Mirrors for Princes and Sultans:
Advice on the Art of Governance in
the Medieval Christian and Islamic Worlds

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Abstract

Among the most significant forms of political writing to emerge from the medieval period are texts offering advice to kings and other high-ranking officials. Books of counsel varied considerably in their content; scholars agree, however, that such texts reflected the political exigencies of their day. As a result, writings in the "mirrors for princes" tradition offer valuable insights into the evolution of medieval modes of governance. While European mirrors (and Machiavelli's *Prince* in particular) have been extensively studied, there has been less scholarly examination of a parallel political advice literature emanating from the Islamic world. We compare Muslim and Christian advisory writings from the medieval period using automated text analysis and identify four conceptually distinct areas of concern common to both Muslim and Christian polities. While political advice givers in both traditions faced the challenge of "speaking truth to power," Muslim and Christian writers diverged — to some degree — in how they offered advice to their powerful patrons. While Christian authors tended to rely heavily on crafting a picture of the "ideal" prince, Muslim writers made greater use of fables and analogies to the natural world as they sought to convey wisdom about the art of governance. Christian authors became even more direct in their engagement with political themes over time. We offer a tentative explanation for these trends.

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1   Introduction

An influential literature in political economy seeks to explain the historical roots of economic and institutional divergence within and across world regions (Kuran, 2010; North, Wallis and Weingast, 2009; Morris, 2010; Acemoglu and Robinson, 2012). There remains little consensus, however, as to why some parts of the world came to develop impersonal political institutions earlier than others. While some have argued that the growth trajectories of the "Western core" (i.e., Europe, North Africa, Anatolia and Mesopotamia) and the "East" (i.e., China, Japan and Southeast Asia) paralleled each other over the historical long-term (Morris, 2010), such accounts still leave unanswered how we can explain divergence *within* the Western core in the medieval and early modern period.[1] Blaydes and Chaney (2013) document significant differences in the duration of rule for monarchs in Christian Europe and the Islamic world beginning in the medieval period. If Muslim and Christian political institutions were changing in meaningful ways during this era, such changes should be apparent in writings of political philosophy focused on modes of rulership.

Among the most important genres of political writing emanating from the medieval and early modern periods are works of advice offered to rulers. Termed "mirrors for princes" in the European tradition, such texts are typically book-length writings providing useful information for royals on subjects as diverse as how to guard against one's political enemies, how to choose a competent administrator, or even how to negotiate one's personal relationship with God. These texts — while long considered valuable literary contributions — can also be read as reflections of the political and cultural ideas of their times. Political organization during the medieval period was dominated by monarchs — in particular, kings and their equivalents — who were decisive holders of political power (Wormald, 2005). Scholars have argued that the content of such texts reflect the political challenges facing the monarchs for whom the texts were written. In this way, "mirrors" texts provide a window into the inner political life of otherwise opaque polities.

While European texts offering advice to rulers are well known and widely studied, there has been relatively less scholarly work comparing such texts to a parallel political advice literature written in the Islamic world. We use automated text analysis to examine the comparative discourse on kingship and governance in the Christian and Muslim worlds during the medieval and early modern periods and identify conceptually distinct areas of discussion common to both regions: discourse on the "just" king, the private realm and interior life, religion, faith and divine politics, and the natural world as reality and metaphor. We find that Muslim and Christian authors reference religious themes at roughly similar rates, though with differences in emphasis as a result of the unique attributes of their respective faiths. Similarly, the personal attributes of kings appear prominently in both Christian and Muslim texts.

The area of greatest divergence between Christian and Muslim writers involves how to deal with the challenge of offering frank, locally-relevant advice to a powerful ruler.[2]

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[1]See Olsson and Paik (2013) for one prominent explanation for reversal within the Western core.

[2]Foucault asks the timeless questions, "Who will tell the truth to the Prince? Who will speak frankly to the Prince? How can one speak truthfully to the Prince?" (2005, 381).

Because of the significant disparity in political power between the writers of advice texts and their royal audiences, advice givers frequently offered their advice in indirect ways. While Christian authors relied heavily on description of an idealized ruler, leaving readers to contemplate the difference between this ideal and their existing ruler, Muslim authors relied more heavily on analogies from the natural world and moralizing fables. Following London (2008), we suggest that both approaches represent forms of indirect, but frank, political speech. While both Christian and Muslim authors sought to overcome the challenge of "speaking truth to power" through indirection, Christian writers employed more explicitly political language, even in the 9th century, and their engagement with overtly political themes increased over time. We consider two tentative interpretations for these differences. The first relates to political structures and modes of communication in "old" states; the second focuses on forms of institutional change beginning in the 9th century — particularly, the emergence of feudalism in the Christian West and mamlukism in the Muslim world — which may have impacted the ability of advice givers to engage explicitly political themes in their writings.

The remainder of the paper is organized as follows. Section 2 describes the "mirrors for princes" genre in political theory and considers the opportunities automated text analysis offers for exploring works of this sort. Section 3 provides a brief discussion of medieval kingship in Christian Europe and the Islamic world. Section 4 discusses our empirical approach, including how texts were selected as well as details on the empirical models employed. In this section, we also describe the four topic areas uncovered by the automated text analysis and offer our interpretation of these themes. In section 5, we present our tentative interpretation of the observed empirical trends. Section 6 concludes.

2   "Mirrors for Princes" in Political Theory

The term "mirrors from princes" has been a common designation for texts that seek to offer wisdom or guidance to monarchs and other high-ranking advisors. In this section, we characterize the scope, features, and thematic content of this genre of political writing at a high level of generality. A second section describes how automated text analysis might be applied to works of political thought in general and to the mirrors genre in particular.

2.1   Advice on Governance

Advice literature is a genre of political writing offering counsel to rulers (and frequently also to their delegates and courtiers) that flourished in both Christian Europe and the Islamic world in the Middle Ages. In both traditions, the genre emerged in the eighth and ninth centuries from both classical and scriptural roots and exploded in the eleventh through thirteenth centuries, precisely the period in which a gap in ruler tenure between the European and Islamic world emerges (Blaydes and Chaney, 2013). Advice literature persisted in Europe through the Renaissance and lasted into the nineteenth century in the Islamic world.

Often called "mirrors for princes" in the European tradition, the works were intended to provoke self-examination on the part of the ruler by providing him with standards of conduct and examples of virtuous leaders to imitate (Forhan, 2002).[3] Defining the scope of the genre is difficult. In the European case, a broad definition might include any works that, either in whole or in part, convey ideals of rulership. A stricter definition might be "limited to independent works explicitly aiming at instructing kings and lesser rulers about the virtues they should cultivate, their lifestyle, their duties, the philosophical and theological meaning of their office" (Lambertini, 2011, 792). In the Islamic case, a broad definition might include wisdom literature, works of moral exhortation, ethical treatises, and testaments, as long as they "serve an advisory purpose and address a royal recipient" (Marlow, 2013a, 349). A stricter definition might be limited to works entirely focused on the manners, conduct, and counsel of kings and their immediate delegates (Marlow, 2009, 2013a). Many of the works in our analysis meet the standards of these narrower definitions. However, we have selected a few from each tradition that may not meet these stricter requirements (e.g., *True Law of Monarchies*, *Kalila wa Dimna*, *Aphorisms of the Statesman*) in order to capture a diversity of approaches to political counsel and broader ideas about the nature of kingship.

In both the Christian European and Islamic traditions, advice literature reflects an acceptance of monarchical government.[4] If kings were, as was widely believed, chosen by God and essential for social order, then the personal attributes and virtues of one's ruler became central concerns. For writers in both traditions, the moral virtues of the ruler were directly correlated to the material prosperity and moral health of the political community (Born, 1928; Marlow, 2013b; Crone, 2004). The hope behind much of the advice literature was that it might be used to educate a ruler, to shape his character for the good of his subjects.

Authors of advice books were almost exclusively members of the educated elite and, in both the European and Islamic traditions, included rulers (often writing for their sons), courtiers, administrators, jurists, men and women of letters, and religious scholars. The works were frequently written as gifts and dedicated to specific recipients (e.g., to a particular king, courtier, or vizier), but often with the expectation that they would be read by a wider audience. In the Islamic tradition in particular, advice books often presented an image of a ruler that enhanced his legitimacy and sovereign power. Furthermore, as Marlow (2013b) suggests, "a ruler's generous reception of such a work was a sign of his subscription to the catalogue of royal virtues it contained, and reflected positively on his personal merit and that of his court." Beyond the intention of shaping a ruler's character and legitimizing his reign, authors wrote mirrors in order to enhance or consolidate their ties to the royal family, for reasons of professional advancement (a motive commonly attributed to Machiavelli), and to delight and please their royal audiences (e.g., by including stories and poetry).

Advice literature in both traditions tends to adhere to a set of generic conventions in

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[3]While several European works self-identify as "mirrors," the term was not used by any Islamic author. However, the imagery and concept of a "mirror for princes" was not entirely foreign to the Islamic tradition. Yusuf Khass Hajib's eleventh-century *Wisdom of Royal Glory*, for instance, notes that "A loyal man may serve one as a mirror: by regarding him one may straighten one's habits and character" (Crone, 2004, 149).

[4]Some works, of course, have a more critical edge than others (e.g., Bahr Al-Fava'id's *Sea of Precious Virtues* and John of Salisbury's *Policraticus* and, on some interpretations, Machiavelli's *The Prince*).

its framing, source materials, and thematic content. Many works begin, for instance, with a profession of humility, an insistence on the author's lack of relevant qualifications, or a disclaimer to the effect that the recipient already embodies the relevant virtues and, therefore, does not require the proffered advice (Forhan, 2002; Marlow, 2013b). Prescriptions are often offered to rulers only indirectly through the use of classical and scriptural authorities and examples. Authors are often at pains to balance praise with counsel, conveying more subtle critiques through their choice of quotations and their presentation of examples.[5]

These generic conventions extended to the issues and themes that dominated advice works. European mirrors tended to offer a vision of a just ruler who "treated equals equally" by maintaining a balance between the various social orders (Forhan, 2002, 35). While many European mirrors took the ruler to be above the law, they nonetheless tended to insist that the good ruler would conform with the law as a matter of virtue and faith (Born, 1928; Nederman, 1998). Beyond this, most European mirrors emphasized the importance of the cardinal virtues (prudence, justice, temperance/restraint, and courage/fortitude), devotion to popular welfare, commitment to public works and economic development, judicious selection of advisors and a willingness to take their advice, and personal faith and promotion of Christianity (Born, 1928). We see a similar set of themes in many Islamic mirrors, which also offered an ideal of a just ruler as one who maintains a harmonious social order (the trope of the "circle of justice" recurs throughout the Islamic mirror genre), practices the cardinal virtues, consults with advisors and heeds good advice, avoids ostentation, and attends to the material and spiritual wellbeing of his subjects (Lambton, 1971; Marlow, 2013a).[6]

A common stock of source material for Christian European mirrors texts include classical sources like Seneca, Plutarch, Cicero, and particularly after the thirteenth-century recovery of his practical philosophy, Aristotle; scriptural passages and exemplary biblical figures (particularly Hebraic models of kingship like Solomon and David); and patristic literature (especially Ambrose and Augustine, and particularly the 24th chapter of the latter's *City of God*) (Forhan, 2002; Lambertini, 2011). Islamic advice books similarly drew from classical sources, particularly Plato and Aristotle's ethical and political works and a pseudo-Aristotelian work, the *Sirr al-Asrar*, which purported to be a letter of advice from Aristotle to Alexander the Great; Sassanian theories of kingship; Arabian oral literature; and testamentary advice from royal and caliphal descendants to their heirs (Lambton, 1971; Marlow, 2013b). Overlaps in their periods of production, the aims of their authors, and their generic conventions make the Christian European and Islamic mirrors ripe for comparative analysis.

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[5]Because both Christian European and Islamic mirrors seem to adhere so closely to these conventions of framing, source material, and thematic content, an older generation of scholars tended to miss the ways in which authors tailored their advice to the exigencies of their times, often with a subtle and sometimes even an overt critical edge (Nederman, 1998; Marlow, 2009). Scholarship on mirrors has increasingly come to attend to contextual specificity and critical edge in a body of advice literature that, at least on its surface, can easily seem entirely conventional.

[6]See London (2011) for a discussion of Islamic conceptions of the 'circle of justice.'

2.2 Text Analysis for Political Theory

The comparative analysis of Christian European and Islamic advice books presents an ideal opportunity for the use of text-as-data methods. While automated text analysis has been used in biblical studies, classics, literary studies, and law for several decades (Schreibman, Siemens and Unsworth, 2004), it has has made very few inroads in political theory and the history of political thought.

Its primary use in political theory has been to settle debates about authorship. Scholars have used statistical wordprint analyses, which detect idiosyncratic but consistent patterns in the use of non-contextual terms or function words (e.g., articles, pronouns, prepositions, and conjunctions), to evaluate competing hypotheses about the authorship of texts. In an early and groundbreaking study, Mosteller and Wallace (1964) used wordprinting to show that James Madison was very likely the author of twelve disputed papers in the *Federalist*. More recently, wordprint analysis has been used to confirm that Thomas Hobbes was very likely the author of three discourses in the *Horae Subseviae* (1620) that were originally published anonymously and whose authorship had been the subject of ongoing debate (Reynolds and Saxonhouse, 1995). However, to our knowledge, text-as-data methods have not been used to discover and analyze themes in political theory or the history of political thought.

To characterize the themes in the mirror genres across the Muslim and Christian kingdoms, we introduce a new statistical topic model for texts and show how it can be combined with a set of predetermined categories to produce new insights. In so doing we contribute a new model and area of application to the growing use of text-as-data methods. These methods have been used in a variety of contexts in political science (Grimmer and Stewart, 2013) and applied across the humanities in the in the literary analysis of poetry and novels (Jockers, 2013; Rhody, 2012), the historical analysis of newspaper articles (Yang, Torget and Mihalcea, 2011; Newman and Block, 2006), and textual analysis of disciplinary history (Goldstone and Underwood, 2012; Mimno, 2012). Our use of statistical models is not intended to replace careful reading nor the subtle work required to interpret and understand works of political thought. Rather, we view our use of such methods as an aid to political theorists — a resource that can provide a thematic guide to direct more careful and nuanced readings of the texts.

Text-as-data methods are particularly useful to political theorists when they are exploring new and large collections of texts. For example, scholars of comparative political thought interested in charting cross-cultural themes or variations in conceptual vocabulary through time are often confronted with a large set of texts. Likewise, when scholars want to know about the historical, intellectual, and linguistic context in which canonical texts are produced, they will often want to consider not only non-canonical works of political thought but also perhaps less formal texts like political pamphlets, newspaper articles, sermons, correspondence, and diary entries (Skinner, 2002) . The large number of texts make it difficult for scholars to allocate careful and equal attention to each text and make organization into broader themes more challenging. Large numbers of texts, then, challenge the limits of our cognitive ability.

When considering many texts, a political theorist's familiarity with particular authors

and modes of argument will inevitably vary. This varying level of expertise can make it harder for readers to identify coherent themes or to engage in a true comparison of the content of the texts. Without additional guidance, researchers may tend to focus on the texts that are more familiar and and might struggle to identify content from the less familiar texts. Certainly, for a small set of books or thinkers, it is possible for scholars to expand their expertise. But this is not possible when for the large sets of texts that could be considered to address more macroscopic questions about the history of political thought.

Text-as-data methods, then, are particularly useful for our comparison of the mirrors genre across Christian and Muslim kingdoms. While we examine a relatively small set of books, they incorporate a wide array of historical thinkers in distinct time periods. And each of the books engage multiple themes. To better understand the common — and contrasting — themes across the texts we use a statistical model as a conceptual guide. First, however, we briefly review the literature on medieval kingship in the Christian and Muslim worlds.

3 Medieval Kingship

By focusing on the two medieval civilizations within what has been called the "Western core" (i.e., Europe, North Africa, Anatolia and Southwest Asia), we seek to understand political and institutional development in a comparative context. What can be said about the aptness of this comparison? Scholars of Islamic history have long argued that common philosophical ideas underpin political thought in the Christian and Muslim worlds. For instance, Lambton (1974, 420) has suggested that Islamic philosophers, like their Christian European counterparts, were heavily influenced by classical Greek philosophy. Lapidus (1984, 2-3) describes the Mediterranean region as sharing an "essentially uniform ecological situation" with the "common historical and political experience of the Roman Empire" and roots in Greek urban society.

Al-Azmeh (1997) furthers the argument that cultural and civilizational boundaries in late antiquity were fluid. Iranian polities, for example, had "vigorous relations with the realms of Hellenism and Romanity" (1997, 7) and that wars between Persians and Greeks or Byzantines were "integrative and universalizing" moments (1997, 8). There existed considerable similarity between Roman, Persian and Indian political forms, for example, and Persian kings were seen to be exemplary rulers (Al-Azmeh, 1997, 9-10). Until the Middle Ages, there was a well-integrated Mediterranean political culture with strong ties to western Asia before the areas of northern Europe were even admitted to the Euro-Asian system (Al-Azmeh, 1997). As a result, there is a high level of consistency in terms of how kingship is represented in the two world regions over both time and space (Al-Azmeh, 1997, 18).

This section describes patterns related to governance in the European Christian and Islamic worlds. These factors are not intended as either predictors or outcomes associated with the conceptual schema presented in the section to follow. Rather, they might be considered institutional forms that evolved alongside the prevailing political-literary traditions.

3.1 Kingship in Christian Europe

Monarchy dominated most of medieval Europe, with the exception of the Northern Italian city-states. For the most part, the position of king was a hereditary one and primogeniture gradually evolved from an informal custom to an institutionalized principle during the medieval period (Bertocchi, 2006). Germany, however, continued the Roman imperial practice of selection. Kingship carried generally favorable associations for medieval Europeans. However, as Black (1992, 136) notes, "not unlike 'democracy' today, it connoted a whole bundle of ideals, and could mean a variety of things." Ideologically, there were powerful justifications for kingship. Some found it the only viable form of rule for a sinful humanity, others saw it as God's preferred form of government, while others still saw kinship as the result of ancient, popular demand (Forhan, 2002). At the level of practical politics, kings tended to be more effective than other groups (e.g., nobles and the Church) at keeping the peace, rendering some degree of impartial justice, repelling foreign invaders, and defending and strengthening the Christian faith (Myers and Wolfram, 1982). While there was both geographical and temporal variation in medieval kingship, it is possible to identify several broad sets of patterns.

First, medieval kingship was fundamentally shaped by its complex relationship to the Church. From Constantine's conversion in 312 CE onward, the bounds of secular and ecclesiastical jurisdiction were subject to fraught debate and perpetual renegotiation. This debate came to a head in the Investiture Controversy (a series of papal challenges to the royal appointment of bishops) of the eleventh and twelfth centuries, which prompted a protracted civil war in Germany and permanently weakened monarchical power there (Cantor, 1994).

More minor but still consequential disputes about appropriate spheres of jurisdiction persisted throughout medieval Europe. At an ideological level, these disputes were sharpened by the belief that both secular and ecclesiastical powers received their authority from God. While this shared divine origin could ground an argument for separate spheres in which the Church wielded moral and spiritual authority and kings exercised political and administrative jurisdiction (Black, 1992), the belief that the Pope was God's vicar on earth could just as easily support Papal interference in the exercise of royal power (Forhan, 2002).

In practical political terms, the relationship between the Church and kings was similarly complex. When faced with a king with the will and the means to threaten its spiritual authority and worldly interests, the Church had a number of powerful disciplinary tools with which to extract compliance — the threat of excommunication, control of episcopal appointments, influence over marital alliances, and its moral and sovereign-legitimating authority. The history of Church-state relations in medieval Europe reveals that the Papacy was more than willing to use all of these means (Forhan, 2002). However, the Church also depended on monarchical power. It lacked an army and relied on kings to provide peace and security. Economically, the Church relied on tithes, donations, and secure lands and property, all of which in turn required the order and stability that effective kings could provide and therefore made the Church dependent on monarchical power (Myers and Wolfram 1982). This dependence supported strong monarchical government and often made the Church willing

to tolerate, if not always overtly endorse, kingship.

Second, feudalism emerged as the dominant system of political economy in much of Christian Europe. As a system of land apportionment, feudalism has its roots among the ancient Germanic tribes. However, it would flourish among the Roman Empire's German successor states, which were not in a position to extract the tax revenues required to pay mercenary forces (Mann 1986). The Carolingians introduced a crucial innovation when they combined "the institutions of *vassalage*, the personal element in nascent feudalism, with *benefice*, the property element in it" (Myers and Wolfram, 1982, 150). Cash-strapped but land-rich and lacking the capacity for effective tax collection, Charlemagne exchanged land for loyalty and military resources.

These feudal arrangements spread throughout much of medieval Europe but met with uneven success, prospering in England and France but faltering or failing altogether in Germany and Poland (Myers and Wolfram, 1982). Where successful, the effects of these arrangements would prove momentous. The Carolingian innovation produced a landed and armed aristocracy. While benefices were not originally inter-generationally transferrable, the expectation that land and property would be inherited, increasingly through primogeniture, became thoroughly entrenched during the feudal revolution. This shift in expectations and customs, combined with a tendency to pool land in order to more widely distribute the burdens of military service, led to a concentration of economic and military power in noble hands (Myers and Wolfram, 1982; Mann, 1986; Blaydes and Chaney, 2013).

As was the case with the monarchical relationship to the Church, the effects of feudalism on kingship were far from uniform and consistent. On the one hand, feudalism placed limits on monarchical power because it emphasized the conditional nature of the king's authority, fragmented political authority, increased the bargaining power of the nobility, and tended to generate expectations of aristocratic consultation that would become the basis for proto-parliamentary institutions (Strayer, 1970; Myers and Wolfram, 1982; Bisson, 1994; Breay, 2002; Van Zanden, Buringh and Bosker, 2012). On the other hand, as long as there was land to be distributed, feudal arrangements strengthened aristocratic obligations to the crown, increased ruler legitimacy whilst lending it the stamp of noble consent, deepened political stability, and arguably increased ruler duration (Strayer, 1970; Myers and Wolfram, 1982; Blaydes and Chaney, 2013).

Third, particularly in larger kingdoms, some delegation of the king's powers was essential. A kingdom like Ireland could function with a small royal household and minimal specialization of tasks. The rulers of larger kingdoms, by contrast, required a large and functionally differentiated group of agents, advisors, and attendants. Members of the king's household staff and court were frequently favored aristocrats and their positions carried political and administrative influence. Those agents whose functions took them far from the royal household were difficult to oversee and control and sometimes attracted charges of corruption. Counts and earls were tasked with a range of essential royal functions in their localities: maintaining order and administering civil and criminal justice, overseeing royal estates, and gathering military forces (Nelson, 1995). Once again, this delegation of authority both supported and limited royal power.

The administration of justice, for instance, was a crucial royal function. Settling disputes and gaining a reputation for impartial justice helped keep subjects loyal, increase the status and power of the king, and gathered revenue through the imposition of fines and forfeitures. The delegation of enforcement and judicial functions allowed the king to secure these benefits over the full extent of his territory (Myers and Wolfram, 1982). However, this delegation also tended to fragment royal power by increasing the local political capital of local nobles. In England and France, the king's magnates and counselors began to see themselves almost as his co-rulers and as a check on his extra-legal actions (Black, 1992).

3.2 Modes of Governance in the Islamic World

Like the mirrors literature emanating from Europe at this time, there existed no clear dividing line between administrative manuals, works of religious theory and guidance on royal manners in Muslim polities. Muslim writers had a "floating repertoire" of Indo-European ideas, institutions and metaphors to draw upon where the vocabularies used to describe kingship in the Muslim and Christian worlds were, to a large extent, interchangeable (Al-Azmeh, 1997). As a result, it would be wrong to assume that Islam imposed a particular form of Muslim kingship, *ex nihilo*; rather, Muslim forms of government were the product of existing historical paradigms (Al-Azmeh, 1997). Although Muslim monarchs were supposed to abide by interpretations of Islamic law, such expectations could not be enforced (Lambton 1974, 423).

While there existed tremendous diversity across Muslim polities in forms and styles of rule, some threads of commonality that might be drawn out of the historical literature. First, delegation of political, military and bureaucratic power to "outsiders" carried into multiple realms. The backbone of Muslim militaries frequently consisted of a professionalized class of soldier-slaves, or mamluks, who came from areas peripheral to the polity, most frequently central Asia, sub-Saharan Africa or southern Europe. Eunuchs, often of foreign origin, were trusted advisors who had the advantage of being without local contact and thus dependent on the king for political power (Kennedy 2004, 264). The bureaucracies of Muslim polities were frequently staffed by local minorities — like Christians or Jews — whose literacy allowed them to constitute a secretarial class (Brett 2004, 680)

Delegation to competent outsiders was deemed necessary to avoid society falling into a state of anarchy. Muslim histories tend to emphasize that government was responsible for maintaining a kind of social equilibrium (Mottahedeh, 2001, 179). This desire to strong government reflected a belief on the part of early Muslims that ungoverned society provided the conditions under which anarchy might dominate (Mottahedeh, 2001, 179). Social disorder was seen as a worst case scenario (Mottahedeh, 2001, 178). A constant source of potential disorder related to the desert peripheries of many Muslim cities. Bedouin were seen as potentially "destructive elements" that had to be driven off from time to time (Mottahedeh, 2001, 176). *Qabus Nama*, for example, refers to the dangers of having exposed land and the need to defend against peripheral areas. Because a weakly ruled or rulerless town might be vulnerable to attack from peripheral people, citizens of many Near Eastern communities "yearned to be ruled" (Mottahedeh, 2001, 176-7).

Second, the system of political economy that emerged and prevailed in a large number of Muslim polities relied on government ownership of land and distribution of *iqta'* — the Islamic land grant — where *iqta'* holders enjoyed the right to revenue from the land.[7] Mottahedeh (2001, 36) defines the *iqta'* as a "financial arrangement in which government revenues were assigned to specific employees or pensioners of the government." Such assignments were generally short-term and not intergenerationally transferable. While Muslim administrators may have preferred to develop a proper tax system based on salaried officials, the granting of *iqta'* was a functional solution to fiscal exigencies (Humphreys, 2004, 721). Indeed, although the system had its origins in the 10th century, it persisted in various forms for hundreds of years to follow (Mottahedeh, 2001, 37). While there exist considerable similarities between the *iqta'* system and granting of fiefs to vassals in feudal Europe, with a key distinction relating to ultimate ownership of the resource and transferability across generations.

A third factor worth highlighting relates to reliance on patterns of kinship and patronage in the distribution of political power. Writing of the Buyid dynasty that ruled Iran and Iraq during the 10th and 11th centuries, Mottahedeh (2001) argues that Islamic society enjoyed forms of social and political stability built on interconnected loyalties rather than institutions. While formal commitments of loyalty tended to be rare, long-term informal commitments were commonplace (Mottahedeh, 2001, 37). Loyalty between actors was underpinned simultaneously by "oath and benefit" where oaths served as "prototypes" for later forms of commitment (Mottahedeh, 2001, 41-2). Loyalty in the this context frequently built upon existing ties of kinship where political confederations were not shaped by formally articulated institutions (Humphreys, 2004, 722).

A final point relates to the nature of the relationship between state and Islamic institutions. Islamic religious institutions tended to be more loosely organized than those of the Christian West. Nonetheless, scholars have argued that Islam consists of or relates to a series of institutions "through which many of the political functions of the Church are performed" despite the differences between religious organization in the Christian and Muslim worlds of this period (Watt, 2000, 64). Scholars have argued that it is difficult to determine if explicitly Islamic religious thought was more or less dominant than that of Catholic Christian thought in Europe of the Middle Ages (Watt, 2000, 72). Religious scholars in the Islamic world dominated higher education, for example, where the study of Islamic jurisprudence was a crucial area of investigation (Watt, 2000, 67). Religious leaders often found rivals in prominent administrators who reported directly to the ruler or regime (Watt, 2000, 74). Some dynasties came to realize that they could increase political influence by allying with religious elites (Watt, 2000, 74) but, in many contexts, regime administrators and religious elites were rivals for political influence. Religious leaders — like judges who dealt with issues of Islamic law — were often important representatives of citizen interests, particularly in urban areas. Chaney (Forthcoming) finds, for example, that Nile floods increased the influence of religious leaders by raising the probability of a successful revolt against sitting rulers.

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[7]*Iqta'* were not limited to grants of land but might also include rights to infrastructure, like waterways or other resources. Mottahedeh writes that "virtually any governmental source of income could be assigned as an *iqta'at*, even water rights or rights of access" (2001, 36).

4 Empirical Analysis

This section describes the empirical analysis that we undertake. A first section discusses the selection of texts used in our analysis. A second section describes the estimation strategies that we employ. A final section focuses on the results of that estimation approach and lays out categories of discourse identified in the texts. Each category is discussed in turn.

4.1 Selection of Texts

Our empirical analysis is focused on eight texts in the Islamic tradition and ten texts from Christian Europe. To facilitate the kind of computer-assisted textual analysis used in this project, we have only selected texts that have been translated into English. The texts selected from the Islamic tradition draw on Arabic, Turkish and Persian sources; the texts from Christian Europe were written in Latin, Italian, French, English, and Old Norse. The texts selected from the Islamic world represent works from the 8th century through the 17th century with most drawn from the 11th and 12th centuries. The Christian texts span the period from the 9th to the 16th century. The advice offered in the texts ranges from religiously-derived rules and admonitions to more "secular" prescriptions for effective state-craft, war-fighting, and bureaucratic management. Not all of these advice books meet the "strict," or perhaps even the "broad" definitions of the mirror genre described in Section 2.1. However, each text has been selected with an eye to capturing a range of both approaches to advice-giving and conceptions of rulership. Table 1 lists all of the texts used in our empirical analysis.

4.2 Estimating Broad and Specific Themes

To examine the themes across the Christian and Islamic mirrors literature we introduce a new statistical model for texts. Our model imposes two different hierarchies in our data set. The first hierarchy is a thematic hierarchy. At the top of the thematic hierarchy are broad themes that provide coarse summaries of the thematic issues that the mirror texts engage. We suppose that there are four such themes. Below the coarse themes in the hierarchy are more granular themes, that identify more specific differences in what the texts engage. We assume there are sixty of these more granular themes.[8] Our model supposes that the more granular topics are nested within the coarser themes — so that the granular topics refine and clarify distinctions within each of our broader themes.

A second hierarchy measures how the texts divide their attention across themes. At the top of this hierarchy are the advice books. We suppose that each of the underlying books are a mixture of the underlying themes — and to identify this mixture of themes we break

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[8]Determining the number of topics is a difficult question for this type of model. Our numbers are based on extensive pre-analysis testing of a related model — vanilla latent Dirichlet allocation (LDA) — as well as some statistical guidance (Blei, Ng and Jordan, 2003). The use of two different types of topics limits the impact of choosing any one number.

Islamic Texts	Christian Texts
1. *Kalila wa Dimna*, folk/Abdullah Ibn Muqaffaʿ (c. 748, Mesopotamia-Persia, Arabic from Persian)	1. *Life of Charlemagne*, Einhard (9th century, West-Central Europe, Latin)
2. *Aphorisms of a Statesman*, Al-Farabi (c. 942-9, Levant-Mesopotamia, Arabic)	2. *Liber Manualis*, Dhuoda (c. 841, Western Europe, Latin)
3. *Wisdom of Royal Glory*, Yusuf Khass Hajib (c. 1070, Turkic Central Asia, Middle Turkish)	3. *Policraticus*, John of Salisbury (1159, England/France, Latin)
4. *Book of Government*, Nizam al-Mulk (c. 1090, Turko-Persian Eurasia, Persian)	4. *The King's Mirror*, Anonymous (13th century, Norway, Old Norse)
5. *Counsel for Kings*, Al-Ghazali[a] (c. 1110, Turko-Persian Eurasia, Persian)	5. *On the Government of Rulers*, Ptolemy of Lucca (c.1300, Italy/France, Latin)
6. *The Just Prince*, Muhammed Ibn Zafar al-Siqilli (c. 1159, Sicily, Arabic)	6. *A Medieval Woman's Mirror of Honor*, Christine de Pizan (c. 1405, France, French)
7. *Sea of Precious Virtues*, Anonymous (c. 1159-62, Levant-Mesopotamia, Persian)	7. *The Prince*, Niccolo Machiavelli (1513, Florence, Italian)
8. *Advice on the Art of Governance*, Mauizah I Jahangiri (c. 1612, Mughal India, Persian)	8. *Education of a Christian Prince*, Erasmus (c. 1516, Western Europe, Latin)
	9. *Book of the Courtier*, Baldesar Castiglione (c. 1528, Italy, Italian)
	10. *The True Law of Monarchies*, James I (1598, Scotland, English)

Table 1: *Listing of all texts used in the empirical analysis with author (when known), approximate date of writing, region from which the text emanates and original language of the text.*

[a]See Crone (1987) on the disputed authorship of this text.

each book into a set of shorter sections.[9] All together our eighteen books are composed of 5,093 shorter sections in total. At the bottom of this hierarchy are the shorter segments for each book, which we assign to a single granular theme. By assigning each of the shorter segments a single theme, we simultaneously assign the text to a single coarse theme at the top of the hierarchy as our granular themes are nested within the coarse themes.

To apply the statistical model to the texts we perform a series of steps that simplify the texts and represent them quantitatively, commonly called pre-processing steps in the text as data literature (Grimmer and Stewart, 2013). The assumptions that we impose are not intended to capture the realistic ways texts are constructed and language is used in every day discussions (Grimmer and Stewart, 2013). Rather, the assumptions are intended to simplify language to aid in the identification of broad and specific themes in the mirrors texts. Our preprocessing steps are similar to numerous other applications of text as data in political science (Quinn et al., 2010; Hopkins and King, 2010); we discard word order, remove common placeholding words, discard punctuation and capitalization, and map variants of a word to a common term.

The varied content of our texts also lead us to impose additional preprocessing. It is common for words that are clearly synonyms to be used in distinct texts. Without further guidance, our algorithms may confuse the synonyms for distinct words about different themes. To avoid this confusion, we identified synonyms and collected the words under a single term. And because our texts are translations that often leave some words in the original language, we imposed additional translations. For example, we combined *God* and *Allah*, ensuring that our model did not arbitrarily separate religious appeals based on differences in translation. The result of this procedure is that each document is represented as an 1,370 element long vector, where each term represents the number of times a word is used in a document.

Using the hierarchy, the statistical model simultaneously estimates five quantities of interest. The model estimates (1) a set of specific themes, (2) a set of broad themes, and (3) classifies each specific theme into a single broad theme. For each of the 18 books in our collection ($i = 1, \ldots, 18$) the model estimates (4) how each book divides its attention over the 60 specific themes. For book i, define **theme**$_i$ as

$$\textbf{theme}_i \quad = \quad (\text{theme}_{i,1}, \text{theme}_{i,2}, \ldots, \text{theme}_{i,60})$$

where $\text{theme}_{i,k}$ is the proportion of space in book i dedicated to specific topic k. Our procedure is analogous to estimating the weights each book attaches to each theme — so we suppose that each entry in **theme**$_i$ is greater than zero ($\text{theme}_{i,k} > 0$) and that the **them**$_i$ sums to 1 ($\sum_{k=1}^{60} \text{theme}_{i,k} = 1$). Because each of the specific themes are nested in the more broad themes, we can easily aggregate **theme**$_i$ to obtain the attention each book allocates to the more general themes by summing together the attention to the specific themes assigned to each coarse theme. Our final quantity of interest (5) assigns each short section to a specific topic. To estimate the statistical model we use a variational approximation, a deterministic

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[9]To make this division we used natural breaks in the texts. In instances where the natural breaks were very short, we combined the breaks until they comprised at least 150 total words.

method for estimating complex posteriors (Jordan et al., 1999; Grimmer, 2011). In the Appendix, we provide full model details and derive the estimation algorithm.

4.3 Themes

We estimate four broad themes and 60 specific themes with our model. We summarize our broad and specific themes in Table 2. In the first column we present the average proportion of the books allocated to the broad and specific themes. The second column contains key words that distinguish the themes. Our model *discovers* the topics, so the key words merely reflect what our model estimates — we did not fix the key words beforehand. The third column provides short-labels for the general topics and numbers for the sub-topics to aid in reading and discussing the table.

Figure 1 shows the proportion of Christian and Muslim books, respectively, that focus on each of the four themes we describe below. Both the absolute levels of attention to different themes and the difference between Christian and Muslim texts in terms of emphasis are noteworthy. Figure 2 provides information on how each of the eighteen texts analyzed deal with each of the four themes discussed.

Theme 1: The "Just" King

This theme is centered on discussions of the public virtues and political practices of ideal rulers, including the distinction between a just king and an unjust tyrant, justice and the law, the conduct of war and conquest, the preservation of peace, and the roles of faith and judgment in political rule. This is the single largest area of discussion for both Christian and Muslim authors yet we see comparatively more emphasis on this theme in the Christian European texts. An analysis of the more granular topics reveals some similarly distinct patterns. The contrast between just kings and unjust tyrants is most prominent in the Christian texts, particularly John of Salisbury's *Policraticus* and Erasmus' *Education of Christian Princes*. The former, somewhat remarkably for its time, offers not only an extensive treatment of tyranny, but further argues that criticizing, correcting and, as a last resort, killing tyrants is a generalized public duty (of Salisbury, 1990; Nederman, 1990). Justice, law, and punishment figure most prominently in the Christian texts, and in James I's *True Law of Monarchies*, in particular.

Discussions of war, conquest, and the treatment of soldiers and enemies are dominated by one standout text from each tradition — Machiavelli's *Prince* and Mauizah I Jahangiri's *Advice on the Art of Governance*. Discussions of the connection between waging war and preserving the peace, on the other hand, tend to be dominated by the Christian European texts, particularly Einhard's *Life of Charlemagne* and *The Education of a Christian Prince*. Finally, we see both traditions well represented in a topic on the relationships between faith, judgment, and political rule, with the *Education of a Christian Prince* and *Advice on the Art of Governance* both especially prominent here.

Table 2: 60 Specific Themes Nested in 4 Broad Themes

| Proportion	Key Words	Number
0.37	princ,peopl,law,ruler,citi,natur,enemi,govern,kingdom,power	Just King
0.076	princ,peopl,state,tyranni,minist,realm,rule,royal,kingdom,countri	1
0.048	ruler,power,peopl,emperor,new,consid,roman,empir,help,govern	2
0.037	peopl,princ,religion,govern,state,offic,order,judg,countri,parti	3
0.034	princ,almighti,peopl,justic,command,prophet,law,tyranni,divin,govern	4
0.03	princ,servant,majesti,servic,head,present,eye,offic,royal,moon	5
0.028	princ,kingdom,reign,govern,son,great,titl,rule,father,state	6
0.025	law,princ,accord,justic,wine,punish,judg,allow,equiti,priest	7
0.021	war,princ,peac,wage,fight,oblig,end,victori,avoid,achiev	8
0.02	citi,peopl,citizen,warrior,human,aristotl,place,preserv,bodi,injustic	9
0.02	natur,human,reason,govern,virtu,bodi,necessari,anim,principl,accord	10
0.016	enemi,armi,troop,fight,camp,battl,forc,soldier,arm,attack	11
0.015	judg,justic,punish,order,allow,law,tyranni,power,accord,death	12
0.25	woman,man,good,ladi,love,virtu,wive,beauti,like,knowledg	Private Realm
0.071	man,wisdom,wise,intellect,princ,intellig,old,fortun,poor,gold	1
0.038	good,man,princ,evil,bad,fortun,prais,wick,world,deed	2
0.027	woman,man,husband,ladi,hous,magnifico,children,love,household,old	3
0.023	like,man,great,think,form,courtier,cold,cloth,land,ought	4
0.018	virtu,end,human,wisdom,perfect,govern,reason,happi,divin,philosoph	5
0.016	ladi,duchess,courtier,court,great,woman,think,laugh,discuss,prais	6
0.014	love,ladi,woman,lover,wish,desir,magnifico,husband,belov,passion	7
0.011	mistress,good,young,ladi,woman,wise,honour,instruct,serv,manner	8
0.011	knowledg,intellig,art,employ,practic,man,excel,know,learn,write	9
0.007	wive,woman,husband,young,daughter,marri,children,home,neighbour,old	10
0.006	beauti,pleasur,write,think,greater,desir,delight,leav,increas,death	11
0.005	feast,food,invit,land,old,anim,poor,camel,fast,sheep	12
0.004	far,play,ja,game,compani,joke,hors,hunt,affair,contrari	13
0.001	cut,letter,secretari,best,discours,write,anecdot,line,persian,accomplish	14
0.21	almighti,prophet,sin,soul,book,muslim,holi,bless,spirit,kill	Religion
0.041	almighti,prophet,prayer,merci,prais,bless,creat,pray,recit,forgiv	1
0.033	almighti,peopl,power,rule,law,kingdom,command,holi,priest,divin	2
0.029	man,almighti,fortun,tale,world,worship,prayer,evil,high,youth	3
0.026	almighti,good,bless,father,son,children,world,great,work,pray	4
0.018	almighti,princ,man,great,honour,wisdom,love,judgment,son,power	5
0.013	prophet,almighti,prayer,relat,islam,muslim,tradit,miracl,companion,priest	6
0.011	book,read,pray,son,mind,almighti,work,world,religion,form	7
0.01	soul,almighti,bodi,desir,life,death,seek,believ,pleasur,prophet	8
0.01	sin,almighti,merci,repent,commit,forgiv,punish,wrong,faith,lie	9
0.009	spirit,holi,almighti,believ,bless,father,abl,gift,contempl,cross	10
0.007	kill,muslim,priest,prophet,allow,properti,infidel,islam,heret,perish	11
0.006	better,hous,fall,ill,eat,prayer,dead,pray,greet,villag	12
0.12	friend,water,world,stone,head,eye,heart,tree,turn,master	Nature
0.025	world,death,life,desir,wealth,almighti,heart,fortun,end,man	1
0.013	friend,eye,enemi,tale,felt,beg,like,don,tree,head	2
0.01	heart,man,eye,wisdom,bodi,princ,death,hear,sage,write	3
0.009	friend,friendship,love,like,great,mind,enemi,wise,accord,desir	4
0.007	water,drink,tree,land,head,food,cold,dead,properti,river	5
0.007	prais,highli,princ,brother,awak,face,heart,tell,desir,world	6
0.007	tree,bear,fruit,night,root,weight,stop,branch,physician,old	7
0.006	servant,serv,command,turn,servic,delight,think,bird,affair,spi	8
0.006	truth,true,man,faith,doubt,knowledg,eye,virtu,idea,life	9
0.006	master,dog,slave,money,sheep,food,flock,eat,judg,tell	10
0.005	right,left,wild,hors,return,arm,path,virtu,excess,eye	11
0.005	face,robe,head,blood,wear,allow,red,eye,cut,joy	12
0.003	merchant,travel,robber,caravan,good,camel,busi,messeng,world,road	13
0.003	hair,head,throw,allow,danc,think,leav,run,practic,turn	14
0.002	page,master,troop,fight,bearer,bought,servic,turk,tent,slave	15
0.002	spring,water,flow,river,mountain,like,turn,villag,countri,abund	16
0.001	stone,throw,prayer,run,place,night,touch,black,wood,hard	17
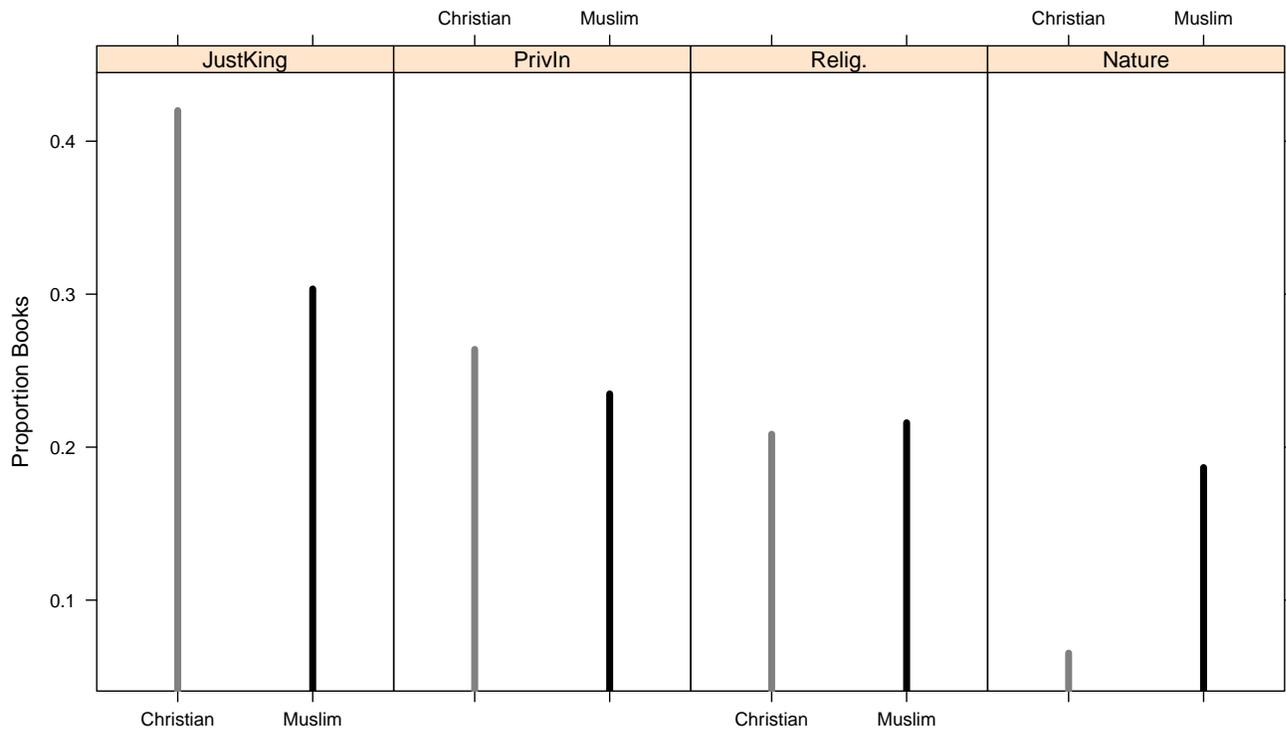
Figure 1: *Christian and Muslim Author Attention to Four Themes.*

Theme 2: The Private Realm and the Inner Life

This theme includes explorations of the personal virtues and practices of a good king and his management of his family and household. Christian European and Islamic texts are both well-represented here, though Christine de Pizan's *Medieval Woman's Mirror of Honor* and Castiglione's *Book of the Courtier* dominate this theme because of their overwhelming focus on women and courtiers, respectively. The topics centered on personal virtues are primarily focused on the cultivation of the intellect, the development of practical wisdom, and the connection between personal virtues and fortune.

While both Muslim and Christian texts provide extensive discussion of these issues — indeed, this is the second largest category of absolute discussion for authors of both regions — there are distinct patterns worth noting. While both Christian European and Islamic texts deal with the relationship between the prince's wisdom and his fortune, Christian European texts on the whole tend to place more emphasis on the connections between virtue, wisdom, happiness, and rulership (Al-Farabi's *Aphorisms of a Statesman* is a prominent Islamic exception here), while Islamic texts place more emphasis on practical wisdom and the processes and rituals of knowledge acquisition like reading, learning, and writing.

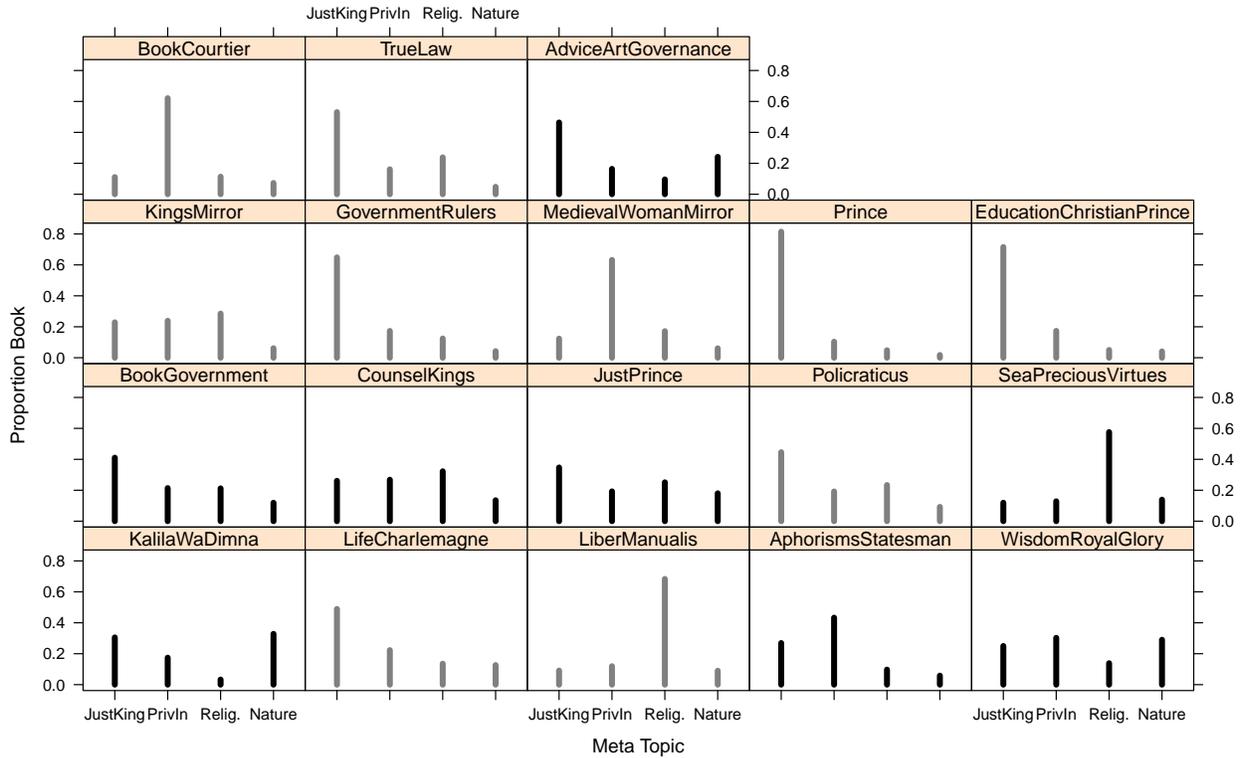The topics centered on family and household management are overwhelmingly dominated

Figure 2: *Attention to Four Themes for Eighteen Texts.*

by the treatment of women and courtiers. Not surprisingly, *Medieval Woman's Mirror of Honor* and *Book of the Courtier* dominate this group of topics. However, Ibn Muqaffa''s translation of *Kalila wa Dimna* and Ibn Zafar al-Siqilli's *The Just Prince* each make a strong showing in a subtopic on the ruler's relationship to his wife, daughters, and household.

Theme 3: Religion, Faith and Divine Politics

This theme includes discussions of religion, faith, spirituality, and divine models for politics. European Christian and Islamic texts are evenly represented here. However, there are two "outlier" texts in which religious themes are especially prominent — Dhuoda's *Liber Manualis* and *Sea of Precious Virtues*, both of which contain not only extensive substantive discussion of religious matters but also numerous ritual invocations of God and divine power.

While the overall level of discussion of religion, faith, and divine politics appears to be similar across Christian European and Islamic mirrors, there are some noteworthy differences in emphasis. The Christian European texts tend to be much more focused on models of divine kingship and divine sources of legitimacy for worldly kingship. This subtopic is especially strong in *Liber Manualis*, the *King's Mirror*, *Policraticus*, and Ptolemy of Lucca's *Government of Rulers*. This may reflect an important difference between the Christian

tradition's conception of divine kingship, in which the powers and attributes of rulers are modeled on those of God, and the Persian ideal of sacral kingship, in which the ruler may be chosen by God but remains, nonetheless, fully human (London, 2008). Unsurprisingly, Islamic texts, and, particularly, the *Sea of Precious Virtues*, dominate subtopics connected to the wisdom of the Prophet and the treatment of heretics and infidels within the Islamic tradition. *Sea of Precious Virtues* is, perhaps, the text most reflective of Muslim concerns about Crusader invasions of the Holy Lands, written in Aleppo in the 12th century. Religious and theological discussions of the body/soul relationship are most prominent in two Islamic mirrors — *Aphorisms of a Statesman* and *Sea of Precious Virtues* — and one Christian mirror — *Policraticus.*

Theme 4: The Natural World as Reality and Metaphor

This theme is dominated by discussions of nature as both a reality (i.e., the landscapes and topographies of princely action) and an analogy or metaphor for princely fortune or political rule. Islamic mirrors are much more prominently represented here than their Christian European counterparts. While not terribly prominent to begin with, the presence of these themes in Christian European texts also tends to decline over time.

In a series of subtopics connected to landscapes and topographical features, the Nordic *King's Mirror*, with its extensive discussions of the Nordic landscape, the importance of geographical knowledge, and the wonders and dangers of sea travel, is the only Christian European text in which these themes figure prominently. Among the Islamic texts, *Kalila wa Dimna* and *Sea of Precious Virtues* are most likely to make use of words related to landscape and topography. Islamic mirrors are also more likely to use words that metaphorically connect the discussion of princely and political fortune to the language of seasons and weather. However, the most noteworthy and recurrent pattern within this theme is a set of subtopics that are dominated by the language of animals and nature as metaphors for political rule. This trend is not just reflected in *Kalila wa Dimna*, which is comprised almost entirely of a collection of animal fables, but extends to a number of other Islamic texts including Nizam al-Mulk's *Book of Government*, "Al-Ghazali's" *Counsel for Kings*, and Ibn Zafar al-Siqili's *Just Prince*. Our preliminary interpretation of this Islamic use of analogies and parables is offered below.

5 Interpretation

In her study of late medieval English mirrors, Ferster (1996) observes that many authors were not in a position to write frankly and openly about the political problems of their day and, therefore, disguised and softened their critiques.[10] Marlow (2009) similarly notes that the authors of Islamic mirrors were in a precarious position in relation to their royal audiences and frankness carried serious dangers. London (2008) argues that metaphors and analogies are a productive way to educate monarchs in political circumstances where speech

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[10]See also (Nederman, 1998)

is not protected. For London (2008), frank speech need not be direct; fables introduce ideas about appropriate rule and good judgement without reliance on explicitly political language.

Our empirical analysis has allowed us to identify four conceptually distinct themes that are common to both Christian and Muslim advice texts. Discussion of the private virtues of kings and management of the king's interior life (theme 2) receive roughly equivalent attention in both Muslim and Christian texts. Similarly, focus on religious issues (theme 3) is similar for Christian and Muslim authors. The most significant area of divergence, then, relates to the relative differences between the predominance of discussion of the "just" king (theme 1) and the employment of language related to the natural world (theme 4).

Discussion of the "just" king typically offers a description of an idealized ruler, leaving readers to contemplate the difference between this ideal and their existing ruler. We interpret this as a form of indirect advice to kings since guidance is offered through focus on a clearly unattainable ideal. Christian advice givers would often draw on examples from Roman antiquity and Scripture or philosophical ideas from Greece, Rome, and the Church fathers. Such an approach is also available and present in the Muslim tradition. Writing of the Islamic world, Marlow (2013a, 350) notes that "authors sometimes cast their advice in the framework of paradigmatic embodiments of the wise sage and receptive monarch, such as Aristotle and Alexander or Buzurgmihr and Anushrivan: figures distant in time and context from the author and the addressee. Such techniques allowed the writer to present himself as an intermediary rather than as a direct critic."

Yet explicitly political language is employed to a lesser extent in the Muslim world than in Christian Europe. Muslim authors tended to make considerable use of analogies from the natural world and moralizing fables. Storytelling is, of course, most notable as the primary form of expression for one of the texts analyzed, *Kalila wa Dimna*. Rulers are advised to avoid the rush to judgement and to practice leniency toward one's enemies, via storytelling with characters from the animal kingdom. Metaphors drawing on the natural world are not exclusive to *Kalila wa Dimna*, however. Treacherous animals who betray their masters are punished in *Book of Government* and tales of strategy with animal actors are described in the *Just Prince*.

Following London (2008), we suggest that both approaches represent forms of indirect, but frank, political speech. So while both Christian and Muslim authors sought to overcome the challenge of "speaking truth to power" through indirection, Christian writers employed more explicitly political language, even in the 9th century, and engagement with overtly political themes increased over time. Figure 3 provides information on the over time dimension. The Christian texts that make greatest use of language related to the natural world tend to be the earliest texts while in the Muslim world, this is trend carried throughout. Importantly, discussion of the "just" king increases over time in Christian Europe, particularly after taking into the account the somewhat unique foci of *Medieval Woman's Mirror of Honor* and *Book of the Courtier*.

How can we interpret both the difference in absolute levels of thematic emphasis as well as changes in modes of communication over time? Early state and societal development — often measured by transition to Neolithic agriculture — may have advantaged certain types
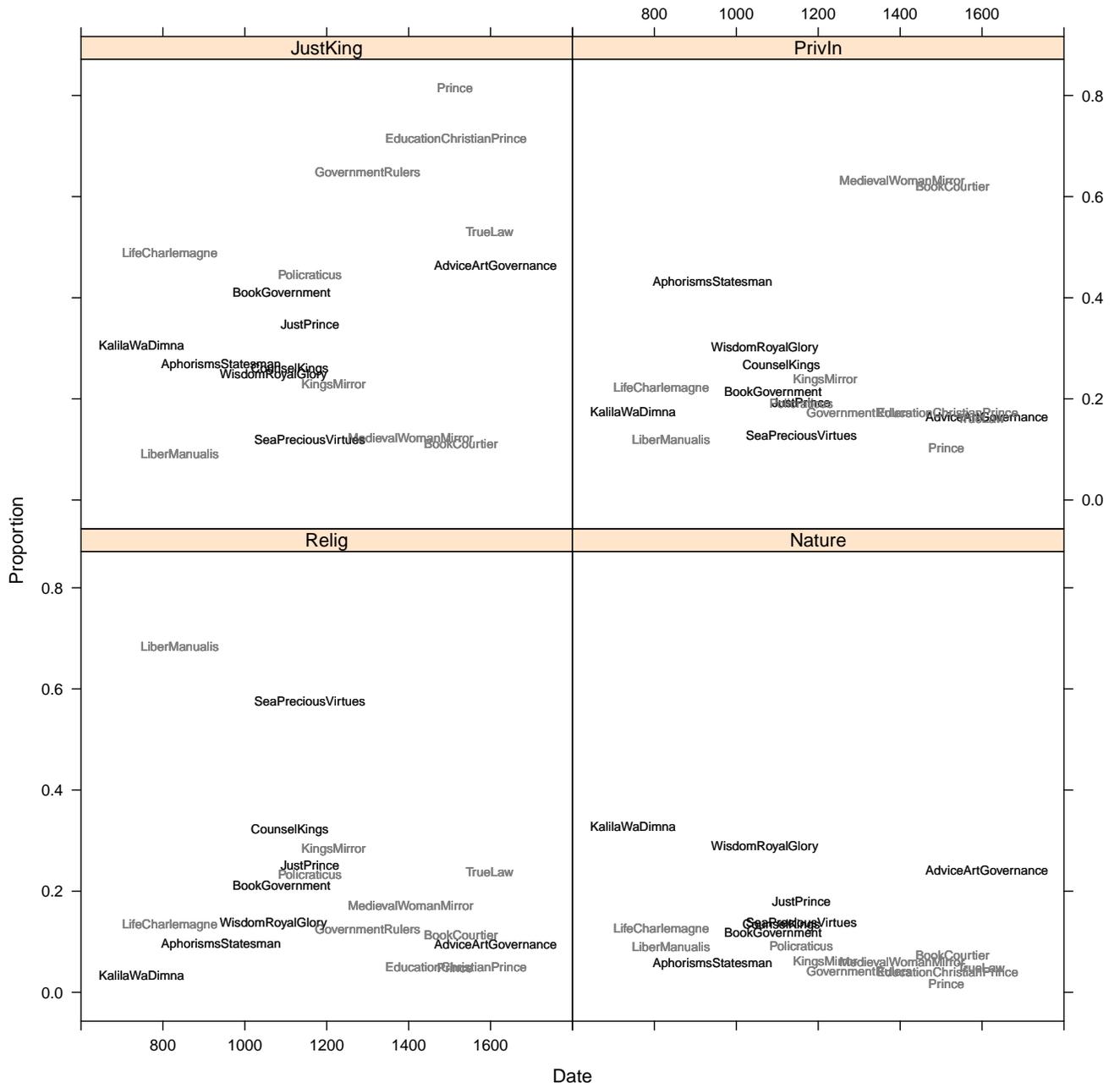
Figure 3: *Attention to Four Themes over Time.*

of governance structures, or even forms of traditional political communication. Within the Western core, the areas with the earliest known transitions to agriculture were in Southwest Asia, Anatolia, the Levant and parts of North Africa, like Egypt. Olsson and Paik (2013) find that areas within the Western core that made the Neolithic transition later — like parts

of Northern Europe — were more likely to experience democratic rule. If "old" societies exhibited more entrenched forms of authoritarian governance, it is not surprising that political advisors might prefer the least direct forms of political communication, relying on fable and analogy and eschewing language about rule and governance to the greatest extent possible.

Our analysis suggests, however, that the use of analogy and fable by Christian writers also declines over time while language related more directly to kingship and rule increases, an empirical regularity that points to dynamic factors, as well. Blaydes and Chaney (2013) argue that institutional innovations beginning in the 9th century — particularly the emergence of feudalism in the Christian West and mamlukism in the Muslim world — encouraged the cultivation of executive constraint in Europe but not the Islamic world. Muslim authors may have been compelled to use explicitly apolitical language to a greater extent than Christian authors because of the absolute nature of monarchy in the Islamic world. Writers in Christian Europe, on the other hand, were living in societies where impersonal political institutions — like parliaments — were increasingly common. Constraints on the monarch may have made advice using explicitly political language more feasible over time in the Christian West.

6   Conclusions

In this paper, we explore temporal and cross-sectional trends in institutional development within the Western core through an examination of advice texts for royals — among the most important forms of political writing to emerge from the medieval and early modern periods. Our analysis of eighteen "mirrors" texts suggests important similarities in theme and emphasis when comparing the ways that Muslim and Christian writers in this genre advised their patrons. Instruction on personal virtues, management of the king's family and household and religious duties, rights and obligations were comparably represented in both the Christian and Muslim texts. And, in both cases, writing on the virtues and practices of ideal rulers was the single largest area of discussion. Yet there does appear to be a difference in the likelihood of Christian rulers to employ more explicitly political language.

Both Christian and Muslim writers in this genre drew on historical examples to develop a model for the "just" king but this tendency was more pronounced among Christian authors. Further, Muslim authors appeared to substitute less explicitly political language when conveying instructions for ideal rule through the use of analogies, metaphors and fables which often made use of non-human actors. While there is little doubt that the characters in such stories represented various human actors (kings, courtiers, political rivals), fables of this sort were favored by Muslim writers when compared to their Christian counterparts. We describe the trends in the use of explicitly political language and offer tentative explanations for both the difference in initial levels and over time trends.

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Appendix

In this methods appendix we provide the technical details for our statistical model. Suppose that we have 18 books, ($i = 1, 2, \ldots, 18$) and that book i is composed of D_i total shorter segments ($j = 1, 2, \ldots, D_i$). We will represent each document as a W element long vector ($W = 1370$) $\boldsymbol{y}_{ij}$ and will collect each of the short documents into a term-document matrix $\boldsymbol{Y}$.

Following previous work on statistical models for texts (Banerjee et al., 2005; Grimmer, 2010) we model the content of our texts using mixtures of von Mises-Fisher distributions (vMF). This is a distribution on a hypersphere—or on texts that are normalized to have unit length. This removes the influence of text length on the topic classification.

We normalize the documents to remove any influence of length (and to make them appropriate for the statistical model we apply). For each document $\boldsymbol{y}_{ij}$ we write its unit-length representation as

$$\boldsymbol{y}_{ij}^* = \frac{\boldsymbol{y}_{ij}}{\sqrt{\boldsymbol{y}_{ij}' \boldsymbol{y}_{ij}}}$$

We use two different kinds of hierarchies to model the content of the texts. As discussed above, our first hierarchy is a thematic hierarchy. We model the contents of the documents as a mixture of vMF. This facilitates statistical modeling using cosine based similarity measures, a popular measure of similarity between documents. At the top of the hierarchy we have M coarse themes ($m = 1, 2, \ldots, M$). We will suppose that each coarse theme, $\boldsymbol{\eta}_m \sim \text{vMF}(\kappa, \boldsymbol{1}\sqrt{W})$, where κ is a concentration parameter and $\boldsymbol{1}\sqrt{W}$ is the least informative prior for a conjugate vMF distribution. We will suppose that each of the K ($k = 1, 2, \ldots, K$) granular topics are classified into one of the coarse topics. For each granular topic k we draw an indicator vector $\boldsymbol{\sigma}_k$ with $\sigma_{mk} = 1$ if granular topic k is classified into coarse topic m. We will suppose that $\boldsymbol{\sigma}_k \sim \text{Multinomial}(1, \boldsymbol{\beta})$ and that $\boldsymbol{\beta} \sim \text{Dirichlet}(\boldsymbol{1})$.

Given each granular topic's assignment to one of the coarse topics, we can draw its content. We will suppose that for each granular topic k that $\boldsymbol{\mu}_k | \sigma_{mk} = 1 \sim \text{vMF}(\kappa, \boldsymbol{\eta}_m)$.

The second hierarchy models the content of the books. We will suppose that each book, i, is a mixture of themes ($i = 1, \ldots, 18$). We will represent the mixture for book i as

$$\boldsymbol{\pi}_i = (\pi_{i,1}, \pi_{i,2}, \ldots, \pi_{i,60})$$

where $\pi_{i,k}$ represents the proportion of book i dedicated to theme k. We will suppose that $\boldsymbol{\pi}_i \sim \text{Dirichlet}(\boldsymbol{\alpha})$, with $\alpha_k \sim \text{Gamma}(1, 1)$. The model supposes that the distribution of themes, $\boldsymbol{\pi}_i$ stochastically controls the rate themes occur in each book. For each of the D_i smaller text sections in book i we will draw an indicator vector $\boldsymbol{\tau}_{ij}$ where $\tau_{ijk} = 1$ if document j in book i is assigned to the kth topic. Conditional on this assignment we draw the content of each document. We suppose that $\boldsymbol{y}_{ij}^* | \tau_{ijk} = 1 \sim \text{vMF}(\kappa, \boldsymbol{\mu}_k)$.

We summarize the model with the following hierarchical model,

$$
\begin{aligned}
\alpha_k &\sim \text{Gamma}(1,1) \\
\boldsymbol{\pi}_i | \boldsymbol{\alpha} &\sim \text{Dirichlet}(\boldsymbol{\alpha}) \\
\boldsymbol{\eta}_m &\sim \text{vMF}(\kappa, \frac{1}{\sqrt{\boldsymbol{W}}}) \\
\boldsymbol{\beta} &\sim \text{Dirichlet}(\boldsymbol{1}) \\
\boldsymbol{\sigma}_k &\sim \text{Multinomial}(1, \boldsymbol{\beta}) \\
\boldsymbol{\mu}_k | \sigma_{mk} = 1 &\sim \text{vMF}(\kappa, \boldsymbol{\eta}_m) \\
\boldsymbol{\tau}_{ij} | \boldsymbol{\pi}_i &\sim \text{Multinomial}(1, \boldsymbol{\pi}_i) \\
\boldsymbol{y}^*_{ij} | \tau_{ijk} = 1, \boldsymbol{\mu}_k &\sim \text{vMF}(\kappa, \boldsymbol{\mu}_k)
\end{aligned}
$$

which implies the following posterior distribution

$$
\begin{aligned}
p(\boldsymbol{\alpha}, \boldsymbol{\pi}, \boldsymbol{\eta}, \boldsymbol{\beta}, \boldsymbol{\sigma}, \boldsymbol{\mu}, \boldsymbol{\tau} | \boldsymbol{Y}) \propto & \prod_{m=1}^{M} \exp\left(\kappa \boldsymbol{\eta}'_m \frac{1}{\sqrt{\boldsymbol{W}}}\right) \times \prod_{m=1}^{M} \prod_{k=1}^{K} \left[\beta_m \exp\left(\kappa \boldsymbol{\mu}'_k \boldsymbol{\eta}_m\right)\right]^{\sigma_{mk}} \prod_{k=1}^{K} \exp(-\alpha_k) \times \\
& \prod_{i=1}^{18} \left[\frac{\Gamma(\sum_{k=1}^{K} \alpha_k)}{\prod_{k=1}^{K}(\alpha_k)} \prod_{k=1}^{K} \pi_{ik}^{\alpha_k - 1} \times \prod_{j=1}^{D_i} \prod_{k=1}^{K} \left[\pi_{ik} \exp(\kappa \boldsymbol{y}^*_{ij} \boldsymbol{\mu}_k)\right]^{\tau_{ijk}}\right] \quad (6.1)
\end{aligned}
$$

Estimation

We approximate the posterior in Equation 6.1 using a variational approximation. A variational approximation is a deterministic alternative to Markov Chain Monte Carlo (MCMC) methods that are particularly useful in large and complex posteriors. A variational approximation approximates the posterior using a simpler, but still very general, class of functions. Specifically, we approximate the posterior in Equation 6.1 with the family of functions,

$$
\begin{aligned}
q(\boldsymbol{\alpha}, \boldsymbol{\pi}, \boldsymbol{\eta}, \boldsymbol{\beta}, \boldsymbol{\sigma}, \boldsymbol{\mu}, \boldsymbol{\tau}) &= q(\boldsymbol{\alpha})q(\boldsymbol{\pi})q(\boldsymbol{\eta})q(\boldsymbol{\beta})q(\boldsymbol{\sigma})q(\boldsymbol{\mu})q(\boldsymbol{\tau}) \quad (6.2) \\
&= q(\boldsymbol{\alpha}) \prod_{i=1}^{18} q(\boldsymbol{\pi})_i \prod_{m=1}^{M} q(\boldsymbol{\eta})_m q(\boldsymbol{\beta}) \prod_{k=1}^{K} q(\boldsymbol{\sigma})_k \prod_{k=1}^{K} q(\boldsymbol{\mu})_k \prod_{i=1}^{18} \prod_{j=1}^{D_i} q(\boldsymbol{\tau}) \quad (6.3)
\end{aligned}
$$

To find the member of the family functions defined in Equation 6.2 that most closely approximates the posterior in Equation 6.1 we follow a standard set of derivations to derive in iterative algorithm to approximate the posterior. We provide the update steps here.

Update for $q(\boldsymbol{\sigma})_k$

$q(\boldsymbol{\sigma})_k$ is a Multinomial$(1, \boldsymbol{c}_k)$ where typical element c_{mk} is equal to

$$
c_{mk} \propto \exp\left(\text{E}[\log \beta_m] + \text{E}[\kappa \boldsymbol{\mu}_k \boldsymbol{\eta}_m]\right).
$$

We will complete the update step when we have determined the remaining forms of the distribution

Update for $q(\boldsymbol{\tau})_{ij}$

$q(\boldsymbol{\tau})_{ij}$ is a Multinomial$(1, \boldsymbol{r}_{ij}$, with typical element of r_{ijk} equal to

$$r_{ijk} \quad \propto \quad \exp\left(\mathrm{E}[\log \pi_{ik}] + \mathrm{E}[\kappa \boldsymbol{y}_{ij}^* \boldsymbol{\mu}_k]\right)$$

Again, as we complete the parametric forms of the other update steps we can complete this update equation.

Update for $q(\boldsymbol{\pi})_i$

$q(\boldsymbol{\pi})_i$ is a Dirichlet$(\boldsymbol{\gamma}_i)$ distribution, where typical element γ_{ik} is equal to

$$\gamma_{ik} \quad = \quad \alpha_k + \sum_{j=1}^{D_i} r_{ijk}$$

Update for $q(\boldsymbol{\beta})$

$q(\boldsymbol{\beta})$ is a Dirichlet$(\boldsymbol{\phi})$ distribution with typical parameter ϕ_m equal to

$$\phi_m \quad = \quad 1 + \sum_{k=1}^{K} c_{mk}$$

Update for $q(\boldsymbol{\eta})_m$

Given the complications of taking expectations with the vMF distribution, we instead provide maximization steps for the vMF parameters. To obtain the form of the updates we follow the derivation outlined in Banerjee et al (2005). To do this, we take the log of the posterior distribution and identify the parameters that depend upon $\boldsymbol{\eta}_m$.

$$\log(p(\boldsymbol{\eta}_m)) \quad = \quad \sum_{k=1}^{K} c_{km}\kappa\boldsymbol{\mu}_k\boldsymbol{\eta}_m + \kappa\boldsymbol{\eta}_m \frac{1}{\sqrt{\boldsymbol{W}}} + \text{constants}$$

To set up the constrained optimization we also introduce the Langragian λ, with the constraint that $\boldsymbol{\eta}_m' \boldsymbol{\eta}_m = 1$,

$$\log(p(\boldsymbol{\eta}_m)) \quad \propto \quad \sum_{k=1}^{K} c_{km}\kappa\boldsymbol{\mu}_k\boldsymbol{\eta}_m + \kappa\boldsymbol{\eta}_m \frac{1}{\sqrt{\boldsymbol{W}}} - \lambda(\boldsymbol{\eta}_m'\boldsymbol{\eta}_m - 1).$$

Differentiating with respect to $\boldsymbol{\eta}_m$, setting equal to zero and solving yields

$$\frac{\kappa\left(\sum_{k=1}^{K} c_{mk}\boldsymbol{\mu}_k + \frac{1}{\sqrt{\boldsymbol{W}}}\right)}{2\lambda} \quad = \quad \boldsymbol{\eta}_m \tag{6.4}$$

If we differentiate with respect to λ and solve we see that $\boldsymbol{\eta}'_m \boldsymbol{\eta}_m = 1$ or that $||\boldsymbol{\eta}'_m \boldsymbol{\eta}_m|| = 1$. Substituting this into Equation 6.4 we have,

$$\frac{\kappa}{2\lambda}\left(\left(\sum_{k=1}^{K} c_{mk}\boldsymbol{\mu}_k + \frac{1}{\sqrt{W}}\right)'\left(\sum_{k=1}^{K} c_{mk}\boldsymbol{\mu}_k + \frac{1}{\sqrt{W}}\right)\right)^{1/2} = 1$$

$$\frac{\kappa||\sum_{k=1}^{K} c_{mk}\boldsymbol{\mu}_k + \frac{1}{\sqrt{W}}||}{2} = \lambda$$

Doing a final substitution we have

$$\boldsymbol{\eta}^*_m = \frac{\sum_{k=1}^{K} c_{mk}\boldsymbol{\mu}_k + \frac{1}{\sqrt{W}}}{||\sum_{k=1}^{K} c_{mk}\boldsymbol{\mu}_k + \frac{1}{\sqrt{W}}||}$$

Update for $q(\boldsymbol{\mu})_k$

Following a very similar set of derivations, the update step for $\boldsymbol{\mu}_k$ is

$$\boldsymbol{\mu}^*_k = \frac{\sum_{i=1}^{18}\sum_{j=1}^{D_i} r_{ijk}\boldsymbol{y}^*_{ij} + \sum_{m=1}^{M} c_{mk}\boldsymbol{\eta}^*_m}{||\sum_{i=1}^{18}\sum_{j=1}^{D_i} r_{ijk}\boldsymbol{y}^*_{ij} + \sum_{m=1}^{M} c_{mk}\boldsymbol{\eta}^*_m||}$$

Completing updates for $q(\boldsymbol{\sigma})_k$ and $q(\boldsymbol{\tau})_{ij}$

Given the forms $\mathrm{E}[\log \beta_m] = \Psi(\phi_m) - \Psi(\sum_{m=1}^{M} \phi_m)$ and $\mathrm{E}[\log \pi_{ik}] = \Psi(\gamma_{ik}) - \Psi(\sum_{k=1}^{K} \gamma_{ik})$ where $\Psi(\cdot)$ is the Digamma function.

Update for q($\boldsymbol{\alpha}$)

A closed form update for the $\boldsymbol{\alpha}$ parameters is unavailable. So we use the Newton-Raphson algorithm outlined in Minka (2000) and Blei, Ng, and Jordan (2003).