Lessons from the Ottoman Harem on Culture, Religion, and Wars

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I. Introduction

What determines war and peace? And how important have religion, ethnicity, and state ideology been for conflict historically? In a variety of forms and contexts, these two questions have long intrigued political scientists and economists alike.

The conventional studies of conflict and war overwhelmingly, if not solely, emphasize differences between social groups.[1] This is primarily driven by the view that religion and ethnicity are two fundamental components of "culture capital," the differences in which can produce a wholesale "clash of civilizations." According to the "club theory," religious and ethnic norms persist and are accentuated because they help maintain adherence and loyalty to different faiths and ideologies.[2] Taking this perspective, then, religiously motivated wars are primarily about societies and not their rulers.[3]

Political leaders' motives for war and peace have been studied quite extensively in more contemporary political economy contexts.[4] However, the degree

[1] We know fairly well that differences of religion have been important for conflict. As Richardson (1960) has shown, differences of Christianity and Islam have been causes of wars and, to a weaker extent, denominational differences within Christianity were responsible for violent conflicts. Similarly, Wilkinson (1980) has claimed that the likelihood of violent conflicts rises as differences between groups in language, religion, race, and cultural style increase.

[2] The culture capital view of religion has been advocated by, among others, Huntington (1996), Landes (1998), and Inglehart and Baker (2000). For the "club theory" of religion, see, e.g., Iannaccone (1992) and Berman (2000).

[3] Nevertheless, there is a nascent but burgeoning subfield of development economics and growth that has documented the role of leadership in economic performance and political stability (e.g., Jones and Olken 2005, 2007).

[4] Among the more notable papers in this strand, see, e.g., Hess and Orphanides (1995, 2001) and Glaeser (2005, 2006).

to which rulers themselves are driven by religious motives or the extent to which their own identities and cultural ties influence the patterns of international war has never been examined. A serious impediment for such an investigation has been the difficulty to observe variations in the rulers' ethnic or religious identities independently of those of their own societies at large.

In a related vein, there exists a strand within economics that promotes the notion that "culture matters." It is primarily on this basis that the channels through which cultural beliefs, views, and traits are passed from one generation to the next have also been of interest to economists.[5] Among the recent but influential papers in the economics literature on the intergenerational transmission of cultural traits, a salient example is provided by Fernandez, Fogli, and Olivetti (2004), who argue that cultural traits or attitudes are transferred from mothers to sons.[6]

Ottoman history is relevant here for three reasons. First, the empire had a profound and lasting impact in Europe, the Middle East, and North Africa, especially during the apogee of its power between the fifteenth and the seventeenth centuries. Most of the Balkans and eastern Europe remained under Ottoman imperial rule for centuries, and many countries there today reflect the remnants of various institutional features inherited from the Ottomans. Indeed, some of the fundamental contemporary political problems of the Middle East and the Balkans are, at least in part, attributed to the empire's rapid disintegration during the late nineteenth and early twentieth centuries (MacMillan 2001).

Second, some historians share the view that the Ottomans were motivated by the *Gaza ideology*, at least during the empire's early era running through the

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[5] There is also an active strand in economics that emphasizes religion, social norms, and culture as important factors in individual behavior and social organization. The main focus of some papers is religion and culture in general (e.g., Iannaccone 1992; Temin 1997; Barro and McCleary 2003, 2005; Guiso, Sapienza, and Zingales 2006; Glaeser and Sacerdote 2008; Spolaore and Wacziarg 2009). Other papers in this line emphasize how individual behavior and the evolution of various institutions interact with adherence to a specific religion, such as Judaism, Islam, or different denominations within Christianity (e.g., Greif 1993, 1994, 2006; Kuran 2004, 2005; Botticini and Eckstein 2005, 2007; Abramitzky 2008; Iyigun 2008; Becker and Woessmann 2009).

[6] In particular, Fernandez et al. identify that female labor force participation in the United States rose rapidly in the post–World War II era, in part due to the fact that men were increasingly being brought up in families in which the mother worked (2004). For other relevant contributions in this strand, also see Fernandez and Fogli (2006, 2009) and Fernandez (2007a, 2007b). Using village-level data from India, Beaman et al. (2009) illustrate a similar mechanism at the more aggregate level: they find that exposure to female leaders weakens stereotypes about gender roles and eliminates the negative bias in how female leaders' effectiveness is perceived among male villagers.

end of the sixteenth century. They state Gaza as the reason why the empire steadily looked westward for expansion driven by religious motives. As analyzed by Paul Wittek and noted by Kafadar (1996, 11), "what fueled the energies of the early Ottoman conquerors was essentially their commitment to Gaza, an 'ideology of Holy War' in the name of Islam. Ottoman power was built on that commitment." To the extent that this view accurately describes the Ottomans' imperial predisposition and their geopolitical objectives, it provides a useful yardstick with which we can gauge and quantify the influence of other relevant determinants of conflict and war.

Third, within a fairly swift period of time after its foundation, the empire became a multiethnic and multireligious civilization with many important posts within the military, administrative, and palace hierarchies routinely being held by converts to Islam from the Balkans, the Mediterranean, and the Black Sea.

In this article, I exploit the Ottomans' unique imperial history to examine whether cultural preferences, beliefs, and values persisted intergenerationally between the sultans and their mothers in perpetuating or diverting conflicts and war. Whereas Gaza is put forward as the reason why the Ottomans initiated more conflicts in the West, and why on the eastern fronts, more conflicts were started by its rivals, another—not necessarily mutually exclusive—hypothesis claims that the imperial harem wielded considerable political power in Ottoman affairs. And various historians have suggested that the members of the harem with different ethnic or religious backgrounds often lobbied the sultan to influence the geography of Ottoman conquests (see, e.g., Shaw 1976; Peirce 1993; Goffman 2002; Imber 2002).

Using a comprehensive data set on conflicts and war in the Middle East, Europe, and North Africa between 1400 and 1700, I find that Gaza was important for understanding Ottomans' imperial motives, but it was not sufficient. What mattered almost as much was the sultans' ethnoreligious identities. In particular, due to the fact that Ottoman throne successions were deliberately noninstitutionalized and highly random events, there is a great deal of variation in the ethnic and religious backgrounds of the Ottoman queen mothers. On this basis, one can establish that, while Ottoman conquests were predominantly in the West until the mid-1500s, the ethnic background of the Valide Sultan (queen mother) was an important and independent determinant of whether the empire engaged in military conquests in Europe versus North Africa or the Middle East. Depending on the empirical specification, the reign of a sultan with a European maternal ethnic background was enough to offset more than 70% of the empire's western orientation in imperial conquests. In contrast, the sultans having a European matrilineal descent mostly had no dis-

cernible influence on the empire's Eastern conflicts, while a Muslim matrilineal genealogy typically boosted Ottomans' military ventures in Europe.

I obtain these results using cross-sectional data covering the reigns of 31 sultans from 1400 to 1909 as well as repeated cross-sectional data with annual observations and lagged dependent-variable controls spanning the reigns of 28 sultans between 1400 and 1851.[7] Regardless of the estimation method employed or the time span covered, the empirical estimates generally show that mothers of European descent suppressed Ottomans' European military involvements, whereas those of Muslim descent typically spurred them.

It is difficult, if not impossible, to discern how general these results are. But, at some level, they are a testament to the deep roots of ethnic and religious identities. That is because conversions to Islam, even and particularly among the elite of the harem hierarchy who had influence on Ottoman policy making, seem not to have been enough to maintain loyalty to the "holy cause." The ethnoreligious identities of the sultans' inner circles played a significant and independent role in subverting the imperial ambitions of the empire toward the Middle East and North Africa. It is on this basis that one can account for the distinct geographical patterns of and shifts in the Ottomans' history of imperial conquest. This is also why the findings below relate to development economics: ethnic and religious polarization is an important determinant of civil as well as interstate conflicts, with the latter having significant adverse effects on long-run economic growth. The findings below suggest that the intergenerational transmission of underlying ethnic and religious identities might be strong enough to have persisted and perpetuated over generations, even when individuals—voluntarily or involuntarily—converted to official or state religions.

The idea that cultural preferences, beliefs, and values may persist intergenerationally—and that they may do so on the basis of motives beyond pecuniary cost-and-benefit calculations—has solid roots in economic theory, political science, and psychology. The literature on the economics of cultural transmission, in particular, provides the foundation for the empirical specifications and interpretations below. For example, Bisin and Verdier (2001) argue that children's preferences are acquired from their parents through a process of adaptation and imitation, whereby parents' efforts to indoctrinate their offspring depend on the social and cultural environment. If family and society are closer substitutes in the transmission of cultural values, parents socialize with their children more intensely when the traits they wish to impart

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[7] At the risk of abusing the correct terminology a bit, I economize on the language in what follows and refer to the latter data set as the time-series data.

on their offspring are common only to the minority. According to Bisin and Verdier, parents evaluate their children's actions from their own preference perspective. Hence, a mother always attempts to socialize her children according to her own cultural preferences.[8] Such considerations seem to have been in play within the Ottoman harem (see, e.g., Shaw 1976; Peirce 1993; Goffman 2002; Imber 2002). Sections II.B and II.C below articulate this point and the relevance of Ottoman royal custom and norms for the empirical specifications that lie ahead.

In this vein, the role of women in Muslim civilizations in general and the Ottoman Empire in particular has been—and continues to be—extensively debated. Inalcik (1973), Shaw (1976), and Peirce (1993) detail the power of imperial women in the Ottoman harem. The empirical analyses below lend some credence to the view that women—in this case, the queen mothers in particular—had influence and power in decision making in an inherently Islamic and powerful empire. All the same, it is important to qualify the channel through which the Ottoman royal women might have had a bearing on Ottoman political and military actions. As I demonstrate below, I find some evidence that the harem politics played less of a role in influencing the sultans in state matters but that, more likely, the sultans acted cognizant of their matrilineal legacies. In this, my findings are more in line with a channel of cultural transmission between the Valide Sultans and their ruling sons.

The remainder of this article is organized as follows: in the next section, I provide the relevant historical background. In Section III, I present the baseline findings as well as a variety of alternative specifications and robustness checks. And, in Section IV, I conclude.

II. Historical Background

A. The Ottoman Empire and Its Conquests

The Ottoman Empire's roots date back to a feudality (*beylik*) founded by Osman I around the Anatolian city of Eskişehir in 1299. With the exception of an interregnum period between 1402 and 1413, which began when the empire collapsed after Tamerlane decimated the Ottoman army, the empire

[8] Doepke and Zilibotti (2008) address a related topic. Their main point is that the intergenerational transmission of cultural traits, such as thrift, patience, and a work ethic, accounts for the evolution of the social infrastructure from which the Industrial Revolution sprang. There are also some analytical parallels between the work by Benabou and Tirole (2006) and the implicit mechanisms through which the maternal cultural lineage of the Ottoman sultans might have factored in their military actions. Theirs is a model in which personal identities are shaped endogenously and individuals develop psychological mechanisms—such as dignity and taboos—to avoid cognitive dissonance related to their "self-worth." An important feature of this model is that, when individuals are uncertain about their own deep values, they turn to their past choices to ascertain "who they are."

grew fairly steadily and rapidly during the fourteenth and fifteenth centuries. According to standard historiography, the Ottomans' era of political and military dominance covers the period between its conquest of Constantinople (Istanbul) in 1453 and the signing of the Treaty of Karlowitz in 1699.[9]

The Ottomans' patterns of conquest reflect the empire's westward orientation from its foundation running through the reign of Beyazid II, later giving way to more frequent conquests in the Middle East and North Africa in much of the sixteenth century, during the reigns of Selim I (the Grim) and Süleyman I (the Magnificent). Even as late as 1500, the Ottomans controlled only parts of Asia Minor in the east, although they had full sovereignty in all of the Balkans and a significant chunk of southeastern Europe too. Within another century, however, the Ottomans had primarily turned eastward for imperial expansion. All of the Arabian peninsula and most of North Africa—with the notable exception of the northwestern coastal regions remaining under the control of the Kingdom of Morocco—were under Ottoman rule by 1600. After a long period of stagnation starting with the Treaty of Karlowitz in 1699, the empire was on its steady sociopolitical decline and geographic retreat in the nineteenth century, with its disintegration culminating in the early twentieth century.[10]

B. The Imperial Harem and the Queen Mother

The imperial harem (*harem-i hümayûn*) was the private quarters of the Ottoman sultan (Peirce 1993, 5–7, 17, 24). This inner sanctum of the harem included the residence of the sultan's wives and concubines as well as his imperial offspring.

While the institutional powers of the queen mother, the Valide Sultan, were solidified with the establishment of the inner sanctum of the imperial harem in the mid-sixteenth century, she exerted influence over the eventual sultan long before that.[11] As Peirce (1993, 24) notes:

[9] With this treaty, Ottomans ceded most of Hungary, Transylvania, and Slavonia to Austria, Podolia to Poland, and most of Dalmatia to Venice. According to Shaw (1976, 224), the agreement marked the Ottomans' transition from the "offensive to the defensive."

[10] For detailed references on the history of the Ottoman Empire, see Inalcik (1973), Karpat (1974), Shaw (1976), and Kinross (1979).

[11] Throughout the middle of the sixteenth century, the imperial harem consisted only of an administrative quarter that was inhabited by males, including the sultan himself and the top echelons of the palace hierarchy. Toward the end of the century, however, when another private quarter to house the immediate family of the sultans was established, it too began to be called the imperial harem. The move of the family harem from the old palace to the new one and its incorporation into the imperial harem, where the empire's administration functioned, began to occur during the reign of Sultan Süleyman. His (only) wife Hurrem Sultan (a.k.a. Roxelana, her given, preconversion name) had a strong sway and influence on the sultan and was thus able to convince him that she and the rest of the impe-

From the middle of the fifteenth century, and possibly earlier, when a prince left the capital for his provincial governorate, he was accompanied by his mother, whose role was to preside over the prince's domestic household and perform her duty of "training and supervision" alongside the prince's tutor. But when the queen mother emerged as an institutionally powerful individual toward the end of the sixteenth century, there were two generations of "political mothers" related to the single politically active male of the dynasty, the sultan. . . . With the lapse of the princely governorate, the entire royal family was united in the capital under one roof, rather than, as previously, dispersed throughout the royal domain. There was now only one royal household, over which the senior woman, the sultan's mother, naturally took charge.

Indeed, the Ottoman polity provided the Valide Sultans both de facto and de jure powers: the former due to the fact that there was a single royal household, and the latter because the empire was considered the personal domain of the dynastic family, thereby imbuing important women within the dynastic household explicit political authority.[12]

Regardless of how the Ottoman harem evolved as an institution over time, however, the key observation is that the princes' mothers were primarily responsible for their upbringing. And it is the royal mothers who had the most direct and sustained contact with the future Ottoman sultans. Imber (2002, 90) states:

From the moment of his birth, every son of a prince or sultan was eligible for the throne, and so became a political rival to his brothers. Princes did not, therefore, grow up together. Instead, each mother raised her son separately and when, at the age of

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rial family should live with Süleyman in the new palace. After the move was completed, "the sultan became increasingly a sedentary palace ruler, the members of his family, heretofore scattered among provincial capitals, were gradually relieved of their public duties and gathered into the imperial capital. By the end of the sixteenth century, no member of the royal family—male or female—left the capital, with the exception of the sultan himself" (Peirce 1993, 119).

[12] Peirce (1993, 6, 7) describes in more detail how the harem hierarchy was typically controlled by the queen mother, Valide Sultan: "The imperial harem was much like the household harem, only much more extensive and with a more highly articulated structure. . . . The larger the household, the more articulated the power structure of the harem." Invariably, but more so after the sixteenth century, the harem hierarchy functioned under the control of the queen mother, Valide Sultan. More to the point, her influence transcended the harem boundaries because the empire itself was accepted as the personal domain of the royal family. For example, "Women of superior status in this female [harem] society, the matriarchal elders, had considerable authority not only over other women but also over younger males in the family, for the harem was also the setting for the private life of men. . . . The authority enjoyed by the female elders transcended, in both its sources and its effects, the bounds of the individual family. In a polity such as the Ottomans, where the empire was considered the personal domain of the dynastic family, it was natural that important women within the dynastic household—in particular, the mother of the reigning sultan—would assume legitimate roles of authority outside the royal household." That Ottoman imperial wives and mothers played an influential role in shaping, directly or indirectly, Ottoman administration and practices is discussed in other sources as well. See, e.g., Shaw (1976, 24) and Goffman (2002, 124–25). For further details, see also Iyigun (forthcoming).

ten, eleven or twelve, the sultan, as was customary appointed him governor of a province, his mother accompanied him to his new post and became his moral guardian. In this way, each mother became a senior figure in the household that formed around her son in the provincial posting, and his sponsor in the contest for the throne that would inevitably follow the death of the father.

Combining these historical facts with Bisin and Verdier's cultural transmission model, according to which a mother attempts to socialize her children according to her own cultural preferences and loyalties, I hypothesize that Ottoman sultans with European ethnic matrilineal roots were, ceteris paribus, less likely to undertake military actions in eastern Europe (presumably because a Christian background reduced the perceived premium of a holy war against Christians).

C. Successions, Sultans, and Matrilineal Genealogies

It is important to establish next that Ottoman throne successions were deliberately noninstitutionalized and highly random events. The only established rules were *unigeniture* and, starting around the 1450s, *infracticide* (Inalcik 1973).[13] On this point, Goffman (2002, 38) states, "[When one sultan died], one of his sons, rather than his many brothers and sons, succeeded him. . . . The road toward unigeniture remained rocky, its institutionalization a matter of luck as well as strategy. Beyazid, for example, probably was able to eliminate his competent elder brother Yakub with ease because it was Beyazid who in 1389 was on the battlefield at Kosovo when his father fell. . . . Yakub, meanwhile, had the misfortune to be far away in Anatolia." Peirce (1993, 21) makes this point even more succinctly when she declares that "the history of Turkish states, the Ottomans included, demonstrates a number of options for succession, none of them regarded as illegitimate or unconstitutional. . . . However, the prevailing tendency in most Turkish states was to avoid restrictions on eligibility and to regard all males as having a claim to eligibility for succession. In theory, he will of God, who had bestowed sovereignty on the dynastic family, would determine in each generation which of its scions should emerge victorious."

Imber (2002, 98) goes a step further to ascribe the resilience of the Ottoman empire to its two principles of succession: "The first, which seems to date from the earliest days of Ottoman rule, was that Ottoman territory was indivisible. The sons of Beyazid fought each other to the death rather than split up the lands that remained to them after Timur's victory. The second principle

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[13] For more details on the Ottoman succession struggles between 1300 and 1650, also see Imber (2002, 96–115).

was that none of the sultan's heirs enjoyed primacy in the succession. The sultanate passed to whichever one of them could eliminate the competition. . . . Ottoman subjects were, it seems, prepared to accept as ruler almost any legitimate heir to an Ottoman sultan, without regard to any order of precedence."

An essential observation for our pursuit is that the royal offspring were predominantly born to concubines who were themselves slaves captured in various non-Muslim domains and converted to Islam. Imber (2002, 89) notes, for instance, that "throughout its history, the Ottoman dynasty continued to reproduce through slaves, but between the fourteenth and early sixteenth centuries it was also the custom to restrict each consort's reproductive life to a single son. Once she had born the sultan a male heir, she never again entered his bed. It was, it seems, the politics of succession that determined this practice."

Table 1 lists a genealogical map of all Ottoman sultans between 1400 and 1909. These genealogies, more or less, mirror Ottomans' military conquests and territorial gains. In the 5 centuries on which we focus below, the empire had 31 sultans. Of those, five were Turkish, four were Venetian, four others were French, and the rest were Serbian (three), Greek (three), Polish (two), Albanian (two), Bosnian (two), Russian (two), Romanian, Bulgarian, Genoese, and Circassian. Some of these genealogical links are debated and contested, as there are various claims about the maternal ethnic ancestors of some of these sultans. For instance, an alternative claim about the maternal genealogy of Mehmed II is that he had a Serbian mother instead of a Turkish one; that of Beyazid II is attributed to Serbian or French in some sources, instead of Albanian. A second hypothesis for the ancestry of Süleyman I involves a mother of European descent rather than a Turkish/Crimean one. In what follows, I adhere to the primary genealogical classification, although, later on, I discuss how alternative classifications affect the main findings. As a potentially valuable reference, the last column of table 1 lists the years when the reigns of the queen mother and her son overlapped.

From the table, we see that six of the Ottoman sultans—roughly 19% of the total 31—had Muslim matrilineal descent, with five sultans who reigned in the fifteenth and sixteenth centuries possessing Turkish heritages and one other who reigned in the late nineteenth century being of Circassian origin. In contrast, there were 23 sultans—about three-quarters of the total—who had European backgrounds, with 12 of those (about 40% of the total) drawing from a Balkan matrilineal heritage. And while sultans with Turkish genealogies were clustered early on during the empire's rise in the fifteenth century, those with European maternal origins were spread more uniformly,

TABLE 1

OTTOMAN SULTANS AND THEIR GENEALOGICAL LINKS, 1400–1909

Name	Reign	Mother's Name	Genealogy	Overlap*
Beyazid I	1389–1401	Gülçiçek Hatun	Greek	Unknown
Mehmed I	1413–21	Devlet Hatun	Turkish	Unknown
Murad II	1421–44, 1446–51	Emine Hatun	Turkish	1421–49
Mehmed II	1444–46, 1451–81	Hüma Hatun	Turkish†	Unknown
Beyazid II	1481–1512	I. Gülbahar Hatun	Albanian†	Unknown
Selim I	1512–20	II. Gülbahar Hatun	Turkish†	Unknown
Süleyman I	1520–66	Ayşe Hafsa Sultan	Turkish†	1520–34
Selim II	1566–74	Hürrem Sultan	Polish‡	Unknown
Murad III	1574–95	Nurbanu Sultan	Venetian†,‡	1574–83
Mehmed III	1595–1603	Safiye Sultan	Venetian	1595–1603
Ahmed I	1603–17	Handan Sultan	Greek	1603–5
Mustafa I	1617–18, 1622–23	?	Albanian	Unknown
Osman II	1618–22	Mahfiruz H. S.	Serbian	1618–20
Murad IV	1623–40	Kösem Sultan	Bosnian	1623–40
İbrahim I	1640–48	Kösem Sultan	Bosnian	1640–48
Mehmed IV	1648–87	Turhan Sultan	Russian	1648–82
Süleyman II	1687–91	Saliha D. Hatun	Serbian	1687–89
Ahmed II	1691–95	Hatice Muazzez S.	Polish‡	Unknown
Mustafa II	1695–1703	Emetullah R. G. S.	Venetian	1695–1703
Ahmet III	1703–30	Emetullah R. G. S.	Venetian	1703–15
Mahmut I	1730–54	Saliha Sultan	Greek	1730–39
Osman III	1754–57	Şehsuvar Sultan	Serbian	1754–56
Mustafa III	1757–74	Mihrişah Sultan	French	Unknown
Abdülhamit I	1774–89	Rabia Sermi S.	French	Unknown
Selim III	1789–1807	Mihrişah Valide S.	Genoese	1789–1805
Mustafa IV	1807–8	Ayşe Seniyep. S.	Bulgarian	1807–8
Mahmut II	1808–39	Nakşidil Sultan	French	1808–17
Abdülmecit	1839–61	Bezmialem Sultan	Russian	1839–53
Abdülaziz	1861–76	Pertevniyal Sultan	Romanian	1861–76
Murat V	1876	Şevkefsa Sultan	French	1876
Abdülhamit II	1876–1909	Tirimüjgan Sultan	Circassian	Unknown

Sources. Shaw (1976), Peirce (1993), Turkboard (http://www.turkboard.com/), and Turk Vikipedi.
Note. Question mark indicates that the mother's name is uncertain.
* Period of each sultan's reign when both the sultan himself and his mother, the Valide Sultan, were alive. "Unknown" denotes an unknown interval of mother-son overlap in which case no period of overlap is assumed in the empirical estimates.
† Alternative theories exist regarding maternal genealogy.
‡ Of Jewish descent.

covering the fifteenth, sixteenth, seventeenth, and nineteenth centuries by a varying extent and spanning the eighteenth century entirely.

If the imperial harem exerted a significant amount of political and familial influence in Ottoman affairs and the Valide Sultan, whose genealogical background varied, was the pinnacle of its hierarchy, a natural question to ask is whether and to what extent the political and familial influence of the imperial harem played a role in Ottoman conquests. In fact, even without the Ottoman harem influencing political and military affairs, the sultans themselves could have been impartial to their ethnic and genealogical backgrounds in deciding

Ottoman military plans. All of this was playing out, of course, against the backdrop of the Gaza ideology defining the imperial objective of the empire from its foundation.

III. Empirical Analysis

A. Data Sources

The primary source of the empirical work is the Conflict Catalog being constructed by Brecke (1999b). It is a comprehensive data set on violent conflicts in all regions of the world between 1400 and the present. It contains a listing of all recorded violent conflicts with a Richardson's magnitude 1.5 or higher that occurred during the relevant time span on five continents.[14] While the catalog is still under construction, it is virtually complete for Europe, North Africa, and the Near East. It is this portion of the catalog that I rely on below.

For each conflict recorded in the catalog, the primary information covers (i) the number and identities of the parties involved in the conflict, (ii) the common name for the confrontation (if it exists), and (iii) where and when the conflict took place. On the basis of these data, there also exists derivative information on the duration of the conflict and the number of fatalities, which is available for less than a third of the sample. Supplementary data come from a variety of sources: for population measures, I use the estimates by McEvedy and Jones (1978), and, for genealogical background data, I rely on Peirce (1993) and Turkboard (http://www.turkboard.com/).

Using these sources, I produced three alternative data sets: for my baseline specifications, I generated cross-sectional data with the reign of each of the 31 sultans between 1400 and 1909 representing one observation. As an alternative to the cross-sectional work, I also compiled 288 annual observations between 1413 and 1700.[15] And for a more comprehensive alternative, I extended the time-series coverage through 1851, spanning 438 years and the reigns of 28 Ottoman sultans.

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[14] Brecke (1999a, 1999b) borrows his definition for violent conflict from Cioffi-Revilla (1996): "An occurrence of purposive and lethal violence among 2+ social groups pursuing conflicting political goals that results in fatalities, with at least one belligerent group organized under the command of authoritative leadership. The state does not have to be an actor. Data can include massacres of unarmed civilians or territorial conflicts between warlords." Richardson's index corresponds to 32 or more deaths (log32 = 1.5), and the five continents covered are all those that are inhabitable (i.e., Europe, Asia, the Americas, Australia, and Africa).

[15] Although the data series starts in 1400, I exclude the years 1402–12 due to the Ottomans' interregnum, which covered that time period (see sec. II.B above). But including this disruption in Ottoman reign in the time-series estimates does not qualitatively affect my key findings.

B. Descriptive Statistics

Table 2 shows the summary statistics for the cross-sectional data. On average, there were close to 4.5 Ottoman-versus-European wars during the reign of each sultan, whereas there were about 2.5 wars in which Ottomans engaged other rivals. At the same time, Ottomans' European engagements exhibited much higher variance. On a per-year-of-reign basis, there was roughly a quarter of a European-Ottoman war versus about a fifth of Ottoman conflicts against others. Three-quarters of the sample of 31 sultans had mothers of European descent, whereas about 19% had Muslim mothers, and 6% (two sultans) had mothers of Russian descent, with the latter accounting for the complementary category of "neither European nor Muslim." The mothers of the 31 sultans were alive for roughly 70% of their sons' rule. And the average population level of the Ottoman territories was 21 million during the reign of a representative sultan, whereas that of the continental European region was roughly 134 million. As the data for European and Ottoman population levels suggest, on average, 51% of each sultan's total wars were against European foes when his mother had European lineage. That is 16% higher for sultans whose mothers were of Muslim lineage. Moreover, not only does the ratio of European to total wars exhibit less variance for sultans with Muslim matrilineal heritage, but the upper and lower bounds of the support for the 95% confidence intervals are higher for such sultans.[16]

The top panel of table 3 presents the summary statistics and the correlation matrices for the baseline time-series data. There are various interesting facts to highlight here too. First, there was roughly one Ottoman military engagement with Europeans every 3 years, while there was an extra-European one, including domestic uprisings, every 5 years. The 19 Ottoman sultans who reigned over the empire between 1400 and 1700 ascended the throne around age 22 and remained at the helm for an average of about 14 years. We confirm that Ottoman rulers were predominantly born to concubines who were slaves of mostly eastern European descent: as indicated by the averages for European and Ottoman population levels, the empire was under the rule of a sultan with a European matrilineal descent for roughly 127 years, in contrast to the 115 years when it was ruled by a sultan with a Turkish maternal genealogical background.

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[16] The data I am referring to are as follows: there were 23 sultans with European mothers and six sultans with Muslim mothers. The mean ratio of Europeanwars/(Europeanwars + extra-Europeanwars) for sultans with European mothers was .503, whereas that for sultans with Muslim moms was .674. The 95% confidence intervals for the two groups were [.347, .659] and [.385, .963], respectively.

TABLE 2
DESCRIPTIVE STATISTICS AND THE CORRELATION MATRIX: CROSS SECTION

	Mean	SD	Correlation Matrix									
			EU W	Ex-EU	EU M	Mus M	Rgn M Al	Asc Age	Rgn L	Asc Yr	Asc Cent	Ott P
European wars	4.39	4.96	1	...	...	...	...	...	...	...	...	...
Extra-European wars	2.45	2.77	.668	1	...	...	...	...	...	...	...	...
European mom	.742	.445	-.361	-.361	1	...	...	...	...	...	...	...
Muslim mom	.194	.402	.443	.306	-.812	1	...	...	...	...	...	...
Reign with mom alive	.710	.461	.071	.115	.165	-.226	1	...	...	...	...	...
Ascension age	29.6	12.0	-.489	-.329	.342	-.109	-.431	1	...	...	...	...
Reign length	16.5	12.1	.779	.739	-.458	.228	.112	-.421	1	...	...	...
Ascension year	1655.2	142.3	-.334	-.234	.435	-.599	.241	.195	-.182	1	...	...
Ascension century	3.10	1.35	-.314	-.184	.388	-.589	.261	.105	-.156	.974	1	...
Ottoman population	20.8	7.93	-.422	-.212	.563	-.641	.419	-.052	-.312	.749	.726	1
European population	133.5	72.3	-.157	-.188	.238	-.389	.110	.089	-.104	.847	.833	.406

Note. $N = 31$. Population data are in millions.

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TABLE 3
DESCRIPTIVE STATISTICS AND THE CORRELATION MATRIX: 1400–1700 AND 1400–1850

	Mean	SD	Correlation Matrix								
			EU W	Ex-EU	Agg EU	Agg Ex-EU	Mus M	EU M	Rgn L	Asc Age	Ott P
1400–1700:*											
European wars	.310	.585	1	…	…	…	…	…	…	…	…
Extra-European wars	.170	.426	.056	1	…	…	…	…	…	…	…
Aggregate European wars	1.37	1.10	.529	.043	1	…	…	…	…	…	…
Aggregate extra-European wars	.507	.641	-.064	.589	-.051	1	…	…	…	…	…
Muslim mom	.383	.487	.169	.072	.239	-.046	1	…	…	…	…
European mom	.423	.495	-.085	.007	-.052	.123	-.676	1	…	…	…
Reign length	14.0	11.2	.067	-.069	.077	-.134	.273	-.272	1	…	…
Ascension age	22.2	11.7	.044	.038	.078	-.067	.160	.306	-.027	1	…
Ottoman population	16.5	9.00	-.092	.031	-.065	.119	-.573	.459	.017	-.173	1
European population	89.7	16.8	-.094	.039	-.093	.086	-.519	.403	.078	-.073	.951
1400–1850:†											
European wars	.262	.552	1	…	…	…	…	…	…	…	…
Extra-European wars	.158	.411	.053	1	…	…	…	…	…	…	…
Aggregate European wars	1.03	1.08	.557	.055	1	…	…	…	…	…	…
Aggregate extra-European wars	.420	.600	-.044	.607	.041	1	…	…	…	…	…
Muslim mom	.256	.437	.183	.073	.367	.049	1	…	…	…	…
European mom	.591	.492	-.162	-.011	-.268	.002	-.705	1	…	…	…
Reign length	12.8	10.1	.078	-.002	.092	-.072	.295	-.263	1	…	…
Ascension age	25.1	11.8	.071	-.010	-.155	-.103	-.025	.433	-.117	1	…
Ottoman population	19.0	8.15	-.123	.005	-.245	.004	-.651	.548	-.075	.022	1
European population	116.6	47.0	-.046	-.019	-.327	-.174	-.474	.397	-.034	.145	.608

Note. Population data are in millions.
* $N = 300$.
† $N = 450$.

To give us an overall sense of Ottomans' rivalries in Europe, there were roughly 35 confrontations of Ottomans with the Hapsburgs that took place between 1413 and 1699, 11 in Poland between 1484 and 1699, and 11 others with Venice between 1416 and 1687. Elsewhere, Ottomans' chief nemeses were the Iranian Safavids, with whom there were 11 confrontations between 1463 and 1638. There were also five confrontations with the Black Sea Cossacks that took place between 1594 and 1674, four each with Mamluks and Muscovy from 1485 through 1700, and three with the Karamans of Anatolia between 1465 and 1474.

Turning to the correlation matrices, we note that the Ottoman military engagements in Europe were more likely when (*a*) the mother of the sultan had a Muslim lineage, (*b*) the sultan ascended the throne at a younger age, and (*c*) his tenure came later in time. Extra-European confrontations were only weakly linked to the maternal genealogy of the sultan. Ottomans' confrontations in Europe and elsewhere decline over the 3 centuries.

The main difference between the statistics shown in the two panels of table 3 stems from the fact that Ottomans' violent confrontations with Europeans as well as extra-Europeans is lower in the bottom panel, reflecting the higher propensity of such conflicts occurring in the earlier time intervals. As well, the fraction of the time when the empire was ruled by a sultan with a European (Muslim) matrilineal descent was much higher (lower) in the extended time series.

C. Baseline Empirical Specifications

With the cross-sectional data, I obtained the impact of ethnic identities on Ottoman military conquests by estimating this equation:

$$\text{Ottoman wars}_i = \gamma_0 + \gamma_1 \text{European mom}_i + \gamma_2 X_i + \varepsilon_i, \qquad (1)$$

where Ottoman wars$_i$ is one of four alternative dependent variables described below, and European mom$_i$ is a dummy variable for whether sultan i had a European maternal genealogical link. In various alternative empirical specifications using the cross-sectional data, the dependent variable Ottoman wars$_i$ will be (1) the number of newly initiated conflicts between the Ottoman Empire and European powers during sultan i's reign, (2) the count of the newly initiated number of Ottoman conflicts with its non-European foes during i's sultanate, (3) the aggregate number of conflicts the Ottomans had with continental Europeans during i's reign (both those that began during i's tenure and those that began earlier), and (4) the aggregate number of Ottomans' extra-European conflicts.

While the central justification for using 1 and 2 is quite straightforward, that for 3 and 4 is provided by two factors: one, we would like to identify whether the sultans' ethnic backgrounds affected not only the immediate and pending confrontations but also the longer-running feuds. Two, warfare in the medieval and preindustrial eras was a highly seasonal activity, with longer-running hostilities typically coming to a halt during the winter months, only to be picked up again with the onset of warmer weather in the spring. In this sense, all unresolved military confrontations were renewed every year. In any case, if matrilineal genealogical links did matter for the Ottomans' conquest patterns, then we would expect γ_1 to be negative and statistically significant for specifications in which 1 and 3 are the dependent variables. As a corollary, we would expect γ_1 to be positive and statistically significant, or at least, insignificant, for specifications in which 2 and 4 are the dependent variables.

The dependent variables are comprehensive: they include all Ottoman conflicts on record (including naval battles) with their rivals in Europe, the Middle East, and North Africa. Classifying Ottoman confrontations by geographic region can be complicated because of the ambiguities of defining the border of the European continent vis-à-vis Asia (see, e.g., Findlay and O'Rourke 2007, 2). For practical purposes, I divide the Eurasian landmass roughly vertically with reference to Istanbul (the Ottoman capital) and consider Ottomans' involvements to the west of that division to be in Europe and to the east of it to be in Asia (hence, as elsewhere).[17]

In the empirical specifications below, the control variables X_i often include the length of the reign of sultan i, the year of ascension of sultan i, estimates of the average Ottoman and European population levels during i's sultanate, and an indicator variable for each of the 3 centuries during which sultan i ruled. Depending on the parsimony of the empirical specification I employ and various alternative estimates, other control variables in X_i are the age at which the sultans ascended the throne, a dummy variable to denote whether i ruled before or after the Lepanto Sea Battle in 1571, a dummy for whether the sultan's reign overlapped at all with his mother's tenure as Valide Sultan, and the number of years during which the sultan's reign overlapped with his mother's tenure as Valide Sultan (i.e., when the queen mother was alive).

I include in my estimates the year and century when the sultan began to rule because there has been a secular decline in warfare in Europe since the fifteenth

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[17] Accordingly, Ottomans' various Crimean, Muscovy, and Russian engagements are classified as Ottoman conflicts outside Europe, while those with and in Lithuania, Moldavia, and Poland are categorized as Ottoman-European confrontations. I discuss the robustness of my estimates to alternative classification rules in the appendix.

century (see, e.g., Woods and Baltzly 1915; Richardson 1960; Wilkinson 1980; Brecke 1999b; Lagerlöf 2007). I include the dummy for the year of the Lepanto war to examine whether the Ottomans' patterns of military activity were altered after their first decisive defeat against European allied forces in 1571. I control for the age at which the sultan ascended the throne as well as his length of reign to identify whether those had systematic discernible effects on Ottoman military activities. Unlike the time-series regressions, which I discuss immediately below, all explanatory variables in the cross-sectional estimates are sultan specific.

With the two alternative time-series data, I obtained the impact of ethnic identities on Ottoman military conquests by estimating the following equation:

$$\text{Ottoman wars}_t = \lambda_0 + \lambda_1 \text{European mom}_t + \lambda_2 X_t + \varepsilon_t, \qquad (2)$$

where the dependent variable is one of four alternative dependent variables described above (with the exception that it represents the number of conflicts in question at time t during sultan i's tenure), and European mom$_t$ is a dummy variable for whether the sultan at time t had a European maternal genealogical link. All other control variables in these estimates are the time-series analogs of the cross-sectional control variables I just referenced. The only exception is that, in all of the time-series estimates, the lagged dependent variable is included as a control in X_t as well.[18]

Note that, in the time-series estimates, whether the sultan had a European matrilineal link is sultan specific, but it does not exhibit time variation during the reign of a given sultan. This is the case with the year when the sultan ascended the throne as well. In contrast, both the sultan's length of reign and the years of overlap between his reign and his mother's tenure as queen mother are sultan specific and time variant. Other controls, such as the population levels of Europe and Ottoman territories in addition to the year- and century-specific time trends, are time specific.

In what follows, I rely on these three different estimates in turn, each with its own inherent pros and cons. The cross-sectional estimates rely on limited data, with the number of observations bound by the 31 sultans who ruled the empire between 1400 and 1909. But they also represent the most parsimonious cut without compromising much on informational content. The benefit

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[18] To confirm the validity of this empirical specification using annual conflict data, I employed the Dickey-Fuller test for cointegration. At a significance level of 1%, I rejected the existence of a unit root in all four dependent variables. Also, in neither of the main specifications reported below could I reject the null of no autocorrelation using the Durbin-Watson d-statistic.

of the shorter time-series data and estimation is that they cover a period when the Ottoman Empire was mostly on the offensive and expanding its territorial sovereignty. Thus, as I document later on, these data correspond to a period when the empire was for the most part the aggressor, engaging its eastern and western foes pretty much on its own terms. Since we are primarily interested in the conflicts that the Ottomans initiated or instigated, this period takes on special significance. On the down side, this period also covers the least extent of variation in the sultans' ethnic and religious backgrounds, with 19 sultans taking the helm at various points during the 3-century interval. In the alternative, expanded time series, there are nine more sultans. However, the eighteenth and nineteenth centuries also span the period when the empire is in unambiguous decline, and the extent to which its pattern of conflicts reflects its own design is more in dispute. All the same, those estimates would help to provide an alternative set of results addressing our central questions.

D. Benchmark Results

In table 4, I report my baseline cross-sectional results based on equation (1). The dependent variable involves the total number of newly initiated conflicts between the Ottomans and continental Europeans during the reign of a given sultan. The first regression is the most parsimonious, univariate estimate. The indicator for a European matrilineal link comes in with the predicted negative sign and with a statistical significance at the 5% level. What is more telling is that the European matrilineal link dummy alone can explain more than 40% of the variation in Ottomans' European engagements.[19] The next two regressions in columns 2 and 3 add three attributes of the reign of each sultan. Specifically, in column 2, I control for the reign of each sultan because sultans who ruled longer might have engaged the Europeans more often. In column 3, I also include the year and century in which the sultan ascended his throne. In both regressions, the European matrilineal link dummy continues to enter with a negative and statistically significant coefficient, although its magnitude is roughly cut in half from the baseline regression in column 1.

Of the other explanatory variables considered, we see—without much surprise—that reign length does raise the likelihood of a European military engagement. But neither the year nor the century in which the sultan took the helm has any bearing on Ottoman's European confrontations. Table 4, column 4, then includes two demographic variables related to the Ottoman and

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[19] Even when the European matrilineal genealogy variable is added to the regressions last, the fit of the regressions, as measured by R^2, increases by at least 4 percentage points and, at a maximum, by more than 27%.

TABLE 4
CROSS-SECTIONAL RESULTS, 1400–1909: ORDINARY LEAST SQUARES REGRESSIONS

	(1)	(2)	(3)	(4)	(5)	(6)
European mom$_i$	−7.06*	−3.50*	−3.25**	−2.67	−2.91**	−2.52**
	(2.20)	(1.66)	(1.73)	(2.00)	(1.59)	(1.35)
Reign length$_i$	. . .	.257*	.259*	.269*	.239*	.224*
		(.047)	(.050)	(.050)	(.071)	(.066)
Ascension year$_i$	. . .	. . .	.0039	−.0088	.025	.043
			(.015)	(.017)	(.031)	(.031)
Ascension century$_i$	. . .	. . .	−.754	−.852	−2.22	−2.70
			(1.57)	(1.62)	(2.06)	(2.07)
Ottoman population$_i$	. . .	. . .	. . .	.083	−.155	.040
				(.129)	(.214)	(.209)
European population$_i$	. . .	. . .	. . .	.023	.001	−.011
				(.013)	(.020)	(.019)
Ascension age$_i$	. . .	. . .	. . .	. . .	−.137	−.185
					(.111)	(.112)
Mom overlapped dummy$_i$	. . .	. . .	. . .	. . .	1.73	2.11
					(1.72)	(1.39)
Reign with mom alive$_i$	. . .	. . .	. . .	. . .	−.150	−.172
					(.131)	(.125)
Lepanto-war dummy$_i$	. . .	. . .	. . .	. . .	. . .	−7.01*
						(2.42)
R^2	.401	.695	.704	.724	.771	.810

Note. $N = 31$. Heteroskedasticity-corrected, robust errors reported in parentheses. Dependent variable = total number of new Ottoman-European conflicts that were initiated during the sultan's reign. Source for the conflict data: Brecke (1999b). Source for population data: McEvedy and Jones (1978).
* Significant at 5%.
** Significant at 10%.

European territories: the levels of population in continental Europe and territories under Ottoman control. The inclusion of these two controls does render the dummy for a European matrilineal link statistically insignificant, although it still comes in with the right sign and registers a *p*-value of 19%. Column 5 incorporates three more variables related to the reign of sultans and their maternal links: the year in which the sultan took the throne, an indicator of whether the sultan's rule overlapped at all with his mother's life, and the number of years the sultan's rule and the Valide Sultan's life overlapped. With this specification, we are back to a statistically significant and negative European matrilineal effect, with none of the controls apart from the length of reign exerting an influence on Ottomans' European campaigns. Finally, in column 6, I add the dummy for the Lepanto war, which indicates whether *i* ruled before or after the Lepanto Sea Battle in 1571. Doing so retains European matrilineal descent as negative and statistically significant at the 10% level. It also produces two statistically significant variables in the length of reign (positive) and the Lepanto-war dummy (negative). As well, the impact of a European matrilineal descent on Ottomans' military activities is very large: taking

the lowest statistically significant coefficient shown in column 6 and the average of 4.4 European-Ottoman wars per sultan, for example, we infer that European matrilineal descent lowered Ottomans' European conflict propensity by about two-thirds.

Table 5 reports my alternative estimates produced on the basis of equation (2) and the 288-year time-series data. The dependent variable here is the number of newly initiated conflicts between the Ottomans and continental Europeans in year t. I report the ordinary least squares estimates in the first three columns of table 5 and Poisson (negative binomial) regressions in columns 4–6.[20] In all estimates that follow, I also cluster the error terms by the reign of each sultan.

Table 5 columns 1 and 4 present results of the most parsimonious specification, in which only the maternal ethnicity of the sultan, the lagged dependent variable, the European and Ottoman population levels, and time as well as century trends are included. In both columns, the coefficient estimates on the maternal ethnic genealogy of the sultan's mother is negative and statistically significant at the 5% level or higher. This is in favor of the view that the sultans' ethnic backgrounds mattered in Ottoman wars, with a European maternal link offsetting the empire's underlying western imperial orientation. In fact, the impact of European matrilineal descent on Ottoman conflicts is consistent with the cross-sectional estimates shown in table 4 and remarkably large: taking the estimate of $-.21$ in column 1 and the average value of the Ottomans' European wars over the sample period, which was .31, these estimates suggest that a European matrilineal tie reduced the Ottomans' military ventures in Europe (or against them) by close to 70%. The estimate in column 4 generates an even larger decline of about 85%.[21] As for the other control variables in columns 1 and 4, there was a clear, negative, and statistically significant time trend in the Ottomans' European military engagements, which is picked up by both the year and the century of the start of a sultan's reign. In addition, the European population level shows a positive and significant impact on our dependent variable. Since the population levels were rising fairly steadily over this time frame, this is also indicative of some partial offset in the declining time trend of Ottomans' European conflicts.[22]

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[20] Negative binomial regressions are designed primarily for count data that are discreet and have a preponderance of zeros and small values, such as my dependent variables with the time-series data.
[21] The dependent variable in the Poisson regressions is in logs. This implies that the dependent variable drops by .788 when the sultan's mother was of a European ethnic background. Thus, evaluated at the mean of log(.31), this produces a reduction in the Ottomans' European conflicts of roughly .25 in levels, which corresponds to about an 85% drop.
[22] In fact, for the relevant time span, note that the McEvedy and Jones (1978) population estimates are available only for the years 1400, 1500, 1600, and 1700 for the Ottoman territories, and they

TABLE 5
TIME-SERIES RESULTS, 1413–1700

	Ordinary Least Squares Regression			Poisson Regression		
	(1)	(2)	(3)	(4)	(5)	(6)
European mom$_t$	−.210*	−.207**	−.207**	−.788*	−.808*	−.821*
	(.070)	(.115)	(.112)	(.246)	(.385)	(.374)
Ascension year	−.010*	−.011*	−.011*	−.042*	−.044*	−.045*
	(.004)	(.005)	(.005)	(.016)	(.017)	(.018)
Ascension century$_t$	−.295*	−.304*	−.303*	−1.03*	−1.12*	−1.12*
	(.128)	(.113)	(.110)	(.419)	(.399)	(.404)
Ottoman population$_t$	.019	.017	.017	.070**	.063	.060
	(.011)	(.017)	(.020)	(.041)	(.056)	(.069)
European population$_t$	.053*	.057*	.057*	.218*	.238*	.242*
	(.024)	(.026)	(.027)	(.087)	(.093)	(.101)
European wars$_{t−1}$	−.031	−.031	−.031	−.097	−.106	−.106
	(.054)	(.057)	(.058)	(.157)	(.172)	(.173)
Ascension age$_t$	. . .	−.001	−.001	. . .	−.006	−.005
		(.006)	(.006)		(.018)	(.018)
Reign length$_t$	. . .	−.0003	−.0003	. . .	−.004	−.004
		(.004)	(.004)		(.014)	(.014)
Reign with mom alive$_t$	. . .	.009	.009	. . .	−.033	−.036
		(.120)	(.123)		(.364)	(.375)
Lepanto-war dummy$_t$	. . .	. . .	.001	. . .	. . .	.062
			(.156)			(.542)
R^2	.047	.047	.047	. . .	. . .	. . .

Note. $N = 288$. Error terms (in parentheses) clustered by the reign of each of the 19 sultans. Dependent variable = number of new Ottoman-European conflicts that began in a given year between 1413 and 1700. Source for the conflict data: Brecke (1999b). Source for population data: McEvedy and Jones (1978).
* Significant at 5%.
** Significant at 10%.

Table 5 columns 2 and 5 add the age at which the sultans took charge, the cumulative duration of their reigns, as well as the indicator for whether the queen mother is alive in a given year. As can be seen in the two columns, neither of these variables exerts a statistically meaningful impact on the propensity of Ottomans to engage in conflicts with Europeans, although the overlap between a sultan's reign and his mother's life is always negative. The key observation is that the matrilineal background of the sultan still makes a statistical difference. If anything, the magnitude of the impact of European matrilineal descent on lowering the empire's military engagements with Europeans is now somewhat larger.

Finally, table 5 columns 3 and 6 add the dummy variable for the Lepanto Sea Battle in 1571. The Lepanto-war dummy does not come in significantly, but it does not influence the key findings reported in previous columns either.

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include an additional estimate for 1550 for Europe. Thus, the annual population estimates are extrapolated from those four or five observations for the entire period. This, in essence, embeds piecewise-linear time trends in both Ottoman and European population levels. In the appendix, I revisit this issue and discuss the role of these variables in the empirical estimates.

In fact, the inclusion of the Lepanto dummy makes the statistically significant and negative impact of European matrilineal descent on Ottoman-European conflicts even larger.

E. Alternative Specifications and Robustness

The empirical findings above show a pattern of how the ethnic genealogical links of the Ottoman sultans factored in the empire's patterns of conquest and war. In particular, we have seen some support for the idea that, while the empire might have been built on the foundations of a Gaza ideology, targeting Christian Europe in the name of a holy war, either the harem politics or the ethnic identity of the sultan himself was strong enough to negate or propagate the empire's westward orientation for conflict and imperial conquest. That noted, there are various empirical and conceptual issues that need to be dealt with regarding the results we have reviewed thus far.

In table 6, I return to the cross-sectional data in order to run some alternative empirical specifications. For instance, an important issue revolves around the time controls and population estimates that, by construction and data limitations, manifest piecewise-linear time trends. In order to explore the extent to which different time controls could be influencing the empirical specifications, table 6 presents two sets of alternative estimates. In none of the six regressions shown do I include the original time controls for the year and century of the beginning of a reign. In columns 1–4, those two variables are replaced by two dummies: one for the rise of the Ottoman Empire, which takes the value of one during the reigns of sultans who ruled before 1571, and another for its era of decline, which switches to one for the reign of sultans who ruled after 1828.[23] In columns 5 and 6, I remove the year and century variables and use instead a nonlinear time trend (by including year and $year^2$). These results are generally in line with those shown in table 4, although a bit weaker. All European matrilineal descent coefficients enter negatively, and, in three of those specifications, the dummy for European matrilineal genealogy attains statistical significance at the 10% or higher level.[24] In columns 1 and 6, European matrilineal descent is insignificant, but it comes in with p-values of 15% and 11%, respectively.

Next, consider the time-series estimates shown in table 5. As with the cross-sectional estimates, it is possible that the maternal ethnic link variables are

[23] The Ottomans' rise and growth more broadly covers 1299–1683, although their European dominance ends with the Lepanto Sea Battle in 1571. And according to conventional historiography, the era of Ottoman decline covers 1828–1908. For further details, see Shaw (1976).

[24] In the regressions listed in table 6 cols. 3–5, the statistically significant coefficients on the European matrilineal genealogy link attain p-values of 9%, 6%, and 6%, respectively.

TABLE 6
MORE CROSS-SECTIONAL RESULTS, 1400–1909: ORDINARY LEAST SQUARES REGRESSIONS

	(1)	(2)	(3)	(4)	(5)	(6)
European mom$_i$	−2.80	−2.65	−3.72**	−3.78**	−3.39**	−2.51
	(1.87)	(1.97)	(2.10)	(1.85)	(1.68)	(1.48)
Reign length$_i$	.258*	.263*	.249*	.248*	.262*	.232*
	(.048)	(.053)	(.068)	(.063)	(.060)	(.058)
Ottoman rise era$_i$	1.07	.099	−3.69	−5.59	. . .	. . .
	(1.90)	(4.65)	(5.15)	(3.54)		
Ottoman decline era$_i$	.722	2.86	−1.37	−2.80	. . .	. . .
	(1.25)	(3.70)	(3.93)	(3.81)		
Ottoman population$_i$	. . .	−.023	−.294	−.105	. . .	. . .
		(.243)	(.278)	(.272)		
European population$_i$	. . .	−.012	.009	.019	. . .	. . .
		(.019)	(.020)	(.020)		
Ascension age$_i$	. . .	. . .	−.105	−.109	−.076	−.145*
			(.069)	(.070)	(.053)	(.065)
Mom overlapped dummy$_i$	. . .	. . .	2.39	3.04**	1.74	1.95
			(1.52)	(1.58)	(1.64)	(1.30)
Reign with mom alive$_i$	. . .	. . .	−.168	−.177	−.137	−.159
			(.107)	(.109)	(.116)	(.092)
Lepanto-war dummy$_i$	. . .	. . .	. . .	−6.32*	. . .	−6.13*
				(1.97)		(2.32)
Ascension year$_i$	. . .	. . .	. . .	. . .	−.046	.102
					(.099)	(.101)
Ascension year$_i^2$	. . .	. . .	. . .	. . .	.000013	−.00003
					(.00003)	(.00003)
R^2	.700	.704	.764	.799	.749	.791

Note. $N = 31$. Heteroskedasticity-corrected, robust errors reported in parentheses. Dependent variable = total number of new Ottoman-European conflicts that were initiated during the sultan's reign. Source for the conflict data: Brecke (1999b). Source for population data: McEvedy and Jones (1978).
* Significant at 5%.
** Significant at 10%.

picking up a time trend because most sultans had Turkish (hence, Muslim) maternal ties early on and they had non-Turkish and often European genealogical ties later in the sample period. Indeed, as shown in table 1, five of the seven sultans who were in power during the first half of the sample period were of Turkish maternal descent. But it is important to acknowledge in this context that, in all estimates shown in table 5, both the year and the century of the start of a reign yield negative and significant coefficients. Thus, the impact of the maternal histories of the sultans on the patterns of Ottoman war and conflict is in their direct effects that are above and beyond those captured by our two time trends.

Still, it is important to check the role of time trends in our key results derived using time-series data. To that end, I have considered two other approaches. First, I ran a regression similar to the ones I discussed immediately above in which I removed the year and century variables and included indicators for

the rise and decline of the empire instead. I have chosen not to report them in detail because the results were very much in line with those reported above.

Second, using the time-series data, we can explore the extent to which the timing of the reigns of sultans of European matrilineal descent influences our key findings. To be more precise, I have already made note of the fact that mothers of Turkish matrilineal descent were very much front-loaded in the rise and growth stages of the empire and that this was true—albeit to a weaker extent—regarding the reigns of sultans of Muslim lineage. Hence, if the data are consistent with the underlying hypothesis of the article, then removing all time controls (as well as the quasi-artificial variables that are piecewise-linear functions of time) ought to produce coefficients on European and Muslim genealogy that are still significant but also altered in magnitude according to the generally negative net effects of our four time-dependent controls.

Table 7 reports six specifications that explore this point. In the first three columns, the table reports regressions in which Muslim genealogy is the main explanatory variable, and, in the last three, the main explanatory variable is the indicator for a European matrilineal link. All other explanatory variables are the ones shown in table 5, except that the year and the century of the beginning of a reign and the European and Ottoman population levels are excluded. As shown, the exclusion of the time trends, in general, renders neither European nor Muslim genealogy statistically insignificant. In fact, a Muslim matrilineal link continues to exert a significant and positive impact on Ottoman-European conflicts in all three specifications. And, as expected, the magnitude of its role on propagating such conflicts appears generally larger when all of our time-related controls are excluded.[25] The effect of European matrilineal links is also generally robust to the exclusion of our time-related variables, although we do not see coefficients on European genealogy in columns 4–6 of table 7 that are higher in magnitude compared with the regressions listed in the same columns of table 5. An important reason for this is that the negative correlation of Muslim genealogy with our time trends is significantly larger in magnitude than that of the positive correlation of European genealogy with time.[26]

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[25] The article does not include the analog of table 5 with the dummy for Muslim matrilineal heritage as the key explanatory variable instead of the European-mother dummy, although table 7 reports similar specifications using the cross-sectional data. But, for reference, regressions that also include all of our time-related controls produce coefficients on Muslim matrilineal heritage that equal .536, .495, and .500, respectively. Thus, cols. 1 and 2 of table 7 produce coefficients that are larger in magnitude, whereas col. 3 produces one that is smaller.

[26] The correlation of Muslim matrilineal heritage with the year of the start of the sultan's reign is −.38, in contrast with the .24 correlation of having a European matrilineal background with the year when a reign began. The correlation of Muslim matrilineal heritage with the century of the start of a reign is

TABLE 7
ALTERNATIVE TIME-SERIES ESTIMATES, 1413–1700: POISSON REGRESSIONS

	Effect of Muslim Mothers			Effect of European Mothers		
	(1)	(2)	(3)	(4)	(5)	(6)
Muslim mom$_t$	.564*	.568*	.433*	. . .	. . .	. . .
	(.185)	(.176)	(.195)			
European mom$_t$	. . .	. . .	. . .	−.379**	−.398**	−.109
				(.219)	(.243)	(.303)
European wars$_{t-1}$	−.031	−.031	−.036	.010	.007	−.023
	(.178)	(.186)	(.187)	(.184)	(.188)	(.194)
Ascension age$_t$	. . .	−.0025	−.005	. . .	.0065	−.0065
		(.012)	(.014)		(.014)	(.019)
Reign length$_t$	. . .	−.0002	−.001	. . .	.0028	−.00005
		(.011)	(.011)		(.001)	(.010)
Reign with mom alive$_t$	. . .	−.044	−.068	. . .	.013	−.077
		(.283)	(.281)		(.324)	(.309)
Lepanto-war dummy$_t$	. . .	. . .	−.200	. . .	. . .	−.486*
			(.248)			(.283)

Note. $N = 288$. Error terms (in parentheses) clustered by the reign of each of the 19 sultans. Dependent variable = number of all Ottoman-European conflicts that began or continued in a given year between 1413 and 1700. Source for the conflict data: Brecke (1999b). Source for population data: McEvedy and Jones (1978).
* Significant at 5%.
** Significant at 10%.

Recall that we have an alternative variable for Ottomans' European conquests that is the aggregate number of conflicts the Ottomans had with continental Europeans at time t (those that were initiated at time t and those that were ongoing then, although they had begun earlier). Due to the fact that medieval and preindustrial era warfare was highly seasonal, we could examine the extent to which Ottomans' ongoing as well as newly initiated conflicts at time t were affected by the European matrilineal genealogy link.

In table 8, I reestimate the regressions reported in table 5, this time using the number of all longer-running confrontations of Ottomans with the Europeans (those that began at date t, as well as those that began earlier but were continuing at that time). As shown, the European matrilineal genealogy link enters negatively in all regressions, and it is statistically significant in column 3. Moreover, in four other estimates, the coefficient on the European matrilineal genealogy link carries a p-value of 11%. Given that the average number of ongoing Ottoman-European conflicts was roughly 1.4, these estimates correspond to a drop of about 30% in the number of all longer-running confrontations of Ottomans with the Europeans. With this, we have some weak empirical support for the fact that a European genealogical maternal background

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−.40, as opposed to the .27 correlation of European matrilineal heritage with the century of the start of a reign.

TABLE 8
ETHNIC BACKGROUNDS AND OTTOMANS' CUMULATIVE EUROPEAN WARS, 1413–1700

	Ordinary Least Squares Regression			Poisson Regression		
	(1)	(2)	(3)	(4)	(5)	(6)
European mom$_t$	−.213	−.317	−.356**	−.139	−.232	−.238
	(.165)	(.187)	(.184)	(.122)	(.145)	(.149)
Ascension year	−.0037	−.0072	−.0092	.0004	−.0017	−.0021
	(.0079)	(.0086)	(.0092)	(.0058)	(.0071)	(.0077)
Ascension century$_t$	−.612*	−.635*	−.601*	−.451*	−.449*	−.445*
	(.205)	(.214)	(.198)	(.201)	(.220)	(.213)
Ottoman population$_t$	.046*	.057*	.047*	.049*	.056*	.054*
	(.014)	(.017)	(.018)	(.014)	(.014)	(.018)
European population$_t$	.021	.037	.045	−.007*	.0018	.0032
	(.047)	(.050)	(.054)	(.035)	(.042)	(.045)
European wars$_{t-1}$	.625*	.612*	.610*	.370*	.365*	.365*
	(.062)	(.066)	(.066)	(.046)	(.054)	(.055)
Ascension age$_t$	. . .	.0034	.0051	. . .	.0039	.0041
		(.0055)	(.0051)		(.0040)	(.0036)
Reign length$_t$	. . .	−.0006	.0008	. . .	−.0015	−.0013
		(.0032)	(.0039)		(.0036)	(.0041)
Reign with mom alive$_t$	. . .	.167	−.159	. . .	.095	.094
		(.118)	(.122)		(.099)	(.101)
Lepanto-war dummy$_t$	. . .	. . .	.230	. . .	. . .	.033
			(.320)			(.228)
R^2	.503	.506	.507	. . .	. . .	. . .

Note. $N = 288$. Error terms (in parentheses) clustered by the reign of each of the 19 sultans. Dependent variable = number of all Ottoman-European conflicts that began or continued in a given year between 1413 and 1700. Source for the conflict data: Brecke (1999b). Source for population data: McEvedy and Jones (1978).
* Significant at 5%.
** Significant at 10%.

of the sultans primarily influenced the initiation of wars between the Ottomans and Europeans and not necessarily their continuation.

Next, we have the issue of reverse causality. However, the historiography of Ottoman throne successions discussed in Section II.C above allows us to address this issue fairly confidently. As I have already noted in detail, Ottoman throne successions were deliberately noninstitutionalized and highly random events. Ottoman procreation norms, throne successions, and the institutional features of the harem were all designed to ensure competition among all the sultan's brothers and his male offspring for succession. In this, we have a de jure basis for why the Valide Sultans' identities were exogenous to Ottomans' European affairs. Of course, this does not rule out the possibility that Valide Sultans' identities were de facto endogenous.

From this latter perspective, there are two issues that complicate the empirical analyses: one, due to Ottomans' patterns of conquest, which were front-loaded with eastern European and Balkan territorial gains, it is possible that the harem composition began to tilt heavily in favor of a European presence.

That, in turn, could have made it more likely for Ottoman sultans to have a European matrilineal descent. Note, however, that the basic mechanism I advocated above would remain intact in that case, although the explanatory variables would affect Ottoman conquests with long lags.

Specifically, there is one channel through which Ottomans' external confrontations could have influenced the matrilineal background of the sultans:[27] given that each sultan acceded the throne at about age 22, there is a chance that the Ottomans' wars are correlated with their conflicts roughly 22 years earlier. If the Ottomans' harem likely consisted of a larger representation of whomever they were defeating in war, then it is more likely that the mother of a sultan who began to rule the empire roughly 2 decades later had an ethnic tie to those foes. Thus, if whom the Ottomans engaged militarily in a given period had a (negative) correlation with whom they might have confronted 2 decades prior, the estimates above would be biased. In order to account for this possibility, I reran the estimates shown in table 5 with the 22-year lagged value of the left-hand-side variables as an additional control variable. The negative impact of having a European mother on Ottomans' European confrontations was retained, so I have chosen not to report these estimates here.

Two, it is also possible that internal or external political developments might have been the channel through which Ottomans' conquests came to bear on the identity of Ottoman sultans. But the historical literature on this topic suggests no specific references that this may have been the case.[28] The chronology of the matrilineal genealogies of Ottoman sultans reveals very little persistence in ethnic identities. But there is stronger persistence more broadly when one examines religious identity or classifies Valide Sultans according to whether they had Turkish roots. Specifically, of the 31 succession transitions, there are only five instances in which the ethnicity of two successive Valide Sultans coincided and one in which three successive queen mothers shared the same Turkish background. In contrast, there were 24 transitions in which the queen mothers had different ethnic identities. Of course, there is clustering of Muslim queen mothers between 1413 and 1566, with only one of the six queen mothers over that time interval having a European lineage. However, it is difficult to discern whether this persistence in religious identities across the queen mothers was due to internal or external political dynamics.

[27] Thanks to Jared Rubin for pointing out this scenario.
[28] Goffman (2002, 186) does note that Europeans, in particular, the Italians, had envoys in Constantinople in attempts to "collect information about and predict the actions of a foreign and dangerous nemesis" at a time when the conventional international diplomatic ties did not yet exist. But there is no indication that such foreign interactions had success in penetrating or influencing the politics of the harem.

Turning to how a European matrilineal background comes to bear on Ottomans' European conflicts, we note that there are at least two possible channels through which maternal genealogy might have mattered for Ottomans' imperials quests. One is that the Ottoman imperial harem was an institution that played a typically varying but influential role in determining the empire's political actions, and the most powerful member of its hierarchy was the Valide Sultan. Alternatively, it is possible that the harem played no role in influencing the sultan in state matters but that the sultans acted cognizant of their family legacies, presumably and in part because their mothers' cultural heritage was transmitted intergenerationally as part of their upbringing. Obviously, the empirical work above cannot fully distinguish between these two channels. Nonetheless, it does verify that ethnic lineage—and perhaps religious identities too—was a strong enough influence on Ottoman matters so as to almost completely nullify one of the founding motives of an inherently Islamic empire.

All the same, one can try to exploit the fact that the private quarters of the imperial harem were built only in the mid-sixteenth century, around 1566.[29] If it was primarily the political influence of the harem that drove Ottoman conquests and not the sultans' ethnic and cultural matrilineal upbringing, then it is plausible that the queen mothers' influence should have risen after the private harem quarters were built. In an alternative specification not shown (but available on request), I ran empirical estimates similar to those shown in table 5, with the main exception being that a dummy variable for the construction of the private harem quarters as well as its interaction with European matrilineal descent were included as additional explanatory variables. These new variables neither yielded statistically significant effects nor altered the impact of European matrilineal descent on Ottoman conflicts reported earlier. In fact, all the coefficient estimates for European matrilineal descent were in line with the magnitude of those presented in table 5. The interaction of European matrilineal descent with the dummy for the addition of the private harem quarters did enter negatively in all regressions, although it also exhibited high variance, and, therefore, it was never statistically significant. The harem dummy did come in with a significant and positive sign in four of the six regressions. While this is no doubt cursory, it could be suggestive of the fact that the sultans' upbringing mattered more than the queen mothers' political influence.[30]

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[29] Recall that the private quarters of the Ottoman harem were added later, a consequence of which is that the role of the harem in Ottoman politics is believed to have risen. This is why, e.g., Peirce (1993, chap. 4) labels the era between 1566 and 1656 as the "age of the Queen Mother."

[30] There is one other possibility that needs to be entertained: since the Janissary corps as well as the top echelons of the Ottoman military and administration relied on converts to Islam whose origins lay in conquered lands, it is possible that they—not Valide Sultans or the sultans' ethnicities themselves—

In this vein, we should also be able to detect that the periods when the queen mothers were alive and in charge of the harem were statistically different. Consider this: if harem politics—but not the intergenerational links of cultural transmission (which presumably were in place even when the sultans were much younger and not in charge)—was the main culprit of the patterns of Ottoman warfare, then the impact of the sultans' matrilineal ties should be conditional on the extent to which the mothers were alive and in charge of the royal harems. It is with this idea that I reran the estimates originally reported in tables 4 and 5 with one modification: I included the number of years when the reign of a sultan overlapped with his mom's life as well as the interaction of the latter with either European or Muslim matrilineal descent as additional explanatory variables. Doing so, I found some additional confirmation in support of the intergenerational transmission channel: neither of the interaction terms came in significantly, although European matrilineal descent was still significant and negative in all three estimates, and Muslim matrilineal descent was positive and significant in all relevant estimates.[31]

Next, we have the issue of ethnicity versus religion. In particular, is it possible to ascertain whether it was ethnic or religious matrilineal ties that mattered more in the patterns of Ottoman conquest? At some level, this is obviously difficult to discern because most of the sultans' mothers were Turkish and Muslim or they were Christian and non-Turkish (which meant European, with the exception of the Russian Orthodox moms of Mehmed IV and Abdülmecit).[32] So it is quite difficult, if not impossible, to dissect whether it was religious or ethnic ties that affected the sultans' conquest motives. However, there is a way by which we can explore whether the impact of having moms of Balkan

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account for the changes in the pattern of Ottoman conquests. There are two issues to bear in mind in this regard. First, we do not have the ethnicity details for the military and palace hierarchies that we do on those of queen mothers. Second, political power was still concentrated but, nonetheless, more diluted among the viziers and the top echelons of the Janissary corps. As such, one would expect less of an impact from the ethnic and religious backgrounds of a member of these institutions.

[31] I carried out a similar exercise using the interaction of European matrilineal descent with the age of the sultan when he ascended the throne, in an attempt to identify whether the former is picking up a direct effect of the queen mothers in Ottoman-European conflicts or an indirect one through the intergenerational cultural transmission mechanism. The results were similar to the ones discussed above, in that the interaction I just defined never entered significantly, lending further credence to the notion that the cultural transmission mechanism was more likely to have been at work. In a related vein, I included sultan fixed effects in the time-series estimates and examined the significance of European matrilineal descent as an indication of a direct influence of queen mothers on their sons. Once again, the impact of having a European mother on Ottoman-European conflict outcomes was insignificant, indicating an indirect cultural transmission mechanism.

[32] There was one additional Muslim mom who was not ethnically Turkish—Sultan Abdülhamit II, who ruled between 1876 and 1909, had a Circassian mother.

descent depended on whether the mother's ethnic region was under Otto-man rule. The idea is that, if it was religion (ethnicity) that mattered more, then the incentive to divert Ottomans away from Europe ought to have still remained high (declined) after the mothers' home regions fell to the Otto-mans.

To test this idea, we can in fact interact each queen mother's ethnicity with dummies for the date at which that ethnic region came under Ottoman con-trol (if it did at all). The downside of this exercise is that, of the maternal ethnoregional backgrounds, only the dummy for having a mother from the Balkans (those of Serbian, Greek, Albanian, Bulgarian, and Bosnian descent) came under the control of the Ottomans, typically around the mid- to late fifteenth century during the reign of Mehmed II (the Conqueror). And only one sultan, Beyazid I, had a mother of Balkan descent before the Balkans were transferred to Ottoman control. All the same, I carried out an exercise in which the key explanatory variable included a dummy for the period during which the Balkans were under Ottoman control as well as the interaction of this dummy with a Balkan-mother dummy.[33] Although, for the sake of brevity, I do not report the results here, I found that the European wars were all the more im-portant before the region fell under Ottoman control. Equally interesting is the fact that, for Ottomans' confrontations with extra-Europeans, the conflict-propagating role of the Balkan-mother dummy was more pronounced before the region became an Ottoman territory.[34] In general, I take these results to be suggestive of the idea that ethnicity and nationalities, but not so much religion, drove some of these results. Alas, given that these findings hinge on the rule of only one sultan, Beyazid I, they should be interpreted with a great deal of caution.

On this point, recall that membership in the Ottoman harem, bureaucracy, or public administration required a Muslim identity. Thus, all wives and queen mothers were either Muslims at birth or converts to Islam from Christian or Jewish backgrounds.[35] In this, we have some implication that ethnic and re-ligious identities had some latent persistence. For a variety of other empirical observations, robustness checks, and alternative specifications, please refer to the appendix.

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[33] The dummy for Balkan independence attains the value of one during independence and zero after conquest and during Ottoman territorial control.

[34] These results are not shown, but, as with all other empirical specifications discussed and not shown, they are available from the author on request.

[35] A possible exception was Orhan's wife Theodora, who might have retained her religion even after becoming an imperial wife. However, Orhan is the second Ottoman sultan, with his reign cor-responding to a much earlier period before 1400.

IV. Conclusion

In this article, I rely on the Ottomans' unique imperial history to examine the influence of religion, ethnicity, and family ties in perpetuating or diverting conflict and war. The Gaza ideology is generally emphasized as the reason why the Ottomans initiated more conflicts in the West and why, on the eastern fronts, more conflicts were started by its rivals. But according to another not necessarily mutually exclusive theory, the imperial harem wielded considerable political power in Ottoman affairs.

Using a comprehensive data set on conflicts and war in the Middle East, Europe, and North Africa between 1400 and 1909, I find that Gaza was important but not sufficient for explaining Ottomans' imperial motives. What mattered almost as much was the sultans' ethnoreligious heritage. In particular, while Ottoman conquests were predominantly in the West until the mid-1500s, I show that the ethnic background of the Valide Sultan (queen mother) was an important and independent determinant of whether the empire engaged in military conquests in Europe versus North Africa or the Middle East. Depending on the empirical specification, the reign of a sultan with a European maternal ethnic background was enough to offset more than 70% of the empire's western orientation in imperial conquests. As I have also identified, however, the sultan having a European matrilineal descent mostly had no discernible influence on the empire's eastern conflicts.

On this basis, we have found that the religious, ethnic, or cultural identities of the sultans' inner circle played a significant and independent role in subverting the imperial ambitions of the empire toward the Middle East and North Africa. Hence, we have evidence in Ottomans' history that the rulers' individual identities as much as those of their societies more broadly were important in the long run for maintaining conflicts, conquests, and wars on ethnic or religious grounds.

All in all, these findings relate to a strand within economics that explores the channels through which cultural beliefs, views, and traits are intergenerationally transmitted. The evidence we have seen above suggests that the sultans acted cognizant of their family legacies and in line with a channel of cultural transmission between the Valide Sultans and their ruling sons.

Appendix

Here, I elaborate on some further observations and empirical analyses that relate to the baseline analyses. First, the average magnitude of the effects of maternal lineage, say for European matrilineal descent, is quite large. It implies that, while Ottomans engaged their European foes once every 3 years on average, they

did so once every decade when a sultan with a European matrilineal descent was at the helm. To put this in further context, as I have shown in Iyigun (2008), of the 93 Ottoman-European military conflicts that occurred between 1400 and 1700, 63 were historically documented to be initiated by the Ottomans (roughly about 68%), but only 17 out of 52 of the Ottomans' confrontations with other sovereigns and groups elsewhere (including Anatolia) were instigated by the empire itself (about 33%).[36] Even more remarkable is the fact that most of the Ottomans' European ventures were front-loaded: between 1400 and 1550, Ottomans engaged Europeans in 51 conflicts; of those, 40 were begun with some Ottoman initiative (which is close to 80%). Thus, when one factors in the fact that some Ottoman-European wars were initiated by the Europeans too, the impact of having a European matrilineal descent becomes even larger.

In this context, one ought to also bear in mind that economic and financial motives would not have been major factors in Ottomans' tendency to primarily target eastern continental Europe: according to Maddison's (2001) estimates, eastern Europe had per capita annual incomes of US$(1990)400 and US$(1990)462 around 1000 and 1500, respectively, whereas his estimates for the geographic regions that are modern-day Iran and Egypt for the same periods are US$(1990)450 and US$(1990)565, respectively. Hence, the pattern and timing of Ottoman conflicts is consistent with their hypothesized ideology. Nonetheless, when pitted against the influence of "family culture and ties" on conflict and war, the empire's institutional objectives and motives—as exemplified by Gaza—seem to have been secondary. In particular, the results above show how sultans' own genealogical backgrounds almost entirely offset the Ottomans' imperial orientation and implicit religious motives.

However, it is possible that the state of Ottoman public finances may have influenced whom the sultans chose to fight. For instance, if the fiscal situation was poor, and European rivals were strong, then sultans may have decided to engage in relatively less intense wars in North Africa. To explore the importance of this issue for my main results, I used the data by Karaman and Pamuk (2010). The problem here was that the Karaman and Pamuk Ottoman tax data are available between 1523 and 1785. And, even for that limited 263-year time interval, the point estimates are available for only 34 years. This essentially ruled out including the tax revenue estimates in the cross-sectional regression because we are left with only 19 sultan observations, rendering any

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[36] There are only a few cases in which border skirmishes before the conflict itself make it harder to assess how the confrontation began; otherwise, this turned out to be a fairly straightforward exercise.

regression estimates based on very few data points mostly, if not wholly, un-reliable.

Using the repeated, cross-sectional time-series data, however, I first extrapolated Ottoman tax revenues for the missing years between 1523 and 1785 (setting tax revenues for the missing years equal to the level in the last year for which data are available). Then, I ran the analogs of the regression shown in table 5, this time including the augmented Karaman and Pamuk Ottoman tax revenue series in my regressions. I found that the influence of European matrilineal descent was robust to this modification. In two specifications, European matrilineal descent has statistically significant, negative effects, and, in one other estimate, it still has a negative sign, although it is barely insignificant, coming in with a .13 p-value. Moreover, tax revenues had predictive power in none of the regressions.

Another important issue involves the degree of uncertainty in the ethnic lineage of some of the sultans. As I have noted in Section II.C, there are alternative hypotheses for the ethnic lineage of at least three Ottoman sultans: Mehmed II, Beyazid II, and Süleyman I. In addition, there are some doubts about the lineage of two other rulers, Selim I and Murad III, although no clear alternatives have been established for their backgrounds. To examine the extent to which these classifications might have affected the baseline results, I created some alternative ethnic lineage series in which I use the ethnic background alternatives for Mehmed II, Beyazid II, and Süleyman I. Note, however, that these alternative claims make a difference for only Mehmed II (with his Turkish ethnic maternal link switching to European) and Süleyman I (with his maternal lineage of Turkish Crimean becoming European, specifically Balkan). Beyazid II, in fact, has two alternatives for his primary maternal background, which is Albanian. However, neither of the two alternatives of Serbian and French affect a change in his European matrilineal descent status. Due to these observations, I created six alternative maternal background series for European and Muslim matrilineal descent: in two of them, I altered Mehmed II's alternative ethnic lineage only; in the next two, I changed Süleyman I's ethnic background only; and in the final two, I switched the maternal ethnic histories of both Mehmed II and Süleyman I. Although I have chosen not to report them here, the change in classification generally made the conflict-augmenting impact of European matrilineal descent weaker when the background of Mehmed II is altered. However, entertaining the alternative lineage for Süleyman I did not influence our central findings.

Then, there is the sensitivity of our key findings with respect to the geographic classification of Ottoman conflicts. Recall that, in all of the preced-

ing empirical specifications, I divided the Eurasian landmass roughly vertically with reference to Istanbul (the Ottoman capital) and considered Ottomans' involvements to the west of that division to be in Europe and to the east of it to be elsewhere. The central justification for this division is purely geographic: the European and Asian continents are divided into two by the Bosporus and Dardanelles Straits, which leaves the eastern coast of the Bosporus (which divides Istanbul into two) in Asia and the western part in Europe.

Nevertheless, I reviewed my data and identified the types and number of conflicts that could be affected by this classification choice. There are only a total of 33 observations based on primarily two different (country) locations. Twenty-one of these involve conflicts in Russia (in Crimea or the Black Sea coasts) fought by Russians, Cossacks, or Crimeans against the Ottomans. According to my original classification rule, these are all labeled as extra-European conflicts. Another 12 include Ottomans' conflicts in Moldavia or Walachia, which are two locations that are closest geographically to Istanbul from the West. Originally, I classified all such confrontations as Ottomans' European confrontations.

Given these conflicts and locations, I entertained two alternative robustness checks regarding the division of the Eurasian landmass. First, I lumped all of the 21 conflicts in Russia as part of the Ottomans' European engagements. To be consistent with this change, I also reclassified two sultans with Russian matrilineal descent as sultans with European matrilineal descent. Second, I included Ottomans' Moldavian and Walachian engagements as extra-European. In effect, this meant reclassifying the 12 such conflicts in the data set as extra-European affairs. This adjustment did not necessitate any modifications in the European matrilineal descent variable because no sultan had Moldavian or Walachian matrilineal heritage. Doing so revealed that results are sensitive to the lumping of all Russian conflicts as European affairs and the treatment of Russian moms as Europeans. But shifting the Moldavian and Walachian affairs out of Europe did not have an influence on my central findings.

As an alternative line of inquiry, I removed all of the maternal ethnicity dummies from the time-series estimates and included dummies for the reign of each sultan instead.[37] Doing so helps to isolate the fixed effects of each sultan who ruled the Ottoman empire between the fifteenth and eighteenth centuries. As right-hand-side control variables, all of the estimates included the year and century of the beginning of a sultan's reign, the levels of population

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[37] The only restriction I imposed is that a sultan had to be at the helm for at least 5 years. On this basis, Mustafa I (r. 1617–18, 1622–23), Osman II (r. 1618–22), Süleyman II (r. 1687–91), and Ahmed II (1691–95) were excluded.

under European and Ottoman control, the sultan's age when he ascended the throne, and his reign of length, in addition to the 13 dummy variables for sultans. I regressed Ottomans' European and extra-European military conflicts on these explanatory variables. For Ottomans' European conflicts, only Mehmed II, Süleyman I, and Mehmed IV entered with statistically significant signs, and they were all positive. Of those Ottoman rulers, Mehmed II and Süleyman I had Turkish ethnic lineages, and Mehmed IV had a Russian background. For Ottomans' eastern frontier conflicts, only Murad III and Mehmed III yielded statistically significant signs, and they were both positive. Murad III and Mehmed III both had Venetian matrilineal descent. And when I reran these regressions with all Ottomans' wars in the west and the east as the dependent variables, I got similar results. The exceptions were the positive and significant impact of Murad IV on Ottomans' newly initiated as well as ongoing European conflicts and the negative and significant influence of Murad II on Ottomans' existing as well as newly initiated confrontations in the east.

In the true spirit of the key hypothesis I am testing here, one would want to focus primarily on wars that were initiated by the Ottomans in Europe and elsewhere. Coding Ottoman conflicts according to this distinction is possible, although there are ambiguities in some conflicts in the extent to which hostilities were initiated by the Ottomans. Nonetheless, I found no major qualitative difference in the empirical estimates that were produced using only conflicts that were initiated by the Ottomans themselves.

As an additional robustness check and alternative line of inquiry, there are two other variables that would have been useful to control for: the number of brothers each sultan had who competed for the Ottoman throne and the age of the queen mother when her son acceded the throne. Unfortunately, I was not able to find reliable and complete data on either of those variables.

References

Abramitzky, R. 2008. "The Limits of Equality: Insights from the Israeli Kibbutz." *Quarterly Journal of Economics* 123, no. 3:1111–59.

Barro, R., and R. McCleary. 2003. "Religion and Economic Growth." *American Sociological Review* 68, no. 5:760–81.

———. 2005. "Which Countries Have State Religions?" *Quarterly Journal of Economics* 120, no. 4:1331–70.

Beaman, L., R. Chattopadhyay, E. Duflo, R. Pande, and P. Topalova. 2009. "Powerful Women: Does Exposure Reduce Bias?" *Quarterly Journal of Economics* 124, no. 4: 1497–1540.

Becker, O. S., and L. Woessmann. 2009. "Was Weber Wrong? A Human Capital Theory of Protestant Economic History." *Quarterly Journal of Economics* 124, no. 2:531–96.

Benabou, R., and J. Tirole. 2006. "Identity, Dignity and Taboos: Beliefs as Assets." Unpublished manuscript, Princeton University.

Berman, E. 2000. "Sect, Subsidy and Sacrifice: An Economist's View of Orthodox Jews." *Quarterly Journal of Economics* 115, no. 3:905–53.

Bisin, A., and T. Verdier. 2001. "The Economics of Cultural Transmission and the Evolution of Preferences." *Journal of Economic Theory* 97, no. 2:298–319.

Botticini, M., and Z. Eckstein. 2005. "Jewish Occupational Selection: Education, Restrictions, or Minorities?" *Journal of Economic History* 65, no. 4:922–48.

———. 2007. "From Farmers to Merchants, Voluntary Conversions and Diaspora: A Human Capital Interpretation of Jewish History." *Journal of the European Economic Association* 5 (September): 885–926.

Brecke, P. 1999a. "The Conflict Dataset: 1400 A.D.–Present." Unpublished manuscript, Georgia Institute of Technology.

———. 1999b. "Violent Conflicts 1400 A.D. to the Present in Different Regions of the World." Paper presented at the 1999 Meeting of the Peace Science Society, Ann Arbor, MI.

Cioffi-Revilla, C. 1996. "Origins and Evolution of War and Politics." *International Studies Quarterly* 40, no. 1:1–22.

Doepke, M., and F. Zilibotti. 2008. "Occupational Choice and the Spirit of Capitalism." *Quarterly Journal of Economics* 123, no. 2:747–93.

Fernandez, R. 2007a. "Culture and Economics." In *New Palgrave Dictionary of Economics*, 2nd ed., ed. Steven N. Durlauf and Lawrence E. Blume. New York: Macmillan.

———. 2007b. "Women, Work, and Culture." *Journal of the European Economic Association* 5, nos. 2–3:305–32.

Fernandez, R., and A. Fogli. 2006. "Fertility: The Role of Culture and Family Experience." *Journal of the European Economic Association* 4:2–3.

———. 2009. "Culture: An Empirical Investigation of Beliefs, Work, and Fertility." *American Economic Journal: Macroeconomics* 1, no. 1:146–77.

Fernandez, R., A. Fogli, and C. Olivetti. 2004. "Mothers and Sons: Preference Formation and Female Labor Force Dynamics." *Quarterly Journal of Economics* 119, no. 4:1249–99.

Findlay, R., and K. H. O'Rourke. 2007. *Power and Plenty: Trade, War and the World Economy in the Second Millennium.* Princeton, NJ: Princeton University Press.

Glaeser, E. L. 2005. "The Political Economy of Hatred." *Quarterly Journal of Economics* 120, no. 1:45–86.

———. 2006. "The Political Economy of Warfare." Working Paper no. 2125 (December), Harvard Institute of Economic Research.

Glaeser, E. L., and B. I. Sacerdote. 2008. "Education and Religion." *Journal of Human Capital* 2, no. 2:185–215.

Goffman, D. 2002. *The Ottoman Empire and Early Modern Europe.* Cambridge: Cambridge University Press.

Greif, A. 1993. "Contract Enforceability and Economic Institutions in Early Trade: The Maghribi Traders' Coalition." *American Economic Review* 83, no. 3:525–48.

———. 1994. "Cultural Beliefs and the Organization of Society: A Historical and Theoretical Reflection on Collectivist and Individualist Societies." *Journal of Political Economy* 102, no. 5:912–50.

———. 2006. *Institutions: Theory and History.* Cambridge: Cambridge University Press.

Guiso, L., P. Sapienza, and L. Zingales. 2006. "Does Culture Affect Economic Outcomes?" *Journal of Economic Perspectives* 20, no. 2:23–48.

Hess, G. D., and A. Orphanides. 1995. "War Politics: An Economic, Rational-Voter Framework." *American Economic Review* 85, no. 4:828–46.

———. 2001. "War and Democracy." *Journal of Political Economy* 109, no. 4:776–810.

Huntington, S. P. 1996. *The Clash of Civilizations and the Remaking of World Order.* New York: Simon & Schuster.

Iannaccone, L. R. 1992. "Sacrifices and Stigma: Reducing the Free-Riding in Cults, Communes and Other Collectives." *Journal of Political Economy* 100, no. 2: 271–91.

Imber, C. 2002. *The Ottoman Empire, 1300–1650.* New York: Macmillan.

Inalcik, H. 1973. *The Ottoman Empire: The Classical Age, 1300–1600.* London: Phoenix.

Inglehart, R., and W. E. Baker. 2000. "Modernization, Cultural Change, and the Persistence of Traditional Values." *American Sociological Review* 65:19–51.

Iyigun, M. 2008. "Luther and Suleyman." *Quarterly Journal of Economics* 123, no. 4: 1465–94.

———. Forthcoming. *Economics of Conflict in the Name of God.* Chicago: University of Chicago Press.

Jones, B. F., and B. A. Olken. 2005. "Do Leaders Matter? National Leadership and Growth since World War II." *Quarterly Journal of Economics* 120, no. 3:835–64.

———. 2007. "Hit or Miss? The Effect of Assassinations on Institutions and Growth." NBER Working Paper no. 13102 (May), National Bureau of Economic Research, Cambridge, MA.

Kafadar, C. 1996. *Between Two Worlds: The Construction of the Ottoman State.* Rev. ed. Berkeley: University of California Press.

Karaman, K., and Ş. Pamuk. 2010. "Ottoman State Finances in European Perspective, 1500–1914." *Journal of Economic History* 70:593–629.

Karpat, K., ed. 1974. *The Ottoman State and Its Place in World History.* Leiden: Brill.

Kinross, L. 1979. *Ottoman Centuries.* New York: Harper.

Kuran, T. 2004. "Why the Middle East Is Economically Underdeveloped: Historical Mechanisms of Institutional Stagnation." *Journal of Economic Perspectives* 18 (Summer): 71–90.

———. 2005. "The Logic of Financial Westernization in the Middle East." *Journal of Economic Behavior and Organization* 56 (April): 593–615.

Lagerlöf, N. 2007. "From Malthusian War to Prosperous Peace." Unpublished manuscript, University of York.

Landes, D. 1998. *The Wealth and Poverty of Nations.* New York: Norton.

MacMillan, M. 2001. *Paris 1919: Six Months That Changed the World.* New York: Random House.

Maddison, A. 2001. *The World Economy: A Millenial Perspective*. Paris: OECD.

McEvedy, C., and R. Jones. 1978. *Atlas of World Population History*. New York: Facts on File.

Peirce, Leslie, P. 1993. *The Imperial Harem: Women and Sovereignty in the Ottoman Empire*. Oxford: Oxford University Press.

Richardson, L. F. 1960. *Statistics of Deadly Quarrels*. Pittsburgh: Boxwood.

Shaw, S. 1976. *History of the Ottoman Empire and Modern Turkey*. Vol. 1. Cambridge: Cambridge University Press.

Spolaore, E., and R. Wacziarg. 2009. "The Diffusion of Development." *Quarterly Journal of Economics* 124, no. 2:469–529.

Temin, P. 1997. "Is It Kosher to Talk about Culture?" *Journal of Economic History* 57, no. 2:267–87.

Wilkinson, D. 1980. *Deadly Quarrels: Lewis F. Richardson and the Statistical Study of War*. Berkeley: University of California Press.

Woods, F. A., and A. Baltzly. 1915. *Is War Diminishing? A Study of the Prevalence of War in Europe from 1450 to the Present Day*. Boston: Houghton Mifflin.