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From Status to Contract? A Macrohistory from Early-Modern English Caselaw and Print Culture

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Abstract

Most modernization or development theories that incorporate law emphasize a growth in the scope of individual choice as law becomes impartial, relevant to all. An early expression of this conceptualization was Henry Maine's (1822-1888) celebrated dictum that progressive societies move from status to contract. We conduct an inquiry into Maine's conjecture using machine-learning applied to two early-modern English corpora, on caselaw and print culture. We train word embeddings on each corpus and produce time series of emphases on contract, status, and contract versus status. Only caselaw exhibits an increasing emphasis on contract versus status, and even that trend is discernible only before the Civil War. Thus, our results can be interpreted as showing that development theories emphasizing the widening of individual choice do not characterize England in the century prior to the Industrial Revolution. After 1660, caselaw trends reflect the increasing importance of equity compared to common-law, with equity increasingly emphasizing status. This effect is particularly evident in the status-oriented family and inheritance law. In print culture, religion consistently emphasizes contract over status while politics exhibits a downward-trending emphasis on contract versus status. VAR estimates reveal that the applicable ideas in caselaw and print culture coevolved.

JEL-Codes: K100, Z100, N000, P100, C800.

Keywords: contract versus status, Henry Maine, early-modern England, machine learning, caselaw, print culture.

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1. Introduction

A recurring theme in social-science research on modernization or development is the conceptualization of social and legal transformation that broadens individual choices and reduces constraints based on parentage, social class, political status, gender, ethnicity, or religion. The law becomes impartial, relevant to all, facilitating freedom of choice. This conceptualization appears in many otherwise distinct interpretations of the development process. It is implicit in the idealization that views developing economies as moving from personalized transactions to rule-based impersonal exchange (e.g., Peng 2003, Greif 2006, World Bank 1996). It is related to the distinction between particularized and generalized institutions (Ogilvie and Carus 2014) and to the contrast between extractive and inclusive institutions (Acemoglu and Robinson 2012). It is also an important element of the transition from a limited access order to an open access order (North et al. 2009).

This general conceptualization did not originate in the twentieth or twenty-first centuries. It was central in the seminal work of Henry Maine, who in his *Ancient Law* (1861) posited that "progressive societies" undergo "a movement *from Status to Contract*" [emphasis in the original]. Maine, an English jurist, has been viewed as "a pioneering student of society," "an English Montesquieu," and "the father of political embryology" (Feaver 1965: 290). Even though he wrote in the 19th century, he is regarded as a pioneering law and economics scholar (Pearson 1997). His work "encapsulated a principal theme in nineteenth-century whig and liberal traditions" (den Otter 2002: 49). He was admired by such eminent legal scholars as Oliver Wendell Holmes, Frederick Pollock, and H. L. A. Hart (Hadjigeorgiou 2020). Maine's ideas have found favor among modern adherents of neo-liberalism and libertarianism. He is praised today for his "contributions to the history of law and the evolution of free societies" (Hamowy 2008: xxx, 314) and for providing "a celebration of laissez-faire liberal individualism" (Mantena 2004: 158).

According to Maine, in early societies legal rights and obligations were based on 'status', reflecting a multiplicity of relational and hierarchical networks within family, tribal, and kinship structures. A person's status determined their choice sets, including those relevant for business and marriage decisions. In contrast, in progressive societies, as Maine perceived his Victorian England, there is a dominance of 'contract', an arrangement where the law explicitly recognizes the capacity of individuals to freely assume powers, responsibilities, and authority. Maine's dictum thereby suggests a fundamental and predictable shift in the fabric of sociolegal organization.

Over time Maine's thesis has been generalized and has come to be viewed by some as "a universal principle" of sociolegal evolution (Rehbinder 1971: 942). Numerous scholars have attempted to evaluate the accuracy of Maine's proposition, in the context of past and contemporary sociolegal settings (e.g., Cohen 1933, Graveson 1941, Kahn-Freund 1967, Utz 1984, VerSteeg 1989). Maine's conjecture continues to fascinate present-day legal scholars employing traditional textual analysis to assess and apply Maine's theory (e.g., Schmidt 2017, Matsumura 2021, Lobel 2016, Scott and Scott 2015, Mantena 2010, Lubin 2023). But over the last few decades it has been

virtually ignored within economics and history, even though, as we note above, it is implicit in influential views of the development process.

Not surprisingly, therefore, Maine's thesis has not been subject to systematic, quantitative empirical inquiry using new computational methods for investigation of text-as-data (e.g., Grimmer et al. 2021, Gentzkow et al. 2019, Grimmer and Stewart 2013, Livermore and Rockmore 2019). Given the increasing availability of digitized corpora relevant to Maine's proposition, such an approach offers the potential to provide new tests of Maine's hypothesis. Maine's thesis is therefore ripe for re-evaluation.

We provide a quantitative, macro-historical, assessment of Maine's proposition, examining it within the very context that surely influenced Maine's thought: pre-19th century English society.¹ In doing so, we implicitly investigate a broader question: Do the early stages of the world's first episode of modernization—early-modern England—conform to the broad conceptualization of sociolegal transformation that emphasizes the expansion of individual choice and the lessening importance of status constraints? Our answer, as we clarify below, is a qualified negative. Thus, our results can be interpreted as showing that development theories emphasizing the widening of individual choice do not characterize England in the century prior to the Industrial Revolution.

We draw on two large corpora from early-modern England. One reflects caselaw, a defining feature of the English legal tradition, and the other captures print culture, a mirror of broader social norms. The crux of our methodology lies in training word embeddings, an unsupervised machine-learning method for text-analysis, where words with similar meanings are assigned similar low-dimensional vector representations (see, e.g., Grimmer et al. 2022: Ch. 8). With our two corpora having different substantive foci, we train separate word embeddings for each corpus. We draw on the resulting estimates to construct quantitative measures of yearly emphases on contract, status, and contract versus status. By examining the aggregate trends indicated by our measures, we can readily assess the applicability of Maine's dictum. We find that only caselaw exhibits an increasing emphasis on contract versus status, and even that trend is discernible only before the Civil War.

We then also probe Maine's dictum at a more disaggregated level. For caselaw documents, we examine whether trends in emphases on contract and status differ between the different types of courts that heard the cases. We thereby provide insight into the comparative role of common law courts and the non-common-law equity courts. This is a distinction much emphasized by legal historians (see, e.g., Baker 2019, Coquillette 2004, Plucknett 1948) but elided in the economics literature on comparative legal development (La Porta et al. 2008; Nunn 2020). It is a distinction with much importance because English equity courts had at least as many civil-law features as common-law ones. We also examine how developments in different subareas of law (e.g., real and personal property, families and inheritance) or cultural subdomains (e.g., politics and religion) explain the aggregate trends in the emphasis on contract versus status.

¹ In the scattered literature on Maine's work, only a handful of older contributions (e.g., Graveson 1941, Lesar 1961) consider Maine's theory within this context.

Finally, we go beyond Maine's dictum to investigate the coevolution of the emphasis on contract versus status within caselaw and print culture. In his theorizing, Maine (1867) allowed for, but did not elaborate on, the interaction between law and culture. More recently, the interplay between institutions and culture has been of much interest in the literature on comparative development and English economic history (e.g., Alesina and Giuliano 2015; Hodgson 2022; Mokyr 2022). In focusing on ideas about contract versus status, our analysis provides empirical evidence relevant to understanding the coevolutionary dynamics of caselaw and culture in the early-modern English context.

The rest of the paper proceeds as follows. In Section 2, we conceptualize Maine's dictum. Section 3 introduces our data. In Section 4, we lay out our methodological approach. Sections 5-7 present and discuss our findings. Section 8 concludes.

2. Conceptualizing Maine's Dictum

2.1. The Challenge

A key challenge in empirically assessing the validity of Maine's dictum involves conceptualizing the two core notions at the heart of his claim: contract and, especially, status. As students of Maine's work have pointed out, "[h]is ideas are not presented in the form of finished propositions that can be maintained and controverted in the manner of a thesis" (Cocks 1988: 7). In particular, Maine never defines the critical notion of status, with his use of the term exhibiting unsettling "conceptual multivalence" (Schmidt 2017: 154).

One must therefore turn to Maine's overall narrative to infer the core elements of status and contract. Maine primarily viewed status as applicable to those "forms of reciprocity in rights and duties which have their origin in the Family" (Maine 1861: Ch. 5). Moreover, modern-day scholars concur that Maine viewed status as characterizing "specifically the condition of subordinate members of the family (sons, and their children, unmarried daughters and slaves)" and "not the paterfamilias himself" (MacCormack 1984: 362-363). In this sense, Maine's view of status encompasses primarily what modern-day sociolegal scholars would characterize as ascribed status, that is, status assigned to an individual without their explicit agreement (see, e.g., Schmidt 2017, Lubin et al. 2024).

For Maine, contract captures the plethora of arrangements that individuals enter into voluntarily, normally for mutual benefit, predicated on "the free agreement of Individuals", thereby replacing the rights and duties arising from family relationships (Maine 1861: Ch. 5). In contrast to social organization stressing status, social organization based on contract therefore emphasizes individual autonomy. This parallels the particularized versus generalized institutions of Ogilvie and Carus (2014) or the limited access order versus open access order of North et al. (2009).

But the above conceptualizations of status and contract do not always fit settings not explicitly discussed by Maine. Indeed, Maine's primary focus in *Ancient Law* was Roman and, to a lesser extent, Hindu law, in both of which the nexus of familial and kinship ties formed the basis of status-relations. In the English context, however, status also had an important foundation in the

feudal system of land tenures (Graveson 1941). Furthermore, in polities with evolved governance structures, immutable rights and obligations that determine one's status are routinely conferred by agents of the state (Kahn-Freund 1967), for example through royal charters and application of criminal law.

Unsurprisingly, therefore, many later and modern-day scholars have found Maine's specific implementation of his theory less applicable to sociolegal settings that were not his explicit focus in *Ancient Law*. The "majority" of scholars, however, agree "that there is a great deal of truth in [Maine's] thesis applied to legal development in general including that of the common law" (MacCormack 1984: 363).

In the present paper, we take no a priori stance on whether Maine's general thesis about the direction of sociolegal development depicts early-modern England; rather, we let the data tell us. To this end, we propose conceptualizations of contract and status that, first, follow Maine's core ideas; second, resonate with the early-modern English context; and, third, incorporate the interpretations of Maine's ideas by modern-day scholars. As we clarify in Section 4, our methodology for constructing quantitative measures of emphases on contract and status in early-modern England directly employs the resultant conceptualization.

2.2. Conceptualizing Contract

Following Maine, we conceptualize as contract-based those relations and settings involving agreements that individuals enter into by mutual consent. Importantly, as recent scholarship makes clear, by contract "Maine was not referring to classical contract doctrine in particular", but rather more broadly to "legal obligations oriented around individuals and based on their free agreement" (Matsumura 2021: 680). In this sense, "[t]he evolution from a fixed law of succession to testamentary disposition provides an example of this elevation of individual will" (ibid.). Thus, we view as contract-based the devising of real property by will, which in England emerged as a legal possibility following the separation between legal and beneficial ownership (see Baker 2019).

Similarly, we regard as contract-based the arrangements that relaxed the many status-based constraints affecting families that had been imposed by early law (see Grajzl and Murrell 2024a). Effectively supplanting the rigid custom of dower, whereby a widow was legally entitled to a fixed portion of the deceased husband's real property, the marriage settlement was a contract between the families of the bride and groom that outlined rights and responsibilities regarding the property owned by both families and specified the allocation of financial resources between the spouses (see, e.g., Bonfield 1983, Erickson 1990). As a component of marriage settlements, jointures defined the amount of property that a widow would control in her life estate, while portions specified the parts of the family estate reserved for daughters and younger sons. All of these family-law elements were inherently contract-based.

Finally, even though Maine in *Ancient Law* focuses on legal foundations and does not directly pay tribute to free markets per se, the institutions of the free market were central in his conception

of a contract-based social system.² Indeed, as emphasized by scholars of classical liberal thought, "Maine regarded Western societies as 'progressive' principally because this evolution to contract resulted in greater individual liberty, initiative, and responsibility", as opposed to "an omnipotent democratic state" (Hamowy 2008: 314). Moreover, in his Victorian England, "the shift in social and economic relationships" that Maine had identified "was believed to have replaced semi-feudal structures with an opportunity for everyone to define their economic and social worth through free competition and market" (Johnson 2010: 197).

2.3. Conceptualizing Status

The narrowest conception of status encompasses the core aspects of ascribed status involving the subordinate family (e.g., as son, brother, granddaughter) and kinship-based relations (e.g., those stemming from consanguinity), as originally envisaged by Maine. Moreover, until the 19th century "the position of an apprentice was similar to that of any other member of his master's family" (Graveson 1941: 265). Thus, we also designate apprenticeship as a status-based relation.

Other conditions that one is either born into or designated as, such as being a nobleman, slave, alien, minor, or mentally impaired, are also status-based. Lunatics, for example, could not perform certain legal acts and the insane were subject to the royal prerogative (Baker 2019, McGlynn 2005). All of these conditions constitute indisputable aspects of status emphasized by modern-day scholars of Maine (see, e.g., MacCormack 1984, Lubin et al. 2024) and are therefore included in our conceptualization of status.

Following later scholarship on Maine, we conceptualize as status an individual's marriage-related standing (e.g., as a widow). In early-modern England, females from elite families, especially, had limited agency in choosing their marriage partner, with status considerations usually overshadowing personal desires (see, e.g., Mendelson and Crawford 1998: Ch. 3). A person's marriage-related standing in turn conveyed important rights and duties (Kahn-Freund 1976). For instance, under coverture, a married woman's legal existence was subsumed into that of her husband, preventing her from owning property.

Given our focus on early-modern England, we also designate as status-based the many obligations and rights stemming from feudal relations. While these arguably did involve an element of agreement (e.g., land rights in exchange for specific duties), the set of available choices was very restricted and, ultimately, rooted in status (MacCormack 1984). As Graveson (1941: 262) points out, "The importance of feudal organization in the development of the English law of status must be conceded as a fact".

We conceive as reflecting status the many instances of society-imposed standing based on factors such as religion (e.g., the designation of a person as papist) or as implied by civil and criminal law (e.g., adulterer, outlaw, fugitive). In early-modern English society, all of these

² In *Popular Government* (1885), Maine is more explicit, for example when praising the "The prohibition against levying duties on commodities passing from State to State" as a "secret...of American Free-trade" that "secures to the producer the command of a free market...".

designations would have fundamentally determined the nature of an individual's relationships with others as well as their legal rights and obligations. Catholics, for example, lost rights under recusancy laws (see, e.g., Manning 1972).

In our conceptualization of status, we include aspects of achieved status, even when the rights and obligations imposed on an individual result from the individual's achievements (see, e.g., Schmidt 2017). In early-modern England, for example, a person could conceivably shape their status via the attainment of citizenship within a local jurisdiction and thereby participate in local governance (e.g., burgess), religious organizations (e.g., bishop), the military (e.g., major-general), and private organizations (e.g., governor). For instance, being named a burgess in a town carried the exclusive right to trade freely in the town as well as to participate in local elections (see, e.g., Patterson 2022).

Public policy also determined status. For example, being an undischarged bankrupt had far-reaching legal and personal ramifications (e.g., Jones 1979). Similarly, receiving a royal patent or a charter of incorporation officially granted by the sovereign fundamentally altered the obligations of the affected individuals. And through the levying of tithes, the Church of England could profoundly shape the obligations of agricultural producers. All of these public-policy-generated designations are part of our conceptualization of status.

In Section 4, we clarify how we empirically operationalize the resulting conceptualizations of contract and status. We first introduce our data.

3. Data

We use two major machine-readable text corpora: the English Reports (Renton 1900-1932; hereafter ER) and the Early English Books Online-Text Creation Partnership (2022; hereafter EEBO-TCP). In the following, we describe both.

3.1. The Caselaw Corpus (ER)

The ER constitutes the definitive set of 129,042 reports on decisions rendered in the English courts of law between the early-13th and the mid-19th centuries. Reports are few in the early years, but coverage becomes substantial by the mid-16th century. Given our early-modern focus, we use the reports on cases heard between 1552 and 1765. The year 1552 is the one in which case reports become numerous enough for empirical study and 1765 marks the approximate beginning of the Industrial Revolution and a time when the style of law reporting became more standardized and methodical than previously.

The ER constitutes neither the population nor a random sample of reports on cases adjudicated in the English courts. Rather, the ER encompasses reports on a subset of the cases considered by the superior courts. Reporters were especially motivated to provide a record of cases that highlighted new or unsettled aspects of law, that is, cases that reflected legal development (Grajzl and Murrell 2021a). However, there is no documentation of the selection process for cases that were eventually compiled in the collections of reports and integrated into the ER.

The ER emerged as the primary record of court cases, serving as the de facto authoritative source for legal precedent within the English legal profession. While not encompassing all judgments from superior courts, the ER provide a record of the large majority of cases that significantly shaped legal principles. No thorough examination of English legal history during the early modern era would be possible without considering the ER. No substitute machine-readable legal-historical corpus with a comparable depth and breadth is available for the preindustrial period.

3.2. *The Print-Culture Corpus (EEBO-TCP)*

The TCP is a machine-readable collection of 60,331 texts, reflecting a comprehensive sample of English print culture prior to 1700. The texts were compiled by the Text Creation Partnership (TCP) and are featured in Early English Books Online (EEBO).

The EEBO-TCP project involved utilizing catalogs that "chronicle the evolution of English thought from the first English-printed book in 1475 through to 1700" (TCP 2022). The overarching goal was "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.³ However, it is important to note that the EEBO-TCP corpus does not provide a random sample of English culture in the relevant time frame; rather, it reflects the culture conveyed in printed text. The texts included are those that have survived over time, possibly due to the value that subsequent generations attached to them. Emphasizing first editions, the EEBO-TCP captures cultural production rather than consumption, akin to the ER, which mirrors the production rather than the overall use of caselaw.

Nevertheless, the EEBO-TCP corpus stands out by providing a window into English print culture before the 18th century. No alternative machine-readable corpus covering a very broad spectrum of texts has been assembled that could be used as the basis of a quantitative inquiry into pre-1700 English culture. We use all of the corpus after 1530, this year marking the time when texts become numerous enough for empirical study.

3.3. *Preprocessing*

We begin with the versions of the ER and EEBO-TCP corpora as processed by Grajzl and Murrell (2021a, 2024a). Computational analysis of early-modern English texts entails many challenges: chaotic orthography, archaic inflections, and untranslated Latin. To address these challenges, Grajzl and Murrell (2021a, 2024a) implemented a number of pre-processing steps. These include converting into standard modern orthography the non-standardized orthography of several centuries of English, translating Latin, and dropping the documents containing either an

³ Paul Schaffner, a TCP production manager, in personal correspondence described the EEBO-TCP 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."

especially small number of words or an uncharacteristically high share of non-English words even after the processing.

Grajzl and Murrell (2021a, 2024a) next associated with each document (case report or text) the metadata variables, in particular the year of publication for the ER and EEBO-TCP documents, as well as the adjudicating court for the ER. For ER, we thus use 52,949 reports on cases heard between 1552 and 1764, a corpus of more than 31 million character strings. For EEBO-TCP, we use 57,863 texts published between 1530 and 1700, a corpus comprising more than 1 billion character strings.

We further processed each of the resultant pre-processed corpora to prepare them for the training of word-embeddings. We split each document in each corpus into sentences. To extract the most informative words, we tagged parts of speech and used only nouns, adjectives, and verbs. We converted all resultant words to lowercase and removed punctuation, digits, standard English stop words, and words with fewer than three characters. We stemmed the words. After completing all preprocessing steps, our final ER vocabulary consisted of 16,938 unique words and our final EEBO-TCP vocabulary 271,989 unique words.

4. Methodology

To generate quantitative measures, we follow and extend the methodological approach of Gennaro and Ash (2022) who quantify the reliance on emotion versus reason in U.S. congressional speeches. The essence of our approach is to characterize words, and eventually each document, using word-embeddings models that we train. We use these characterizations in conjunction with word lists that reflect the distinction between contract and status. As we clarify in Section 4.2, we extend the Gennaro and Ash (2022) methodology by utilizing our trained word embeddings to iteratively refine the status and contract word lists. In doing so, we ensure that our word lists contain entries that are appropriate within our specific historical context. Because the ER and EEBO-TCP corpora have a different substantive focus, we conduct the analysis separately for each corpus. Thus, it is entirely possible that we could generate very different results for caselaw and culture. At the same time, it is conceivable that the two domains influenced each other. We investigate such influence in Section 7.

4.1. Training Word Embeddings

Word embeddings provide numerical representations of words based on their co-appearance in a given corpus. Each word is characterized by a low-dimensional vector that encodes the word's meaning. Semantically related words (e.g., widow and woman) have similar vectors while semantically unrelated words (e.g., widow and apple) have dissimilar vectors. Word embeddings have recently emerged as one of the primary machine-learning techniques for analysis of text in the law and the social sciences (e.g., Frankenreiter and Livermore 2020, Ferguson-Cradler 2021, Ash et al. 2024, Choi et al. 2022).

We make use of word embeddings to identify the emphases on status and contract in each document in each corpus. For estimation, we use word2vec (Mikolov et al. 2013) with standard

specifications: three-hundred-dimensional vectors, an eight-word context window, and ten epochs of training (see, e.g., Gennaro and Ash 2022, Rodriguez and Spirling 2022).⁴ Thus, for each word in the vocabulary of our two corpora we generate a three-hundred-dimensional vector. Given the many substantive distinctions between the ER and the EEBO-TCP corpus, we train a separate word-embeddings model for each corpus.⁵ To construct a measure of contract versus status for each document, we use the estimated word embeddings in conjunction with carefully assembled lists of words that reflect each of the two modes of structuring sociolegal relations.

4.2. Defining Contract and Status Word Lists

To generate our contract and status word lists, we employ a semi-supervised approach that is well-suited for specialized vocabularies like ours. In our setting, even a well-trained historian of the period would be challenged by having to specify *ex ante* an encompassing set of terms pertaining to contract and status, as is standard in conventional dictionary-based approaches (see, e.g., Gennaro and Ash 2022). Instead, our method relies on the iterative refining of the status and contract word lists by leveraging the word embeddings that were trained on the pertinent corpora (see, e.g., Rice and Zorn 2021, Osnabrügge et al. 2021). We are thereby able to define status and contract word lists that reflect word usage in exactly the historical period and contexts (caselaw or print culture) that we are studying.

For each corpus, we began with two relatively small word lists, one for contract and the other for status. To construct these lists, we examined the keywords that characterize the topics estimated by Grajzl and Murrell (2021a) for the ER corpus and Grajzl and Murrell (2024a) for the EEBO-TCP corpus. Topics estimated by a topic model are formally probability distributions over a corpus vocabulary and reflect the salient emphases in the corpus (see Grimmer et al. 2022: Ch. 13). Words featured prominently in the relevant topics estimated by Grajzl and Murrell (2021, 2024a) thus represented a natural point of departure for identifying the initial contract and status word lists.

We then used our trained word embeddings to identify for each word on the initial lists the 30 most closely associated words based on the cosine similarity of the corresponding word-embedding vectors. We carefully studied the resultant words to identify any words not on the initial lists but capturing the notions of status and contract, as well as any words on the initial lists that, based on the embeddings, did not resonate with the intended notions.⁶ We then revised our word lists. We repeated this process for the new lists. Using this iterative process, we undertook multiple rounds of revisions of the word lists. For caselaw, our final contract and status word lists consist

⁴ Rodriguez and Spirling (2022) suggest that results are quite robust to different choices of these parameters.

⁵ The corpora are large enough to use independently. Ash et al. (2024: Appendix C) demonstrate that reliable word embeddings can be estimated for corpora with about 1 million words.

⁶ For instance, for the caselaw corpus (ER), inquiry into similar words for 'tenure', a central status-related concept included on our initial list, revealed the relevance of 'knight-service', 'heriot-service', and 'frankalmoign'. Similarly, for the print culture corpus (EEBO-TCP), investigation of similar words for 'agreement', a key term depicting contract-based relations, indicated the relevance of 'paction' and 'concord'.

of 176 and 193 words, respectively, and for print culture 147 and 423 words. Appendix A lists the corresponding words (stems) that we use in our analysis.⁷

4.3. Constructing Measures of Emphasis on Contract and Status

We next use the trained word embeddings and the contract and status word lists for each corpus to estimate the emphasis on contract (C) and status (S) for each document. We use ER and ET to indicate the two different corpora, ET henceforth abbreviating $EEBO-TCP$.

We first use the vector representations of each word to generate aggregate vector representations for each of the word lists (contract and status). For corpus j , let vector \mathbf{c}^j be the mean of the word-embedding vectors of all the words in the applicable contract word list. Analogously, let vector \mathbf{s}^j be the mean of the word-embedding vectors of all words in the applicable status word list. \mathbf{c}^j and \mathbf{s}^j are thus corpus- j -specific, three-hundred-dimensional representations of the word lists, $j \in \{ER, ET\}$.

We next produce analogous, three-hundred-dimensional, vector representations of each document in each corpus. For document i published in year t in corpus j , let the vector \mathbf{d}_{it}^j be the mean of the corpus- j -specific, three-hundred-dimensional word-embedding vectors of all words in the document.

For each document i published in year t in corpus j , we are thus able to compute three key measures. The first is $c_{it}^j \equiv \text{sim}(\mathbf{d}_{it}^j, \mathbf{c}^j)$, the cosine similarity between the vectors \mathbf{d}_{it}^j and \mathbf{c}^j .⁸ The second is $s_{it}^j \equiv \text{sim}(\mathbf{d}_{it}^j, \mathbf{s}^j)$, the cosine similarity between the vectors \mathbf{d}_{it}^j and \mathbf{s}^j . For any given document i published in year t and appearing in corpus j , c_{it}^j and s_{it}^j reflect the document's overall emphasis on contract and status, respectively. Finally, to measure the emphasis on contract versus status in document i published in year t and included in corpus j , we use:

$$cvs_{it}^j = \frac{c_{it}^j + k}{s_{it}^j + k}, \quad (1)$$

where the constant $k = 1$ in the numerator and denominator ensures that $cvs_{it}^j > 0$.

Note that our use of word embeddings in constructing our document-level measures ensures that these measures are not critically dependent on the exhaustiveness of our contract and status word lists. This is especially the case in comparison with a conventional dictionary-based approach relying on word-frequency counts for sets of 'contract' or 'status' words, as defined in one of the generic external dictionaries of word lists that are often used in such analyses (see also Gennaro

⁷ Importantly, our iterative process of assembly of contract and status word lists reaffirmed our conviction that each corpus should be analyzed separately. For example, in the ER corpus, settlement is most closely associated with jointure and marriage-agreement, and thus clearly belongs on the applicable contract list (see Section 2.2). In the $EEBO-TCP$ corpus, however, examples of words most closely associated with settlement include tranquility, safety, and security, none of which have a contractual connotation.

⁸ For any pair of vectors \mathbf{x} and \mathbf{y} , their cosine similarity is defined as $\text{sim}(\mathbf{x}, \mathbf{y}) = (\mathbf{x} \cdot \mathbf{y}) / (\|\mathbf{x}\| \|\mathbf{y}\|)$.

and Ash (2022: Sec. 1.2-1.3)). For example, if in constructing the external word list for contract we had omitted an important synonym for 'contract', say 'agreement', then because the word embedding for 'agreement' is similar to that for 'contract', our document-level measure of emphasis on contract would appropriately reflect an emphasis on contract, even in a document that uses 'agreement' instead of 'contract'.⁹

In Appendix B we provide examples of documents from the ER and the EEBO-TCP corpora that exhibit especially high and especially low scores based on measure (1). Reading the content of the corresponding documents provides evidence validating our approach: our computational approach does capture important aspects of contract and status as conceptualized by Maine and subsequent scholars debating Maine's work.

Finally, for each corpus j , we aggregate each of the measures c_{it}^j , s_{it}^j , and cvs_{it}^j at the yearly level. Aggregating the document-level measures at the yearly level for a given corpus allows us to examine whether early-modern England evidences Maine's "movement from *Status* to *Contract*", the heart of his theory. For each of the measures $y_{it}^j \in \{c_{it}^j, s_{it}^j, cvs_{it}^j\}$, we compute:

$$y_t^j = \frac{\sum_{i \in D_t^j} len_{it}^j y_{it}^j}{\sum_{i \in D_t^j} len_{it}^j}, \quad y_t^j \in \{c_t^j, s_t^j, cvs_t^j\}, \quad (2)$$

where len_{it}^j is the length, in words, of the i^{th} document published in year t and included in corpus j while D_t^j is the set of all documents from corpus j that were published in year t . The weighting of the document-level measure y_{it}^j with document-level word counts addresses the fact that, in each corpus, documents are of widely varying lengths. Use of an unweighted average of y_{it}^j would discount the words used in longer documents, thereby underestimating the true attention to the pertinent ideas in year t . For each corpus j , we thus generate three yearly time-series: a measure of emphasis on contract, c_t^j ; a measure of emphasis on status, s_t^j ; and a measure of emphasis on contract versus status, cvs_t^j .

In what follows, we draw on these aggregate measures to assess whether early-modern England really did feature a shift from status to contract. We then disaggregate our measures of the emphasis on contract versus status to provide insight into the contributions to changes in these measures made by different subareas of caselaw and culture. For caselaw, we also highlight the importance of different courts in contributing to the changing emphasis on contract versus status. Finally, we examine whether these developments in emphasis within caselaw influenced analogous developments in print culture, and vice versa. We thereby provide quantitative insight into the coevolution of law and culture.

⁹ In contrast, a document-level measure of emphasis on contract, constructed on the basis of counting of the appearance of included external dictionary words in documents, would in this case underestimate the document's emphasis on contract.

5. Assessing Maine's Dictum: Examining the Aggregate Trends

Figure 1 plots timelines of the three yearly measures for the caselaw corpus (parts (a)(c)(e)) and the culture corpus (parts (b)(d)(f)), using three-year centered moving averages. The figures reveal several fundamental findings.

5.1. Aggregate Trends in Caselaw

Between the mid-16th and late-18th centuries, the emphasis on contract versus status in English caselaw trends upward (Figure 1(a)). Fitting a bivariate regression (not shown) with cvs_t^{ER} as the dependent variable, a constant, and a linear time trend, the estimated coefficient on the time trend equals 0.001 (p-value<0.001), indicating an increase of about one standard deviation of cvs_t^{ER} every one hundred years. Moreover, from the late 16th century onwards, the values of cvs_t^{ER} always exceed the value one, an indication that during this period English caselaw reports on average exhibit a greater emphasis on contract than on status.¹⁰

The shift toward a stronger emphasis on contract versus status in English caselaw was far from monotonic, however. From year to year, cvs_t^{ER} fluctuates considerably and there exist several subperiods when there was a decline in the emphasis on contract versus status. These subperiods include the years just prior to and at the start of the Civil War (1640-1642) and the final stages of Oliver Cromwell's rule followed by the collapse of the Protectorate (1657-1659). Both sets of episodes were marked by great political uncertainty when, on the one hand, commerce and thus the emphasis on contracting would have declined in prominence and, at the same time, status-based considerations invoking religious distinctions and military hierarchy would have naturally gained importance among the factions vying for power.

Moreover, Figure 1(a) exhibits two fundamentally different periods in terms of the overall movements of contract versus status. Until the 1650s' there is an upward trend in the emphasis on contract versus status, but from the Restoration onwards there is no discernible trend. This is verified using a standard test (Perron 2006) for a structural break occurring at an unknown date in the cvs_t^{ER} time series. The test identifies 1657 as the time when change occurs.¹¹

Figures 1(c) and 1(e) provide more insight. The emphasis on contract trends upward throughout the time period under investigation, with no significant break in the c_t^{ER} series. In contrast, the emphasis on status declines up to the ending years of the Interregnum, but rises thereafter, so that over the whole time period there is no net change in the emphasis on status. The

¹⁰ For a given corpus j in year t , $cvs_t^j > 1$ if $c_{it}^j > s_{it}^j$ for a sufficiently large share of documents i from that year (see expression (1)). Importantly, because our approach does not involve frequency counts of words specified in external dictionaries (see Section 4.3), ascertaining whether a given corpus in a given year emphasizes contract over status (or vice versa) does not immediately hinge on the number of words included on the pertinent contract and status word lists. In particular, as we make clear in this section, our status word list has more entries than the corresponding contract word list both in the context of caselaw and in the context of print culture (see Section 4.2 and Appendix A), yet we find that both caselaw and print culture generally emphasize contract over status.

¹¹ cvs_t^{ER} is the dependent variable in a regression with a constant and a linear time-trend as regressors. The test estimates the year in which a break in the regression parameters occurs. The 1657 break is significant at the 0.01 level.

estimated break in the s_t^{ER} series is in 1657 (p-value < 0.01). It is this reversal in the movement away from the emphasis on status that underpins the diverging movements in the emphasis on contract versus status in the pre- versus post-Civil-War periods (Figure 1(a)). Thus, for caselaw, in the pre-Civil-War era, there is a trend *from* status *to* contract, while after the Civil War there is a movement *to* status *and* contract.¹² Stated in a particularly provocative way: the movement from status to contract did not occur immediately prior to the Industrial Revolution, but rather 100 to 200 years earlier.

5.2. Aggregate Trends in Print Culture

We find little empirical support for Maine's hypothesis in print culture. In Figure 1(b), cvs_t^{ET} exceeds the value one throughout the period under consideration: in every year, English print-culture texts thus on average emphasize contract over status. But, in stark contrast to Maine's dictum, the measure exhibits a negative trend between the early-16th century and the end of the 17th century (Figure 1(b)). Upon fitting a bivariate regression (not shown) of cvs_t^{ET} on a constant and a linear time trend, the estimated coefficient on the time trend equals -0.0004 (p-value < 0.001), indicating a decline of close to one standard deviation of cvs_t^{ET} every century. The dip in the emphasis on contract versus status in print culture was especially pronounced in certain subperiods. These include the Civil War-impacted 1640s and the years between 1583 and 1587, a period of Elizabeth's reign that was characterized by heightened religious tensions, culminating in the execution of Mary Queen of Scots. During this era, there would have been an inevitable rise within cultural discourse of religion-related socially-imposed status (Figure 1(f)).

In print culture, there is an upward trend in the overall emphasis on both contract and status (Figures 1(d)(f)). The observed declining trend in the emphasis on contract versus status (Figure 1(b)) is a consequence of the differentially faster rise in the emphasis on status. Interestingly, this rise in the emphasis on status is especially evident in the last quarter of the 17th century.

Overall, therefore, the pre-Civil-War period is the only segment of the early-modern era when England can be characterized as moving from status to contract, and even then only in caselaw. In print culture, there is no movement from status to contract. In both pre- and post-Civil-War periods, and for both caselaw and print culture, however, the overall trend is movement toward contract. We thus find no evidence that in the century preceding the Industrial Revolution England provides an example of Maine's dictum or, more broadly, the lessening of status-based constraints on individuals' choice sets.

6. Further Probing Maine's Dictum: Disaggregating the Aggregate Trends

We next disaggregate the aggregate movements in cvs_t^{ER} and cvs_t^{ET} . The resulting analysis provides insight into which courts and which subdomains of caselaw and print culture were

¹² Notably, this timing coincides with the analysis of Henriques and Palma (2023), who focuses on higher-level institutions and identify the Civil War as a time of significant change.

especially important in accounting for the changes in the aggregate emphases on contract versus status.

6.1. *The Role of Courts*

Historically, the English legal system evolved into a structure characterized by two interrelated yet separate systems: common law, applied primarily in the King's Bench and Common Pleas, and equity, administered primarily in Chancery. Common law was grounded in a detailed and rigid scheme of writs, gave prominence to an adversarial process, and involved juries. The Act of Settlement (1701) gave common-law judges tenure. In contrast, equity adopted less rigid pleading rules, had no juries, employed an inquisitorial process that facilitated discovery, and offered alternative remedies such as decrees and injunctions (Baker 2019). The Lord Chancellor, the head of Chancery, was always a direct servant of the Crown: the fabled independence of judges applied formally only to the common-law part of the English legal system.

Some English legal historians have suggested that during the later preindustrial era, law reform in England was "proceeding chiefly under the guise of Equity, and chiefly...in the court of Chancery" (Jenks 1938: 211). But just how important was equity in comparison to common law in shaping the trend in emphases on contract versus status? We offer the empirical evidence.

For each case report in the ER, we know the court that adjudicated the pertinent case. Thus, we apportion the value of the aggregate cvs_t^{ER} in each year among the individual courts: King's Bench, Common Pleas, Chancery, and other courts. The aggregate contribution of each court to cvs_t^{ER} can be further decomposed into the mean cvs_t^{ER} within the court and the prevalence of the court's reports in the corpus (see Appendix C). Figure D1 in Appendix D displays the full resultant decomposition of cvs_t^{ER} . In commenting on the findings, we restrict our attention to the King's Bench and Chancery, the two major courts that dominate the reports during the period of our focus (Figure D1(b)). We illuminate the most important patterns in Figures 2(a) and 2(b).

The emphasis within the King's Bench clearly involves a secular shift from status to contract, while the trend within Chancery is in the opposite direction (Figures 2(a)(i)(ii)).¹³ Early on, the King's Bench contributes the overwhelming majority of case reports (Figure 2(a)(iii)). However, especially after 1675, the Chancery's presence in the English Reports increases (Figure 2(a)(iv)). The difference between the pre- and post-Civil-War trends in emphases on contract versus status in caselaw, identified in Section 5, can therefore be explained, in part, by the rising importance of the Chancery in our data. This is indeed paradoxical: Maine (1861: 25, 28, 167, 293) emphasized the role of equity as a remedial agent of legal change, but our data clearly indicate that equity did not contribute to the movement from status to contract.

More insight can be provided by examining the timelines of emphases on each of contract and status in the two courts (Figure 2(b)). Interestingly, contract is emphasized more in Chancery than in King's Bench, but so is status after the Civil War. Moreover, the post-Civil-War emphasis on

¹³ Based on a bivariate regression (not shown) estimated using all available observations for the 1552-1764 period, mean cvs_t^{ER} within Chancery decreases by about one half of the variable's standard deviation every century.

status within Chancery is rising steeply (Figure 2(b)(iv)). Interestingly, within the King's Bench, a surge in the emphasis on contract occurs only after 1730 (Figure 2(b)(i)). Perhaps not coincidentally, around this time the chief justice of King's Bench becomes Lord Mansfield, gaining the reputation of "the founder of the commercial law" of Britain (Lieberman 1989: 88).

6.2. *The Role of Caselaw Themes*

In estimating a topic model using the ER corpus, Grajzl and Murrell (2021a, 2021b) group their 100 ER topics (e.g., Manorial Tenures; Executable Purchase Agreements; Jury Procedures & Trials) into a smaller number of broader themes (e.g., real-property, contract, procedure), with each topic assigned to one theme. We follow their lead and aggregate topics into 9 themes.

In topic-modeling, each document is viewed as a mixture of topics (see, e.g., Grimmer et al. 2022) and therefore at the more aggregated level a mixture of themes. Thus, the emphasis on contract versus status in a document in any given year can be apportioned among the applicable themes (subareas of law). In addition, analogously to the previous analysis of courts, the contribution of each theme can be decomposed into the emphasis on contract versus status within the theme and the relative prevalence of the theme within the corpus (see Appendix E). (Appendix F lists the constituent topics of each theme.) Figure D2 in Appendix D shows the resultant decomposition of cvs_t^{ER} .

The increasing emphasis on contract over status was uniform across all caselaw subareas (Figure D2(a)). We ran bivariate regressions (not shown), one per theme, of mean cvs_t^{ER} within each theme on a constant and a linear time trend. All nine estimated coefficients on the time trend were positive and statistically significant.

Strikingly, Figure D2(d) indicates that the relative shift toward contract in English caselaw (Figure 1(a)) cannot be attributed primarily to developments in caselaw on the very market-oriented theme of contract and debt, even though mean cvs_t^{ER} within contract and debt is the largest of all themes and increasing over time (Figure D2(a)). The aggregate contribution of contract and debt to cvs_t^{ER} rises somewhat until the first quarter of the 17th century (Figure D2(c)) but no longer exhibits a clear trend thereafter.

To provide additional substantive insights about the evolution of emphases on contract and status in caselaw, we next focus on a small subset of the patterns in Figure D2. Figures 3(a) and 3(b) display the relevant information for real and personal property (RPP) and families and inheritance (FI), two subareas of law that were fundamental in the development of property arrangements of early-modern England.

Figure 3(a) shows that, as the feudal system of property rights wanes and issues of inheritance within the family gain importance, the prevalence of RPP falls and FI rises. At that point, the comparatively lower emphasis on contract versus status in FI affects aggregate developments relatively more than the corresponding emphasis in RPP. Notably, emphasis on contract is rising within both caselaw subareas, but emphasis on status is higher within FI than within RPP and increases to a greater extent (Figure 3(b)). We thus have the paradox that the decline of the feudal

property-rights system provided an impetus for the owners of the great landed estates to find ways to perpetuate their ancestral estates, leading to law that leaned heavily on status arrangements, particularly the marriage settlement within FI (see Bonfield 1983, Erickson 1990). These developments help account for the aggregate trends discussed in Section 5 and exhibited in Figure 1.

6.3. *The Role of Cultural Themes*

In estimating a topic model using the EEBO-TCP corpus, Grajzl and Murrell (2024a) group their 110 EEBO-TCP topics (e.g., Deductive Theology; Astronomy & Astrology; French & Iberian History) into a smaller number of broader themes (e.g., religion, science), with each topic assigned to one theme. We follow their categorization. The four parts of Figure D3 in Appendix D show the decomposition of cvs_t^{ET} based on nine broad cultural themes: institutions, literature, philosophy, politics, relationships, religion, science, skills, and other. (Appendix G lists the constituent topics that comprise each theme.)

The aggregate trend in emphasis on contract versus status (Figure 1(b)) is not reflected uniformly within all subareas of print culture (Figure D3(a)). Regressing mean cvs_t^{ET} within a theme on a constant and a linear time trend, the estimated coefficient on the time trend is negative and statistically significant (p-value < 0.05) for eight out of the nine themes. The exception is religion for which the estimated coefficient on the time trend is also negative, but only marginally statistically significant (p-value = 0.053) and especially small (-0.0001, or 22 percent of the mean absolute value of the other eight coefficients).

Within religion, mean cvs_t^{ET} therefore remains quite steady over time and, remarkably, exceeds the value one (Figure D3(a)). This emphasis on contract over status could reflect the presence of one of the core tenets of covenant theology, an early-modern Puritan conception that "reimagined fixed status or, rather, the ontological relations of man and God, in terms of the voluntary relations of contract" and featured "an even more radical emphasis on individual attention than [found] in the common law" (Kahn 2004: 48-49). Moreover, there is no fading of the relative prevalence of religion in the corpus (Figure D3(b)). Religion thus consistently makes the largest contribution to the emphasis on contract versus status (Figure D3(d)). In England, the religious outlook hence played an important role in shaping cultural ideas about social organization throughout the portion of the early-modern period covered by our data.

When zeroing in on specific cultural themes, politics and religion provide a fascinating contrast with respect to emphases on contract and status. Our data cover a time when a Bill of Rights in politics, based at least partially on a contract theory, contrasted sharply with status categories such as Protestant, Catholic and non-conformist that were so central in religion. A naïve conjecture might then be that politics was raising, and religion lowering, the overall emphasis on contract versus status in print culture. Our data reveal that, in fact, the opposite is true. The relevant patterns are displayed in Figures 4(a) and 4(b).

Notably, the emphasis on contract versus status is generally higher within religion than within politics and, moreover, declines less over time within religion than within politics (Figures 4(a)(i)(ii)). To be sure, emphasis on contract alone is higher, and rises more, in politics than in religion, but the same characterization also applies to emphasis on status (Figure 4(b)). Indeed, while religion always de-emphasizes status (the value of s_t^{ET} within religion is negative), in politics the emphasis on status rises throughout the time period, and indeed faster than the corresponding emphasis in contract especially after 1670 (Figures 4(b)(i)(iii)). At the same time, the corpus-wide relative prevalence of politics versus religion (i.e., the ratio) is rising from 1640 onwards (Figures 4(a)(iii)(iv)). It is the combination of these developments that accounts for the relevance of politics and religion in understanding the aggregate decline in emphasis on contract versus status in print culture, indicated in Section 5.2.

7. Beyond Maine's Dictum: Exploring the Coevolution of Caselaw and Print Culture

Finally, we use the cvs_t^{ER} and cvs_t^{ET} series to investigate the coevolution of emphases on contract versus status in caselaw and print culture. The interplay between law and culture, or more broadly institutions and culture, has been a subject of lively interest in the literature, including in economics.¹⁴ For early-modern England, the role of institutions and culture, as well as their interconnectedness, has been debated but remains relatively underexplored (e.g., Hodgson 2022, Mokyr 2022, Murrell and Schmidt 2011).

The possibility of an interaction between ideas in law and the broader culture concerning contract and status is fully consistent with Maine's sociolegal theorizing. For Maine, law was both a "product of time and place" (see, e.g., Cocks 1988: 2) and an instrument of cultural change.¹⁵ Which way, then, did the influence between early-modern English law and culture flow? Or was the influence bidirectional?

To offer some suggestive evidence, we use VAR, a standard approach to investigating the interrelated dynamics of multiple endogenous time series (see, e.g., Stock and Watson 2001). Applied to data reflecting historical institutions and culture, VAR facilitates valuable insight into coevolutionary processes (Grajzl and Murrell 2023a, 2023b, 2024b).

In positing our two-variable VAR, we log both cvs_t^{ER} and cvs_t^{ET} to reduce the influence of outliers. Given the trends in the two variables (see Section 5.1), we include in our VAR a linear time trend. Both (logged) series are trend-stationary.¹⁶ The inclusion of the time trend also absorbs

¹⁴ See, for example, Alesina and Giuliano (2015), Belloc and Bowles (2017), Lowes et al. (2017), Gorodnichenko and Roland (2021), Bisin and Verdier (2023), and Acemoglu and Robinson (2023).

¹⁵ For example, Maine (1867: Ch. 2) notes that the (legal) "Fiction of Adoption...permits the family tie to be artificially created". Legal development can therefore fundamentally modify traditional social structures. In this spirit, as a legal advisor in India (see Roy and Swamy 2016: Ch. 5, 7), Maine viewed the creation of a legal framework rooted in "individual personality and property rights" as a path to "the removal of ascriptive status based on indigenous religious practices", a necessary step toward ensuring "progress" of Indian society (Feaver 1969: 89).

¹⁶ For logged cvs_t^{ER} , the augmented Dickey-Fuller test for a model with intercept and linear time trend rejects the null that the series exhibits a unit root with $p=0.002$. For logged cvs_t^{TCP} , the same test applied to an analogous model rejects the null of a unit root with $p<0.001$.

the role of factors such as preindustrial economic expansion (see, e.g., Crafts and Mills 2017), which may have exerted an independent effect on the emphasis on contract versus status in both caselaw and print culture. We estimate a model with two lags.¹⁷ We focus on the years 1552-1700, the period for which the cvS_t^{ER} and cvS_t^{ET} series overlap.

For identification, we rely on short-run restrictions (see, e.g., Ramey 2016: Sec. 2; Caldara and Iacoviello 2022, Baker et al. 2022). Specifically, consistent with the view that culture is comparatively more slow-moving than formal institutions (see, e.g., Roland 2004), we assume that shocks to attention to the pertinent ideas within caselaw do not contemporaneously impact the attention to the pertinent ideas in print culture (i.e., within the same year). Appendix H presents the complete VAR system.

We compute cumulative impulse-response functions (IRFs) for the two variables. We model the initial change as a one-time, one-standard-deviation positive structural shock in the attention to the pertinent variable, a manifestation of an exogenous 'innovation' in the pertinent ideas. We report one-standard-deviation confidence bands computed using Kilian's (1998) bootstrap method.¹⁸

Figure 5 summarizes the results. In each of the four 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. The subfigures of main interest are those off the main diagonal (Figure 5(b)(c)), showing how innovations in one domain affect future developments in the other.

Developments in the pertinent ideas in caselaw, with some delay, spurred attention to the corresponding ideas in print culture (Figure 5(b)). The estimated effect, however, is relatively small: 15 years after a typical shock that elevates the emphasis on contract versus status in caselaw, attention to analogous ideas in print culture is about 1.7 percent higher than it was prior to the shock. (In comparison, 15 years after the same shock, attention to the pertinent ideas in caselaw is about 19 percent higher than prior to the shock; see Figure 5(d).)

Similarly, we find some evidence that developments in ideas about contract versus status in print culture, again following some delay, elevated attention to related ideas in caselaw (Figure 5(c)): 15 years after a typical shock that elevates the emphasis on contract versus status in print culture, attention to analogous ideas in caselaw is about two percent higher than it was prior to the shock. (In comparison, 15 years after the same shock, attention to the pertinent ideas in print culture is about 5.7 percent higher than prior to the shock; see Figure 5(a).) For this IRF, however, the zero-effect line is fully within the one-standard-deviation confidence bands at all horizons.

¹⁷ In choosing the number of lags, we applied standard criteria (Kilian and Lütkepohl 2017: Ch. 2). The model with two lags was suggested by the Schwarz and Hannan-Quinn information criteria. Estimating a model with more lags does not change any of our findings, but gives rise to jagged impulse-responses indicative of overfitting.

¹⁸ Our reliance on one-standard-error confidence bands to interpret the IRFs follows a broad swath of the empirical literature using VAR in economic history and beyond. See, for example, Cortes et al. (2022), Jalil (2015), Rousseau (2011), Quinn and Roberds (2019), Burhop (2006), Romer and Romer (2004), Stock and Watson (2001).

As we demonstrate in Appendix I, these findings are robust to an alternative identification scheme where we assume that innovations in the pertinent emphases in print culture do not contemporaneously affect the analogous ideas in caselaw. Overall, our findings suggest that in terms of their emphases on contract versus status, early-modern English caselaw and print culture coevolved, albeit to a limited extent.

8. Conclusion

Focusing on England between the 16th and late 18th centuries, we have provided the first systematic quantitative investigation of Henry Maine's celebrated dictum that progressive societies move from 'status' to 'contract'. We analyzed two major corpora reflecting early-modern English caselaw and print culture. After conceptualizing the notions of contract and status, we trained word embeddings on each corpus and drew on the resulting estimates to construct corpus-specific yearly measures of emphasis on contract versus status. Broadly, our results indicate that development theories emphasizing the widening of individual choice do not adequately capture the sociolegal transformation of England in the century prior to the Industrial Revolution.

Turning to more detailed results, we generated four central findings. First, resonating with Maine's conjecture, during pre-Civil-War times early-modern English caselaw exhibits an increasing emphasis on contract versus status. But we reject Maine's theory for post-Civil-War caselaw as well as for print culture throughout the 16th and 17th centuries. In post-Civil-War caselaw, the movement is to both contract and status, with no clear trend in emphasis on contract versus status. In print culture, there is always an emphasis on contract over status, but the emphasis on contract versus status actually declines over time. In the 100 years immediately prior to the Industrial Revolution, we cannot find evidence of the recurring theme in social science research that development implies an elevated role for contract in law and, at the same time, diminished importance of status. If anything, it is the earlier, Elizabethan, era that provides the clearest case of continuing movement to contract and away from status in law.

Second, both common law and equity were important in contributing to temporal changes in the pertinent ideas in caselaw, to different extents at different times. Our analysis thereby offers a rare empirical insight into the ebb and flow of the relevance of common law and equity, two complementary but separate legal systems that profoundly shaped England's institutional development (see, e.g., Baker 2019, Grajzl and Murrell 2022). In particular, our findings indicate that, especially in the post-Civil-War era, English sociolegal evolution was a product not only of the common law, emphasized in the literature on comparative development (e.g., La Porta et al. 2008, Nunn 2020), but to a very significant extent also of Chancery's administration of equitable justice, which exhibits a growing emphasis on status.

Third, for both caselaw and print culture, the aggregate trends reflect developments within multiple subdomains. In caselaw, over time, there is an increasing emphasis on contract versus status within all subareas of law, with the subarea of contract and debt generally entailing the strongest emphasis. But developments in law on contract and debt alone do not account for the aggregate movement toward contract. Rather, as the years unfold, there is a rising importance of

the status-oriented family and inheritance law. In print culture, religion consistently emphasizes contract over status and makes the largest contribution to the aggregate emphasis on contract versus status. Moreover, within religion, the corresponding emphasis on contract versus status is remarkably stable over time. Within politics, the emphasis on contract versus status exhibits a downward trend throughout the early-modern era.

Finally, we find suggestive evidence that developments in ideas about contract versus status originating in caselaw and print culture coevolved. These results speak to the broader literature on the interaction between institutions and culture (e.g., Alesina and Giuiliano 2015, Acemoglu and Robinson 2023).

In providing fresh empirical insights into Maine's dictum, we have purposefully adopted a macro-historical and quantitative approach. Such an outlook can be particularly productive when focusing on the *longue durée*, a perspective on the study of history that is currently experiencing an intellectual revival (see, e.g., Piketty 2014, Guldi and Armitage 2014, Schmidt 2017: 184-186). Our approach to studying early-modern English caselaw and print culture, as well as their coevolution, could be fruitfully applied to many other historical contexts.

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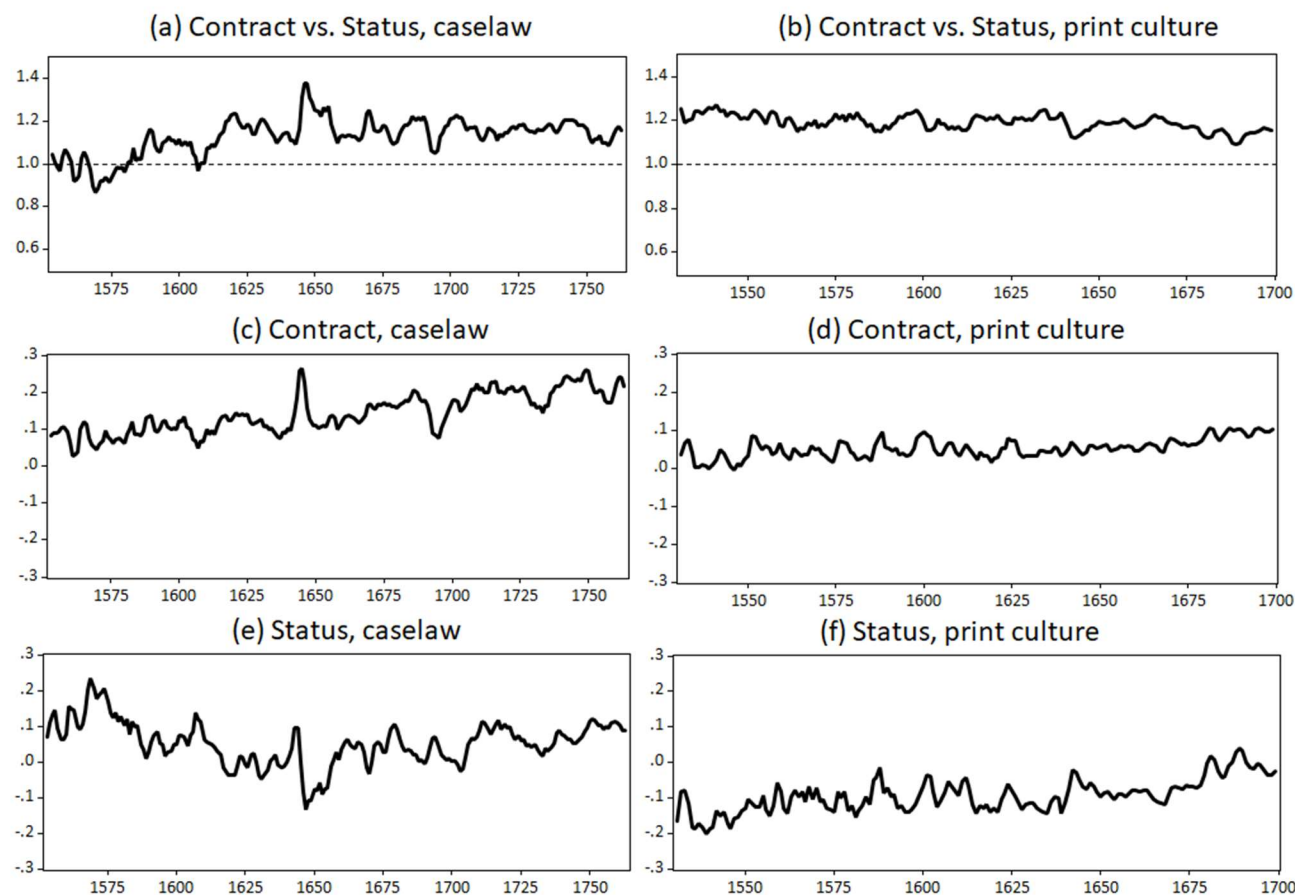
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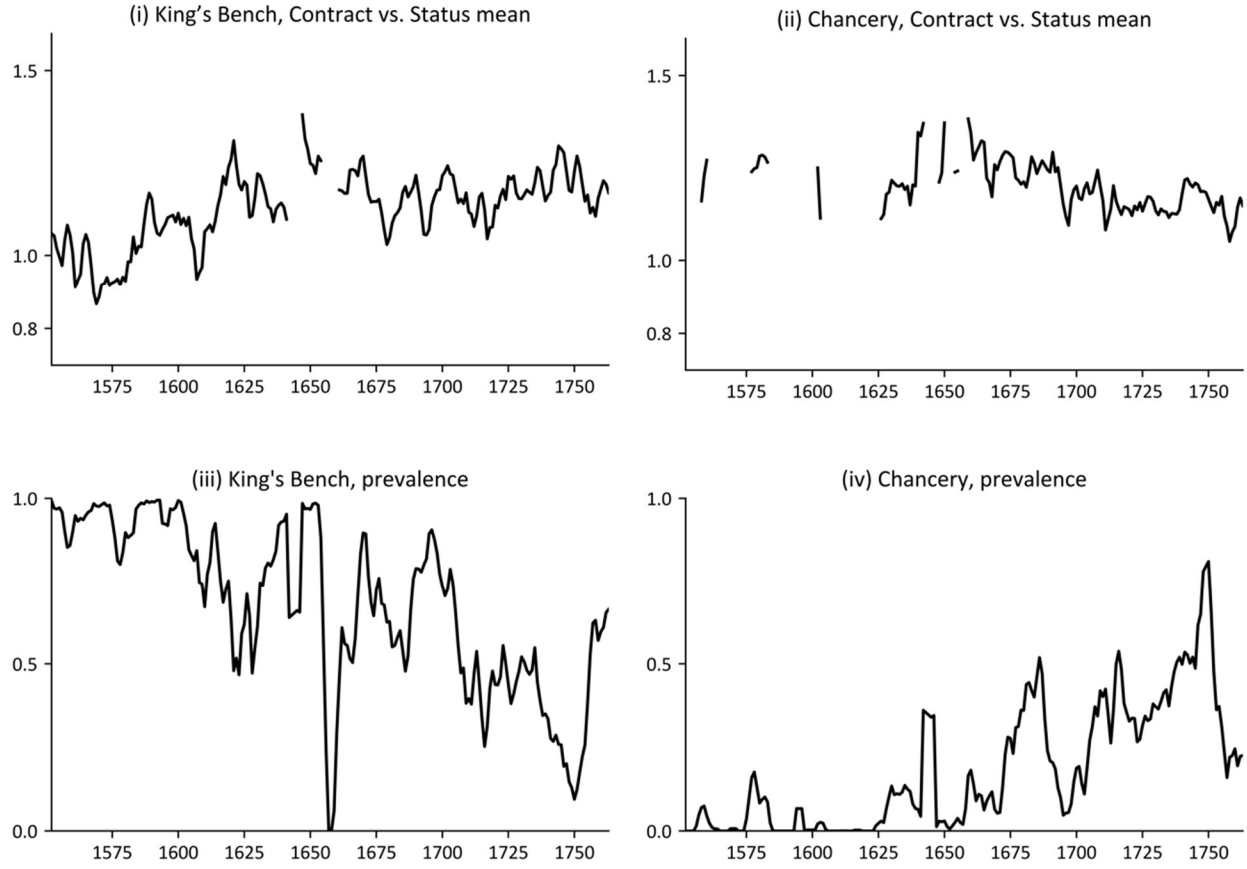
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Figure 1: The evolution of aggregate emphases on contract vs. status, contract, and status in caselaw and print culture



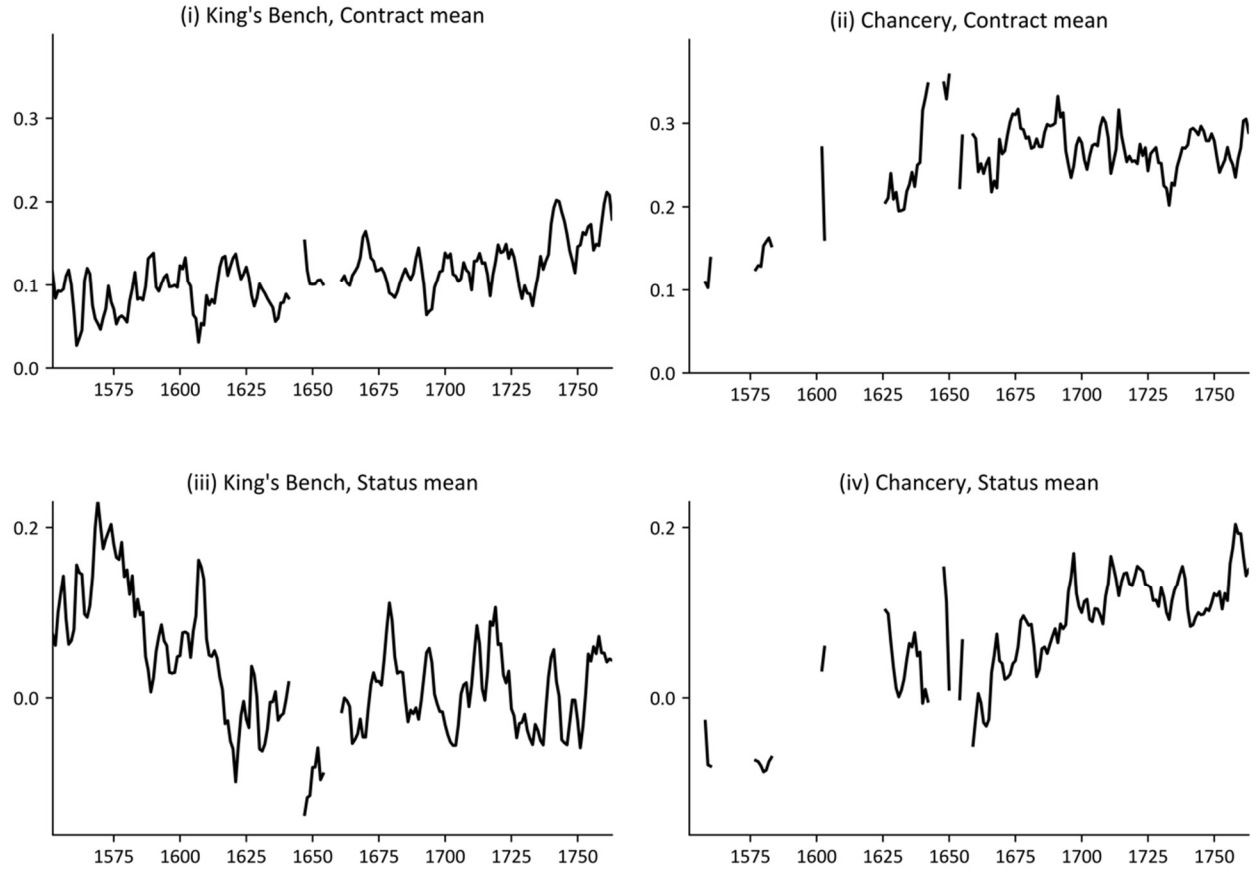
Notes: The figure shows the temporal evolution of three-year centered moving averages of the measures cvs_t^j , c_t^j , and s_t^j (see expression (2)) for $j = ER$ (parts (a)(c)(e)) and $j = ET$ (parts (b)(d)(f)).

Figure 2(a): Contract vs. status, two courts



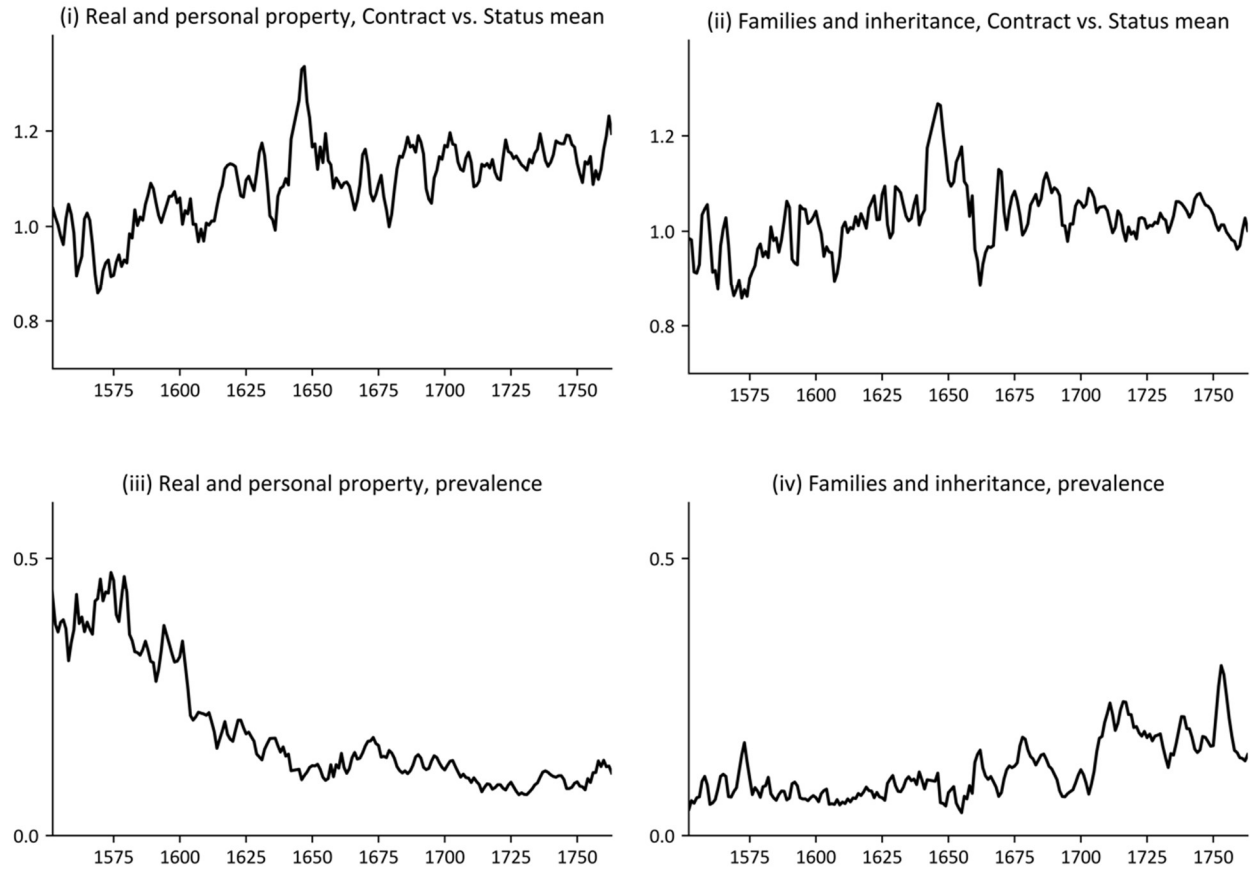
Notes: Parts (i) and (ii) show the temporal evolution of mean cvS_t^{ER} within King's Bench and Chancery, respectively. Parts (iii) and (iv) show the temporal evolution of the relative prevalence in the corpus of reports from King's Bench and Chancery, respectively.

Figure 2(b): Contract and status, two courts



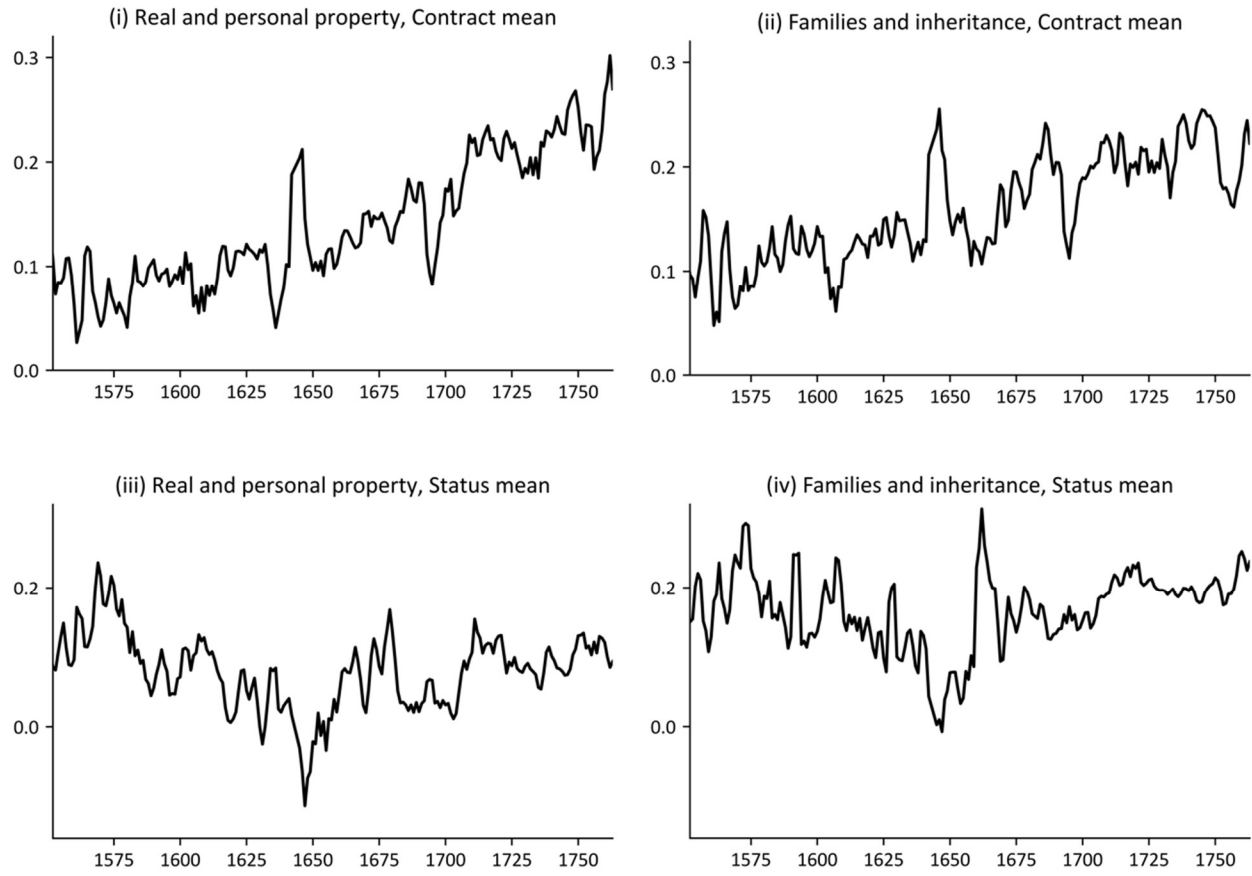
Notes: Parts (i) and (iii) respectively show the temporal evolution of mean c_t^{ER} and mean s_t^{ER} within King's Bench. Parts (ii) and (iv) respectively show the temporal evolution of mean c_t^{ER} and mean s_t^{ER} within Chancery.

Figure 3(a): Contract vs. status, two areas of property law



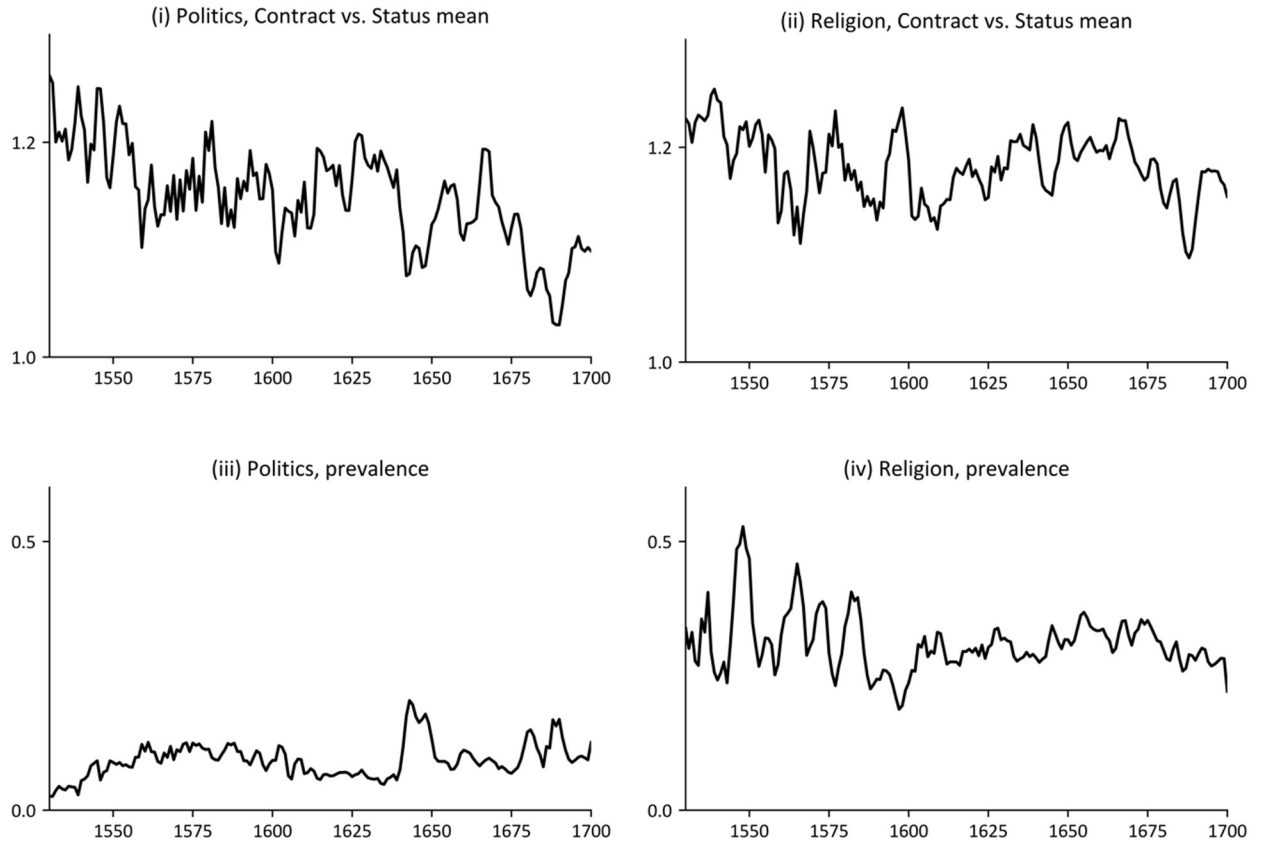
Notes: Parts (i) and (ii) show the temporal evolution of mean cvS_t^{ER} within real and personal property and families and inheritance, respectively. Parts (iii) and (iv) show the temporal evolution of the relative prevalence in the corpus of the themes real and personal property and families and inheritance, respectively.

Figure 3(b): Contract and status, two areas of property law



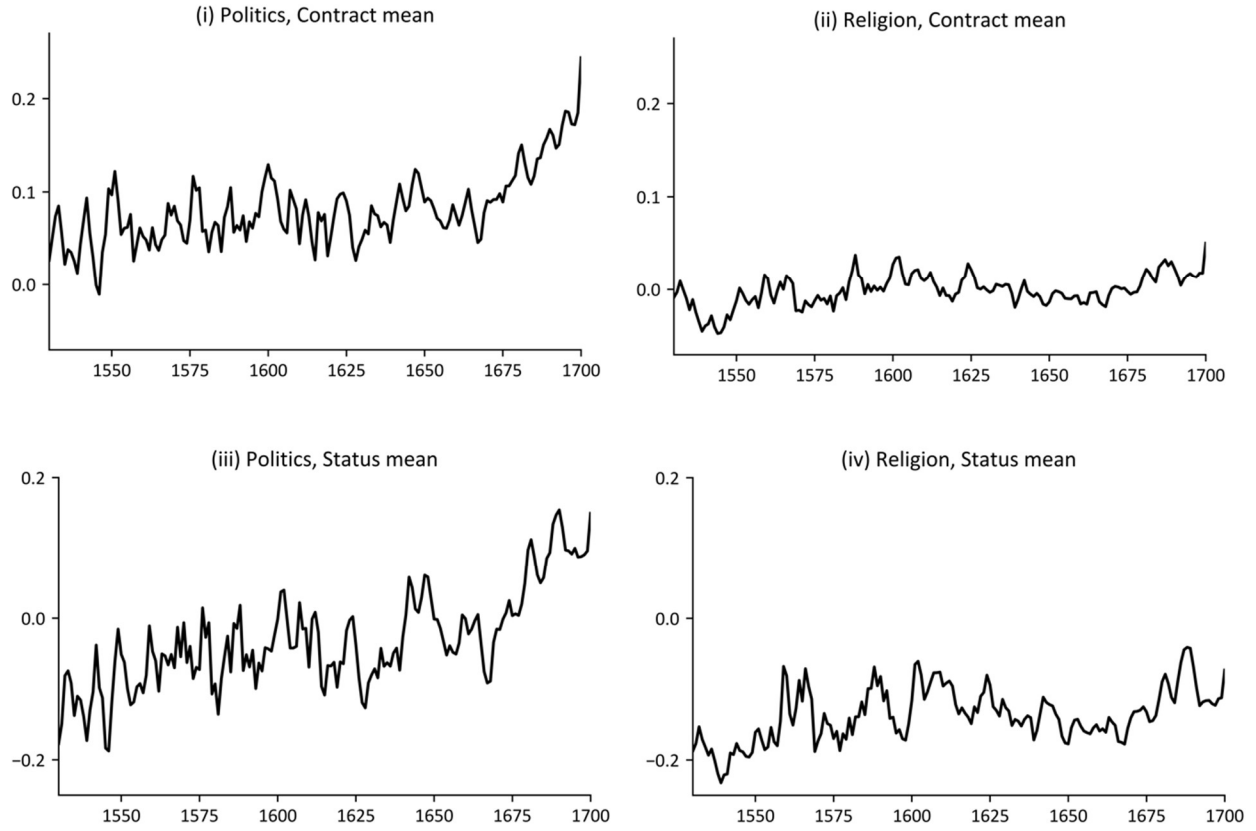
Notes: Parts (i) and (iii) respectively show the temporal evolution of mean c_t^{ER} and mean s_t^{ER} within real and personal property. Parts (ii) and (iv) respectively show the temporal evolution of mean c_t^{ER} and mean s_t^{ER} within families and inheritance.

Figure 4(a): Contract vs. status, two areas of print culture



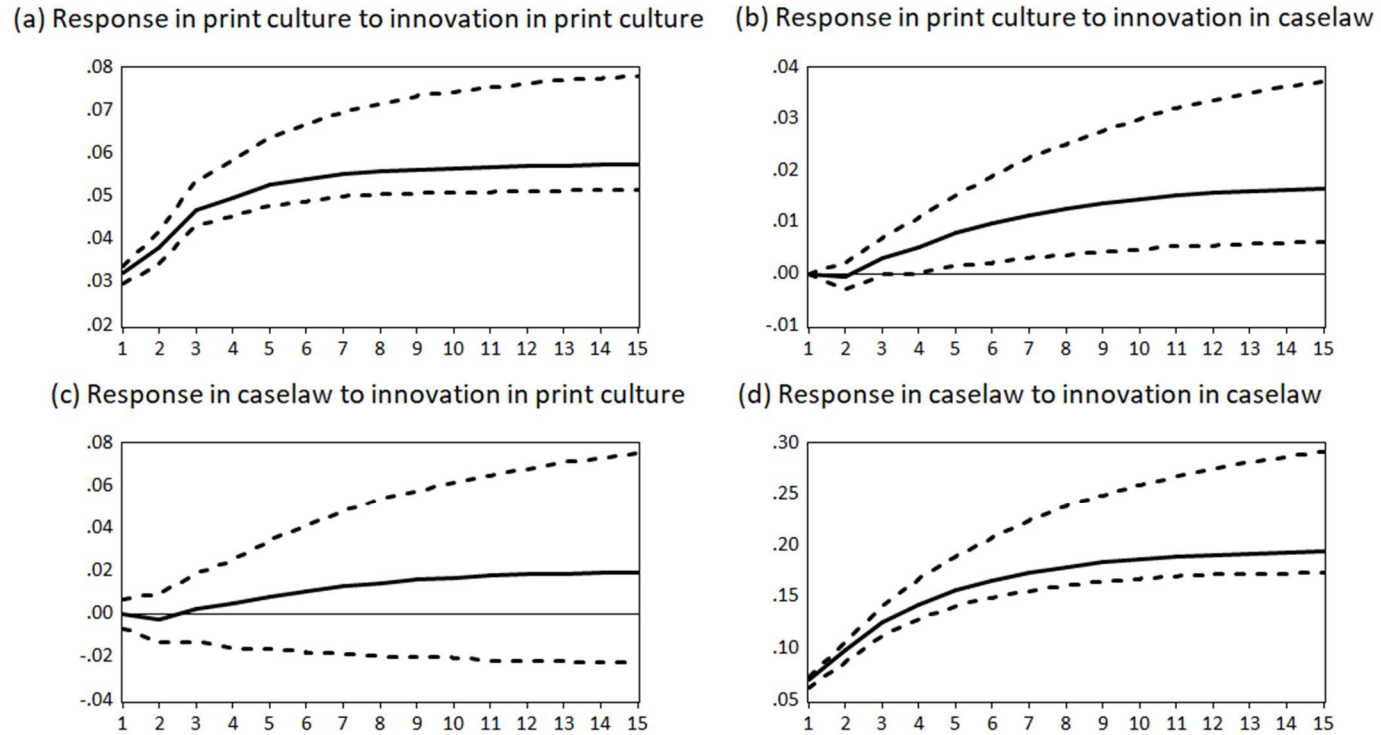
Notes: Parts (i) and (ii) show the temporal evolution of mean cvS_t^{ET} within politics and religion, respectively. Parts (iii) and (iv) show the temporal evolution of the relative prevalence in the corpus of the themes politics and religion, respectively.

Figure 4(b): Contract and status, two areas of print culture



Notes: Parts (i) and (iii) respectively show the temporal evolution of mean c_t^{ET} and mean s_t^{ET} within politics. Parts (ii) and (iv) respectively show the temporal evolution of mean c_t^{ET} and mean s_t^{ET} within religion.

Figure 5: Coevolution of caselaw and print culture in aggregate emphases on contract vs. status:
VAR-based impulse responses



Notes: The figure shows accumulated impulse-responses with one-standard-deviation confidence intervals computed using Killian's (1998) bootstrap method for the VAR model involving logged $cvst_t^{ET}$, logged $cvst_t^{ER}$, and a linear time trend. See Appendix H.

Appendix A

This appendix provides the lists of contract and status words for caselaw and print culture. The lists were assembled by iteratively updating initial lists with similar entries suggested by corpus-specific word-embeddings, as described in Section 4.2. Because of the different foci of the two corpora, the word lists are not the same across the two corpora (ER, EEBO-TCP).

The list of contract words, caselaw (ER):

accept, acceptor, agent, agreement, annuiti, assigne, assignor, assump, assumpsit, assumpt, auction, bargain, bargaine, bargainor, barter, bearer, bequeath, bequest, bidder, bind, bond, bondcreditor, bonddebt, borrow, bottomri, bottomrybond, breach, brocag, brokag, broker, buy, buyer, charterparti, codicil, commerc, commerc, commod, compact, consider, considerationmoney, consign, consigne, consignor, contract, contractor, coobligor, counterbond, coven, covenant, covenante, covenantor, creditor, deal, dealer, deed, devis, devise, devisor, discount, drawe, drawer, endors, endorse, endorsor, ensur, escrow, exchang, exchangealley, export, factor, forbear, foreclos, foreclosur, hire, indebitat, indebitatu, indentur, insur, invest, invoic, jointress, jointur, jointureland, judgmentcreditor, leas, lend, lender, lesse, lessor, loan, market, marketplac, marriageagr, marriageport, marriagesettl, marriagetreati, mercantil, merchandis, merchant, money, mortgag, mortgage, mortgagede, mortgagemoney, mortgageterm, mortgagor, mutual, negoti, nonassumpsit, nonpay, nonperform, oblig, obligatori, obligatorio, oblige, obligor, pawn, pawnbrok, pawne, pawner, payabl, paye, peppercorn, perform, pledg, portion, premium, price, priviti, promis, promissori, purchas, purchasemoney, reciproc, redeem, redempt, repay, repurchas, retail, retal, sale, sell, seller, settl, settlement, shopkeep, simplecontract, specialti, statutemerch, statutestapl, sureti, testament, testamentar, testamentari, trade, trader, tradesman, traffic, transact, treati, underleas, underlesse, underlet, undertak, underten, underwrit, underwritten, unperform, usanc, vende, vendibl, vendor, vintner, voluntari, wage, wholesal

The list of status words, caselaw (ER):

adulter, adulteress, alderman, alien, aliene, alienship, ambassador, anabaptist, ancestor, ancestr, antenati, antenatu, apprentic, apprenticeship, archbishop, archbishoppr, archdeacon, archdeaconri, assessor, bankrupci, bankrupt, bankruptci, baron, baronag, baronet, baroni, bastard, bastardchild, bastardi, birthright, bishop, bishoppr, blood, bloodrelationship, boroughenglish, brother, brotherinlaw, burgess, cathol, charter, child, chivalri, christian, citizen, clergi, coheir, coheiress, colonel, commoncouncil, commoncouncilman, commoncouncilmen, consanguin, constabl, convict, coparcen, coparcenari, copihold, copyhold, copyh, copyhold, corpor, countess, cousinag, covertur, crown, culpabl, daughter, daughterinlaw, deacon, deniz, denizen, descend, descent, disinherit, divorc, dower, duchess, duchi, duke, dukedom, earl, earldom, elder, emperor, empir, enfant, ennobl, entail, escuag, esquir, estatestail, estatetail, fatherinlaw, fealti, feetail, felon, femal, femecovert, femesol, feudal, feudal, feudatori, filiat, franchis, frankalmoign, frankmarriag, frankpledg, freeman, freemen, fugit, gavelkind, gentil, grandaught, grandchild, granddaught, grandson, guilti,

halfblood, hariot, heathen, heir, heiress, heirmal, heirship, heirsmal, hereditari, heresi, heret, heriot, heriotservic, herriot, hightreason, homag, honour, husband, ideoci, idioci, idiot, idiota, ignobl, illegitim, imbecil, incap, incapac, incapacit, incorpor, infanc, infant, inferior, infidel, inherit, inheritor, insan, intail, issuemal, jesuit, jew, jewish, jointstock, kin, kindr, king, kingdom, kinsman, kinswoman, knight, knighthood, knightservic, knightsservic, letterspat, levit, leviticu, lieuten, linea, lineag, lineal, lunaci, lunat, mahometan, majesti, major, majorgener, male, marchio, marqui, marri, marriag, martyr, mastership, matern, matrimoni, mayor, mayoralty, mesnalti, minor, monarchi, mortdancest, mortdancestor, mortdauncestor, mortmain, motherinlaw, mulier, naturalborn, naturarborn, nephew, niec, nobil, nobl, nobleman, nonag, nonconform, nonconformist, offici, orphan, outlaw, outlawri, overs, pagan, papist, parentag, partibl, patent, patente, patern, patrimoni, patron, pauper, pedigree, peer, peerag, physician, poor, pope, popish, postnati, postnatu, presbyterian, primogenitur, princ, princess, progenitor, protest, puritan, quaker, queen, rector, rectorship, reput, romish, schismat, seignioress, seignori, sheriff, signiori, signori, sister, slave, slaveri, socag, soccag, sodomi, son, soninlaw, sovereignti, spiritualty, squir, subject, subordin, superior, suprem, surveyor, tailmal, temporalty, tenur, tith, tithabl, titheabl, traitor, treason, unmarri, viceadmir, villain, villeinag, viscount, viscountess, wardship, wedlock, wholeblood, widow, widowhood, wife, witch, yeoman

The list of contract words, print culture (EEBO-TCP):

agreement, agrement, annuiti, assigne, assignor, assumpsit, auction, auctionhous, bankcredit, bargain, bargaine, bargainor, barter, bequeath, bequest, bidder, borrow, bottomri, brocag, brokag, broker, brokeri, buy, buyer, chaffer, chapman, charterparti, cheapen, codicil, commerc, commerci, commod, commodi, compact, concord, consign, contract, contractor, counterbond, covenante, covenantor, creditor, dealer, devise, devisor, discount, ensur, escrow, exchang, exchangealley, export, factor, foreclos, freetrade, hire, import, indebitat, indebitatu, indentur, insur, interestmoney, invoic, invoic, jointress, jointur, leas, leasor, leasse, leassor, lend, lender, lesse, lessor, loan, market, marketplac, marketpric, marriagesettl, mercantil, mercat, mercenari, merchandis, merchant, morgag, mortgage, mortgag, mortgage, mortgagor, nonassumpsit, nonpay, nonperform, obligatori, oblige, obligor, pact, paction, pawn, pawnbrok, pawner, payabl, payment, peppercorn, portion, price, promis, promissori, purchas, purchasemoney, reciproc, recompens, reexport, reimburs, repay, repurchas, retail, retal, royalexchang, sale, saleabl, sell, seller, shiploan, shopkeep, statutemerch, statutestapl, sureti, testamentar, testamentari, trade, trader, tradesman, traffic, transact, treati, truck, underwrit, unperform, usanc, vend, vende, vender, vendibl, vendor, vintner, wage, ware, wholesal

The list of status words, print culture (EEBO-TCP):

administr, adulter, adulteress, agnat, alderman, aldermen, alien, aliene, allegi, ambassador, anabaptist, anathemat, ancestor, ancestr, ancestri, antenati, antenatu, antichrist, antichristian, antipapist, apprentic, apprenticeship, archbishop, archbishopr, archbishoprick, archdeacon, archdeaconri, aristocrat, arminian, assessor, bankrupci, bankrupt, bankruptci, baron, baronag, baronet, baroni, bastard, bastardchild, bastardi, bastardson, birthprivileg, birthright, bishop, bishopprick, bishopr, bishopship, bloodrelationship, bondman, bondslav, boroughenglish, brother, brotherinlaw, brownist, burgess, burroughenglish, calvinian, calvinist, cameronian, cardinalship, catharist, cathol, chancellor, chancellorship, child, chivalri, christian, citizen, clergi, cognat, coheir, coheiress, coheirship, colonel, commoncouncellmen, commoncouncilmen, commoncouncil, commoncouncilman, commoncouncilmen, commoncounsel, conformist, consanguin, consanguini, constabl, convict, coparcen, coparcenari, copihold, coppiehold, copyhold, copyhold, countess, covertur, culpabl, daughter, daughterinlaw, deacon, deaconship, denisen, deniz, denizen, denizon, descend, descent, dignitari, disinherit, dissenter, divorc, donatist, donatista, donatistarum, donatu, dower, duchess, duchi, duke, dukedom, earl, earldom, elder, elector, emperor, empir, ennobl, enslav, entail, escuag, esquir, estatetail, ethnic, excommun, exil, fatherinlaw, fealti, feetail, fellowheir, felon, femal, femecovert, femesol, feodal, feudal, feudatori, filiat, firstborn, franchis, frankalmoign, frankmarriag, frankpledg, freeborn, freeman, freemen, fugit, galleylav, gavelkind, gentil, gentrey, gentri, gomarist, governor, granddaughter, grandchild, granddaught, grandson, guilti, halfblood, hariat, heathen, heathenish, heir, heiress, heirmal, heirship, heirsmal, hereditari, heresi, heret, heriot, heriotservic, herriot, hightreason, homag, honour, hugenot, huguenot, husband, ideoci, idioci, idiot, idiota, ignobl, illegitim, illegitimaci, imbecil, incapac, incapacit, infanc, infant, inferior, infidel, inherit, inheritor, inlaw, innobl, insan, intail, issuemal, jesuit, jew, jewish, jointheir, jointstock, kin, kindr, king, kingdom, kinsfolk, kinsman, kinswoman, knight, knighthood, knightservic, knightsfe, knightsservic, legat, letterspat, levit, leviticu, libertin, licenti, lieg, liegelord, liegeman, lieut, lieuten, lieutenantcolonel, lieutenantgener, lineag, lineal, lollard, lollardi, lordchancellor, lunaci, lunat, lutheran, lutherian, mahometan, mahometist, majesti, majorgen, majorgener, male, malelin, manichaeen, marchio, marqui, marri, marriag, martyr, martyrdom, mastership, matern, matrimoni, mayor, mayoralti, mesnalti, monarch, monarchi, mortdancest, mortdancestor, mortdauncest, mortdauncestor, mortmain, motherinlaw, mulier, muslim, naturalborn, nephew, niec, nobil, nobilit, nobl, nobleman, nobless, nonag, nonconform, nonconformist, offici, orphan, orphanc, orthodox, outlaw, outlawri, overs, pagan, paganish, papaci, papish, papist, parentag, partibl, pasha, patent, patente, patern, patriarch, patriarchship, patrician, patrimoni, patron, pauper, pedigree, peer, peerag, personag, physician, plebeian, poor, pope, popedom, popish, popist, postnati, postnatu, predecessor, presbiterian, presbyterian, primogenitur, princ, pryncedom, princess, priscillian, priscillianist, privycouncil, privycouncillor, progeni, progenitor, protest, protestant, pseudochristian, puritan, quaker, queen, raja, rank, rector, rectorship, reformist, regal, reput, rogatist, romancathol, romanist, romish, romist, royal,

royalti, ruler, sacramentarian, schismat, scutag, seigneuri, seignioress, signori, separatist, seperatist, sheriff, signiori, signori, simonian, sister, sisterinlaw, slave, slaver, socag, soccag, socinian, sodomi, sodomit, son, soninlaw, sonship, sovereign, sovereignti, spirituali, squir, subject, subordin, sultan, superior, suprem, supremaci, surveyor, temporalti, tenure, tith, tithabl, titheabl, traitor, treason, tzar, unmarri, vassal, vassalag, vestrymen, viceadmir, vicecount, villain, villein, villeinag, viscount, viscountess, vizier, wardship, wedlock, wholeblood, widow, widowhood, wife, witch, yeoman, yeomanri, zwinglian

Appendix B

In this appendix, we provide examples of documents from the two corpora that score either especially high or especially low on our document-level measure of contract versus status (measure (1)).

In the ER corpus, a report with an especially large value (above the 99th percentile) of measure (1) is on a 1692 Chancery case (*Lane v Williams*, 2 *Vernon's Chancery Cases* 277, 23 ER 779). The crux of the dispute was the extent to which debts incurred by one of the partners in a business partnership may bind other partners: "A and B. partners as woollen-drapers. A. borrows money of C. and gives a note for the same for himself and partner. Though this money was not brought into partnership, nor the note given with the privity of the other partner; yet held per Cur that this would bind the other partner." In deliberating on the case the judges noted: "It is clear that the law of merchants is part of the law of the land, and that in mercantile transactions one partner may bind the rest ... but not by deed, *ibid.* unless under a particular power, per Lord Kenyon, *ibid.* it seems however that one partner may bind the rest by deed or bond, if executed in the presence of the others.... How far to make a partnership liable in respect of a separate transaction with one partner, an express agreement must appear...". Thus, the focus of the case is contracting, not status.

In contrast, a document with an especially small value (below the 1st percentile) of measure (1) is a report on a 1597 case, heard in King's Bench (*Lord de la Warre's Case*, 11 *Coke Report* 1a, 77 ER 1145). The emphasis on status and absence of an emphasis on contract is evident from the reason for the court filing: "Thomas de la Warre petitioned the Queen for his place in the House of Lords, which his great grandfather had. It appeared that William, his father, had been disabled by Act of Parliament, 3 Ed. 6. during his life to claim or enjoy any dignity, &c. by descent, &c; afterwards William was called by Q. Eliz. to Parliament, by writ of summons, and sat as puisne Lord of Parliament, and afterwards died." During their deliberation on the petition, the judges noted that "...that there was a difference betwixt disability personal and temporary, and a disability absolute and perpetual: as where one is attainted of treason or felony (a) that is an absolute and perpetual disability by corruption of blood for any of his posterity to claim any inheritance in fee-simple, either as heir to him, or to any ancestor above him: but when one is but disabled by Parliament (without any attainder) to claim the dignity for his life, it is a personal disability for his life only; and his heir after his death may claim as heir to him, or to any ancestors above him." In the end, "[t]he Judges and House of Lords resolved that, this was only a personal temporary disability in William, and that Thomas was entitled to the place of his great grandfather".

Similarly, in the EEBO-TCP corpus, a document with an especially high value (above the 99th percentile) of measure (1) is a 1684 poem about the frozen river Thames (*A True Description of Blanket Fair upon the River Thames, in the time of the Great Frost in the Year of our Lord, 1683*, by an unknown author). The author points out, and celebrates, the existence of a vibrant market and trade on the ice. At the same time, there is little emphasis on status: "BEhold the Wonder of this present Age, A Famous RIVER now become a Stage. Question not what I now declare to you, The Thames is now both Fair and Market too,.... Before the *Temple* there a Street is made, And

there is one almost of every Trade: There may you also this hard Frosty Winter, See on the Rocky Ice a Working-PRINTER, Who hopes by his own Art to reap some gain, Which he perchance does think he may obtain. Here is also a Lottery and Musick too, Yea, a cheating, drunken, leud, and debauch'd crew. Hot Codlins, Pancakes, Duck, Goose, and Sack, Rabit, Capon, Hen, Turkey, and a wooden Jack. In this same Street before the Temple made, There seems to be a brisk and lively Trade...".

In contrast, a document with an especially small value (below the 1st percentile) of measure (1) is a 1689 song shunning Catholics and celebrating the new Protestant king (The Prince's triumph: or The subjects happiness, in a Protestant King. To the tune of, Let Oliver now be forgotten, by an anonymous author). In this song, there is a clear emphasis on status and no emphasis on contract: "LET Popery now be forgotten, Their Relicks are quit out of door, Their Images now lie a Rotting, Which they formerly used to Adore; At the Convention first siting, They thought that the day was their own, But now they have had a new meetting, And things in order are getting, To settle the Prince on the Throne. While that the House was Debating, The Papists Cries we shall see, And all their stories relating, The Bishops will never agree. The King the Parliament greeted, And sent them a Letter on's owne, But now their joys are Defeated, The brave Prince of Orange is Seated, To Rule on the English Throne."

Appendix C: Disaggregating contract versus status by court

This appendix shows analytically the disaggregation of the aggregate measure of the emphasis on contract versus status based on the contribution by courts. The corresponding disaggregation underpins the four parts of Figure D1 in Appendix D.

Let $y_{it}^{ER} \equiv cvs_{it}^{ER}$ denote our document-level measure and $y_t^{ER} \equiv cvs_t^{ER}$ our yearly measure of emphasis on contract versus status in caselaw. Each case report in the ER corpus depicts a case heard at a particular court. Let K denote the set of courts that adjudicated the cases discussed in the ER. Let D_t^{ER} denote the set of reports (documents) on cases from year t irrespective of the adjudicating court. Let D_{ct}^{ER} denote the set of reports (documents) on cases from year t adjudicated at court $c \in K$, with $\bigcup_{c \in K} D_{ct}^{ER} = D_t^{ER}$ and $D_{ft}^{ER} \cap D_{gt}^{ER} = \emptyset$ for all $f \neq g$.

Then, we can write the yearly value of y_t^{ER} , defined in expression (2) for corpus $j = ER$, as follows:

$$y_t^{ER} = \frac{\sum_{c \in K} \sum_{i \in D_{ct}^{ER}} len_{it}^{ER} y_{it}^{ER}}{\sum_{i \in D_t^{ER}} len_{it}^{ER}}. \quad (C1)$$

To ascertain the contribution of court $c \in K$ to y_t^{ER} in year t , we calculate:

$$\tau_{ct}^{ER} \equiv \frac{\sum_{i \in D_{ct}^{ER}} len_{it}^{ER} y_{it}^{ER}}{\sum_{i \in D_t^{ER}} len_{it}^{ER}}. \quad (C2)$$

Recall that $y_{it}^{ER} \equiv cvs_{it}^{ER}$ is strictly positive and thus $y_t^{ER} \equiv cvs_t^{ER}$ is strictly positive. To ascertain the relative contribution of court $c \in K$ to y_t^{ER} in year t , we compute:

$$\omega_{ct}^{ER} \equiv \tau_{ct}^{ER} / y_t^{ER}, \quad (C3)$$

where, by construction, $\sum_{c \in K} \omega_{ct}^{ER} = 1$ in any given year t .

Next, upon dividing and multiplying by $(\sum_{i \in D_{ct}^{ER}} len_{it}^{ER}) / (\sum_{i \in D_t^{ER}} len_{it}^{ER})$, we can rewrite the right-hand-side of expression (C2) as:

$$\frac{\sum_{i \in D_{ct}^{ER}} len_{it}^{ER} y_{it}^{ER}}{\sum_{i \in D_t^{ER}} len_{it}^{ER}} \cdot \frac{\sum_{i \in D_{ct}^{ER}} len_{it}^{ER}}{\sum_{i \in D_t^{ER}} len_{it}^{ER}} = \underbrace{\frac{\sum_{i \in D_{ct}^{ER}} len_{it}^{ER} y_{it}^{ER}}{\sum_{i \in D_{ct}^{ER}} len_{it}^{ER}}}_{(C5)} \cdot \underbrace{\frac{\sum_{i \in D_{ct}^{ER}} len_{it}^{ER}}{\sum_{i \in D_t^{ER}} len_{it}^{ER}}}_{(C6)} \quad (C4)$$

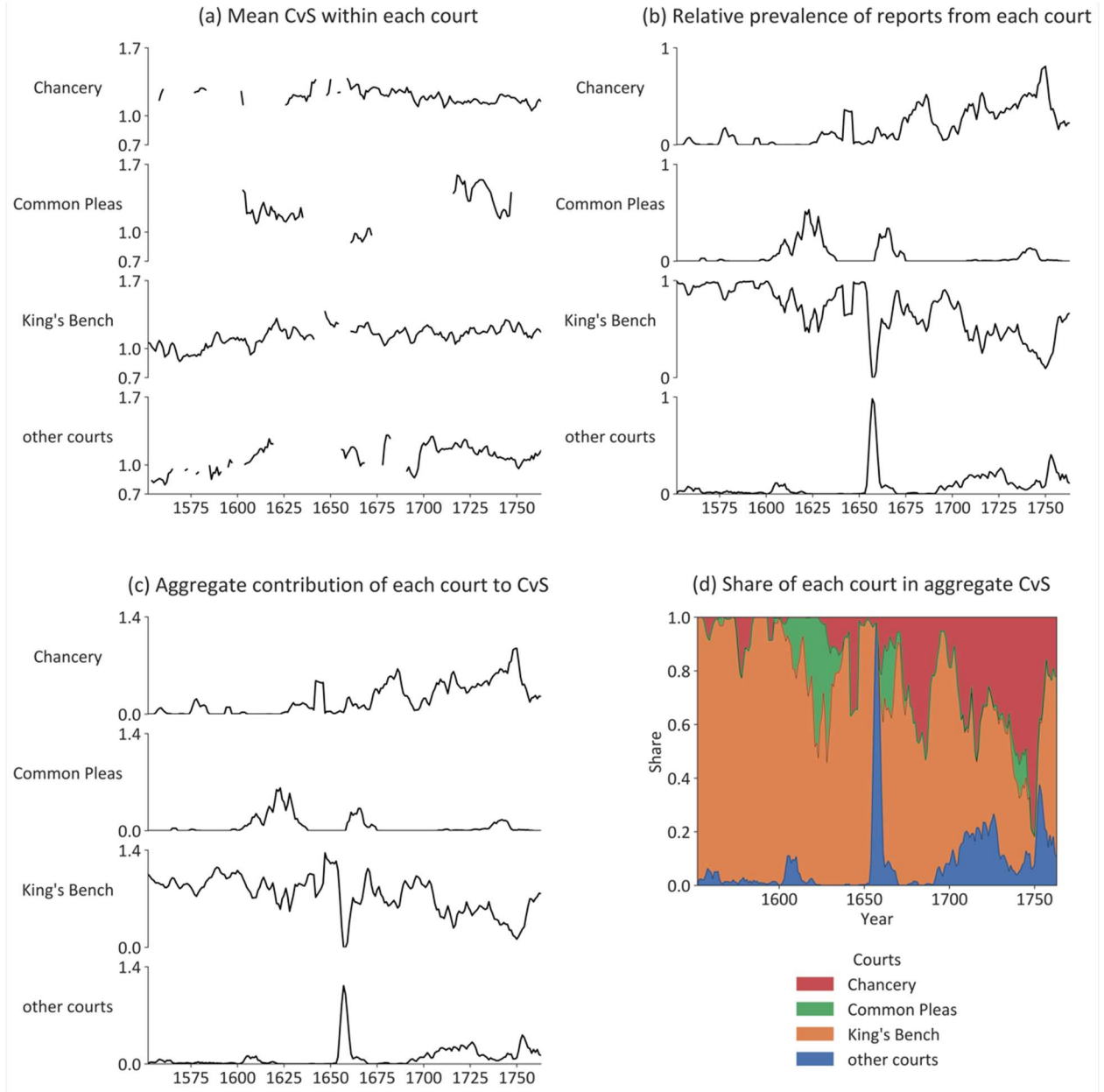
Thus, the relative contribution of court $c \in K$ to y_t^{ER} in year t , as captured by expression (C2), is a product of two components: the mean y_t^{ER} for court c in year t (expression (C5)) and the share of corpus due to reports from court c in year t (expression (C6)).

For each court $c \in K$, where K includes Chancery, Common Pleas, King's Bench, and other courts, Figure D1 in Appendix D plots the evolution over time of the pertinent components for $y_t^{ER} \equiv cvs_t^{ER}$. Specifically, for each court c , Figure D1(a) plots expression (C5); Figure D1(b)

plots expression (C6); Figures D1(c) plots τ_{ct}^{ER} defined in expression (C2); and Figure D1(d) plots ω_{ct}^{ER} defined in expression (C3).

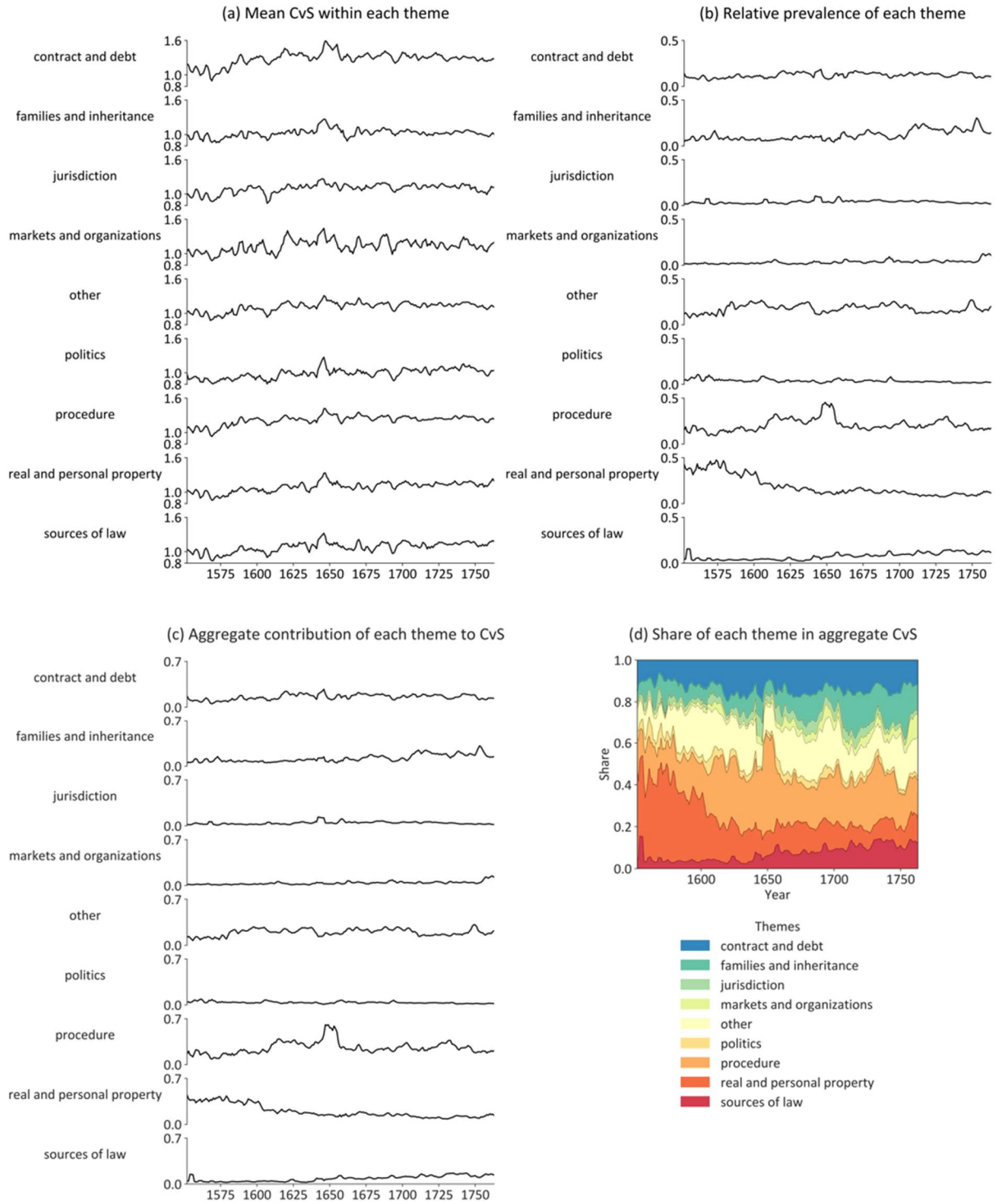
Appendix D: Decompositions of yearly aggregates of contract versus status

Figure D1: The role of courts in accounting for aggregate Contract vs. Status (CvS), caselaw



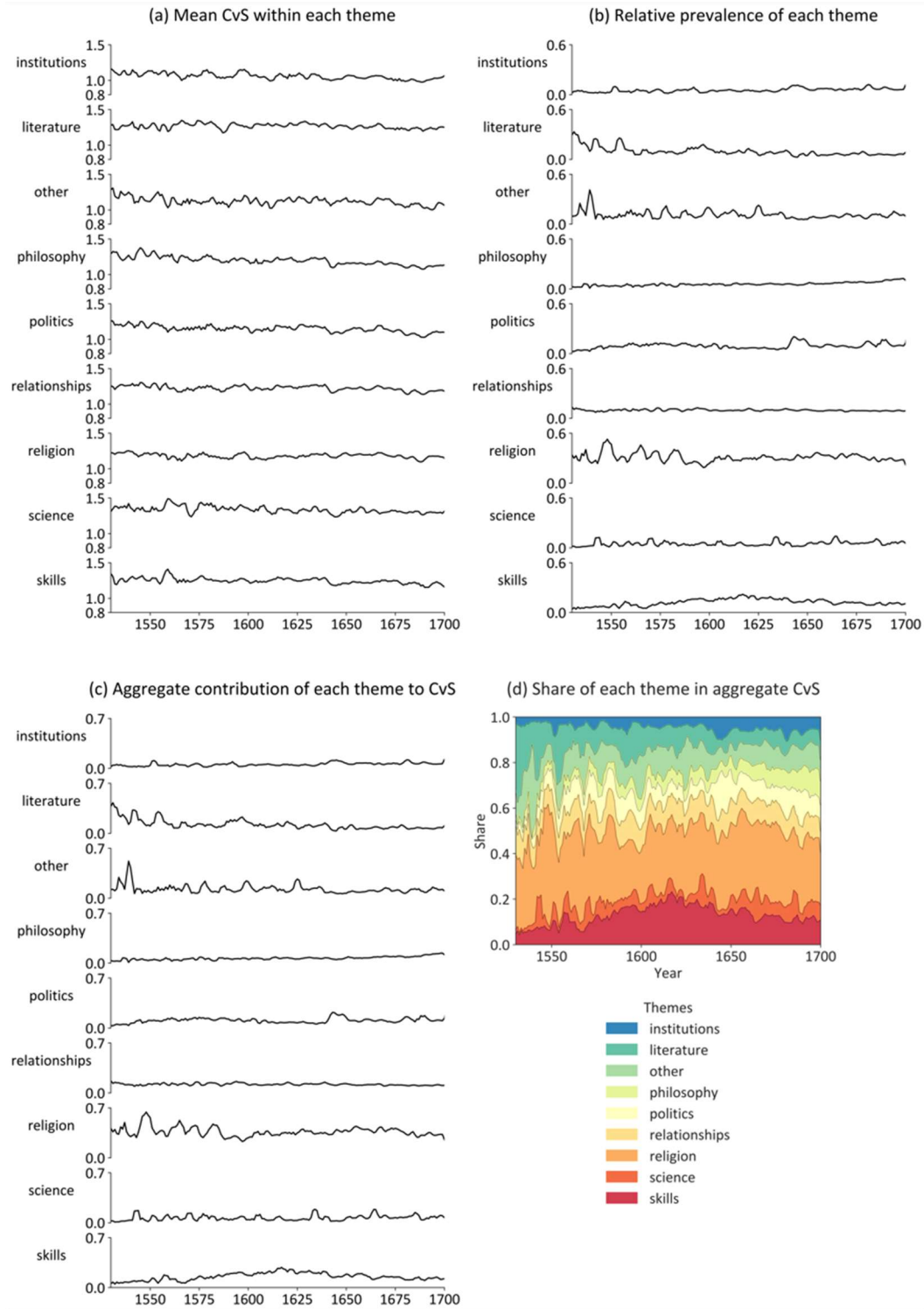
Notes: The figure shows the disaggregation of cvs_t^{ER} by courts. Part (a) shows mean cvs_t^{ER} within each court (with missing values in the years for which no applicable reports exist), part (b) the relative prevalence of reports from each court, and part (c) the aggregate contribution of each court as implied by parts (a) and (b). Part (d) displays the share of cvs_t^{ER} accounted for by each court. See Appendix C. The figure displays three-year centered moving averages.

Figure D2: The role of legal themes in accounting for aggregate Contract vs. Status (CvS), caselaw



Notes: The figure shows the disaggregation of cvs_t^{ER} by legal themes. Part (a) shows mean cvs_t^{ER} within each theme, part (b) the relative prevalence of each theme in ER, and part (c) the aggregate contribution of each theme to cvs_t^{ER} as implied by parts (a) and (b). Part (d) displays the share of cvs_t^{ER} accounted for by each theme. See Appendices E and F. The figure displays three-year centered moving averages.

Figure D3: The role of themes in accounting for aggregate Contract vs. Status (CvS), print culture



Notes: The figure shows the disaggregation of cvs_t^{ET} by cultural themes. Part (a) shows mean cvs_t^{ET} within each theme, part (b) the relative prevalence of each theme in EEBO-TCP, and part (c) the aggregate contribution of each theme to cvs_t^{ET} as implied by parts (a) and (b). Part (d) displays the share of cvs_t^{ET} accounted for by each theme. See Appendices E and G. The figure displays three-year centered moving averages.

Appendix E: Disaggregation reflecting the contribution of legal or cultural subdomains

This appendix provides the analytical disaggregation of our yearly measure of emphasis on contract versus status based on the contribution of the pertinent legal or cultural subdomains. The disaggregation underpins the four parts of Figures D2 and D3 in Appendix D.

In any topic model, a document is by construction a mixture of topics, with topic shares at the document level summing to one. We define themes as groupings of topics such that each topic is assigned to exactly one theme. Thus, theme proportions at the document level also sum to one. Let θ_{itm}^j be the share of document i published in year t from corpus j devoted to theme $m \in M^j$, where M^j denotes the set of themes applicable to corpus j (see Section 5.2 and Appendices F and G).

Recall that $y_{it}^j \equiv cvs_{it}^j$ is our document-level measure and $y_t^j \equiv cvs_t^j$ our yearly measure of emphasis on contract versus status in corpus j . With $\sum_{m \in M^j} \theta_{itm}^j = 1$ for any document i from corpus j , it is first convenient to observe that $y_t^j \equiv cvs_t^j$, defined in expression (2), can be written as follows:

$$y_t^j = \frac{\sum_{i \in D_t^j} len_{it}^j y_{it}^j}{\sum_{i \in D_t^j} len_{it}^j} = \frac{\sum_{i \in D_t^j} len_{it}^j y_{it}^j (\sum_{m \in M^j} \theta_{itm}^j)}{\sum_{i \in D_t^j} len_{it}^j}. \quad (E1)$$

Given θ_{itm}^j , we can thus express the contribution to y_t^j of theme $m \in M^j$ in year t as follows:

$$\tau_{mt}^j \equiv \frac{\sum_{i \in D_t^j} len_{it}^j y_{it}^j \theta_{itm}^j}{\sum_{i \in D_t^j} len_{it}^j}. \quad (E2)$$

Because $y_{it}^j \equiv cvs_{it}^j$ is strictly positive (see Section 4.3) and thus $y_t^j \equiv cvs_t^j$ is also strictly positive, we can further compute the share that theme $m \in M^j$ contributes to y_t^j in year t :

$$\omega_{mt}^j \equiv \tau_{mt}^j / y_t^j, \quad (E3)$$

where, by construction, $\sum_{m \in M^j} \omega_{mt}^j = 1$ in any given year t , and τ_{mt}^j and y_t^j are respectively defined by (E2) and (E1).

Next, upon dividing and multiplying by $(\sum_{i \in D_t^j} len_{it}^j \theta_{itm}^j) / (\sum_{i \in D_t^j} len_{it}^j)$, we can rewrite the right-hand-side of expression (E2) as:

$$\frac{\sum_{i \in D_t^j} len_{it}^j y_{it}^j \theta_{itm}^j}{\sum_{i \in D_t^j} len_{it}^j} \cdot \frac{\sum_{i \in D_t^j} len_{it}^j \theta_{itm}^j}{\sum_{i \in D_t^j} len_{it}^j} = \underbrace{\frac{\sum_{i \in D_t^j} len_{it}^j \theta_{itm}^j y_{it}^j}{\sum_{i \in D_t^j} len_{it}^j \theta_{itm}^j}}_{(E5)} \cdot \underbrace{\frac{\sum_{i \in D_t^j} len_{it}^j \theta_{itm}^j}{\sum_{i \in D_t^j} len_{it}^j}}_{(E6)}. \quad (E4)$$

Thus, the contribution to y_t^j of theme $m \in M^j$ in year t , as captured by expression (E2), is a product of two components: the mean y_t^j within theme m in year t (expression (E5)) and the relative prevalence of theme m in year t (expression (E6)).

For each theme $m \in M^j$ for the applicable corpus j , Figures D2 and D3 in Appendix D plot the evolution over time of the pertinent components for $y_t^j \equiv cvs_t^j$. Specifically, for each theme m relevant to corpus j , Figures D2(a) and D3(a) plot expression (E5); Figures D2(b) and D3(b) plot expression (E6); Figures D2(c) and D3(c) plot τ_{mt}^j defined in expression (E2); and Figures D2(d) and D3(d) plot ω_{mt}^j defined in expression (E3).

Appendix F

This appendix lists the constituent topics for each of the themes featured in Section 5.2 and displayed in Figure D2. The topics were estimated by Grajzl and Murrell (2021a) using the ER corpus. A detailed description of the estimated topic model, the naming and interpretation of each topic, and the grouping of topics into broader themes can be found in Grajzl and Murrell (2021a, 2021b) and the corresponding appendices.

Contract and debt:

Assumpsit; Bonds; Identifying Contractual Breach; Employment of Apprentices & Servants; Executable Purchase Agreements; Contract Interpretation & Validity; Length & Expiry of Leases; Rental Payments; Repaying Debt; Bankruptcy; Prioritizing Claims; Claims from Financial Instruments; Pleadings on Debt; Mortgages

Families and inheritance:

Marriage Settlement; Minors & Guardians; Daughters' Legacies; Geographic Settlement of Children; Rights of Married Women; Disentangling Heirs; Specifying Inherited Property Rights; Implementing Ambiguous Wills; Contingency in Wills; Execution & Administration of Estates; Intestacy; Validity of Wills; Excluding Beneficiaries of Wills; Estate Tail

Jurisdiction:

Inferior-Court Jurisdiction; Equitable Relief; Geographic Jurisdiction of Laws; Equity Jurisdiction; Prohibiting Jurisdiction

Markets and organizations:

Publishing & Copyright; Regulating Commerce; Municipal Charters; Governance of Private Organizations; Restraints on Trade; Negotiable Bills and Notes

Other (criminal, ecclesiastical, multiple, torts):

Indicting for Murder; Habeas Corpus; Decisions After Conviction; Ecclesiastical Appointments; Temporal & Spiritual Jurisdiction; Tithes; Revocation; Determining Damages & Costs; Multiparty Cases; Vesey Footnotes; Coke Reporting; Vesey Reporting; Keble Reporting; Modern Reporting; Attorney- & Solicitor-General; Non-Translated Latin; Nuisance; Actionable Defamation; Wrongful Possession

Politics:

Local Administrative Appointments; Dignitaries; Rights of Public Office; Royal Patents & Tenures

Procedure:

Reviewing Local Orders; Rendering Judgement; Equity Appeals; Arbitration & Umpires; Interacting in Court; Procedural Rulings on Actions; Mistakes in Court Records;

Procedural Bills; Writs of Error; Jury Procedures & Trials; Motions; Court Petitions; Coke's Procedural Rulings; Correct Pleas; Procedural Rulings on Writs; Rulings on the Calendar; Evidence Gathering & Admissibility

Real and personal property:

Timing of Property Rights; Competing Land Claims; Elizabethan Land Cases; Equitable Waste; Manorial Tenures; Possession & Title; Self-Help in Real-Property Disputes; Common-Land Disputes; Shared & Divided Property Rights; Transfer of Ownership Rights; Bailment; Ownership of War Bounty; Trespass to Goods

Sources of law:

Precedent; Statute Applicability; Clarifying Legislative Acts; Contrasting Cases & Statutes

Appendix G

This appendix lists the constituent topics for each of the themes featured in Section 5.2 and displayed in Figure D3. The topics were estimated by Grajzl and Murrell (2024a) using the EEBO-TCP corpus. A detailed description of the estimated topic model, the naming and interpretation of each topic, and the grouping of topics into broader themes can be found in Grajzl and Murrell (2024a) and the corresponding appendices.

Institutions:

Parliamentary & Court Procedure; Local Law; Scottish Law; Dignitary Law; Lawfulness; Compilations of Laws; Constitutional Rules; Ordinances; Scottish Political Acts; Autonomous Church Governance; Royal Proclamations

Literature:

Early Literature, Secular; Early Literature, Spiritual; Jokes & Mishaps; Lusty Entertainments; Chivalric Literature; Comedy, Satire, Epigrams; Historical Romance; Romance & Comedy; Drama; French Romance; Poetic Laments; Political Poems

Other (geography, history, miscellany):

Voyages; Africa & Asia; Western Europe Surveyed; Chorography; Ecclesiastical History; Monarchs' Lives; Biblical History; Analyzing Ancient Thought; French & Iberian History; British Isles History; Roman History; Art Catalogs; Names Listed; Listing City Facts; Not English; Non-Translated Latin

Philosophy:

Republicanism; Moral Philosophy: Interests; Moral Philosophy: Passions; Moral Philosophy: Virtues; Deductive Reasoning

Politics:

Defending Monarchs; High Crimes; Allegiance & Resistance; Fearing Catholicism; Political Uses of Religion; Petitions, Protests, & Proposals; Military Campaigns; Continental International Relations; Economic Lobbying; Turkish International Politics; Asserting Parliamentary Powers

Relationships:

Obloquy & Encomium; Family Matters; Authority Relationships; Emotional Relationships; Expressing Loving & Loathing; Self-Reflection

Religion:

Holy Days; Official Prayer; Establishing Correct Doctrine; Papacy; Counter-Reformation Scholarship; Religious Love & Hope; Transubstantiation; Holy Lives; Allaying Christian Doubt; Old Testament; Attacking False Doctrine; Apocalyptic Theology; Catholics Under Protestant Rule; Dissent, Schism, & Toleration; Sin, Damnation, & Repentance; Christian

Mysticism; Salvation via Virtue; Salvation via Faith; Baconian Theology; Deductive Theology; Reasonable Religious Discourse

Science:

Mathematics; Astronomy & Astrology; Natural Philosophy; Botany; Chemistry; Physics; Zoology; Medical Science; Anatomy; Pharmacology; Diet & Health; Diseases & Cures

Skills:

Commercial Aids; Scholarly Learning Guides; Practical Geometry; Student & Practitioner Law; Using Numbers; Industrial Arts; Legal Practice Aids; Bibliographical Practice; Equine Learning; Military Training; Cookery; Improving Soil & Its Products; Rural Recreations; Catechismal Compilations; Christian Mental Exercises; Practicing Christianity

Appendix H

Define $\mathbf{y}_t \equiv (\ln(cvs_t^{ET}), \ln(cvs_t^{ER}))'$ as the vector consisting of our logged measures of contract versus status in print culture (based on the EEBO-TCP corpus, abbreviated as ET) and caselaw (based on the ER corpus). To study the interrelated dynamics of the elements of \mathbf{y}_t , we posit the following structural VAR:

$$\mathbf{A}\mathbf{y}_t = \mathbf{\Gamma}_0 + \mathbf{\Gamma}_1\mathbf{y}_{t-1} + \mathbf{\Gamma}_2\mathbf{y}_{t-2} + \mathbf{D}t + \mathbf{u}_t. \quad (\text{H1})$$

$\mathbf{\Gamma}_0$ is a 2×1 vector of constants. $\mathbf{\Gamma}_1$ and $\mathbf{\Gamma}_2$ are 2×2 matrices of coefficients. (The model with two lags was chosen using conventional lag length criteria and tests; see Section 7.) t is a linear time trend. \mathbf{D} is the corresponding 2×1 vector of coefficients. \mathbf{u}_t is a 2×1 vector of orthogonal structural shocks with $E(\mathbf{u}_t\mathbf{u}_t') = \mathbf{I}_2$. The 2×2 coefficient matrix \mathbf{A} captures how shocks occurring in one domain can immediately affect attention in other domains.

Without additional assumptions, the parameters of (H1) are not identified. However, under reasonable scenarios, \mathbf{A} has characteristics that ensure that estimates of the parameters of (H1) can be derived from OLS estimates of the following:

$$\mathbf{y}_t = \mathbf{A}^{-1}\mathbf{\Gamma}_0 + \mathbf{A}^{-1}\mathbf{\Gamma}_1\mathbf{y}_{t-1} + \mathbf{A}^{-1}\mathbf{\Gamma}_2\mathbf{y}_{t-2} + \mathbf{A}^{-1}\mathbf{D}t + \mathbf{e}_t, \quad (\text{H2})$$

where $\mathbf{e}_t \equiv \mathbf{A}^{-1}\mathbf{u}_t$. In particular, as we argue in Section 7, to the extent that print culture is more slow-moving than caselaw, innovations in ideas about contract versus status in caselaw should not impact the pertinent ideas in print culture contemporaneously (i.e., in the same year), but rather possibly only with a lag. Then, \mathbf{A} and, consequently, \mathbf{A}^{-1} are lower triangular and the residuals from the reduced-form VAR in expression (G2) can be expressed as:

$$\mathbf{e}_t \equiv \begin{bmatrix} e_t^{ET} \\ e_t^{ER} \end{bmatrix} = \begin{bmatrix} \tilde{a}_{11} & 0 \\ \tilde{a}_{21} & \tilde{a}_{22} \end{bmatrix} \begin{bmatrix} u_t^{ET} \\ u_t^{ER} \end{bmatrix}. \quad (\text{H3})$$

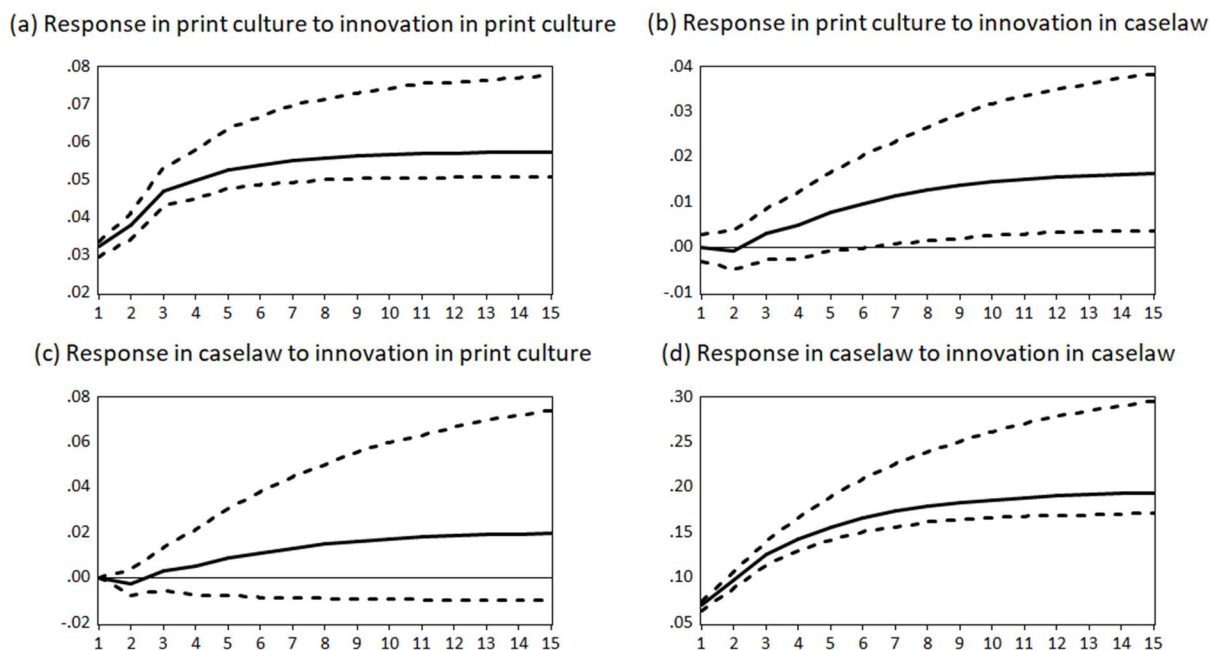
With this form, estimates of the structural parameters of (H1) can be derived from OLS estimates of (H2). The corresponding estimates and the structure of the VAR are then used to compute the impulse-responses as shown in Figure 5.

Appendix I

In this appendix, we present the VAR-based impulse-responses generated under an alternative identification assumption. In contrast to the approach in Section 7, we now assume that innovations in ideas about contract versus status in print culture do not impact the pertinent ideas in caselaw immediately (i.e., in the same year), but rather possibly only with a lag. Under this alternative assumption, therefore, caselaw is viewed as stickier than print culture.

Figure I1 shows the accumulated impulse-responses, displayed in exactly analogous format as those in Figure 5 (see Section 7). Evidently, the imposition of the above-described alternative identification assumption does not alter any of our substantive findings. Much like in the case of the results discussed in Section 7, developments in ideas about contract versus status in caselaw give rise to elevated attention to the corresponding ideas in print culture (Figure I1(b)). Similarly, developments in ideas about contract versus status in print culture spur a rise in attention to related ideas in caselaw (Figure I1(c)). However, for this IRF, the zero-effect line is within the one-standard-deviation confidence bands at all horizons.

Figure I1: Coevolution of caselaw and print culture in emphases on contract vs. status: VAR-based impulse responses under an alternative identification assumption



Notes: The figure shows accumulated impulse-responses with one-standard-deviation confidence intervals computed using Killian's (1998) bootstrap method for the VAR model involving logged cvs_t^{ET} , logged cvs_t^{ER} , and a linear time trend.