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Change Visible from a Distance: Digital Analysis of the *Fetvas* of Ottoman *Şeyhülislam*s in the Early Modern Era

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Abstract

Using a distant reading methodology, the article examines the thematic compositions of *fetva* compilations by four Ottoman *şeyhülislam*s in the early modern era. Our analysis of the *fetva*s from the late 17th and early 18th centuries reveal that the majority of these opinions concerned a small number of issues, including women, family problems, contractual matters, and disputes and litigations. The article also demonstrates that the representation of *fetva*s with such concerns increased compared to what we find in the opinions of Ebussuud Efendi, a 16th-century *şeyhülislam*. But interest in religious issues, non-Muslims, and taxation declined over time. Finally, the article proposes computational procedures to identify the complex contextual characteristics of the *şeyhülislam*s' opinions.

Keywords: distant reading; *fetva*; Ottoman empire; *şeyhülislam*; topical analysis

This article examines the thematic components of the *fetva* compilations belonging to three early modern Ottoman *şeyhülislam*s—Çatalcalı Ali Efendi (d. 1692), Feyzullah Efendi (d. 1703), and Yenişehirli Abdullah Efendi (d. 1743)—using computational techniques that make comprehensive analysis of this material practicable and labor-efficient. We have built our argument on the "distant reading" methodology that we first tested in our earlier work on the opinions of Şeyhülislam Ebussuud Efendi's (d. 1574) from an earlier era—the mid- to late 16th century. The results of this earlier effort also provide the present study with a basis of comparison.[1] As such, this is the first study to explore *fetva* (Arabic, fatwa) corpora from different periods through an approach that allows one to identify major thematic shifts over time.

Although modern researchers have long acknowledged the historical import of the Ottoman *fetva*s, the existing scholarship has remained disinclined to represent the thematic contents of even the most influential *fetva* compilations. This knowledge gap has consequences. For example, without such a content analysis it is difficult to assess the jurisprudential legacies of important muftis or their contributions to specific areas of jurisprudence. In addition, without an analysis of the thematic patterns in the *fetva* corpora, the nature of the relationship between *ifta'* practice (the process of issuing *fetva*s) and other realms of life (for example, social, economic, and political) remains opaque. Here our main focus is on the latter concern: by studying the thematic characteristics of multiple *fetva* compilations by *şeyhülislam*s from the 16th to 18th centuries, we not only contextualize how various external factors influenced these jurists' work but also highlight one aspect of jurisprudential change in the Ottoman context. With regard to the latter, this study

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[1] See Boğaç Ergene and Atabey Kaygun, "Semantic Mapping of an Ottoman Fetva Compilation: Ebussuud Efendi's Jurisprudence through a Computational Lens," *Journal of Islamic Studies* 32, no. 1 (2021): 62–115.

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contributes to recent discussions on Islamic jurisprudential evolution, which have centered primarily on interpretative developments.[2] We do not focus on variations in the substance of the law (that is, what the *fetva*s say), which is nearly impossible to accomplish except through close reading of a relatively small number of *fetva*s; rather, we provide generalizable information on temporal shifts in the contents of the *şeyhülislams' fetva*s (what the *fetva*s are about) based on a very large number of these texts.

Distant reading techniques based on computational methods facilitate systematic topical and textual analyses of large bodies of written texts when an endeavor of comparable scale cannot be accomplished by "close" (human) reading of the same material.[3] The phrase "distant reading" has a dubious genealogy and complicated connotations, but in this study we use the term to describe an effort to detect the major thematic features of particular texts by using computational techniques.[4] What such techniques might lack compared to in-person ("traditional") readings, such as intuitive comprehension of and immediate engagement with written information, they make up for with their speed and ability to process a large volume of data. Although many discussions on the topic often juxtapose close and distant reading of texts as incompatible methods of analysis, it also is possible to use them in complementary ways.[5] We consider our findings amenable to such a collaboration, although space limitations prevent us from making that type of effort here. Nevertheless, in the following pages we flag instances where close reading techniques might help to substantiate, fine-tune, or even qualify our impressions.

The Ottoman Empire in the 17th and 18th Centuries: A Recapitulation

A glance at the scholarly literature on our period suggests that by the 17th century the Ottoman Empire was a large polity with relatively stable borders and comparative security, interrupted only by periods of intense political violence in its territories.[6] This situation

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[2] See, for example, Wael B. Hallaq, "From Fatwās to Furūʿ: Growth and Change in Islamic Substantive Law," *Islamic Law and Society* 1, no. 1 (1994): 29–65. For a recent discussion of the existing scholarship on jurisprudential change in the particular context of the debates surrounding *ijtihad* (independent juristic interpretation), see Anver M. Emon, "Ijtihad," in Anver M. Emon and Rumee Ahmed, eds., *The Oxford Handbook of Islamic Law* (New York: Oxford University Press, 2019), 181–216. See also other sources cited below.

[3] For a useful overview of distant and close reading techniques in the humanities, see S. Jänicke, G. Franzini, M. F. Cheema, and G. Scheuermann, "On Close and Distant Reading in Digital Humanities: A Survey and Future Challenges," Eurographics Conference on Visualization, 2015, https://diglib.eg.org/handle/10.2312/eurovisstar. 20151113.083-103. See also Ted Underwood, "A Genealogy of Distant Reading," *DHQ: Digital Humanities Quarterly* 11, no. 2 (2017): 1–12.

[4] Franco Moretti, who might be the best-known proponent of distant reading techniques in the field of comparative literature, defines "distance" (in the phrase "distant reading") as an aspirational quality, since as "a condition of knowledge[,] it allows you to focus on units that are much smaller or much larger than the text: devices, themes, tropes—or genres and systems" (57); "Conjectures on World Literature," *New Left Review* 1 (2000): 54–68.

[5] Although Gayatri Chakravorty Spivak acknowledges that distant reading "promises excellent reference tools," she also describes it as an attempt that "legitimate[s] the humanities by making them scientific," which "was already tried by the extremes of symbolic logic and structuralism." Further, she wrote that "the world systems theorists upon whom Moretti relies . . . are . . . useless for literary study—that must depend on texture." See Spivak, *Death of a Discipline* (New York: Columbia University Press, 2005), 101, 108. Also see Spivak, "World Systems and the Creole," *Narrative* 14, no. 1 (2006): 102–12. More generally, see Maurizio Ascari, "The Dangers of Distant Reading: Reassessing Moretti's Approach to Literary Genres," *Genre* 47, no. 1 (2014): 1–19. For an example of a collaborative utilization of close and distant reading methods based on *şeyhülislams' fetva*s, including the compilations examined here, see Boğaç Ergene and Atabey Kaygun, "The Textual Evolution of the Ottoman *Şeyhülislams' Fetva*s: A Cross-Corpora Computational Analysis," *Der Islam* 98, no. 2 (2021): 516–45.

[6] Suraiya N. Faroqhi, ed., *The Cambridge History of Turkey*, vol. 3, *The Later Ottoman Empire 1603–1839* (Cambridge, UK: Cambridge University Press, 2006) 3–17. More broadly, the impressions presented in this section are based on the following works unless the source is specifically identified: Halil Inalcık and Donald Quataert, eds., *An Economic and Social History of the Ottoman Empire* (Cambridge, UK: Cambridge University Press, 1994); Linda T. Darling, *Revenue-Raising and Legitimacy: Tax Collection and Financial Administration in the Ottoman Empire 1560–1660* (Leiden:

promoted domestic and interregional trade for the most part, even as global commerce slowly shifted to the Atlantic. During this period, the Ottomans continued to control overland trade routes, benefited from robust commercial activity in the eastern and southern Mediterranean, and boasted strong commercial connections with Europe.

The era might be characterized as one of protracted political decentralization, but one in which links between the capital and the provinces grew stronger. It was a period of sedentary leadership when the sultans "reigned more than ruled" and the rise of elite households diluted the concentration of power in the imperial center.[7] In the provincial settings, local grandees became better integrated with the administrative apparatus and gained access to local revenue sources—a process that led to wealth accumulation and political differentiation, despite episodes of confiscation that primarily targeted upper-level government appointees and prominent tax-farmers.[8] Among the consequences of the intensified pluralization in the political realm were pronounced household-based factionalism, intense competition for increasingly limited government positions, and growing extractive pressures on taxpayers.

Changes in public finance during this era have received major scholarly attention, including the regularization of extraordinary taxes originally imposed in times of war; the continuous and often intentional depreciation (through debasement) of the currency; the spread of short-term tax-farming (*iltizam*), particularly in the agrarian sector; and the institution and proliferation of the life-term tax-farming (*malikane*) system after 1695. These changes all stemmed from the polity's deepened financial needs, which also contributed to the economy's monetization. The required immediate payments for short- and longer-term tax-farm contracts led to the rise of credit markets and networks where big-time financial investors (*sarraf*) profited by loaning sums at substantial interest rates. We also observe intensified attempts to shelter wealth in charitable endowments, which led to increases in the numbers of family waqfs.[9] Another financial development that has received attention in the scholarship is the greater tendency for the wealthy to invest in real estate. The popularity of tax-farming practices in the 17th and 18th centuries led to the development of a hierarchy of intermediary actors in the countryside, many of whom were subcontractors, and to increasing demands on the surplus generated by the productive classes. When it was impossible to broaden the profit margins, these demands led to greater levels of (often illegal) extraction, tax increases, and intense complaints against abuse.

A few scholars also have noted a protracted liberalization of the constraints in the *miri* (prebendal) system and strengthening of land ownership rights during the 17th and 18th centuries.[10] In Syria, the cultivators might have enjoyed increasing freedom to lease usufruct rights on their lots and to pledge land rights against a loan with the permission of the grant-holder. A similar tendency was prevalent in central Anatolia around the same time: the usufruct rights of cultivators in *miri* plots turned into what we might regard as a quasi-

Brill, 1996); Mehmet Genç, *Osmanlı İmparatorluğu'nda Devlet ve Ekonomi* (Istanbul: Ötüken, 2000); and Pal Fodor, *The Business of State: The Ottoman Finance Administration* (Berlin: Klaus Schwarz Verlag, 2018).

[7] Carter V. Findley, "Political Culture and the Great Households," in Faroqhi, *Cambridge History of Turkey*, 65–81.

[8] See Ariel Salzmann, "An Ancien Régime Revisited: 'Privatization' and Political Economy in the Eighteenth-Century Ottoman Empire," *Politics and Society* 21, no. 4 (1993): 393–423; and Yasin Arslantaş, "Confiscation by the Ruler: A Study of the Ottoman Practice of Müsadere, 1700s–1839" (PhD diss., London School of Economics and Political Science, 2018).

[9] Beshara Doumani, *Family Life in the Ottoman Mediterranean: A Social History* (Cambridge, UK: Cambridge University Press, 2017).

[10] Molly Greene, "An Islamic Experiment? Ottoman Land Policy in Crete," *Mediterranean Historical Review* 11, no. 1 (1996): 60–78; Dina Rizk Khoury, "Administrative Practice between Religious Law (Shari'a) and State Law (Kanun) on the Eastern Frontiers of the Ottoman Empire," *Journal of Early Modern History* 5, no. 4 (2001): 305–30; Eugenia Kermeli, "Caught in between Faith and Cash: The Ottoman Land System of Crete, 1645–1670," in Antonios Anastasopoulos, ed., *The Eastern Mediterranean under Ottoman Rule: Crete 1645-1840* (Rethymno, Greece: Crete University Press, 2008), 17–48.

private ownership that could be transferred, inherited, or sold with minimal interference from grant-holders in the 17th and 18th centuries.[11]

Also noteworthy is the popularization of sophisticated forms of contractual arrangements involving real estate, land use, and cash-based transactions. For example, scholars have noted elaborate partnerships in agrarian production that developed after the 16th century between cultivators and individuals with claims on land.[12] Various types of contractual arrangements concerning credit transactions involving collateral or disguised interest payments likely became common by at least the 18th century.[13]

At the cultural level, the 17th and 18th centuries were characterized by enhanced interest in secular subjects; support for literary, artistic, and scientific endeavors; urban development; and architectural innovation. In the so-called Tulip Age (1718–30), which coincided with the grand-vizirate of Nevşehirli Ibrahim Paşa, scholars have noted a growing appreciation for worldly pleasures and entertainment. Such trends, often apparent in the ruler's court but also adopted by the elite, nevertheless provoked criticism: conservative segments of the society emphasized the unrestrained expenditures associated with questionable practices and festivities, the burden of taxes imposed to finance them, and what they regarded as immoral and irreligious behavior.

This period also saw two of the more significant events in Ottoman history, including the second siege of Vienna in 1683, which ended in a military catastrophe, and the 1703 (Edirne) rebellion, which toppled Sultan Mustafa II and cost then-şeyhülislam Feyzullah Efendi his life.[14]

The Ottoman Şeyhülislam and His Fetvas

The şeyhülislam, or chief mufti, was the highest-ranking official in the Ottoman religious-judicial hierarchy. The position might have emerged in the second half of the 15th century.[15] The original function of the şeyhülislam was to issue fetvas, which remained paramount, although his other responsibilities also expanded as he came to play a greater role in government, including appointments to judicial and teaching positions all over the empire, new consultative responsibilities in the polity's political and administrative affairs, and increasingly pronounced ceremonial functions. In time, his office also grew in size and came to overtake most aspects of the ifta' process, including but not limited to logistical and secretarial help with tasks such as the collection, handling, and processing of fetva requests.[16]

In this study we examine the fetvas of Çatalcalı Ali Efendi, Feyzullah Efendi, and Yenişehirli Abdullah Efendi, who occupied the office of şeyhülislam between 1674 and 1730, and compare them to those of Ebussuud Efendi, who served as şeyhülislam between 1545 and 1574 (Table 1).[17] The fetva corpora that belong to the first three are among the

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[11] Özer Ergenç, "XVIII. Yüzyılda Osmanlı Anadolu'sunda Tarım Üretiminde Yeni Boyutlar: Muzara'a ve Muraba'a Sözleşmeleri," *Kebikeç* 23 (2007): 129–39.

[12] Ibid.

[13] Süleyman Kaya, "XVIII: Yüzyıl Sonlarında Üsküdar Vakıflarının Gelir Kaynakları," *Dîvân: Disiplinlerarası Çalışmalar Dergisi* 15, no. 29 (2010–12): 95–132.

[14] See Michael Nizri, *Ottoman High Politics and the Ulama Household* (New York: Palgrave Macmillan, 2014), ch. 1.

[15] See Richard Repp, *The Müfti of Istanbul: A Study in the Development of the Ottoman Learned Hierarchy* (London: Ithaca Press, 1986), 111–24, 192–96; and İsmail Hakkı Uzunçarşılı, *Osmanlı Devletinin İlmiye Teşkilâtı* (Ankara: Türk Tarih Kurumu Basımevi, 1988), 175–76.

[16] See Uriel Heyd, "Some Aspects of the Ottoman Fetvā," *Bulletin of the School of Oriental and African Studies* 32, no. 1 (1969): 35–56; Uzunçarşılı, *İlmiye Teşkilâtı*, 196–97; Ferhat Koca, "Fetvahâne," *TDV İslam Ansiklopedisi*, vol. 12 (Istanbul: Türkiye Diyanet Vakfı Yayınları, 1995), 496–500; Emine Arslan, "Nukûllü Fetva Mecmûaları ve Mehmed Fıkhî'nin el-Ecvibetü'l-Kâni'a Adlı Eserinin Bunlar Arasındaki Yeri" (PhD diss., Marmara University, Istanbul, 2010), 22–27; and Talip Ayar, "Osmanlı Dönemi Fetvâ Hizmetlerinde Etkin Bir Birim: Fetvâ Eminliği," *bilimname* 21 (2011–12): 159–77.

[17] Although we are inclined to assume that Ebussuud's corpus reflects the prevalent concerns in şeyhülislams' opinions in the 16th century, we lack the empirical basis to test the validity of this assumption.

TABLE 1. Corpora Examined in This Study

Şeyhülislam	Corpus Title	Time in Office	Modern Source	Number of *Fetvas* in Corpus
Ebussuud Efendi	*Fetâvâ-yı Ebüssu'ûd*	1545–74	Ahmet Akgündüz, ed., *Şeyhü'l-islâm Ebüssu'ûd Efendi Fetvâları (Fetâvây-ı [sic.] Ebüssu'ûd Efendi)* (Istanbul: Osmanlı Araştırmaları Vakfı, 2018).	5,012
Çatalcalı Ali Efendi	*Fetâvâ-yı Ali Efendi*	1674–86	Necati Demirtaş, ed., *Açıklamalı Osmanlı Fetvâları: Fetâvâ-yı Ali Efendi*, 2 vols. (Istanbul: Kubbealtı, 2014).	3,948
Feyzullah Efendi	*Fetâvâ-yı Feyziyye*	1688 1695–1703	Süleyman Kaya, ed., *Fetâvâ-yı Feyziyye: Şeyhülislam Feyzullah Efendi* (Istanbul: Klasik, 2009).	2,833
Yenişehirli Abdullah Efendi	*Behcetü'l Fetâvâ*	1718–30	Süleyman Kaya et al., eds., *Behcetü'l Fetâvâ: Şeyhülislam Yenişehirli Abdullah Efendi* (Istanbul: Klasik, 2011).	3,474

Note: Ebüssu'ûd Efendi Fetvâları contains some *fetvas* that belong to earlier Ottoman and non-Ottoman jurists. For our analysis, we selected and focused only on Ebussuud's opinions. For all four corpora, we also excluded *fetvas* not in Turkish, and *fetvas* improperly scanned or improperly digitized by OCR. We do not expect these exclusions to statistically impact our results.

most influential compilations in the Ottoman context.[18] Yet aside from a handful of attempts to highlight a few prominent or controversial issues reflected in the opinions of these three jurists, comprehensive and systematic analyses of their opinions have yet to emerge.[19]

*Fetva*s are the responses issued by qualified jurists (muftis), based on Islamic law, to specific questions raised by the public; although technically nonbinding, in practice they were influential.[20] In the Ottoman context, the *şeyhülislams'* opinions were often collected by their scribes in manuscript form either during their lifetimes or shortly after. Print editions of the corpora we examine were issued in the 19th century. Modern scholars produced the transliterations used in this study by comparing multiple versions of each corpus and eliminating their occasional inconsistencies.[21]

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[18] Ahmet Özel "Behcetü'l-Fetâvâ," *TDV Islam Ansiklopedisi*, vol. 5 (Istanbul: Türkiye Diyanet Vakfı Yayınları, 1992), 346. The fact that modern scholars have produced reliable transliterations of the corpora in the modern Latin alphabet testifies to the justifiable importance that they attributed to these works.

[19] See, for example, Esra Yakut, "Şeyhülislâm Çatalcalı Ali Efendi'nin 'Fetâvâ-yı Ali Efendi' Adlı Fetvâ Mecmuasına göre Osmanlı Toplumunda Aile Kurumunun Oluşması ve Dağılması," *Ankara Üniversitesi Osmanlı Tarihi Araştırma ve Uygulama Merkezi Dergisi* 7 (1996): 298–318; Colin Imber, "Women, Marriage and Property: Mahr in the *Behçetü'l-Fetava* [*sic*] of Yenişehirli Abdullah," in Imber, ed., *Studies in Ottoman History and Law* (Istanbul: Isis, 2010), 263–88; Muhammed Kara, "Lale Devrinde Şeyhülislamlık ve Yenişehirli Abdullah Efendi" (master's thesis, Balıkesir University, Balıkesir, Turkey, 2017); Esra Kılavuz Eser, "17. Yüzyıl Şeyhülislamlarından Çatalcalı Ali Efendi'nin (1631–1692) Fetâvâ'sı Işığında Fıkıh Düşüncesi" (PhD diss., Marmara University, Istanbul, 2020); and Esra Kılavuz Eser, "17. Yüzyıl Osmanlı Şeyhülislamlarından Çatalcalı Ali Efendi'nin Hayatı ve Fetvâları Üzerine Bazı Mülahazalar," *Usul İslam Araştırmaları* 34 (2020): 159–90. For a monograph-length study on Şeyhülislam Feyzullah Efendi's political career, see Nizri, *Ottoman High Politics*.

[20] According to Guy Burak, *şeyhülislams'* *fetvas* became binding in the 16th century, at least during their tenure; see Guy Burak, *The Second Formation of Islamic Law: The Hanafi School in the Early Modern Ottoman Empire* (Cambridge, UK: Cambridge University Press, 2015), 41–42. Yavuz Aykan raised doubts about this claim in his review of Burak's book; *International Journal of Middle East Studies* 48, no. 4 (2016): 793-95. For a general discussion of the types of *fetvas* used in provincial settings in the 18th century, see Yavuz Aykan, *Rendre la justice à Amid: Procédures, acteurs et doctrines dans le contexte ottoman du XVIIIème siècle* (Leiden: Brill, 2016), ch. 3.

[21] It is a possibility that each corpus does not contain the entirety of individual jurists' opinions. In fact, the original compilers likely made editorial choices to include certain opinions and exclude others based on various criteria, including, perhaps, concerns about redundancy. As such, one should consider these works the composite legacies of

It is likely that each corpus comprises thematic and textual characteristics associated with individual jurists' personal and professional idiosyncrasies. For this reason, we combined the three later corpora, since we are interested in the jurisprudential concerns of the era rather than those of individual jurists.[22] Treating the *fetva*s of the three jurists as one set minimizes the potential impact of the editorial choices made by the compilers of specific corpora and lessens the influence each jurist's personal and professional preferences had on the results.[23] The choice also increases the total number of observations we hope to use as a basis for comparison to those of Ebussuud, composed more than a century earlier, to see how they might reflect changes over time in jurisprudential opinions.[24]

Methodology

The analysis presented here is premised on the fact that individual *fetva*s often concern multiple matters. To perform any comprehensive topical analysis of a *fetva* compilation, one must find ways to systematically identify the thematic attributes of every *fetva* it contains. In our earlier work, we detailed the computational procedures that we implemented to analyze Ebussuud's *fetva*s.[25] In a nutshell, the methodology we follow allows us to identify the thematic characteristics of individual *fetva*s by considering the frequency of specific words and phrases in them. Given the limited space, we will not rehash here every single step of our procedures, but we should explain some of the more essential aspects of our methodology. Broadly speaking, our analysis involves two separate phases:

1. Data production, which involves converting the in-print *fetva* corpora to a cleaned and normalized machine-readable electronic text, then eliminating the "stop-words"; colliding multicomponent noun and verb phrases; stemming each word and phrase in the corpus; and removing words/phrases that appeared fewer than ten times in the corpora, as these words have little statistical significance.[26]

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the individual muftis and their compilers. For more on this issue, see Ergene and Kaygun, "Semantic Mapping," 76. For a useful discussion of the editorial choices made by the compilers of a few provincial *fetva* corpora in the 18th century, see Guy Burak, "Şeyhulislam Feyzullah Efendi, the Ḥanafī Muftī of Jerusalem and the Rise of the Provincial Fatawa Collections in the Eighteenth Century," *Journal of the Economic and Social History of the Orient* 64, no. 4 (2021): 377–403.

[22] Akgündüz's *Ebüssu'ûd Efendi Fetvâları* is based entirely on well-known manuscript versions of the corpus. According to their publishers, the production processes of the three later corpora involved systematic comparisons across various print and manuscript versions of individual compilations. The manuscript versions are either contemporaneous or nearly contemporaneous with the jurists associated with these works. See Akgündüz, *Ebüssu'ûd Efendi Fetvâları*, 4, 35–43; Demirtaş, *Fetâvâ-yı Ali Efendi*, vol. 1, 12–13; Kaya, *Fetâvâ-yı Feyziyye*, vi; and Kaya, *Behcetü'l Fetâvâ*, 5–6. Esra Kılavuz Eser claimed that the Necati Demirtaş edition of *Fetâvâ-yı Ali Efendi* is missing about five hundred *fetva*s that belonged to Çatalcalı Ali Efendi. Unfortunately, Eser did not provide any clues regarding the thematic characteristics of these opinions or, assuming that the claim is true, why Demirtaş might have left them out. See Eser, "Çatalcalı Ali Efendi'nin (1631–1692) Fetâvâ'sı Işığında Fıkıh Düşüncesi," 206n587. It is unclear how this possible omission might influence our results.

[23] The later three corpora show slight differences in their thematic distributions. For example, *Fetâvâ-yı Fevziye*'s coverage of *fetva*s related to women is faintly larger than the other two, whereas *Behcetü'l Fetâvâ*'s coverage of *fetva*s about disputing and about contractual matters might be more pronounced. We explain in the next section how we defined our thematic categorizations.

[24] Despite the potential variations among the three corpora, they are more similar to one another than they are to Ebussuud's corpus, at least semantically. See appendix 1.

[25] See Ergene and Kaygun, "Semantic Mapping," 76–84.

[26] "Stop-words" are words with insignificant substantive import, such as *ve* (and), *ya da* (or), *bir* (one), or *etmek* (to do). Stemming was done to reduce inflectional forms of a word to a common base form. See *Stemming and Lemmatization*, 7 April 2009, https://nlp.stanford.edu/IR-book/html/htmledition/stemming-and-lemmatization-1.html. For this purpose, we used the Snowbol Turkish stemmer, available on most natural language processing (NLP) platforms; see Gülşen Eryiğit and Eşref Adalı, "An Affix Stripping Morphological Analyzer for Turkish," *Proceedings of the IAESTED International Conference*, Artificial Intelligence and Applications, 16–18 February 2004,

2. Production of thematic categories of analysis based on specific lists of words and phrases that we associated with each grouping. These categories comprise various jurisprudential and socioeconomic topics prominently represented in the *fetva* corpora as we identified them. Table 2 provides the categories we used both in our previous work to parse Ebussuud's corpus and in the present study.[27]

Some of the categories in Table 2 are self-explanatory; for others we provide brief explanations regarding the intended coverage. The themes are not meant to be exclusive. In fact, significant overlaps exist among *fetvas* that belong to specific categories, a point we will return to. To determine whether a particular *fetva* belonged to one or more of these categories, we looked for specific words or phrases associated with particular themes.[28]

Analysis and Results

Thematic Representations

Table 3 lists the proportional representations of each thematic category based on the numbers of *fetvas* in the composite set of three *fetva* corpora (by Çatalcalı Ali Efendi, Feyzullah Efendi, and Yenişehirli Abdullah Efendi) that contained at least 15 percent of the words or phrases associated with the specific theme, which on average corresponded to 2.4 stemmed words per *fetva* after the removal of the stop-words.[29]

In the composite corpora, which refers to the *fetvas* of the three later jurists combined in one compilation, the top five thematic categories are "Women," "(C)—Transactions, employment and gifts," "Family," "Disputing and litigation," and "(P)—Real estate." The *fetvas* associated with these themes collectively comprise 91.8 percent of the entire collection, but this figure is deceptive, since it involves double-counting (or more) of the *fetvas* included in the top five thematic categories. When the possibility of multiple counting is eliminated, those *fetvas* included in the five categories constitute about 63.8 percent of the composite set, still a significant figure. Based on this finding, we could suggest that in the late 17th and 18th centuries, the *şeyhülislams*' *fetvas* primarily focused on a small number of concerns involving contractual matters; issues related to family, women, and real estate; and disputes and litigations.

When we compare the tendencies of this period with those of an earlier era based on Ebussuud's compilation (Figure 1), the analysis provides even more revealing results.[30] In

Innsbruck, Austria, https://admin.turkofoni.org/files/an_affix_stripping_morphological_analyzer_for_turkish_g.y__t-e.adali-itu-2004.pdf. For a detailed methodological discussion and the precautions necessary for operating on old Turkish texts, see Ergene and Kaygun, "Semantic Mapping," 78–79.

[27] While the thematic categories are identical in both studies, we altered the lists of words and phrases associated with a specific theme based on the corpora examined here.

[28] For example, we took *fetvas* containing words or phrases such as *dava* (lawsuit), *inkar* (denial), *kadı* (shariʿa judge), *sulh* (amicable settlement), *meclis-i şer* (court), and *şahid* (witness) to be related to the thematic category "Disputing and litigation." The lists of words and phrases we associated with specific categories can be found at https://web.itu.edu.tr/kaygun/Documents/ergene_kaygun_change_2021_word_phrase_list.html.

[29] For Ebussuud's compilation as well, 15 percent of the words and phrases corresponded to 2.4 stemmed words per fetva on average. For a statistical justification of the 15 percent standard, see Ergene and Kaygun, "Semantic Mapping," 81–2, 106–108. To put it concisely, an average of 2.4 stemmed words per fetva standard generates a coverage rate of 60 to 80 percent of the opinions included in Ebussuud's corpus. This rate implies some undercounting of the *fetvas* associated with thematic groups, yet we do not expect the undercounting to significantly impact the groups' ordinal rankings based on their relative sizes. Based on 600 spot-checks we conducted for Ebussuud's corpus, we expect the standard's ability to identify the thematic attributes of the *fetvas* in its coverage to be high, 90 percent or more for most thematic groups. Although increasing the percentage threshold of the standard would ensure better "precision," it also would reduce the "recall" (coverage) rate.

[30] The ranking given for Ebussuud's *fetvas* is largely consistent with our findings in our earlier work (Ergene and Kaygun, "Semantic Mapping," 83–84) even though in the present study we adjusted the word/phrase list to the later corpora and used only the *fetvas* composed by Ebussuud himself and not those by earlier jurists cited in his

TABLE 2. List and Selective Definition of Thematic Categories

THEMATIC CATEGORY	SELECTIVE DESCRIPTIVE NOTATION
MONETARY	for *fetvas* that contain references to monetary exchanges
PROPERTY—REAL ESTATE	for *fetvas* that contain references to land and buildings that may be privately owned
PROPERTY—SLAVERY	
PROPERTY—OTHER	for *fetvas* that contain references to property other than real estate
PROPERTY—TERMINOLOGY	for *fetvas* that contain references to unidentified property or property relationships
FAMILY	
WOMEN	
INHERITANCE	
WAQF	
GENDER ISSUES AND SEXUALITY	for *fetvas* that contain references to gender identity, sexual acts, and their consequences
DISPUTING AND LITIGATION	for *fetvas* that contain references to litigation and legal procedures associated with dispute resolution, such as amicable settlements (*sulh*)
CRIME	
PUNISHMENT	
TAXATION, PREBENDAL RIGHTS, AND REVENUE EXTRACTION	for *fetvas* that contain references to taxation, other forms of wealth extraction, and prebendal rights and duties
LAND, NOT PROPERTY	for *fetvas* that contain references to state-owned land
CONTRACTUAL—TRANSACTIONS, EMPLOYMENT, AND GIFTS	for *fetvas* that contain references to buying and selling, and property transfers including gifts, partnerships, and employment contracts
CONTRACTUAL—DEBTS AND LOANS	
RITUAL AND WORSHIP	for *fetvas* that contain references to acts, aspects, or components of religious rituals or worship
RELIGIOUS AND DOCTRINAL MATTERS	for *fetvas* that contain references to theological issues and concerns, including, for example, sins and virtuous behavior, *mezheb*- or school-based variations, permissible and impermissible (halal/haram) actions, bases of infidelity and apostasy, heaven and hell
RELIGIOUS, ADMINISTRATIVE FUNCTIONARIES AND THEIR ACTIONS	for *fetvas* that contain references to specific officeholders and their functions
COMMUNAL MATTERS (INCLUDING RIGHTS AND OBLIGATIONS)	for *fetvas* that contain references to communal life, relationships, and responsibilities, including, for example, collective rights to way and water, neighborhood interactions, and crimes committed by unidentified parties in public places
NON-MUSLIMS	
REPRESENTATIONS, SURETYSHIP, AND GUARDIANSHIP	

(*Continued*)

TABLE 2. (*Continued.*)

THEMATIC CATEGORY	SELECTIVE DESCRIPTIVE NOTATION
AGRICULTURE AND CULTIVATION	
FOOD AND BEVERAGES	
ANIMALS	
INTOXICANTS	
ILLNESS, DEATH, AND INJURY	
MILITARY GROUPS AND MATTERS	for *fetva*s containing references to the affairs and responsibilities of military groups including (but not exclusively) warfare, policing, and interactions with the populace

Source: Ergene and Kaygun, "Semantic Mapping," 80–81.

particular, we observe that the composite corpora contain proportionately more *fetva*s concerning "Women" and "Family" than Ebussuud's corpus does, which indicates that matters related to these themes are better represented in the former group. The impression that the later corpora enhanced women's visibility and highlighted domestic matters is a significant finding and perhaps indicative of a social (and consequently jurisprudential) transformation between the 16th and 18th centuries, when the Ottomans built a sophisticated urban civilization with well-articulated gender roles and family relationships.

Also, the following categories significantly increased their proportional representations: contractual concerns ("Transactions" and "Debts and loans"), property-related issues ("Real estate" and "Other"), "Waqf," "Inheritance," and "Illness, death, injury."[31] Particularly noticeable here is the significant jump in "Transactions," which corresponds to an 8.9 percent increase in its prevalence (overall, the representation of *fetva*s involving contractual matters grew from 13.2 to 23.1 percent when duplicate *fetva*s are removed). "Other property" too almost doubled its representation.

On the other hand, the relative ranks and representations of the following categories declined considerably: "Ritual and worship," "Religious and doctrinal matters," "Religious, administrative functionaries and their actions," "Non-Muslims," and "Taxation, prebendal rights, and revenue extraction." The decreases in the first three groups are particularly severe: their collective representation dropped by more than half in the later *fetva*s, from 16.8 to 6.7 percent, without double-counting those *fetva*s associated with both groups.

Combined with the previous finding, this result indicates a clear swing in jurisprudential attention away from issues that can be roughly characterized as religious-doctrinal concerns and extractive matters involving government functionaries, toward contractual matters, property relations, waqf-related business, and concerns related to inheritance divisions among family members. In other words, our findings suggest that between the 16th and 18th centuries Ottoman society became more occupied with worldly anxieties, especially economic matters, and less obsessed with state-society relations, including extractive processes.

Finally, one unanticipated finding (not in the figure) is the significant jump in the cumulative representation of all the thematic categories: for Ebussuud's compilation that total is only 135.6 percent, but in the composite corpora it rises nearly twenty percentage points, to

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compilation. The only significant difference between the present ranking and the previous one pertains to the category "Women," which is noticeably higher in Figure 1 because we decided to include in the updated word/phrase list variations of the names Hind and Zeyneb (such as Hint and Zeynep), which naturally increased the representation of *fetva*s associated with this category.

[31] We consider the increases in "Inheritance" and "Illness, death, and injury" closely related.

TABLE 3. Sizes of Thematic Categories in the Composite Corpora (Largest to Smallest)

THEMATIC CATEGORY	TOTAL *FETVA*S	PERCENTAGE
WOMEN	2,831	27.6
CONTRACTUAL—TRANSACTIONS, EMPLOYMENT, AND GIFTS	2,132	20.8
FAMILY	1,827	17.8
DISPUTING AND LITIGATION	1,646	16.1
PROPERTY—REAL ESTATE	973	9.5
WAQF	666	6.5
PROPERTY—OTHER	585	5.7
ILLNESS, DEATH, AND INJURY	512	5.0
PROPERTY—SLAVERY	457	4.5
MONETARY	404	3.9
COMMUNAL MATTERS (INCLUDING RIGHTS AND OBLIGATIONS)	378	3.7
CRIME	366	3.6
CONTRACTUAL—DEBTS AND LOANS	355	3.5
RITUAL AND WORSHIP	338	3.3
INHERITANCE	288	2.8
RELIGIOUS AND DOCTRINAL MATTERS	237	2.3
AGRICULTURE AND CULTIVATION	231	2.3
REPRESENTATIONS, SURETYSHIP, AND GUARDIANSHIP	231	2.3
PROPERTY—TERMINOLOGY	217	2.1
RELIGIOUS, ADMINISTRATIVE FUNCTIONARIES AND THEIR ACTIONS	200	2.0
ANIMALS	196	1.9
PUNISHMENT	166	1.6
NON-MUSLIMS	152	1.5
TAXATION, PREBENDAL RIGHTS, AND REVENUE EXTRACTION	147	1.4
LAND, NOT PROPERTY	133	1.3
FOOD AND BEVERAGES	105	1.0
GENDER ISSUES AND SEXUALITY	87	0.8
MILITARY GROUPS AND MATTERS	39	0.4
INTOXICANTS	32	0.3

Note: The cumulative percentage representation of the *fetva*s in all the categories exceeds 100 percent because many *fetva*s are included in multiple categories.

155.5 percent. This result suggests that the tendency for the individual *fetva*s to be included in multiple thematic categories is greater in the later corpora, and hence perhaps that over this period the jurists' way of thinking about legal problems grew thematically more complex. The finding implies a significant evolution in the semantic characteristics of the *şeyhülislams*' *fetva*s and deserves further probing in future research.

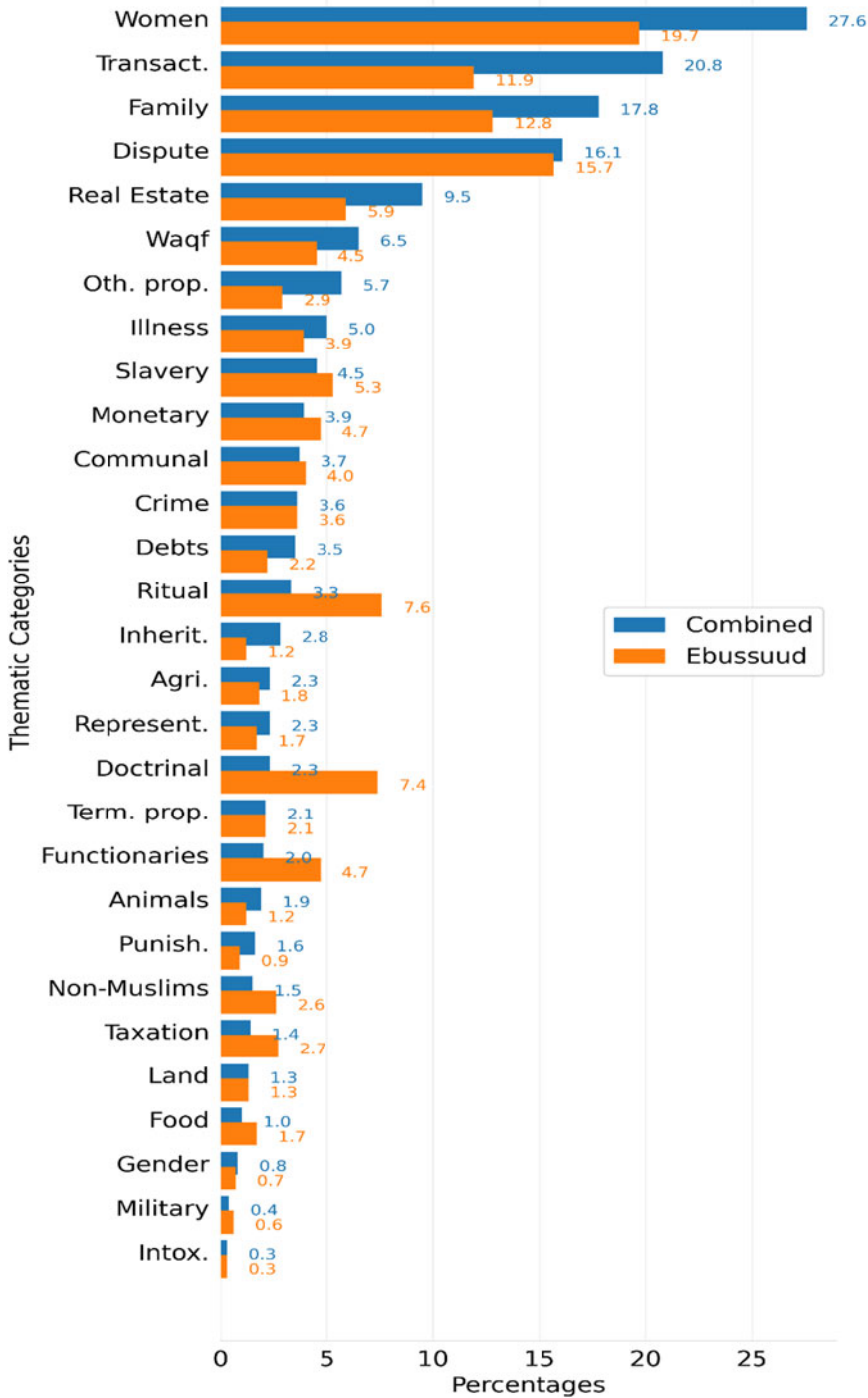**FIGURE 1.** Thematic Categories in Combined Corpora vs. Ebussuud's Corpus.

Contextual Backdrops of Specific Thematic Groups

As informative as the ranking of the thematic categories may be, on its own it tells us little about the contextual attributes of specific groups. But distant reading techniques also can inform us about how these groups appear in relation to others, indicating their relative

thematic proximity to one another. The heat map presented in Figure 2 does this by providing the percentile distributions of specific concerns within every group.[32] For example, we learn from the figure that of all the *fetva*s included in the category "Monetary" (*y* axis), 7.1 percent also are included in "Disputes and litigations," 16 percent in "Transactions," and 7.0 percent in "Debts and loans," so collectively the latter three categories constitute a big chunk of the "Monetary" category's contextual backdrop.

Figure 2 contains a few expected results. For example, it indicates that in *fetva*s concerning "Family" matters, the proportion of those related to "Women" is high (and vice versa); that *fetva*s concerning "Crime" and "Punishment" overlap to a significant degree; and that *fetva*s on "Monetary" issues are well represented in those related to "Debts." But the figure also presents information that may not be immediately obvious even to those familiar with the contemporary Ottoman society or jurisprudential opinions. Most prominently, the figure indicates the overall centrality of four themes in the composite corpora: "Family," "Women," and, in particular, "Disputing" and "Transactions." Because these groups are represented at significant proportions in many categories, their columns appear generally darker in the figure, which points to their general contextual import for other categories.

The heat map also presents several interesting nuggets. For example, it indicates that a relatively large portion of the *fetva*s about "Gender and sexuality" also concern "Crime" (16 percent); a significant percentage of the *fetva*s concerning "Food and beverages" also relate to "Communal matters" (13 percent); and *fetva*s about "Religious and doctrinal" issues prominently involve matters related to "Women" and "Non-Muslims," perhaps signaling some theological anxiety about these groups (this will be further addressed). We also find that *fetva*s regarding "Women" and "Transactions" dominate other possible sources of conflict in *fetva*s about "Disputes and litigations."

A comparison of the heat map in Figure 2 to the one based on Ebussuud's opinions (Figure A2) reveals a few temporal shifts in the contextual backdrops of specific thematic groups. Table 4 summarizes some of the more obvious variations using two different gradations of importance.

We mentioned earlier the greater focus on women in the composite corpora. As Table 4 indicates, references to women became especially noticeable in *fetva*s concerning "Gender issues and sexuality," "Religious and doctrinal matters," and "Non-Muslims," which raises questions about the specific types of issues that brought these themes together. An exploration of this finding, one that would benefit from a close reading of the relevant *fetva*s, might generate insights about historical change that has remained invisible to modern scholarship.[33]

We also observe in Table 4 a surge in contractual and property-related concerns, mainly in economic or partially economic themes, including "Taxation," "Agriculture," and "Animals." In other words, not only do the later corpora contain a larger proportion of *fetva*s

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[32] Each cell a_{ij} in the matrix represents the relative size of the *fetva*s that belong to category j within the category i. In other words, a_{ij} is the number of *fetva*s that belong to categories i and j at the same time divided by the number of *fetva*s that belong to category i only: $a_{ij} = \frac{|C_i \cap C_j|}{|C_i|}$.

[33] Here are a few examples of *fetva*s that combined thematic attributes of the categories "Women," "Religious and doctrinal matters," "Gender issues and sexuality," and/or "Non-Muslims":

> Question: If Hind accuses her husband Zeyd of believing in magic and if Zeyd admits to this claim by stating that he does, can Hind prevent Zeyd from interacting with her as his wife by stating that "your admission amounts to blasphemy [*küfr*], which is a reason for divorce"? Answer: She cannot. See *Behcetü'l Fetâvâ*, 202.
> Question: Is it permissible (halal) for Zeyd to penetrate his father Amr's concubine Hind? Answer: It is not. *Fetâvâ-yı Feyziyye*, 417.
> Question: If Hind, a Christian woman, dies after her husband Zeyd, originally a Christian, converts to Islam, can Zeyd be Hind's heir? Answer: He cannot. *Fetâvâ-yı Ali Efendi*, vol. 1, 294.
> Question: If Zeyd and Amr, who are dhimmis (non-Muslim subjects of the Islamic state), testify in the presence of a judge that Hind, a Christian who denies her [prior] conversion to Islam, that "Hind had converted to Islam," would their testimony be accepted? Answer: It would. *Behcetü'l Fetâvâ*, 424.

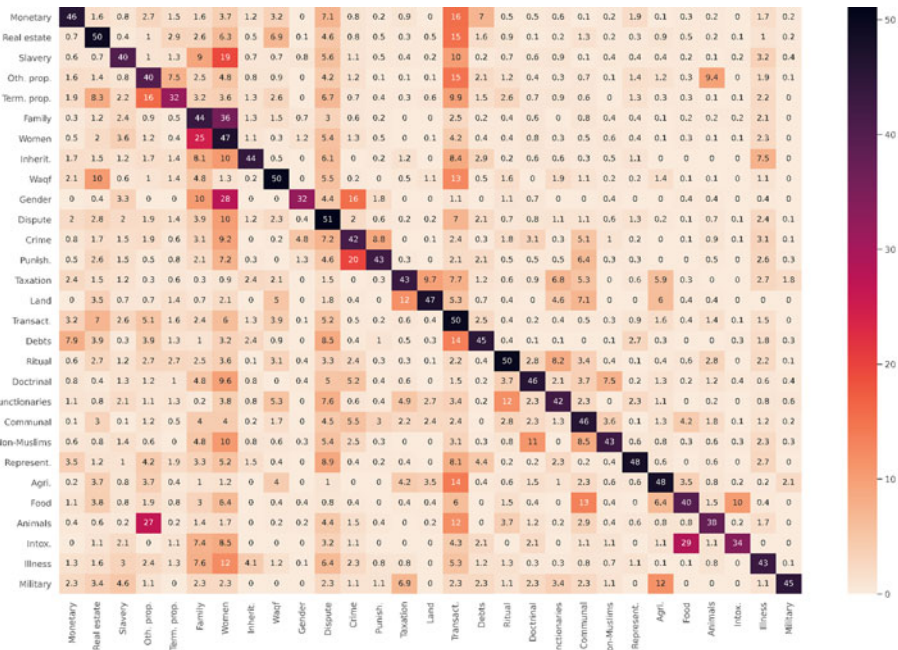|	Mon	R.est	Slav	OthP	TrmP	Fam	Wom	Inh	Waqf	Gen	Disp	Crime	Pun	Tax	Land	Trans	Debts	Rit	Doc	Func	Com	NMus	Rep	Agri	Food	Anim	Intox	Ill	Mil
Monetary	46	1.6	0.8	2.7	1.5	1.6	3.7	1.2	3.2	0	7.1	0.8	0.2	0.9	0	16	7	0.5	0.5	0.6	0.1	0.2	1.9	0.1	0.3	0.2	0	1.7	0.2
Real estate	0.7	50	0.4	1	2.9	2.6	6.3	0.5	6.9	0.1	4.6	0.8	0.5	0.3	0.5	15	1.6	0.9	0.1	0.2	1.3	0.2	0.3	0.9	0.5	0.2	0.1	1	0.2
Slavery	0.6	0.7	40	1	1.3	9	19	0.7	0.7	0.8	5.6	1.1	0.5	0.4	0.2	10	0.2	0.7	0.6	0.9	0.1	0.4	0.4	0.4	0.2	0.1	0.2	3.2	0.4
Oth. prop.	1.6	1.4	0.8	40	7.5	2.5	4.8	0.8	0.9	0	4.2	1.2	0.1	0.1	0.1	15	2.1	1.2	0.4	0.3	0.7	0.1	1.4	1.2	0.3	9.4	0	1.9	0.1
Term. prop.	1.9	8.3	2.2	16	32	3.2	3.6	1.3	2.6	0	6.7	0.7	0.4	0.3	0.6	9.9	1.5	2.6	0.7	0.9	0.6	0	1.3	0.3	0.3	0.1	0.1	2.2	0
Family	0.3	1.2	2.4	0.9	0.5	44	36	1.3	1.5	0.7	3	0.6	0.2	0	0	2.5	0.2	0.4	0.6	0	0.4	0.4	0.1	0.2	0.2	0.1	0	2.1	0
Women	0.5	2	3.6	1.2	0.4	25	47	1.1	0.3	1.2	5.4	1.3	0.5	0	0.1	4.2	0.4	0.4	0.8	0.3	0.5	0.6	0.4	0.1	0.3	0.1	0.1	2.3	0
Inherit.	1.7	1.5	1.2	1.7	1.4	8.1	10	44	0.5	0	6.1	0	0.2	1.2	0	8.4	2.9	0.2	0.6	0.6	0.3	0.5	1.1	0	0	0	0	7.5	0
Waqf	2.1	10	0.6	1	4.8	1.3	0.2	0.2	50	0	5.5	0.2	0	0.5	1.1	13	0.5	1.6	0	1.9	1.1	0.2	1.4	0.1	0.1	0	1.1	0	0
Gender	0	0.4	3.3	0	0	10	28	0	0	32	4.4	16	1.8	0	0	1.1	0	1.1	0.7	0	0	0.4	0	0	0.4	0.4	0	0.4	0
Dispute	2	2.8	2	1.9	1.4	3.9	10	1.2	2.3	0.4	51	2	0.6	0.2	0.2	7	2.1	0.7	0.8	1.1	1.1	0.6	1.3	0.2	0.1	0.7	0.1	2.4	0.1
Crime	0.8	1.7	1.5	1.9	0.6	3.1	9.2	0	0.2	4.8	7.2	42	8.8	0	0.1	2.4	0.3	1.8	3.1	0.3	5.1	1	0.2	0	0.1	0.9	0.1	3.1	0.1
Punish.	0.5	2.6	1.5	0.5	0.8	2.1	7.2	0.3	0	1.3	4.6	20	43	0.3	0	2.1	2.1	0.5	0.5	6.4	0.3	0.3	0	0	0.5	0	2.6	0.3	0
Taxation	2.4	1.5	1.2	0.3	0.6	0.3	0.9	2.4	2.1	0	1.5	0	0.3	43	9.7	7.7	1.2	0.6	0.9	6.8	5.3	0	0.6	5.9	0.3	0	0	2.7	1.8
Land	0	3.5	0.7	0.7	1.4	0.7	2.1	0	5	0	1.8	0.4	0	12	47	5.3	0.7	0.4	0	4.6	7.1	0	0	6	0.4	0.4	0	0	0
Transact.	3.2	7	2.6	5.1	1.6	2.4	6	1.3	3.9	0.1	5.2	0.5	0.2	0.6	0	50	2.5	0.4	0.2	0.4	0.5	0.3	1.6	0.4	1.4	0.1	1.5	0	0
Debts	7.9	3.9	0.3	3.9	1.3	1	3.2	2.4	0.9	0	8.5	0.4	1	0.5	0.3	14	45	0.4	0.1	0.1	0	0.1	2.7	0.3	0	0	0.3	1.8	0.3
Ritual	0.6	2.7	1.2	2.7	2.7	2.5	3.6	0.1	3.1	0.4	3.3	2.4	0.3	0.3	0.1	2.2	0.4	50	2.8	8.2	3.4	0.4	0.1	0.4	0.6	2.8	0	2.2	0.1
Doctrinal	0.8	0.4	1.3	1.2	1	4.8	9.6	0.8	0	0.4	5	5.2	0.4	0.6	0	1.5	0.2	3.7	46	2.1	3.7	7.5	0.2	1.3	0.2	1.2	0.4	0.6	0.4
Functionaries	1.1	0.8	2.1	1.1	1.3	0.2	3.8	0.8	5.3	0	7.6	0.6	0.4	4.9	2.7	3.4	0.2	12	2.3	42	2.3	0	2.3	1.1	0	0.2	0	0.8	0
Communal	0.1	3	0.1	1.2	0.5	4	4	0.2	1.7	0	4.5	5.5	3	2.2	2.4	2.4	0	2.8	2.3	1.3	46	3.6	0.1	1.3	4.2	1.8	0.1	1.2	0.2
Non-Muslims	0.6	0.8	1.4	0.6	0	4.8	10	0.8	0.6	0.3	5.4	2.5	0.3	0	0	3.1	0.3	0.8	11	0	8.5	43	0.6	0.8	0.3	0.6	0.3	2.3	0.3
Represent.	3.5	1.2	1	4.2	1.9	3.3	5.2	1.5	0.4	0	8.9	0.4	0.2	0.4	0	8.1	4.4	0.2	0.2	3.2	0.2	0.4	48	0.6	0	0.6	0	2.7	0
Agri.	0.2	3.7	0.8	3.7	0.4	1	1.2	0	4	0	1	0	0	4.2	3.5	14	0.4	0.6	1.5	1	2.3	0.6	0.6	48	3.5	0.8	0.2	0.2	2.1
Food	1.1	3.8	0.8	1.9	0.8	3	6.4	0	0.4	0.4	0.8	0.4	0	0.4	0.4	6	0	1.5	0.4	0	13	0.4	0	6.4	40	1.5	10	0.4	0
Animals	0.4	0.6	0.2	27	0.2	1.4	1.7	0	0.2	0.2	4.4	1.5	0.4	0	0.2	12	0	3.7	1.2	0.2	2.9	0.4	0.6	0.8	0.8	38	0.2	1.7	0
Intox.	0	1.1	2.1	0	1.1	7.4	8.5	0	0	0	3.2	1.1	0	0	0	4.3	2.1	0	2.1	0	1.1	1.1	0	1	0	0.2	29	1.1	34
Illness	1.3	1.6	3	2.4	1.3	7.6	12	4.1	1.2	0.1	6.4	2.3	0.8	0.8	0	5.3	1.2	0.3	0.3	0.8	0.7	1.1	0.1	0.1	0.8	0	0	43	0.1
Military	2.3	3.4	4.6	1.1	0	2.3	2.3	0	0	0	2.3	1.1	1.1	6.9	0	2.3	2.3	1.1	2.3	3.4	2.3	1.1	0	12	0	0	0	1.1	45

FIGURE 2. Cross-Tabulation of Thematic Categories in Composite Corpora.

with economic import (as we already observed), but these *fetva*s also might be more exclusively economic compared to their counterparts in Ebussuud's corpus.

On the other hand, the declining prevalence of "Ritual and worship" and "Religious and doctrinal matters" in the later corpora is noticeable in a few specific themes, generating significant contextual implications. In particular, what we observe for "Non-Muslims," "Food," and "Intoxicants" suggests diminishing apprehensions about interconfessional existence and more relaxed attitudes toward the consumption of food, alcohol, and other psychoactive substances; these issues require further probing.[34] And in at least one category—"Animals"—we observe the gradual shifting of weight from religious matters to economic ones: although the property status of and contractual issues involving "Animals" became more prominent in the later corpora, their import for "Ritual and worship," for example as potential pollutants of food and body purity, received less interest.[35]

Finally, the relatively fewer references to government "Functionaries" in the *fetva*s on "Taxation" and "Land" and the weaker links between "Military" and "Taxation," compared to those in Ebussuud's opinions, supplement our earlier impressions of a transformation in public finance: these declines serve as more direct indicators of progressive privatization of revenue extraction after the 16th century through the spread of short- and longer-term tax-farming arrangements.

Cluster analysis

The computational analysis also can help us draw an even more elaborate contextual picture by measuring the relative distances among multiple categories, which allows us to organize

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[34] The observation regarding "Non-Muslims" qualifies what we stated earlier about the "theological anxiety" regarding this group based on the findings in Figure 2. Although such an anxiety might have continued to exist in the later corpora, it is likely to be less pronounced in them than in Ebussuud's *fetva*s.

[35] This does not mean that the link between "Animals" and "Ritual and worship" is completely severed in the composite corpora. See further discussion.

TABLE 4. Temporal Changes in the Contextual Backdrops of Select Thematic Groups

Thematic Group in Composite Corpora	Increased Concentrations Compared to Ebussuud	Decreased Concentrations Compared to Ebussuud
(P)—Other	(C)—Trans., empl., gifts	(P)—Terminology
(P)—Terminology	(P)—Real estate	
Gender issues and sexuality	Women	
Crime	Punishment	
Punishment	Crime	Illness, death, and injury
Taxation, prebendal rights, and revenue extraction	(C)—Trans., empl., gifts	Relig., admin. func. / actions
Land, not property		Relig., admin. func. / actions
Ritual and worship		Religious and doctrinal matters
Religious and doctrinal matters	Women	
Non-Muslims	Women	**Religious and doctrinal matters**
Agriculture and cultivation	(C)—Trans., empl., gifts	_
Food and beverages	Intoxicants	Religious and doctrinal matters
Animals	**(P)—Other** (C)—Trans., empl., gifts	Ritual and worship
Intoxicants	Food and beverages	**Religious and doctrinal matters**
Military groups and matters	Agriculture and cultivation	**Tax., prebendal, extraction Relig., admin. func. / actions**

Note: Only shifts equaling or greater than 5 percent are included in the table. Shifts equaling or greater than 10 percent are in bold.

them in thematic clusters.[36] The dendrogram presented in Figure 3 accomplishes this precisely: based on the relative numbers of shared *fetvas* in specific groups, it identifies closely associated thematic concentrations. In the figure, the horizontal lines associated with particular groups indicate each group's relative propensity to remain isolated (that is, to include *fetvas* not shared with other groups); the order in which these lines merge (left to right) indicates the comparative similarities among different categories based on the relative frequency of *fetvas* they share.[37]

[36] Numerically, we represented each thematic group of *fetvas* by their relative size within the other groups. In other words, a thematic group of *fetvas* C_i is represented by the sequence (C_{1i}, . . . , C_{ni}), which can be read as the columns of the heat maps in Figure 2 and Figure A2. In constructing the dendrograms, we used the Minkowski distance with a *p* of 0.4 and Ward's linkage method. We used the SciPy library of the Python language to do the computations. For details on hierarchical clustering methods and their visualizations, see Christopher D. Manning, Prabhakar Ragavan, and Hinrich Schütze, *Introduction to Information Retrieval* (Cambridge, UK: Cambridge University Press, 2008), ch. 17.

[37] For example, the brevity of distinct lines for "Women" and "Family" suggest that these categories share many *fetvas*, compared to other themes. In other words, these two themes often appear in the *fetvas* simultaneously—that is, *fetvas* that contain proxy words or phrases for "Family" also frequently contain proxy words or phrases for "Women." Incidentally, the close relationship among "Women," "Family," and "Slavery" that we detected in the dendrogram brings to mind the conceptual links that Kecia Ali observed between wives and slaves and between marriage and property interactions in the works of early Muslim jurists; see Kecia Ali, *Marriage and Slavery in Early Islam* (Cambridge, MA: Harvard University Press, 2010), 12, 50, 140. The close connections among the three thematic
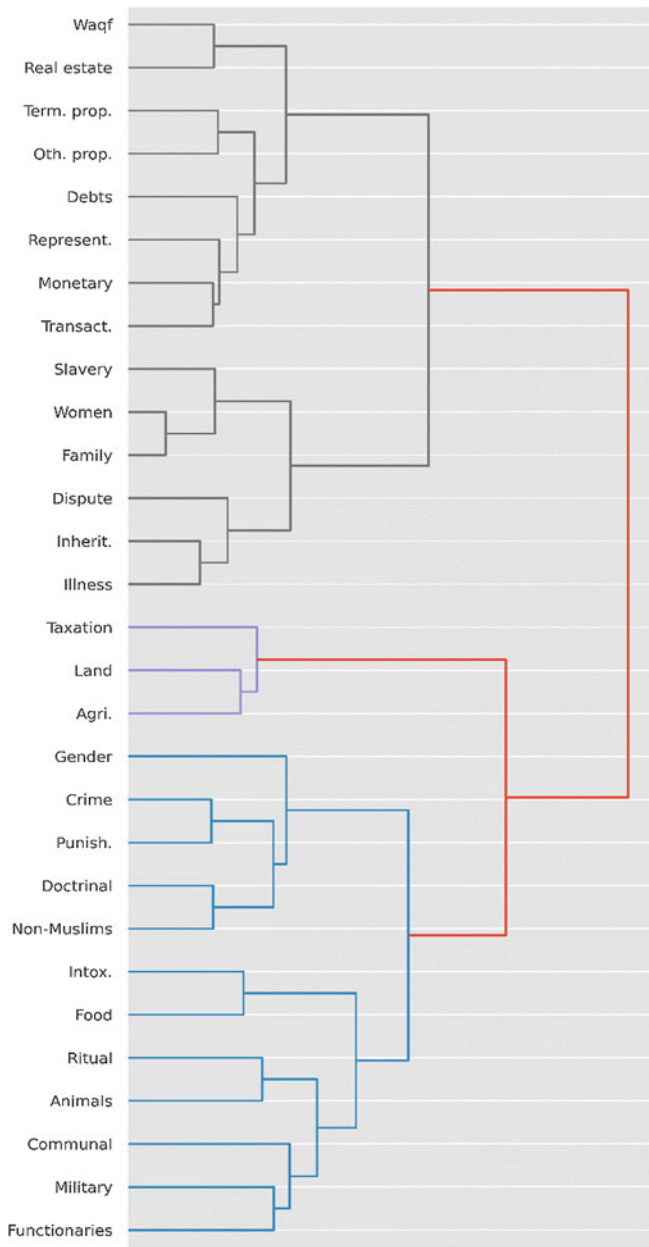
FIGURE 3. Dendrogram of Thematic Groupings in Composite Corpora.

To get a clear sense of the information presented in the figure, consider the cluster at the very top. According to our analysis, issues related to "Waqf," "Real estate," "Terminology," "Other," "Debts and loans," "Representatives," "Monetary," and "Transactions" often appear together and therefore constitute each other's contextual setup. In the same cluster, "Waqf"

concerns also is evident in Rumee Ahmed's characterization of the relationships among the notions of "dominion/ authority" (*qiwama* in Arabic), marriage, and slavery in premodern jurisprudential works; see Rumee Ahmed, *Sharia Compliant: A User's Guide to Hacking Islamic Law* (Stanford, CA: Stanford University Press, 2018), 147. Thus, the analysis presented above hints at a thematic continuity between Ottoman and non-Ottoman juristic traditions, which calls for more research. We are grateful to one of our reviewers for recognizing this potential and bringing it to our attention.

and "Real estate" are closer to one other than to the rest of the themes included in the same group, so we should regard them and the rest of the themes in the group as distinct subclusters. Overall, the dendrogram reveals the existence of five distinct clusters of different sizes (Table 5), two of which contain multiple subclusters (separated by spaces in cluster columns 1 and 2).

The contextual import of the dendrogram should be evident. The cluster analysis demonstrates, for example, that *fetva*s addressing "Crime" and "Punishment" often appear in close proximity to those addressing "Gender issues and sexuality," "Religious and doctrinal," and "Non-Muslims" (cluster 4), and thereby reveals what types of issues often raise such considerations. The results also suggest that *fetva*s concerning "Disputing and litigation" often focus on issues related to "Illness, death, injuries" and "Inheritance," followed by "Women," "Family," and "Slavery" (cluster 2). Interestingly, *fetva*s concerning "Slavery" may be more directly associated with "Women" and domestic affairs than with other property-related matters (cluster 2), which was a revelation to us. Another notable finding is that *fetva*s involving government "Functionaries" appear farther from cluster 3, including "Taxation," "Land," and "Agriculture," and closer to cluster 5, which includes "Communal matters," "Ritual and worship," "Food," "Intoxicants," and "Animals."

In addition, the dendrogram and the clusters presented in Table 5 provide a holistic, bird's-eye view of the thematic structure of the composite corpora, one that might be likened to a cartographic representation of the (semantic) masses that constituted this (textual) landscape. Accordingly, cluster 1, which contains the largest number of economic themes, and cluster 2, composed of *fetva*s related to women, domestic matters including inheritance, and disputes, constitute the largest concentrations; respectively they make up 40 and 48.6 percent of the composite corpora. What's more, these two large clusters appear semantically closer to one other than they are to others. Cluster 3, on the other hand, comprising *fetva*s related to agrarian and land- and extraction-related matters, is the smallest (4.3 percent) and most isolated group (that is, the *fetva*s included in it are the least likely to be included in other clusters). Clusters 4 (7.9 percent) and 5 (10.6 percent) also appear much smaller than clusters 1 and 2, and semantically far removed from them. Finally, the contents of clusters 1 ("Economic") and 3 ("Agrarian, extractive") appear to be more coherent (less varied) than the rest.

The cluster analysis provides more insights when we compare it to what we observe in Ebussuud's opinions. The "tanglegram" in Figure 4 demonstrates how the semantic masses that constituted the corpora might have changed shape between the 16th and 18th centuries.

Figure 4 makes it possible to identify a few variations between Ebussuud's fetvas and the composite corpora. These include (among others):

1. The shift of "Military" and other government "Functionaries," which have stronger links with "Animals," "Ritual and worship," and "Communal" concerns in the composite corpora, whereas earlier, in Ebussuud's *fetva*s, are in closer proximity to "Agriculture," "Land," and "Taxation."
2. The move in "Representatives" away from "Inheritance," "Illness, death, injuries," and "Disputing" and toward more strictly defined economic issues, including contractual and property-related matters.
3. The more direct association of "Non-Muslims" and "Doctrinal" matters with "Gender and sexuality," "Punishment," and "Crime" in the composite corpora.

But none of these shifts amounts to a radical reconfiguration of the broader thematic structures. In fact, the most important finding of the tanglegram is the relative stability in the composition of the semantic masses and their distances to one another. This may be unsurprising for multiple reasons, including the obvious overlaps among many matters addressed in the *fetva*s, as we have discussed. And the jurisprudential tradition is deliberately self-referential; continuity with the past is valid as much for its attention to selected topics as for its interpretive development, although only the second issue has received significant

TABLE 5. Thematic Clusters in the Composite Corpora

Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5
Waqf	Slavery	Taxation	Gender	Intox.
Real estate	Women	Land	Crime	Food
	Family	Agri.	Punish.	Ritual
Term. prop.			Doctrinal	Animals
Oth. prop.	Dispute		Non-Muslims	Communal
Debts	Inherit.			Military
Represent.	Illness			Functionaries
Monetary				
Transact.				
40.0%	48.6%	4.3%	7.9%	10.6%

FIGURE 4. Cluster Comparisons (Tanglegram) of Ebussuud's Corpus (Left) and Composite Corpora (Right).

attention in the scholarship.[38] This finding is particularly noteworthy: it qualifies our earlier findings in that it implies distinct paces of change for various aspects of the *şeyhülislams'*

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[38] The methodological inclination to engage with earlier scholarship and derive authority from prior opinions tends to lead jurists to take a primarily affirmative relationship with the past, even when they aspire to be flexible in their ability to respond to change. See Brinkley Messick, *Sharīʿa Scripts: A Historical Anthropology* (New York: Columbia University Press, 2018), for an articulate, ethnographically based discussion of this issue. Also see Wael B. Hallaq, "From Fatwās to Furūʿ"; and Wael B. Hallaq, *Authority, Continuity and Change in Islamic Law* (Cambridge, UK: Cambridge University Press, 2001), ch. 6.

*fetva*s—faster for the relative representations of specific thematic groups and their contextual attributes, slower for the broader configurations of the semantic masses, just as the timescale associated with continental drifts in geological time is longer, more drawn-out, than the pace of change observed in smaller topographical bodies.

Conclusion

This article offers an overview of the main thematic features of select *fetva* corpora by early modern Ottoman *şeyhülislam*s using a method that highlights variations in the jurists' focus. Methodologically building on our earlier work on the opinions of 16th-century jurist Ebussuud Efendi, we demonstrated that a majority of the *fetva*s composed by three late 17th- and early 18th-century *şeyhülislam*s was concentrated around a small number of issues, including domestic matters, contractual concerns, and disputes and litigations. Our analysis also has revealed significant temporal variations in the thematic concentrations of the *şeyhülislam*s' opinions. For one, references to women and family-related matters became more visible in the *fetva* corpora between the 16th and 18th centuries. Contractual and property-related concerns also gained prominence in this period. But interest in religious and doctrinal issues, non-Muslims, and matters regarding taxation and other extractive endeavors declined.

The article also explored the contextual backdrops of specific themes in the *fetva* compilations. In particular, we noted that the later corpora tended to consider many issues more from an economic perspective and less in terms of their religious and doctrinal import. Whereas the first tendency sharpened focus on the economic and partially economic categories (including "Agriculture," "Taxation," and "Animals"), the second may have led to a relative desacralization of concerns surrounding "Food," "Non-Muslims," "Intoxicants," and "Animals" when compared with Ebussuud's opinions. We also observed in the later corpora fewer overlaps among *fetva*s concerning "Taxation," "Land," and "Military" and government "Functionaries," and also among those involving "Military" and "Taxation," which we attributed to changes in taxation and extractive practices after the 16th century, particularly the spread of tax-farming.

These findings are consistent with prevalent scholarly insights on historical trends in the early modern Ottoman context. But our analysis of the contextual shifts also hinted at a few potentially important historical developments that have received little to no attention in the scholarship. For example, we noticed that the enhanced representation of "Women" in the later corpora was especially pronounced in *fetva*s involving "Gender issues and sexuality," "Religious and doctrinal matters," and "Non-Muslims."

One important insight from our study is that we can explain many thematic shifts in the *şeyhülislam*s' *fetva* corpora largely, if not exclusively, based on prevalent historical developments. Conversely, the cluster-analysis comparison between Ebussuud's *fetva*s and the composite corpora indicated temporally consistent patterns among larger groups of contextually associated themes ("semantic masses"), which confirmed a general thematic continuity in jurisprudential concerns. Overall, our findings indicate that as the Ottoman *şeyhülislam*s formulated their opinions within certain contextual boundaries, they could and did respond to socioeconomic and political change.

As a distant reading attempt, this study provided broad insights into the thematic characteristics of the *fetva* corpora of a few Ottoman *şeyhülislam*s and the variations among them. A more granular analysis of select *fetva*s based on a close reading could provide nuance to the larger picture supplied by this study; material constraints did not allow us to attempt that in this article. We believe that a complementary use of distant and close reading techniques, which can only be implemented in a longer study or in a series of articles that build on each other, has great potential to generate new insights on the Ottoman *fetva*s and how they might have changed over time.[39]

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[39] But see Ergene and Kaygun, "Textual Evolution," for a preliminary attempt.

APPENDICES

Appendix 1

Semantic Proximities among the Four Corpora

A justification of the comparison of the three later corpora as a composite unit with Ebussuud's corpus can be found in the semantic differences among these works. To determine these distances, we assume that the tendency of a group of words to be used alongside some others in a given *fetva* is indicative of these words' contextual attributes or manifestations.[40] For example, if we observe that the word *zina* (illicit intercourse) frequently appears in the *fetvas* with the word *cerime* (fine), we could hypothesize that the muftis regarded *zina* and *cerime* as contextually related words. Thus, a corpus where a strong association between *zina* and *cerime* is evident (that is, a corpus containing *fetvas* in which *zina* and *cerime* often appear together) would be more closely related to another corpus that features a similar association than to a third one where the association between *zina* and a term for a corporal punishment such as *celde/değnek* (flogging) or execution (*recim*, or "stoning to death") is more prominent, everything else being the same.[41]

Figure A1 demonstrates the contextual proximities of the three later corpora relative to Ebussuud's opinions.
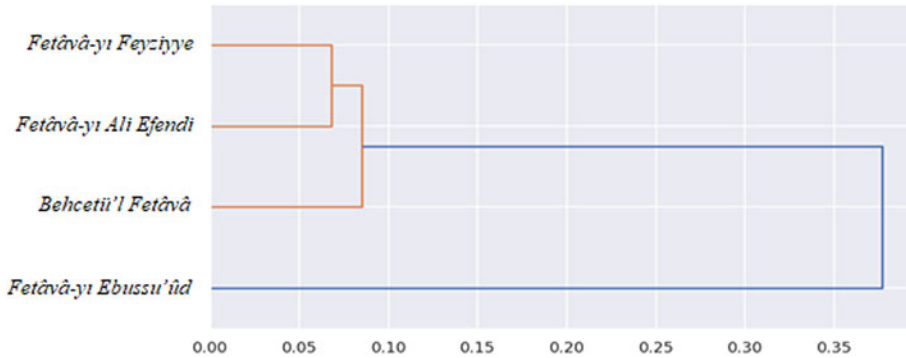

FIGURE A1. Contextual Distances among Corpora Under Study.

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[40] The analysis is based on the so-called distributional hypothesis of meaning, applied to words that are similar or related in meaning occurring in similar contexts; see Herbert Rubenstein and Jon Goodenough, "Contextual Correlates of Synonymy," *Communications of the Association for the Computing Machinery* 8, no. 10 (1965): 627–33. For the origin of the distributional hypothesis of meaning, see Zellig Harris, "Distributional Structure," *Word* 10, nos. 2–3 (1954): 146–62; and J. R. Firth, "A Synopsis of Linguistic Theory 1930–1955," in Firth, ed., *Studies in Linguistic Analysis* (Oxford, UK: Basil Blackwell, 1962), 1–31. For this analysis, we used 1,180 words (in stemmed forms) common to all corpora.

[41] This example is relevant to the Ottoman scholarship because researchers have wondered whether Ottomans tended to punish sexual crimes by using corporal or noncorporal measures. See, for example, Elyse Semerdjian, *"Off the Straight Path": Illicit Sex, Law, and Community in Ottoman Aleppo* (Syracuse, NY: Syracuse University Press, 2016).
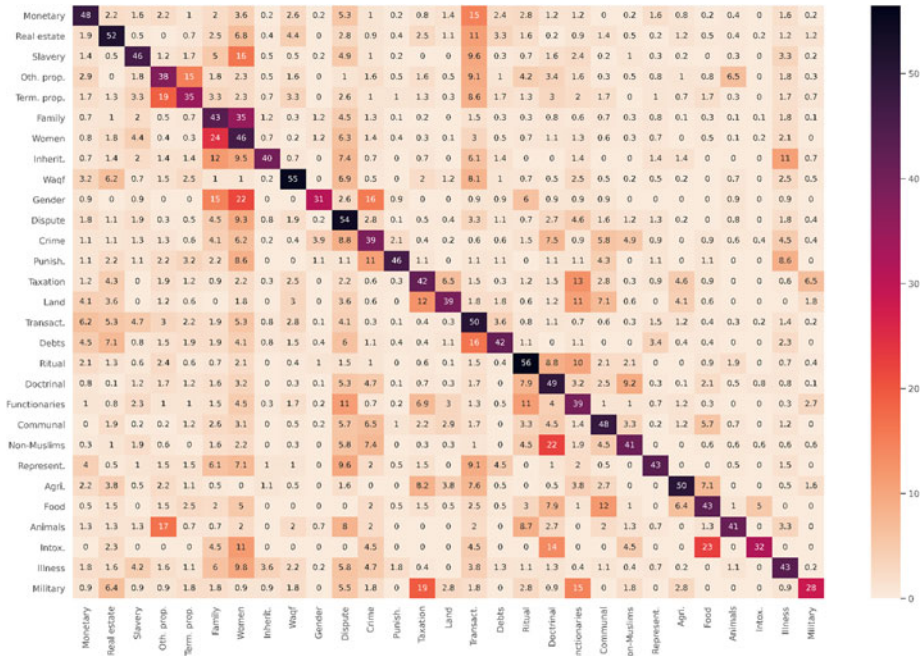
Appendix 2

FIGURE A2. Cross-Tabulation of Thematic Categories in Ebussuud's *Fetva*s.