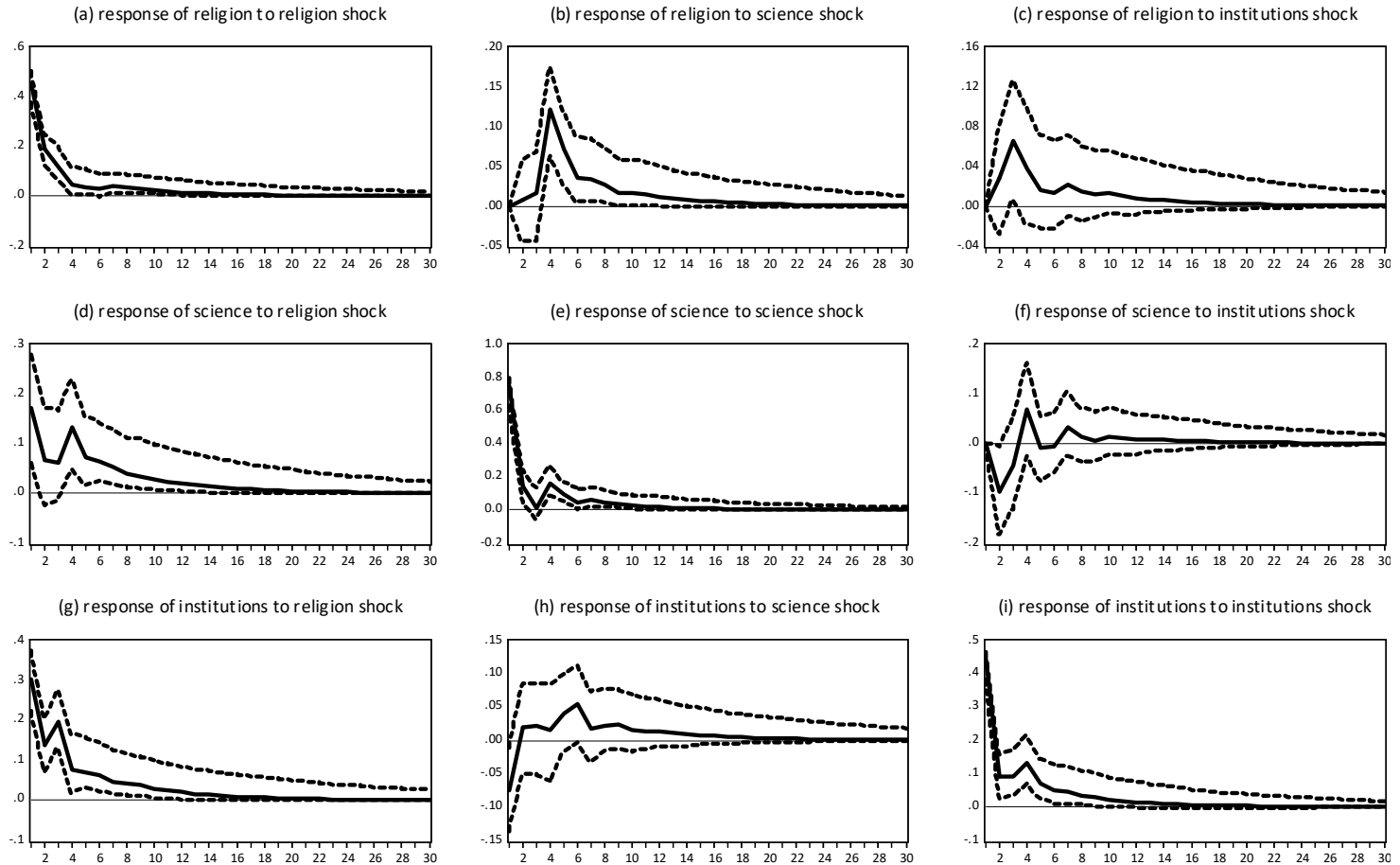
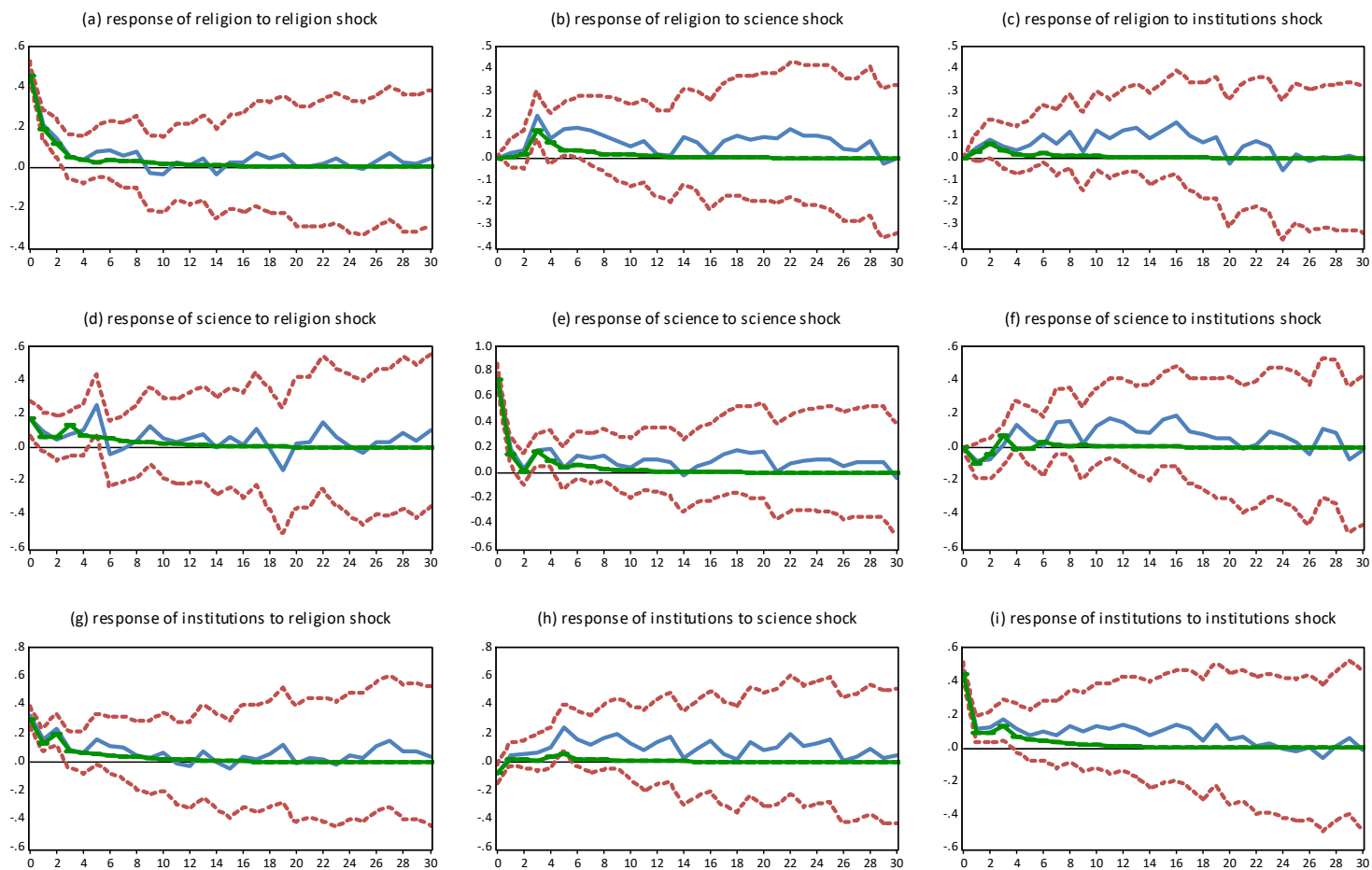


Figure G.2: Non-accumulated impulse-responses, VAR-based (green) and LP-based (blue, with dashed-red 90% Scheffe confidence bands)



Notes: Each subfigure presents non-accumulated impulse-responses to a one-time, one-standard-deviation structural shock identified using the variable-ordering with Cholesky decomposition identification approach as discussed in the subsection entitled Identification assumptions. The VAR-based impulse-responses are in green. The LP-based impulse-responses are in blue, with their corresponding 90% Scheffe confidence bands in red.