Queens*

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Abstract

A large scholarship claims that states led by women are less conflictual than states led by men. However, it is theoretically unclear why female leaders would favor more conciliatory war policies. And, it is empirically challenging to identify the effect of female rule, since women may gain power disproportionately during periods of peace. We surmount this challenge by exploiting features of hereditary succession in European polities over the 15th-20th centuries. In this context, women were more likely to acquire power if the previous monarch lacked a male first-born child, or had a sister who could follow as successor. Using these factors as instruments for female rule, we find that queenly reigns participated more in inter-state conflicts, without experiencing more internal conflict. Moreover, the tendency of queens to participate as conflict aggressors varied based on marital status. Among unmarried monarchs, queens were more likely to be attacked than kings. Among married monarchs, queens were more likely than kings to participate as attackers and fight with allies. These results are consistent with an account in which marriages strengthened queenly reigns, both because of alliances, and because queens utilized their spouses to help them rule. Kings, in contrast, were less inclined to utilize a similar division of labor. This asymmetry in how queens utilized male spouses and kings utilized female spouses increased the relative capacity of queenly reigns, enabling them to pursue more aggressive war policies.

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1 Introduction

A large body of scholarship contends that women are less violent than men, and consequently, states led by women are less conflict prone than states led by men. In recent work, Stephen Pinker (2011) writes "Over the long sweep of history, women have been and will be a pacifying force (p. 527)." He also claims "...males...take more foolish risks in aggressive attacks...and plan and carry out almost all the wars and genocides (p. 684)." Similarly, Francis Fukuyama (1998) states "A truly matriarchal world would be less prone to conflict and more conciliatory and cooperative than the one we inhabit now (p. 33)." Fukuyama also posits that the growing feminization of political leadership has contributed to the recent democratic peace among the developed nations.

These claims regarding female leaders and their state's conflict behavior are common — but there are reasons to interpret them with caution. First, theoretically, even if women are less violent than men, women leaders may be unwilling to enact conciliatory war policies. After all, doing so would put their states in a relatively weak position, particularly since they typically operate in a world of primarily male leaders. This observation has led some to suggest that female leaders such as Indira Gandhi or Margaret Thatcher, who readily used military force, may have done so as a form of "male posturing" (Ehrenreich and Pollitt 1999). Second, it is empirically challenging to isolate the effect of female leadership on conflict. Women may be more likely to gain power during periods of peace, under both electoral systems (Lawless 2014) and hereditary systems (Pinker 2011). This form of endogenous succession could generate bias in estimating the effect of female rule.

In this paper, we determine how female rule affected war participation in Europe historically, exploiting features of hereditary succession to surmount this identification challenge. We focus on the late 15th to early 20th centuries, and analyze polities that had at least one female ruler over this period. Within these polities, older male children of reigning monarchs had priority in succession (Monter 2012, p. 36-37). As a result, queens were less likely to come to power if the previous monarchs had a first born child who was male. They were also more likely to come

to power if the previous monarchs had a sister who could follow as successor. We therefore use the presence of a male first born child and presence of a sister as instruments for queenly rule. Our analysis determines whether polities led by women differed in their war participation than states led by men. This is conceptually distinct from examining whether women are less violent than men.

To implement our Instrumental Variables approach, we construct an original panel dataset which tracks the genealogy and conflict participation of each polity, over 1480-1913. Our sample covers 193 reigns in 18 polities, with queens ruling in about 19% of these reigns. Our empirical strategy also includes decade fixed effects and polity fixed effects, so we exploit variation over time in the ruler's gender within each polity. Using this approach, we find that polities ruled by queens were 27% *more* likely to participate in inter-state conflicts, compared to polities ruled by kings. Queenly reigns were also more likely to experience territorial gains, but were no more likely to experience internal conflicts or other types of instability.

We explore two theories of why female rule may have increased war participation over this period. The first theory suggests that women may have been perceived as easy targets of attack. Female rule was sometimes virulently opposed on exactly the grounds that women made for weak leaders, who were incapable of leading their armies to war. This perception—accurate or not—could have led queens to participate more in wars as a consequence of getting attacked by others.

The second theory builds on the importance of state capacity. During this period, many wars were fought with the aim of expanding territory and economic power (Mearsheimer 2001). These wars demanded financing, spurring states to develop a broader fiscal reach (Besley and Persson 2009; Karaman and Pamuk 2013; Gennaioli and Voth forthcoming). As Tilly (1992) famously argued, "states made war, and war made states". As a result, states undertaking wars required greater capacity as a whole. If queens enlisted their spouses to help them rule, in ways that kings were less inclined to do, then greater division of labor under queenly reigns may have enhanced their capacity and enabled them to pursue more aggressive war policies. As a consequence, queens may have participated more in wars in which their polity was the

aggressor.

To test these ideas, we disaggregate war participation based on which side was the aggressor, and examine heterogeneous effects based on the monarch's marital status. We find among unmarried monarchs, queens were more likely to be attacked than kings. Among married monarchs, queens were more likely to participate as aggressors than kings.

These results provide some support for the idea that queens were targeted for attack. Unmarried queens, specifically, may have been perceived as weak and attacked by others. But the same did not hold true for married queens, who, instead participated as aggressors. The results also support the idea that the willingness of queens to enlist their spouses in ruling may in fact have enabled queens to pursue wars more aggressively. As such, the asymmetry in how queens utilized male spouses, and how kings utilized female spouses, may have strengthened the relative capacity of queenly reigns, facilitating their greater participation in warfare.

We also present evidence against several alternative accounts. One such account suggests that queens may have fought more to signal they were strong and counter perceptions they were weak. For example, under the bargaining model of war, a state may pursue war as a costly way of signaling its military strength (Fearon 1995). If queens were signaling, we should observe a larger effects early in the reign, when it would be most valuable to send this signal. However, we observe no such differential effect. Another account suggests that it is not the queen, but a foreign minister or other persuasive male, who set the war policy. If this is true, then the gender effect should be larger among monarchs who acceded at a younger age, who were more likely to be influenced by others. But we again observe no such differential effect, which casts doubt on the idea that war participation was driven by the influence of another official.

We additionally conduct a number of checks to validate our instruments. We control for the total number of siblings among previous monarchs, which may be correlated with the presence of a sister and affect wars over succession in the previous reign. We show that the lack of a first born male doesn't itself affect war in the contemporaneous reign, or in a sample of polities that never had queens. And, we verify the robustness of the results to excluding succession wars from the sample.

To the best of our knowledge, our work is the first to quantify how female rule historically influenced conflict engagement. A number of important studies have examined this relationship in the modern era, and found mixed results. For example, female executives have been shown to increase state military spending and international conflict engagement (Koch and Fulton 2011), while a higher fraction of female legislators have been found to reduce both outcomes (Koch and Fulton 2011; Caprioli 2000; Caprioli and Boyer 2001; Regen and Paskaviciute 2003). The second set of results are aligned with findings that women are less likely to support the use of force internationally (Conover and Shapiro 1993; Shapiro and Mahajan 1986; Jelen et al. 1994; Wilcox et al. 1996; Eichenberg 2003). In addition, female leadership and gender equality have both been shown to lower internal conflict (Caprioli 2000; Melander 2005; Fearon 2010). We build on this literature by explicitly accounting for endogeneity bias, and using an exogenous determinant of female rule.

Our paper is part of a broader literature that asks whether leaders matter (Jones and Olken 2005; Pande 2003), and whether female leaders, in particular, shape public policies. Several studies have demonstrated how female leaders affect modern day development outcomes at the sub-national level, including: public goods provision (Duflo and Chattopadhay 2004); education (Clots-Figueras 2005; Beaman et al. 2012); and corruption (Brollo and Trojano 2014).[1] Breuning (2001) also demonstrates an impact of female leadership on the provision of development assistance. We also examine effects on a national-level policy outcome, but in a historical context.

Another related literature examines how female socialization affects male behavior. These studies have documented how mothers influence their sons' labor market outcomes (Fernandez et al. 2004[2]); and how having a daughter affects male legislative voting (Washington 2008), party identity (Healy and Malhotra 2013), and judicial decision-making (Glynn and Sen 2013).

[1]Recent work has also examined how female leadership on firm boards influence their performance (Matsa and Miller 2013; Bertrand et al. 2015).

[2]Fernandez et al. (2004) use variation in World War II as a shock to women's labor force participation to demonstrate that wives of men whose mothers worked are also more likely to work. Abramitzky et al. (2011) also use variation stemming from World War I mortality to demonstrate how the scarcity of men can improve their position in the marriage market. This paper highlights the influence of past war on marriage-related outcomes, while our findings suggest the role of marriage in influencing war-related outcomes.

Others have also explored the combined effect of ethnicity and female socialization. For example, Iyigun (2013) finds that Ottomans of European matrilineal lineage tended to fight fewer wars against European kingdoms. We examine the direct effect of female decision-making, rather than the effect of female socialization on male decision-making.

Our paper also relates to a number of recent works that have carefully examined the nature of European monarchies. These analyses have demonstrated that reigns became longer with the spread of feudalism and parliamentarianism (Blaydes and Chaney 2013); that hereditary succession promoted economic growth when executive constraints were weak (Besley and Reynal-Querol 2015)[3]; and succession through primogeniture increased monarch survival over 1000-1800 (Kokkonen and Sundell 2014) — a period when regicides also declined (Eisner 2011). Consequently, we examine related outcomes such as reign length and regicide in our analysis.

Finally, a large, rich literature has highlighted the political and economic legacy of warfare. A number of influential works have advanced war as a key factor in promoting the formation of nation-states (Tilly 1992; Besley and Persson 2009; Gennaioli and Voth forthcoming). Within this area, scholars have also documented how modern day political and economic development reflect historical conflict and military competition between states (Dincecco and Prado 2012; Voigtlander and Voth 2013a, 2013b; Acharya and Lee 2015). Our focus is on understanding factors that give rise to war, and whether the gender identity of a state's leader influences this consequential outcome.[4]

In the remainder of the paper, we discuss mechanisms through which female leadership can influence war; describe our data; outline the empirical strategy; present the results; and

[3]Abramson and Boix (2012) document another channel for European growth, showing that industrialization took place in territories with strong proto-industrial centers, regardless of executive constraints.

[4]Our analysis discerns the effect of queens on conflict. This is distinct from discerning the effect of male heirs, which has been the subject of two recent papers examining economic outcomes. Acharya and Lee (2015) examine how the availability of male heirs over 1000-1500 affect modern-day economic growth. Besley and Reynal-Querol (2015) use first-born males in both the current and previous reigns as an instrument for hereditary succession, to examine effects on economic growth in the post-1848 period. In contrast, only one part of our identifying variation stems from first-born males, which complements the sisters instrument. This reflects the fact that gender of the first-born does not perfectly determine whether a queen comes to power. For example, even if a monarch has a first-born son, a daughter could still inherit the throne if the son dies at young age. Conversely, even if a monarch has a first-born daughter, the throne could still pass to a younger brother. We discuss the sources of variation in our instrument set in greater detail in Section 4.2.

conclude.

2 Mechanisms

2.1 Gender and Perceived Weakness

One account of how female rule influenced war participation focuses on others' perceptions that women were weak and incapable of leading their countries to war. While male sovereigns were typically also military commanders, this role remained taboo for female rulers (Monter 2012, p. 49). In fact, the legitimacy of female rule was often questioned on these very grounds. For example, when Mary Tudor became queen of England in 1553, many strongly opposed female succession. The Protestant reformer John Knox then declared that women were incapable of effective rule for "nature...doth paint them forth to be weak, frail, impatient, feeble, and foolish...(Jansen 2002)."

These perceptions may have led others to view queens as easy targets, and thus attack polities ruled by queens at higher rates. Take the case of King Frederick II of Prussia, described as a "notorious misogynist" who once exclaimed that "no woman should ever be allowed to govern anything" (Monter, p. 166). A month after Maria Theresa acceded as monarch of Austria in 1745, King Frederick invaded Silesia, the richest of the provinces within her territory (Beales, p. 132). Frederik's perception of women as incapable rulers fuelled the notion that her territory would be easy to seize. Accounts of perceived weakness such as this one suggest that queens may have participated more in wars in which they were attacked.

2.2 Gender and Reign Capacity

A second theory of female rule and war participation focuses instead on the importance of state capacity in conducting warfare. Over the 16th-20th centuries, European wars were frequent and increasingly required extensive financing and military management. Both factors became especially important with the advent of the "Military Revolution" in the 1500s, which intro-

duced new military technologies and spurred larger militaries, making war more expensive. For example, the widespread use of cannons led to the use of stronger, more costly fortifications, which were required to withstand cannon fire (Gennaioli and Voth forthcoming).[5]

Army sizes also grew with new forms of fortification and gunpowder technology (Hoffman 2011, Roberts 1956, White 1962, Bean 1973).[6] And, during this period, many countries introduced standing armies and permanent navies, with professional soldiers trained on an ongoing basis. For example, the armed forces of England grew 3-fold over 1550-1780, while the armed forces of Austria increased 28-fold over this same time (Karaman and Pamuk 2010). Larger armies with professional soldiers required greater military management, as well as greater financing. As Tilly (1992) argued, the need for war financing to larger more centralized states, with more extensive fiscal infrastructure for collecting revenue (Gennaioli and Voth 2014; Karaman and Pamuk 2013).

Ultimately, fighting wars effectively required greater capacity, in both collecting revenue and overseeing large armies. They also required substantial resources. These requirements highlight another way in which female rule may have altered a state's belligerence: female reigns may have had greater resources at their disposal, and thus a greater capacity to carry out war along two dimensions. First, queenly reigns may have benefited from more alliances. While marriage brought alliances for both male and female monarchs, male spouses were typically more engaged with military matters in their home countries than female spouses, and thus better positioned to forge and cement military alliances. Alliances, in turn, would serve to strengthen the fighting position of a polity, by spreading the burden and costs of fighting over numerous partners.

Second, queenly reigns may have utilized their spouses to a greater degree in helping them rule. Queens often put their male spouses in charge of some state matters, which kings were less inclined to do with their female spouses. This greater division of labor under queenly reigns would then have freed up time and resources to pursue a wider array of policies, including more

[5]For example, engineers devised the *trace italienne* fortification to protect cities but these were very expensive to construct.

[6]This trend continued into the 19th century, with military size spiking after the introduction of railroads in 1859 (Onorato Scheve and Stasavage 2014).

aggressive war policies. This asymmetry in spousal division of labor emerged in several realms. Since women didn't serve as heads of militaries, queens would often appoint their husbands to this role, though kings of course, did not do the same with their wives (Beem and Taylor 2014, p.4). As an example, when Queen Doña Maria II of Portugal married Prince Augustus Francis Anthony in 1836, their marriage contract stated that he would serve as commander in chief of the army (Alves 2014, p.166).

Many male spouses (called king consorts) played a critical roles in military conquests, even if they were not official heads of militaries. For example, Mary of Burgundy relied heavily on her husband Maximilian, heir to the Holy Roman Empire, for leading successful military campaigns against the French (Monter 2012, p. 89). Ferdinand V, who co-ruled the Kingdoms of Leon and Castile with Isabella I over 1474-1504, also played an essential military role. Ferdinand helped Isabella defeat her niece, Joan of Castile, who challenged her succession. He also led the Spanish conquest of Granada, expunging the last Islamic state from Spanish soil, and was instrumental in engineering Spain's conquest of the new world.

In addition, some spouses played important roles in carrying out economic reforms and boosting the state's fiscal capacity, which were needed for financing wars. Francis Stephen essentially single-handedly revitalized the financial system of the Austrian monarchy and raised money for an army during the 1740s when his wife Maria Theresa was its ruler (Beales 2014).

Other spouses helped shape the monarchy's position in foreign affairs and other areas, even if they never planned or carried out wars. For example, Prince Albert was Queen Victoria's most trusted advisor, and shaped her colonial policy and public relations image (Urbach 2014). In fact, Victoria was said to be most active as a ruler during Albert's lifetime.

Though the degree of direct involvement in wars varied from reign to reign, king consorts were typically involved in governing some aspect of state affairs. Spouses may have been particularly important because for playing a supporting role, since they solved the ages old problem of who could be trusted in ruling. In contrast to spouses, siblings for example, could be potential contenders for the throne, and thus, could not be easily entrusted in positions of military power. Thus, the greater spousal division of labor, in conjunction with alliances,

may have strengthened the overall capacity of queenly reigns, enabling hem to participate in wars more aggressively. This reign capacity account implies that queens may have participated more in wars in which their polities were the aggressors, particularly if they were married. In addition, it implies that married queens may have participated disproportionately in wars in which they fought in conjunction with an ally.

3 Data and Sample Description

There is no pre-existing dataset which tracks the genealogy of European polities and their participation in wars historically. We construct this dataset for the period spanning 1480-1913, using various data sources. Our sample starts in 1480 since this is the first year for which war data is available. Our sample ends at the onset of World War I, after which time monarchs had relatively limited power in deciding when their polities should go to war.

3.1 Genealogy Data

We use Morby (1989) as the starting point for constructing our polity-year panel. This source provides a list of polities that existed in Europe over this period.[7] Our main sample has 18 polities that had at least one queen during this time. Figure 1 shows these polities.[8] Not every polity existed for every year: on average, each polity existed for 199 years, though this ranges from 9 years to 434 years. Also, periods in which a polity is a republic are not a part of the sample, since we aim to examine the effect of female monarchs relative to male monarchs.

For each polity, Morby provides a chronological listing of rulers, along with the start and end years of their reign. Following this structure, we define a reign as a period in which a given

[7]Morby refers to these units as kingdoms. While some of these units — such as the Kingdom of England, the Kingdoms of Leon and Castile, and the Tsardom of Russia — are formally defined as kingdoms, others— such as The Medici and their Successors in Florence or The Principality of Monaco — are more accurately described as independent states. We use the term polity to encompass both kingdoms and states.

[8]This figure was created by overlaying six Georeferenced Historical Vector maps from Euratlas (http://www.euratlas.com/) at the turn of each century between 1500-2000. Since the boundaries are from different time periods, they do not necessarily match present day borders or show the maximum geographical area covered by each polity historically. Rather the figure aims to visually show the polities appearing in our sample.

monarch or set of monarchs rule the polity. Our sample includes 193 reigns. In most reigns, there is a single monarch. However, in 16 reigns, multiple monarchs rule simultaneously. Most of these cases reflect actual co-rule, from (1) a husband and wife ruling jointly, as in the case of Isabel I and Ferdinand V, who ruled the Kingdoms of Leon and Castile or (2) father and son ruling together, such as Ivan III the Great and Ivan the Younger who ruled the Tsardom of Russia as co-regents over 1471-1489.[9] Given co-rule, a monarch may govern across multiple reigns.[10]

Queens ruled in 36 of the reigns, constituting 19% of the sample. They ruled on their own as "Solo queens" in 23 reigns, and co-ruled with husbands in almost all remaining reigns.[11] Joint rule with husbands typically arose when queens succeeded to the throne, and their husbands were officially declared co-rulers with the title of king. This was not always feasible under the laws of the land. Sometimes women who succeeded were actually designated "kings" – and in that regard they are better described as "female kings" rather than queens (Monter 2012).

A total of 188 monarchs, including 29 queens, governed across the reigns within our main sample. We code genealogy information for these monarchs using the Catalog of Royal Family Lineages (Tompsett 1994), which follows the same polity listing as Morby. For each ruler, we code marriage year, marriage dissolution year, and spouse birth and death years. This allows us to track who they are married to, and whether their spouses are living during their reign. In addition, we record the birth and death year of the children and their siblings. This allows us to establish whether the monarch had any siblings, and to discern the birth order of the children. Tompsett (1994) is highly comprehensive, and records those who died as infants. For example, even children with the same birth year and death year are included in the catalog.

The gender of a ruler's children and siblings are typically not stated separately. However, we use their listed names to establish gender. For most instances, this is obvious based on

[9]In seven additional cases, there is multiple rule because one ruler governed the polity for less than a year before being deposed. For example, Edward V ruled the Kingdom of England for a part of 1483 before he was deposed and his brother Richard III took over as the monarch.

[10]For example, Queen Suzanne ruled the Duchy of Bourbonnais on her own over 1503-1504. She ruled together with her husband Charles III over 1505-1521. Upon her death, Charles III ruled on his own, from 1522-1527.

[11]The one exception occurred when two females — Mary I and Lady Jane Grey ruled the kingdom of England in the same year (1553).

name. When it is not, we used additional data sources to determine if the individual was male or female. In a few cases, Tompsett (1994) lists the gender but not the name, and for these we simply record gender as listed.

We use this data to generate indicators of whether the monarch(s) in the previous reign had a legitimate first born child who was male, and whether they had a sibling who was female. In the instances where neither name nor gender are provided, we create indicators that the gender of the first born and or siblings are missing. We also create a measure of the total number of siblings among previous monarchs. Additionally, we record the ruler's age at accession.[12]

Our empirical approach requires us to examine the impact of siblings and first-born children among the previous monarchs, since these individuals tend to correspond to the previous generation. So in most cases, the previous monarchs are simply those who ruled in the previous reign. However, in 16 cases, co-rule and one monarch ruling across multiple reigns break the correspondence of generations to reigns. In these cases, our definition of previous monarchs differ from monarchs in the last reign. For example, in the case of Suzanne and Charles of Bourbonnais, when Suzanne rules by herself, and Suzanne and Charles rule together, and Charles rules by himself, we take all three reigns, and we designate the previous monarchs to be Suzanne's father Peter II and his brother Charles II, who ruled together in a year prior to Suzanne's succession.[13]

3.2 War Data

We code war information provided by Wright (1942) and match it to our genealogy panel to track when each polity is at war. Wight provides a comprehensive listing of wars starting in 1480. This includes "all hostilities involving members of the family of nations, whether international, civil, colonial, imperial, which were recognized as states of war in the legal sense

[12]We favor Morby over Tompsett if they differ in reporting the ruler's accession year or the relationship with the ruler(s) of the previous reign.

[13]Since Charles is from a different family than Suzanne, instrumenting his reign with Suzanne's parents will weaken the relationship between the endogenous variable and the instrument. On the other hand, agnostically coding previous rulers, irrespective of whether they are from a different family as the endogenous monarchs, is important for preserving the validity of the instrument.

or which involved over 50,000 troops" (Wright 1942, p.636). It also includes "hostilities of considerable but lesser magnitude, not recognized at the time as legal states of war, that led to important legal results" (Wright 1942, p.636). Importantly, this data source records when each participant enters and exits each war, which allows us to track war participation with precision. It also distinguishes between different types of wars, formally defined as:

1. Balance of Power War - war among state members of the modern family of nations

2. Defensive War - war to defend modern civilization against an alien culture

3. Imperial War - war to expand modern civilization at the expense of an alien culture

4. Civil Wars - war within a state member of the modern family of nations

Balance of Power wars took place among European polities; defensive wars almost exclusively involved Ottoman invasions; and imperial wars were colonial conflicts. We aggregate these three war types together to create a measure of external conflict participation. External conflicts, by definition, involve two or more units at the start of the war (and these units are comprised of two or more European polities in the case of Balance of Power wars). Civil wars, in contrast, are internal to one unit, and by definition, involve one polity at the start of the war. Typically, we analyze external wars separately from civil wars. However, since civil wars can result in the creation of new units (for example, if part of the original unit secedes), we also analyze an aggregate measure of war participation in the appendix. Most wars are external wars, and most external wars are Balance of Power wars. Specifically, our main sample includes 45 balance of power wars, 29 imperial wars, 7 defensive wars, and 28 civil wars.

Wright also demarcates which side is the aggressor — i.e., which side initiated each war.[14] This is of course a subjective measure, as is the case for aggressor coding in any war setting. We rely on Wright's coding, rather than on our own, to minimize potential bias in this measurement. The concept of the aggressor is also clearest and most precisely measured for Balance

[14]Wright also discusses that he demarcates the aggressor by looking for the side that he considers to be the "primary belligerent."

of Power wars, so we analyze aggressive war participation for this type of war.[15] Besides war participation, we also use data on regicide — the killing of monarchs — as coded by Eisner (2011).

3.3 Sample

Our main sample spans 1480-1913, and includes 18 polities that ever had a queen. Table A.1 lists these polities. We also code genealogy and war participation for an auxiliary sample of polities that never had queens, which we use to conduct falsification tests. This sample is comprised of 151 reigns across 19 polities for which we were able to match the units in the war data to units in the genealogy data. For example, this was not possible for the German kingdoms, which typically had multiple houses co-ruling different sub-regions within their polities — but Wright's war data does not discern which specific sub-regions participated in each war. These 19 polities are also shown in Figure 1.

4 Empirical Strategy

4.1 Succession Laws

How did queens become queens? Whether women were allowed to come to power varied based on laws of succession. Some laws explicitly prevented women from coming to power. Chief among these were salic law, which governed succession in the French monarchy after 1317. As a consequence no queens came to power in France, with the exception of queen consorts (Corcos 2012).

Another system of succession that effectively barred women from coming to power was election. During the period we study, polities did not utilize broad-based elections as in the modern era; rather, the elite voted for a monarch among a pool of selected candidates, who were typically all from royal families (Kokkonen and Sundell 2014). This succession law was

[15]The colonizing power is always assumed to have initiated imperial wars; rebels are always assumed to have initiated civil wars; and no participant is defined as an aggressor in defensive wars (Wright 1942, p.637).

used perhaps most famously in the Holy Roman Empire, where seven prince-electors would choose an emperor. This system essentially prevented female rule. In fact, no female was ever *elected* to head a European government until Margaret Thatcher was elected prime minister in 1979 (Monter 2012, p.40).

It is only possible for us to identify effect of queens on conflict among polities that had at least one queen historically — i.e., among polities where female succession was allowed at some point in time. Laws that allowed women to come to power under particular circumstances included primogeniture, which broadly speaking, is the principle of letting the oldest son inherit power. For example, under male preference primogeniture, "[i]f the male line of particular heir fails, then the eldest daughter of the most recent male sovereign may succeed to the throne" (Corcos, p. 1604). This system preferred males but allowed females to succeed. Absolute primogeniture, where the oldest child inherits regardless of gender, was not practiced in any monarchy during our sample period.[16]

While in sweeping terms, we can say that England, Portugal and Russia practiced primogeniture for large parts of their history, in actuality, succession laws changed substantially over time. These changes may have arisen endogenously, in response to the conditions such as external wars, or the availability of male heirs. For example, the Austrian monarch Charles VI (who ruled from 1711 to 1740) had no sons or close male relatives. In 1713 he put forward a document called the Pragmatic Sanction, which declared that his daughter Maria Theresa — and, failing her — his younger daughter Maria Anna should succeed him as monarch (Beales, 2014, p. 127). The Kingdom of Sweden also reversed itself on the question of female rule several times. It prohibited female inheritance from 1654 until 1683 and again after 1720 (Monter, p.34).

Note that the endogeneity of these laws make it problematic to exploit them for identifying the effect of female rule. Moreover, no source systematically tracks which polities had which types of law in place in each year covered in our study. Though laws varied tremendously across polities and years, Monter (2012, p. 36-37) succinctly summarizes that:

[16]It was first adapted only in 1980, by Sweden.

> Four general principles governed dynastic successions to major states almost everywhere Christian Europe – they were (1) legitimate birth (2) masculine priority (3) direct over collateral descent and (4) primogeniture.

David Chambers, in his 1579 treatise on female rule also wrote, "it is a general rule that women succeed in the absence of males" and "If a decreased king anywhere else [but France] left legitimate daughters but no legitimate sons, the oldest surviving daughter took precedence over more distantly related males." These guiding principles motivate our empirical strategy. Since the oldest son of a monarch had priority in succession, we exploit whether the first born legitimate child of the previous monarch was male as one of our instruments for female rule.

4.2 Gender Variation in Siblings and First-born Children

Several examples suggest that being the sole or oldest daughter of a monarch was one path to becoming a queen. For example, Mary succeeded as queen of Burgundy and the Low Countries in 1477 — she was the only child of the previous monarch, Charles the Rash. Similarly, Marie Adelaide came to rule the Grand Duchy of Luxemburg in 1912 — she was the eldest child of William IV. In addition, Figure 2 shows that among the 28 queens appearing in our sample, 22 (in grey) are cases where the previous monarchs had no male first born child, including eight in which the monarchs had no children.

Clearly, the death of male heirs played a role in the pathway to becoming a queen. Among six queen cases where the previous monarchs had a male first-born child, all six males had died by the time of accession. Even among nine queen cases where the first-born child was female, in eight cases, the younger male children had also all died by the time of accession.

In addition, many queens were siblings of reigning monarchs. Particularly if the monarch had no brothers or no legitimate children, the throne would often pass to a sister. This motivates us to use the presence of a sister as a second instrument for female rule. For example, when Charles XII was king of Sweden (1697-1718), he never married or had children. All of his brothers had also passed away by the time he died, so the throne passed to his younger sister,

Ulrika Eleanora. Queen Isabella I of Castile also came to rule in 1474, upon the death of her brother.

The Tudors of England are yet another example. Mary I was Queen of England (over 1553-1558), and the fourth of the Tudor monarchs. She wanted to prevent her younger half-sister Elizabeth from succeeding her, as she feared Elizabeth would reverse her restoration of Roman Catholicism to England. Mary tried to have children with her spouse, Philip of Spain, but was never able to produce an heir. Upon her death, Elizabeth I did succeed her (and in fact did establish the Protestant Church as one of her first acts in power). Figure 2 also shows that the previous monarch(s) had at least one sister in 22 of the 28 queen cases (as highlighted in aqua).

4.3 Instrumental Variables Approach

We use a Instrumental Variables (IV) strategy to estimate the effect of queens on their polity's conflict participation. We instrument whether a queen ruled with indicators of whether the previous monarchs had a male first born child, and whether they had a sister.

The second stage of the IV estimation is given by:

$$Y_{prd} = \alpha_p + \tau_d + (\widehat{Queen}_{pr})\delta + \mathbf{X}'_{pr}\phi + \varepsilon_{prd} \tag{1}$$

where Y_{prd} are war-related outcomes in a polity p, reign r and decade d; α_p denotes polity fixed effects; τ_d denotes decade fixed effects; and $\mathbf{X}$ is a vector of controls that vary at the reign level (detailed below). $\widehat{Queen}_{pr}$ is the instrumented indicator of whether a queen rules during a given reign.

The first stage is given by:

$$Queen_{pr} = \alpha_p + \tau_d + (\textit{First-Born Male}_{pr-1}) + (\textit{Sister}_{pr-1})\,\theta + \mathbf{X}'_{pr}\rho + \omega_{prd} \tag{2}$$

Here, $\textit{Sister}_{pr-1}$ is an indicator of whether the monarch(s) in the previous reign had a female sibling; and $\textit{First-Born Male}_{pr-1}$ is an indicator of whether the previous monarch(s) had a legitimate first born child who was male. We use Two-Stage Least Squares to estimate

equations (1) and (2) together in a one-step procedure.

The queen variable, as well as the two instruments, vary at the level of the reign. However, war incidence may be serially correlated, for example, if particular polities tend to experience spurts of war during particular centuries. To account for this potential serial correlation, we cluster the standard errors at the polity by century level. There are 67 such clusters in our primary specifications.

We use gender of the first born since this is an arbitrary outcome determined by nature and thus exogenous to conflict in the polity. In contrast, the presence of a male child or number of male children could be a function of effort by the previous monarchs. For example, rulers could actively continue having children until they have a son. This effort may be correlated with other characteristics such as aggressive behavior, which may, in turn, affect conflict engagement and the legacy of conflict left behind in the polity.[17]

The *First-Born Male* variable is defined to be zero if the previous monarchs had no legitimate children. However, we additionally control for whether they had any legitimate children with two variables — one indicates if they had any children for whom birth years are not missing, and another indicates if they had any children with missing birth years. This disaggregation helps account for measurement error since we can most accurately identify who is first born when there are no missing birth years. Note that these "any children" controls also account for plausibly endogenous reasons why the previous monarchs may not have had children, such as war in the past reign that led them to die young, which may also affect war in the current reign.[18]

In addition, we control for whether the previous monarchs are co-rulers who are unrelated to one another, since the gender of the first born may be relatively less informative of the actual successor in these cases. For example, in 1605, Theodore II and Dimitri co-ruled the Tsardom of Russia. Dimitri claimed to be the descendant of Ivan the Terrible, but it was later

[17]We also exploit the gender of the first born, rather than gender of the oldest surviving child at accession, since there may be selection bias in who survives. For example, children who are able to survive harsh conditions may be stronger, and strength may be correlated with a tendency to be aggressive and fight aggressively, including in warfare.

[18]We also include war in the past reign as auxiliary controls in some specifications.

discovered that he was actually an imposter. There are three such cases of unrelated co-rulers in our sample.

In all our specifications, we also control for whether the gender of the sibling and gender of the first-born are missing. As discussed above, we identify gender based on name. When the name was missing from Tompsett (1994), we first conducted an exhaustive search to see if we could locate it from other sources. After searching, we were still unable to find the name of five first-born children. We believe these are very likely to be girls — as Jansen (2002) documents in detail, it is common royal genealogies to provide limited information about female children. However, our empirical strategy also controls separately for missing gender first-borns. We additionally control for whether our search filled in missing genealogy information. These controls, with the any children indicators, comprise the "main controls" utilized in all IV specifications. Some specifications also control for the total number of siblings of past monarchs.

Table 1 shows two instruments at the level of the reign. Conditional on the previous monarchs having children, there was a male first born in 54% of the sample. The naturally occurring sex ratio at birth is 52% male (Grech et al. 2002). Since missing gender cases are likely to be female, the first born ratio in our sample is within the margin of error around the naturally occurring sex ratio. Table 1 also shows that the previous monarchs had a sister in 71.5% of the cases.

Overall, our instrumental variables strategy is based on the idea that succession was hereditary, and our instruments will only predict queenly reigns if succession generally proceeded within a family lineage. Of course, succession did not always follow this course — sometimes the lineage changed, and on discrete occasions, law changes even facilitated non-hereditary succession.[19] These discrete cases could potentially weaken the strength of the first-stage, but the first-stage F-statistics (presented in the results) will ultimately dictate if succession was sufficiently hereditary for gender of the siblings and the first born to predict queenly rule.

[19]For example, in 18th century Russia, Peter the Great's succession law of 1722 gave the ruling tsar the right to appoint his or her successor. This opened the door to ambiguity in how succession could occur, leading to a series of successions via coups, depositions, and appointment by the privy council.

Some of our polities changed boundaries substantially over this period — some may have come to an end as one unit, and re-emerged as a part of another unit after unification or capture by another kingdom. For example, the Kingdoms of Leon and Castile are present in our sample as a polity from 1480 until the first decade of the 1500s, at which point Spain emerges as another polity which lasts through to 1913. We address this issue in two ways. First, we include polity fixed effects, and look only at changes over time within a given polity. Under this approach, we exploit variation over time within the Kingdoms of Leon and Castile when it is in existence, and over time Kingdom of Spain after it comes into existence. Second, while we are unable to observe high-frequency boundary changes, Morby (1989) records when monarchies come to an end via unification, partition, or capture; or transform into republics. Thus we are able to examine if queenly reigns predict these outcomes. Table 2 provides the descriptive statistics of key variables used in our analysis, at the panel level.

5 Results

This section presents evidence of how queenly reigns affect war participation. We begin by showing the OLS and IV results. We next address instrument validity. We then examine potential mechanisms behind the effects, and close by examining alternative accounts.

5.1 Queens and War: Main Results

Table 3 examines the OLS relationship between queens and war participation. The first two columns examine the aggregated external wars participation variable, while the latter columns show disaggregated effects on balance of power wars, defensive wars, and imperial wars, respectively. The even numbered controls include our standard controls. These are not needed for the OLS specifications, but we include them for comparability to the IV specifications.

The results show that polities led by queens participated in external wars more relative to polities led by kings. The estimate in column (2) indicates a differential war participation rate of 8.6%. The results also show that this effect stems from greater participation in Balance of

Power wars. The coefficients in columns (3)-(4) are substantial and precisely estimated while the coefficients for other types of war are both small in magnitude and statistically insignificant. As shown in Table 2, balance of power wars are by far the most prevalent form of external conflict. On average, polities were engaged in this type of war during 21% of the polity-year observations. In contrast, they were engaged in imperial and defensive wars 3.4% and 1.1% of the times, respectively.

However, these OLS estimates may be downward biased — for example, if the elite allowed queens to come to power more during times of stability, or prevented them from coming to power during times of war. In fact, even some reigning queens articulated the view that women should not govern if they had to lead armies into battle. This was the position of Ulrika Eleanora who asked that the Swedish Riksdag that her husband Frederick be made co-regent. When the Riksdag refused, she abdicated in his favor (Persson 2014).

To account for this potential bias, we present the IV estimates in Table 4. The second-stage results again demonstrate that queens participate in external wars more than kings, and that these effects are concentrated in Balance of Power wars. The coefficient in column (1) suggests that the likelihood of external conflict is 27% higher for queens relative to kings. The larger coefficient on the IV estimate relative to the OLS estimate is consistent with downward bias on the OLS estimates.

The bottom of Table 4 shows that the instruments together make for a strong first stage: the Kleibergen-Paap F-statistic is 13.7. Individually, each instrument also has a statistically significant effect on the likelihood of a queen coming to power. If the previous monarchs had a first-born male, this reduced the likelihood of a queen coming to power by 21.2%. In contrast, if they had a sister, this increased the likelihood of queen coming to power by 18.9%.

In Appendix Table A.2, we present results using other variants of the instrument set. In column (1) we interact the sister instrument with the first-born male instrument, and in column (2) we interact the sister instrument with an indicator that the monarch had no legitimate children, since it is possible that sisters may have acceded more often when the monarchs lacked suitable heirs. Columns (3) and (4) include just the first-born male instrument and

sister instrument, individually.

All of these instrument sets yield second-stage coefficients of similar magnitudes, indicating that the results are not especially dependent on any one particular IV approach. However, the strength of the first stage and precision of the second stage estimates vary across specifications. The first-stage F-statistics in Table A.2 range from approximately 9 to 13. For example, estimate with the first-born male instrument in column (3) has a first stage F-statistic of 12.99 and the second stage instrument is marginally insignificant with a p-value of .11. We use the sister instrument together along with the first-born male instrument since this yields the strongest first stage among these potential instrument sets.

5.2 Instrument Validity

In this section, we address two potential concerns regarding the validity of our instruments. First, it is possible that the previous monarchs were more likely to have had a sister if their parents had a large number of children. Then, these previous monarchs would have had many siblings who were potential contenders for the throne, and who may have initiated wars aimed at seizing power. These attempts at succession, in turn, would serve as an alternate channel for war, which would violate the exclusion restriction.

In Table 5, we take two steps to address this concern. First, we control for the total number of siblings, which closes off this alternative channel. As an additional check, we identify and remove wars of succession from the sample.[20] Table 5 shows that the effect of queens on external war participation remains precise and increases in magnitude under both changes. In addition, results by war type remain unchanged, with the effects clearly concentrated among Balance of Power Wars. This provides assurance that our estimates are not driven by siblings fighting for the throne. Going forward, we continue to control for the number of total siblings in all remaining specifications.

A second potential concern lies in the use of the first born male instrument. The lack of a first born make could spur war if it signals uncertainty in succession. Other monarchs

[20]These five succession wars are all external wars since they came to involve more than one European power.

may choose to attack the polity if they see that the first birth did not yield a male heir. If so, queens would inherit polities that are already participating in more wars. If these wars continue into their reign, this would be yet another path through which the instrument affects war participation. In Table 6, we examine whether such effects hold. Columns (1) - (4) examine if monarchs who have a first born male (or sister) end up fighting more in their current reign. The coefficients are insignificant, small in magnitude, and display varying signs, suggesting they do not.

We also conduct a second, broader falsification. If the presence of a first born male (or sister) in the last reign affects war through some other channel beyond queenly accession, these variables should also affect war participation in polities that never had queens. To examine this idea, we test whether the presence of a first-born male and sister in the past reign affected conflict in the non-queen polities. We find no evidence of such a relationship in columns (5) - (8). These two falsifications further bolster the validity of our instruments.[21]

5.3 Robustness Checks

Since our effects on external war participation stem primarily from participation in Balance of Power wars, we treat this latter variable as our main outcome, and conduct a number of additional robustness checks focusing on this measure.

First, we build on the falsification tests presented in Table 6. In column (1) of Appendix Table A.3, we account directly for the possibility that legacy of war in the previous reign may affect conflict in the current reign by controlling for whether any balance of power wars occurred during the previous reign. We find that this control does not affect our estimate. Second, Figure 2 suggests that many queens come to power after male siblings have died. If the presence of

[21] Acharya and Lee (2015) find that over 1000-1500 AD, the number of male heirs in the past reign affects internal conflicts. Three points are useful in understanding our results together. First, our IV strategy uses the presence of a first-born male, not the number of male heirs. And, as discussed earlier, we use the first born male instrument in conjunction with the sister instrument which is a different source of variation. Second, our sample begins when their sample ends — and it is possible that succession may have been more contentious and given rise to more internal conflict during the earlier pre-1500 period, if succession laws were less detailed during that time. Finally, we find second-stage effects of queens on external wars, not internal wars. Thus, from the angle of instrument validity, we are most concerned about alternative ways in which our instruments can affect external wars, not internal wars.

dead male siblings itself is an indicator of internal instability it is possible that this type of instability influences war in subsequent reigns. In columns (2)-(4), we incorporate three sets of controls, all of which are counts of dead siblings at the time the current monarch acceded. This includes: the number of dead male siblings and dead female siblings of the previous monarchs; the number of dead male children and dead female children of the previous monarchs, who are siblings of the current monarchs in the cases when the throne actually passed to a child of the previous monarchs; and most directly, the dead male and dead female siblings of the current monarch. The table shows that incorporating these controls also do not influence the results.

We also address potential age differences across rulers. Monarchs in queenly reigns, were on average, six years younger at accession than monarchs in kingly reigns. If younger monarchs are more aggressive, then the effect of queenly reigns on war could reflect youth, rather than gender. However, the results remain unchanged when we control for average age at accession in column (5) of Table A.3.[22]

In addition, we consider the possibility that greater war participation may not indicate greater belligerence if queens tend to participate in wars of a smaller scope. Although we are unable to observe casualties, we are able to observe the total number of polities participating in each war. We average this number across all external wars in which a polity participates in a given year. Column (6) of Table A.3 shows that queens, on average, do not engage in wars of a smaller scope, based on the number of participants.[23]

In Table A.4, we also verify that our results are not driven by particular polities. Among the 29 queens in the sample, six are from England and four are from Russia. There are also two queens from each of Navarre, Leon and Castile, Portugal and Sweden. (The remaining queens all come from different polities). Columns (1)-(6) demonstrate that dropping each of these six polities with multiple queens leaves our results unchanged. In other words, our effects

[22]We treat this as an auxiliary control since age of accession is potentially endogenous, as war conditions may determine the age at which monarchs are allowed to accede. In addition the age variable is missing for a sub-sample of our observations, but we control for an indicator of age missingness in this specification.

[23]Note that this participant variable can only be defined for years in which polities are participating in wars, which is why the number of observations is smaller in this specification.

are not driven solely by English queens, or Spanish queens, or Russian queens.[24] On the flip side, many of the remaining polities are small in size and political power, and it is important to verify that outliers from these areas do not drive the estimates. In column (7), we remove all the remaining queen polities besides the primary six, and find that the estimated effects are if anything larger in magnitude. This suggests that outliers among the minor polities also do not drive our results.

Finally, in column (8) we check the robustness of our results to an alternate specification. Our main specification identifies the effect of queens in polities that have ever had a queen. This has two clear advantages. First, these are the areas where our instruments have predictive power for whether a queen comes to power. Moreover, under this restriction, we compare queens to kings in polities that have, at some point, been ruled by a queen, who arguably constitute a better control group relative to kings in non-queen polities. On the other hand, focusing on the queen polities does have the disadvantage that it omits war incidents occurring among kings in reigning in polities that have never had queens. If this type of war incidence is very high, it is possible that queens may not participate more in wars relative to this other broader, control group. Also, some of the wars analyzed for the queen polities also involve participants from the non-queen polities. To explore whether omitting the non-queen polities impacts our estimates, we look at a pooled sample of queen and non-queen polities. To get predictive power from our IV strategy in this pooled sample, we use the first-born male and sister variables, and their interactions with an indicator of whether the polity ever had a queen, as instruments for queenly reigns. We also interact our control variables with this queen polity indicator. Column (5) shows that our results remain unchanged under this alternate approach.

In Table A.5, we present another alternate specification. We collapse our annual panel to the level of the reign. We then run reign level regressions in which our dependent variable is

[24]Since the results remain in place when we drop Russia from the sample, this provides assurance that the succession law change in 1722 and its effects on how monarchs came to power (see Section 4.2), do not affect our estimates. In particular, the Russian queens who inherited the throne during the 18th century gained power either when their spouse died, when they overthrew the reigning monarch, or when they were appointed by the privy council. However, as column (2) shows, these queens who came to power outside of hereditary succession, do not drive our estimates.

the number of years the polity is at war, controlling for the length of the reign (in years). We continue to use polity fixed effects, and also include indicator variables of the centuries in which the reigns fall. In some cases a reign can span multiple centuries by cutting across the turn of the century. We cluster the standard errors at the polity level. Since there are 18 clusters, and the null may be over-rejected when there are fewer than 30-40 clusters (Cameron Gelbach and Miller 2008), we additionally apply a wild bootstrap procedure (with 1,000 replications). The specifications in columns (1)-(2), as well as (5)-(6), verify the robustness of our main results to this alternate reign level approach.

5.4 Disaggregated Effects: Examining the Reign Capacity and Perceived Weakness Accounts

In this section, we further disaggregate the effect of queens on war participation to unpack why these effects arise. First, we examine if increased war participation stems from new wars that the reign initiated or from the continuation of old wars started in previous reigns. Column (1)-Table 6 presents the main effect on balance of power war participation, and columns (2)-(3) show the decomposition. The coefficients in these latter two outcomes add up to the coefficient in column (1). The magnitudes suggest that reign entry into new wars and reign continuation of old wars both contribute to the queen effect on wars.

Second, we gauge whether queens participate more in wars in which their polity attacked, or in which their polities were attacked. This is useful for gauging the perceived weakness account, which suggests that queens should be engaged disproportionately in wars in which their polity is attacked.

We utilize Wright's coding of who initiated the conflict for this disaggregation. Since the aggressor coding is missing for some observations, column (4) of Table 6 shows the queen effect on balance of power war participation in this sub-sample. Columns (5)-(6) then shows the disaggregated effects. The coefficients indicate that the largest and most precisely estimated effect is for the polity attacked variable: Queens, on average, participated more in wars in

which their polity was the aggressor, and not in wars in which their polity was attacked. This suggests that queens did not end up at war solely because they were attacked out of perceived weakness, and is also inconsistent with the idea that women, in general, adapted conciliatory policies.

Is it possible that these effects on aggressive war participation were driven by the cases of co-rule in which the husbands of queens were official co-regents? To examine this, Table A.6 presents the effects for "solo queens" who ruled as the sole regent – either because their husbands did not hold the co-regent title or because they were unmarried during their reign. We find the same results with the solo queens measure as with the overall queens measure. This suggests that the effects on aggressive war participation do not simply reflect decisions made by co-ruling kings.

Did queens succeed by pursuing aggressive participation? While we cannot observe who won the wars, we can observe whether polities gained or lost territory over the course of various reigns. This is relevant since territorial expansion, was of course, a major objective of balance of power wars among European actors. We generate an indicator of whether the contiguous territory of a polity increased over the course of the reign, and examine this outcome using reign level specifications.[25] Table A.5 demonstrates that queenly reigns are associated with a greater likelihood of territorial gain. It also verifies that the effects of queens on aggressive participation hold at the reign level. Territory can be gained and lost for reasons other than war. Nonetheless, these results suggest that the aggregate set of policies pursued by queenly reigns, including participation in wars of aggression, led to greater chances of expansion.

At first cut, these effects are consistent with the idea that reigns with queens had greater capacity, which enhanced their ability to pursue wars more aggressively. But if aggressive war participation is facilitated by support from spouses, then these effects should emerge specifically among married monarchs. To test this account, Table 8 examines whether a queen's proclivity to attack or be attacked varies by marital status. We define a monarch as married during the

[25]The source of the territorial gain data is the Centennia Historical Atlas, which provides 10 snapshots of territory for most of the European polities in our sample. We determined if the contiguous territory under a polity increased by comparing snapshots at the beginning and end of the ruler's reign.

reign if he or she had a (living) spouse during any year of their reign. (In cases of co-rule, we consider if either monarch had a spouse during the reign).

This marital measure differs from whether the monarch was ever married. For example, he or she may be unmarried during a reign either because their rule precedes marriage, or because they were married previously, but became single owing to separation or their spouse's death. For example, 12% of the rulers in our sample never married, but 27% of the reigns are composed of rulers without spouses, including 13 queenly reigns without spouses. We interact this married in reign variable with the Queen indicator, the instruments, and the control variables. Since marital status varies by age, and age may influence war aggression, we also control for equivalent age at accession interactions. To account for missing values, we include indicators of of whether the marriage and accession age variables are missing, and include interaction terms with these indicators and the endogenous variable, as well as the instruments and controls.

Columns (1) and (2) of Table 8 show a distinct pattern. Among married monarchs, queens were more likely to participate in wars as attackers, and less likely to be attacked than kings. Yet among unmarried monarchs, queens were more likely to be attacked than kings. The coefficients on the Married in Reign variable capture the effect for married kings. These coefficients indicate that married kings were not significantly more likely to attack or be attacked than single kings. In contrast, the significant interaction terms on the Queen x Married variable tell us that the married queens were significantly more inclined to attack than single queens, and also significantly less likely to be attacked than singe queens. [26]

These results provide two additional insights into the mechanism at play. First, the differential tendency of queens to participate as attackers among married monarchs is consistent with the idea that spouses enhanced the reign capacity of married queens, enabling them to pursue aggressive war policies. Second, the differential tendency of single queens to get at-

[26]The omitted category in these specifications is unmarried kings. The coefficient on the Queen variable captures the effect of unmarried queens relatively to unmarried kings. So, the coefficient of .737 in columns (2) tells us that unmarried queens were more likely to be attacked than unmarried kings. The coefficient of .004 on "Married" tells us that married kings were no more likely to be attacked than unmarried kings. And, the sum of the coefficients on "Queen" and "Queen x Married" (.126) tells us the effect size for married queens relative to married kings.

tacked (relative to both single kings and married monarchs) provides some support for the perceived weakness account — i.e., it suggests that unmarried queens, specifically, may have been perceived as weak and easy to attack.

It is again important to consider if these heterogenous effects on aggressive war participation, concentrated among married queens, reflect the dictate's of a queen's husband. We present evidence against this in several ways. First, we posit that a queen's husband is most likely to be influential when he is also an official co-regent. But when we eliminate all cases of queens co-ruling with co-regent in columns (3)-(4), we continue to observe the same pattern of results for the solo queens. This suggests that even married queens who were sole regents had greater capacity to fight wars of aggression; and even unmarried queens who were sole regents tended to be attacked to a greater degree.

In Table 8, the coefficients on the Solo queen x Married interaction terms are even larger than those on the Queen x Married interactions. This raises the possibility that king consorts who were not official co-regents may have been especially militaristic and dominated war-making decisions. It is even possible that marriages may have been organized strategically to wed queens to these militaristic spouses. To account for this, we control for whether the spouses of monarchs had any military experience prior to the marriage. This variable measures whether they had direct experience as military lieutenants or commanders, or presided over a war as the adult monarch of a polity prior to their marriage. In column (5)-(6) we include this spousal military experience variable and its interaction with the endogenous queen variable, the instruments and the controls. We find that the results hold even with this additional control.[27] These results suggest that the differential tendency of married queens to participate as aggressors reflects some factor beyond the militaristic tendency of their spouses.

In addition, qualitative accounts also suggest that queens who involved their spouses in state matters did not necessarily retract their own decision-making authority in those matters.

[27]In a handful of cases, queens married their husbands after the start of the reign. We create a second version of the military experience variable that only considers military experience prior to the reign, rather than marriage, for these cases. The results (available upon request) are the same with the inclusion of this alternate control.

Historical records show that ruling husbands and wives often disagreed over major policy issues. For example, when Isabella acceded, Ferdinand tried to assert his rights to become an official co-regent. They clashed over this, and eventually, Isabella prevailed. They embarked on "joint government by two monarchs" but Isabella was the queen regnant and Ferdinand was her king-consort. Importantly, the succession law specified that if she died the throne would pass to their daughter Isabel, not Ferdinand (Jansen 2002, p. 15).

Though Ferdinand played a critical in military confrontations, Isabella also never withdrew from this realm. During the internal conflict against Juana, she rode throughout her territory to garner support for her cause (Jansen 2002, p. 21). Her military role only expanded during the war against Granada:

> An "accomplished strategist," she ultimately moved out from behind the scenes to center stage, taking the field with the Castilian army in Cordoba, Malaga, Baeza, and, at last, in Granada, where she appeared wearing armor and mounted on a warhorse (*ibid*).

In short, though Isabella relied on her husband, her authority and independence were apparent, and few would have described her as Ferdinand's subordinate.

In Table A.7, we present two additional checks. We combed through historical records of the married queens in our sample, and found three cases in which they could have been considered weak owing to either their public posture or mental state. One case is Juana la Loca who co-ruled Leon and Castile over 1504-1506. As her name suggests, Juana was mentally incapacitated. Another case is Mary II who co-ruled England with William III over 1689-1695, but ceded power to him willingly. A third is Ulrika Eleanora, who ruled Sweden (1718-1719), but publicly declared that women were unfit to rule, and abdicated when the Riksdag refused to make her husband a co-monarch. It is unlikely that these women were major drivers of decision-making given their stances, which raises concerns that their husbands may have been the major decision makers in these cases. However, in columns 1-2 of Table A.7, we find that the same results continue to hold even after we drop these three queens from the sample. This reinforces

the idea that even among queens who were positioned and willing to serve as decision makers, married queens pursued war more aggressively. Finally, we consider the possibility that married queens pursued aggressive war policies not because of capacity, but rather, because they were more likely to have had legitimate male heirs to whom they could bequeath their kingdom. However, columns 3-4 of Table A.7 show that the results are unaffected if we control for the interaction of whether the monarchs had a legitimate male child.

Next, we examine the second way in which married queens may have had greater capacity to carry out war — through more alliances. We were able to track whether each polity fought in wars alone, or alongside another polity fighting on its side, for 73 percent of the balance of wars in our sample.[28] From this coding effort, we generated an indicator of whether the polity fought with at least one ally. This serves as the dependent variable in columns (7)-(8) of Table 8. By construction, it is only defined for the years in which a polity was participating in a war. The table shows heterogenous effects based on martial status. Married kings were more likely to fight alongside an ally (relative to unmarried kings). Moreover, the tendency to fight with an ally was even greater among married queens (relative to married kings, unmarried kings and unmarried queens). For example, the effect is .117 larger for married queens than married kings in column (7), and .266 larger for married queens than kings in column (8), which are 18% and 42% above the mean, respectively. These results suggest that marriage brought alliances for all monarchs, but disproportionately so for queens. One interpretation of this effect is that male spouses may have been better positioned to forge alliances because they were typically more tied to military matters in their home polities, compared to female spouses.

Overall, the results from Table 8 are consistent with the idea that asymmetries in the division of labor, and more alliance formation in queenly reigns relative to kingly reigns served to strengthen the relative capacity of queens, facilitating their greater participation in external wars. These marital effects raise the natural question of why a spouse is unique – after all, if monarchs were unmarried, couldn't other figures in the royal courts play an equally supportive

[28]This coding required us to have detailed descriptions of each war, to discern which polities fought on which side. This information is not available from Wright, and had to be constructed from various sources.

role? We view spouses as occupying a unique position along two dimensions. First, they solve an ages old problem of who to trust in ruling. Since siblings could be contenders for the throne, it would be risky for queens to place their brothers in charge of the military. In contrast, a spouse would be a safer choice, especially since he would typically be ineligible to serve as a monarch in the queen's polity, if he originated from another polity.[29] In addition, precisely because spouses typically originated from other polities, they played a unique role in being able to provide alliances, which others in the court would not have been positioned to do.

5.5 Addressing Alternative Accounts

In this section we consider and present evidence against three alternative accounts. One alternative account posits that queens may have chosen to fight to signal their strength. This is important to address since influential accounts of war, such as the bargaining model (Fearon 1995), imply that states may fight in order to send a costly signal that they are not as militarily weak as others perceive. If queens were signaling, it would be most advantageous for them to send this signal early in the reign, to maximally ward off potential attacks over the duration of their rule. This suggests we should observe more aggressive war participation earlier in their reign. In Table 9, we test this idea by introducing an interaction between the queen variable and two indicators: one that demarcates the second half of the reign and another which demarcates the period beyond the first two years of the reign. In these specifications, we also control for the overall length of reign. For balance of power war participation, as well as the polity attacked variable, the interaction term is statistically insignificant and also positive in sign (suggesting, if anything, more war later). This suggests that the queen effects on war do not arise from signaling, specifically.

A second alternate account suggests that aggressive actions undertaken during a queen's reign may reflect the actions a foreign minister, rather than the queen herself. This conjecture is based on two assumptions – that foreign ministers are more aggressive than monarchs, and that women rulers are more easily influenced by ministers than male rulers.

[29]We verify that in our sample, the spouses of queens did in fact originate from other states.

Scholars throughout history have questioned the second assumption. In 1630, Gregorio Leti, who produced a biography of Elizabeth I, wrote:

> I do not know why men have conceived such a strange and evil opinion of women so as to consider them incapable of conducting important business ... if men see a person of that sex govern a state with prudence and success they will inevitably take the glory away from her and attribute it to her favorites and ministers. (Monter, p. 153).

Although this assumption has been questioned, if female rulers were in fact more easily influenced by male ministers, these effects should be larger if they acceded to the throne at an early age. This is when they were the most impressionable, and may not have developed clear policy positions of their own. To test this idea, we introduce interactions of age at accession with the queen variable. Columns (7)-(9) of Table 9 indicate that there are no differential effects of queens on war based on the age at which they came to power. This casts doubt against the idea that ministers behind the scenes were making all war-related decisions.

These results are also consistent with evidence that queens did not passively receive the advice of ministers. When Frederick invaded Silesia, Maria Theresa's elderly ministers advised her to make concessions— she refuted their advice and fought back as she wanted retain all of her territory (Beales, p. 133).

Finally, we examine the account that queens pursued external war strategically because they faced greater internal instability and sought to unify the polity against an external threat (Ostrom and Job 1986). Table 10 shows that having a queen did not affect participation in civil war, or differentially impact the length of a monarch's reign. [30] Moreover, it had no significant impact on the likelihood that a monarch was killed. It also didn't bring about the demise of the kingdom: there were no large-scale shifts in whether a kingdom ended, either through partition, unification or capture with another kingdom, or through its transformation into a

[30]It is possible that the distinction between external wars ad civil wars may be unclear in cases where a civil war results in the creation of a new unit. Column 7 of Table A.3 verifies that queens lead to greater war participation under an alternate measure of war that aggregates together participation in any war — external or internal.

republic. This suggests that greater internal instability was unlikely to be a key motivating factor for pursuing external war.

6 Conclusion

A large body of work contends that states led by women engage less in conflict than states led by men. Yet, the theoretical reasons behind this conjecture are unclear, and it is empirically difficult to estimate how female rule affects conflict engagement. We examine this question in the context of Europe, over 1480-1913. We exploit gender of the first-born and presence of a sister in the previous reign as instruments for whether queens come to power. We find that queenly reigns participated more in inter-state wars relative to kingly reigns, and these effects arise from greater participation in Balance of Power wars, which took place among European actors. Queens were also more likely to gain territory over the course of their reigns, but were no more likely than kings to experience civil wars or other internal conflicts.

Notably, queens engaged more in wars in which their polity was the aggressor, though this effect varies based on marital status. Among unmarried monarchs, queens were attacked more than kings. Among married monarchs, queens participated as attackers more than kings, and were more likely to fight alongside allies. These results are consistent with an account in which unmarried queens were attacked as they were perceived to be weak, while married queens had greater capacity to attack, based on both alliances and a willingness to use their spouses to help them rule.

These results suggest that war policy differed based on the ruler's gender in part because female rulers organized their rule differently from male rulers – for example, by enlisting their spouses to aid in ruling, which male rulers were less inclined to do. This asymmetry in enlisting spouses reflected prevailing gender norms of the day, which points to how gender norms themselves played a role in shaping different conflict trajectories under male and female rule.

While we cannot extrapolate directly from these results to the current era, we can consider a few potential implications for today's rulers. These conjectures seem relevant since existing

work has already documented a positive correlation between female executives and a state's conflict behavior in the modern period (Koch and Fulton 2011). Broadly speaking, we may expect to observe systematic differences in war policy based on a ruler's gender if male and female leaders continue organizing their rules differently, including in who they recruit into their governments, and who they enlist to play supportive roles. The marital interactions we uncover for Europe historically also suggest that perhaps the largest gender-based effects today arise in weakly institutionalized settings, where families continue to play a role in solving the challenge of who to trust in leading. This should be the subject of future research, in further study of gender and conflict.

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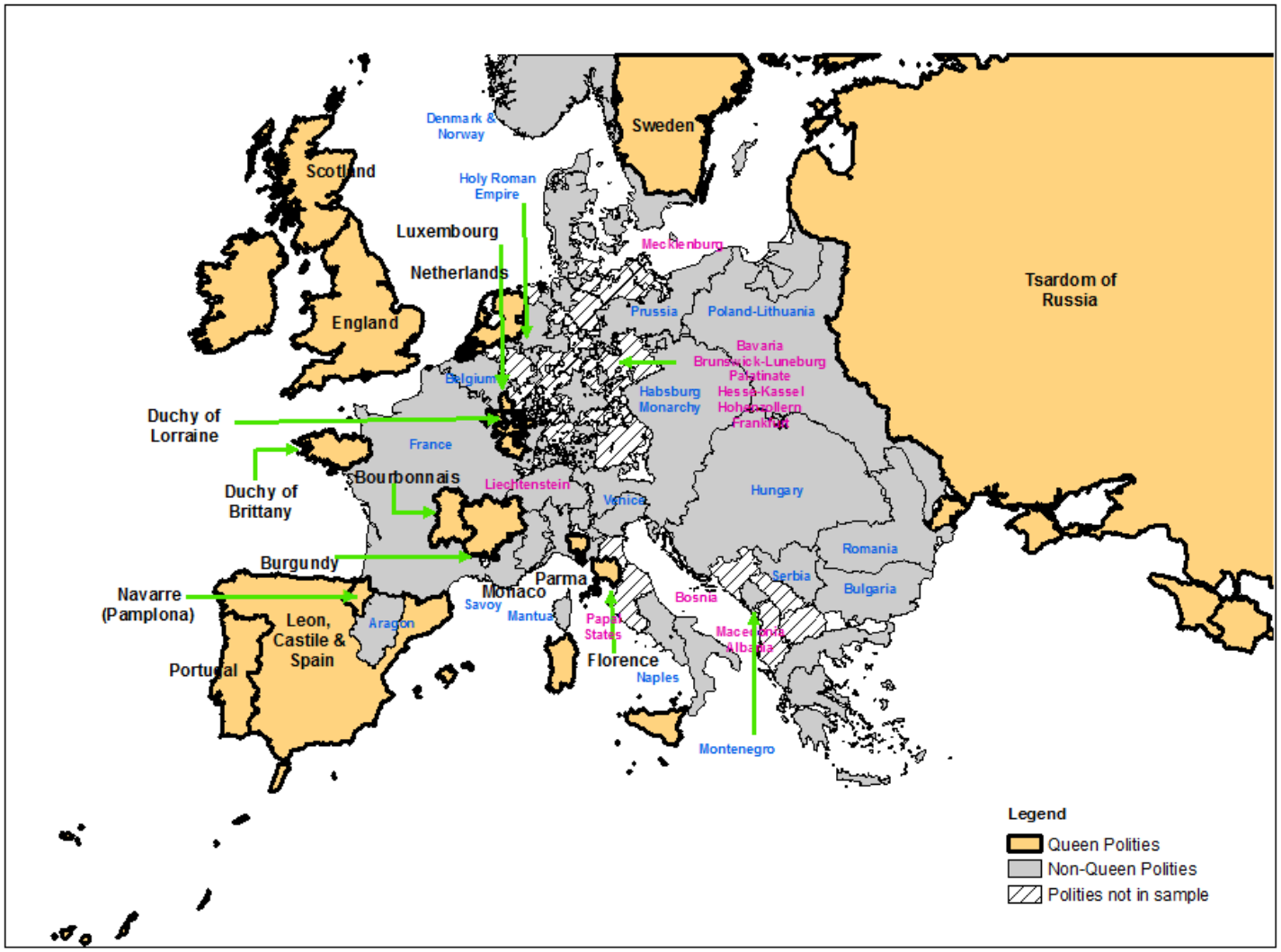
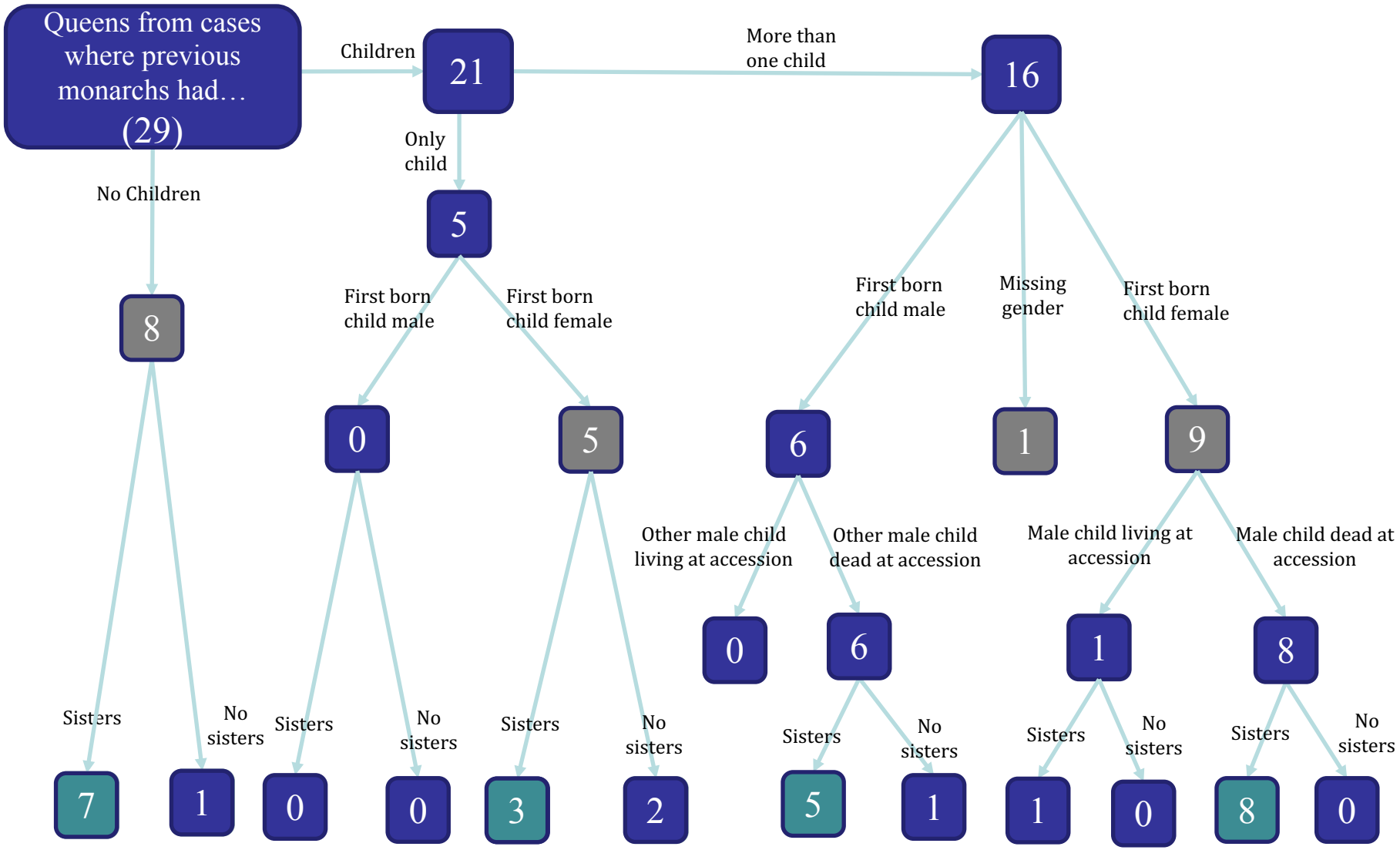
Figure 1
Queen and Non-Queen Polities



Notes. This figure shows the queen polities, non-queen polities and polities not included in our sample. It was created by overlaying six Georeferenced Historical Vector maps from Euratlas (http://www.euratlas.com/) at the turn of each century between 1500-2000. Each polity was identified and chosen from one of these six maps to minimize displayed territorial overlap among polities. The territorial boundaries for different polities are from different time periods, and do not necessarily match present day borders or show the maximum geographical area covered by each polity historically.

Figure 2
Circumstances under which Queens Came to Power



Notes. This figure shows the circumstances of the previous monarchs for each of the 29 queens who came to power in our sample. For example, the previous monarchs had children in 21 of 29 queen cases and lacked children in 8 cases. Among these latter 8 cases, the previous monarchs had sisters in 7 cases and had no sister in 1 case. Aqua cells show all the cases in which there was at least one sister among previous monarchs. Grey cells show all the cases in which there was no male first born child among previous monarchs.

Table 1

The Instruments

Male First Born (previous monarchs)			Sister (Previous Monarchs)		
Yes	71	46%	Yes	138	71.5%
No	84	54%	No	55	28.5%

Table 2

Summary Statistics of Key Variables

Variable	Obs	Mean	Std. Dev.	Min	Max
Dependent Variables					
In External War	3586	0.248	0.432	0	1
In Imperial War	3586	0.034	0.181	0	1
In Defensive War	3574	0.013	0.114	0	1
In Balance of Power War	3577	0.214	0.410	0	1
In Balance of Power War - Reign Entered	3577	0.164	0.370	0	1
In Balance of Power War - Reign Continued	3577	0.050	0.219	0	1
In Balance of Power War - Kingdom Attacked	3563	0.086	0.281	0	1
In Balance of Power War - Kingdom was Attacked	3563	0.124	0.330	0	1
In Civil War	3586	0.070	0.255	0	1
Reign Length	3586	30.746	15.677	1	66
Monarch Killed	3058	0.145	0.352	0	1
Polity Ends in this Reign	3586	0.085	0.279	0	1
Polity is Partitioned / Captured / Unites with Another	3559	0.067	0.250	0	1
Polity becomes a Republic	3559	0.001	0.029	0	1
Any Ally in Balance of Power War	530	0.636	0.482	0	1
Independent Variables					
Queen	3586	0.160	0.366	0	1
Solo Queen	3586	0.131	0.337	0	1
Married in Reign	3410	0.836	0.370	0	1
First-born male (of previous monarchs)	3586	0.502	0.500	0	1
Sister (of previous monarchs)	3586	0.740	0.438	0	1
Total Siblings (of previous monarchs)	3586	4.302	4.145	0	22
First-born missing gender (of previous monarchs)	3586	0.019	0.137	0	1
Missing gender sibling (of previous monarchs)	3586	0.064	0.245	0	1
At least one child with missing birth year (of previous monarchs)	3586	0.118	0.323	0	1
At least one child without missing birth year (of previous monarchs)	3586	0.821	0.383	0	1
Co-rulers unrelated (among previous monarchs)	3586	0.008	0.088	0	1

Table 3

Queens and War: OLS Results

VARIABLES	(1) In External War	(2) In External War	(3) In Balance of Power War	(4) In Balance of Power War	(5) In Defensive War	(6) In Defensive War	(7) In Imperial War	(8) In Imperial War
Queen	0.081*	0.086**	0.097**	0.100**	-0.003	0.002	-0.013	-0.017
	[0.043]	[0.043]	[0.041]	[0.042]	[0.007]	[0.006]	[0.026]	[0.026]
Observations	3,586	3,586	3,577	3,577	3,574	3,574	3,586	3,586
R-squared	0.403	0.407	0.396	0.398	0.204	0.260	0.127	0.142
Specification	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS
Standard Controls		Y		Y		Y		Y

Notes. Variables not shown include polity and decade fixed effects. Robust standard errors clustered at the polity level are shown in parentheses. *** is significant at the 1% level, ** is significant at the 5% level, * is significant at the 10% level.

Table 4

Queens and War: IV Results

VARIABLES	(1) In External War	(2) In Balance of Power War	(3) In Defensive War	(4) In Imperial War
Queen	0.265*	0.299**	-0.033	0.044
	[0.155]	[0.146]	[0.053]	[0.073]
Observations	3,586	3,577	3,574	3,586
R-squared	0.390	0.375	0.251	0.131
Instruments	FBM_{r-1} & $Sister_{r-1}$	FBM_{r-1} & $Sister_{r-1}$	FBM_{r-1} & $Sister_{r-1}$	FBM_{r-1} & $Sister_{r-1}$
Standard Controls	Y	Y	Y	Y

FIRST STAGE:	Queen
FBM_{r-1}	-0.212**
	(0.064)
$Sister_{r-1}$	0.189**
	(0.051)
Observations	3586
R-squared	0.354
Standard Controls	Y
Kleibergen-Paap F-statistic	13.7

Notes. Variables not shown include polity and decade fixed effects. FBM_{r-1} denotes previous monarchs had a First-Born Male. $Sister_{r-1}$ denotes previous monarchs had a sister. Robust standard errors clustered at the polity by century level are shown in parentheses. *** is significant at the 1% level, ** is significant at the 5% level, * is significant at the 10% level.

Table 5

Siblings and Wars of Succession

VARIABLES	(1) In External War	(2) In Balance of Power War	(3) In External War	(4) In Balance of Power War	(5) In External War	(6) In Balance of Power War	(7) In Defensive War	(8) In Imperial War	(9) In Defensive War	(10) In Imperial War	(11) In Defensive War	(12) In Imperial War
Queen	0.288*	0.324**	0.364**	0.398**	0.379**	0.414***	-0.028	0.076	-0.033	0.044	-0.028	0.076
	[0.151]	[0.147]	[0.168]	[0.155]	[0.168]	[0.160]	[0.058]	[0.089]	[0.053]	[0.073]	[0.058]	[0.089]
Observations	3,586	3,577	3,586	3,575	3,586	3,575	3,574	3,586	3,574	3,586	3,574	3,586
R-squared	0.386	0.370	0.336	0.312	0.332	0.307	0.254	0.121	0.251	0.131	0.254	0.121
Specification	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV
Standard Controls	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Total Siblings	Y	Y			Y	Y	Y	Y			Y	Y
Sample	All wars	All wars	No Succession Wars	No Succession Wars	No Succession Wars	No Succession Wars	All wars	All wars	No Succession Wars	No Succession Wars	No Succession Wars	No Succession Wars

Notes. Variables not shown include polity and decade fixed effects. Robust standard errors clustered at the polity level are shown in parentheses. *** is significant at the 1% level, ** is significant at the 5% level, * is significant at the 10% level.

Table 6

Falsification Tests

VARIABLES	(1) In External War	(2) In Balance of Power War	(3) In Defensive War	(4) In Imperial War	(5) In External War	(6) In Balance of Power War	(7) In Defensive War	(8) In Imperial War
FBM_r	-0.032	-0.035	0.010	-0.008				
	[0.035]	[0.033]	[0.014]	[0.019]				
$Sister_r$	0.061	0.044	0.019	0.029				
	[0.042]	[0.039]	[0.014]	[0.028]				
FBM_{r-1}					-0.044	-0.057	0.008	0.016
					[0.072]	[0.057]	[0.035]	[0.012]
$Sister_{r-1}$					-0.030	-0.029	-0.069	0.025
					[0.065]	[0.052]	[0.049]	[0.018]
Observations	3,319	3,310	3,307	3,319	2,903	2,818	2,903	2,903
R-squared	0.409	0.408	0.256	0.161	0.346	0.353	0.368	0.188
Specification	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS
Standard Controls	Y	Y	Y	Y	Y	Y	Y	Y
Total Siblings	Y	Y	Y	Y	Y	Y	Y	Y
Sample	Queen Polities	Queen Polities	Queen Polities	Queen Polities	Non-Queen Polities	Non-Queen Polities	Non-Queen Polities	Non-Queen Polities

Notes. Variables not shown include polity and decade fixed effects. FBM_{r-1} denotes previous monarchs had a First-Born Male. $Sister_{r-1}$ denotes previous monarchs had a sister. FBMr and Sisterr denote if current monarchs have a First-Born Male or Sister, respectively. Robust standard errors clustered at the polity by century level are shown in parentheses. *** is significant at the 1% level, ** is significant at the 5% level, * is significant at the 10% level.

Table 7

War Entry and War Aggression

VARIABLES	(1) In Balance of Power War	(2) Reign Entered	(3) Reign Continued	(4) In Balance of Power War	(5) Polity was Attacked	(6) Polity Attacked
Queen	0.324**	0.211*	0.113	0.331**	0.067	0.264*
	[0.147]	[0.116]	[0.142]	[0.149]	[0.111]	[0.149]
Sample restriction?	None	None	None	Polity Attack variables defined		
Observations	3,577	3,577	3,577	3,563	3,563	3,563
R-squared	0.370	0.270	0.213	0.366	0.283	0.169
Specification	IV	IV	IV	IV	IV	IV
Standard Controls	Y	Y	Y	Y	Y	Y
Total Siblings	Y	Y	Y	Y	Y	Y

Notes. Variables not shown include polity and decade fixed effects. Robust standard errors clustered at the polity level are shown in parentheses. *** is significant at the 1% level, ** is significant at the 5% level, * is significant at the 10% level. Column 5 retricts the sample to observations for which the Polity was Attacked and Polity Attacked variables are defined.

Table 8

Queens, Wars and Alliances: Effects by Marital Status

VARIABLES	(1) Polity Attacked	(2) Polity was Attacked	(3) Polity Attacked	(4) Polity was Attacked	(5) Polity Attacked	(6) Polity was Attacked	(7) Any Ally	(8) Any Ally
Queen	-0.306	0.737***					-0.525	
	[0.324]	[0.231]					[0.391]	
Queen x Married in Reign	0.414*	-0.611***					0.642***	
	[0.214]	[0.216]					[0.236]	
Married in Reign	0.027	0.004	0.058	-0.005	0.055	-0.020	0.291*	0.314**
	[0.058]	[0.050]	[0.069]	[0.054]	[0.070]	[0.061]	[0.149]	[0.139]
Solo Queen			-0.427	0.860***	-0.384	0.879***		-0.522
			[0.345]	[0.265]	[0.360]	[0.312]		[0.409]
Solo Queen x Married in Reign			0.608**	-0.688***	0.736**	-0.899***		0.788***
			[0.269]	[0.223]	[0.302]	[0.252]		[0.259]
Observations	3,563	3,563	3,459	3,459	3,372	3,372	530	517
R-squared	0.192	0.281	0.145	0.279	0.112	0.247	0.737	0.727
Specification	IV	IV	IV	IV	IV	IV	IV	IV
Standard Controls	Y	Y	Y	Y	Y	Y	Y	Y
Control Total Siblings	Y	Y	Y	Y	Y	Y	Y	Y
Control Accession Age	Y	Y	Y	Y	Y	Y	Y	Y
Control Spousal Military Experience					Y	Y	Y	Y
Sample Restriction?	None	None	No reigns with co-ruling queens	No reigns with co-ruling queens	No reigns with co-ruling queens	No reigns with co-ruling queens	No war years	No war years & No Reigns with co-ruling Queens

Notes. Variables not shown include polity and decade fixed effects. Robust standard errors clustered at the polity level are shown in parentheses. *** is significant at the 1% level, ** is significant at the 5% level, * is significant at the 10% level. Accession age is the average age of accession of the monarchs in the reign. Spousal military experience is one if the spouse had any military experience prior to marriage.

Table 9

Effects based on Timing and Age

VARIABLES	(1) In Balance of Power War	(2) Polity Attacked	(3) Polity was Attacked	(4) In Balance of Power War	(5) Polity Attacked	(6) Polity was Attacked	(7) In Balance of Power War	(8) Polity Attacked	(9) Polity was Attacked
Queen	0.310**	0.257*	0.062	0.294*	0.203	0.088	0.304*	0.208	0.105
	[0.155]	[0.150]	[0.106]	[0.165]	[0.144]	[0.114]	[0.174]	[0.170]	[0.144]
Queen x After first two years of reign	0.089	0.099	-0.023						
	[0.299]	[0.191]	[0.265]						
Queen x After second half of reign				0.076	0.137	-0.038			
				[0.188]	[0.156]	[0.165]			
Queen x Accession age							-0.011	0.014	-0.025
							[0.016]	[0.015]	[0.018]
Observations	3,577	3,563	3,563	3,577	3,563	3,563	3,577	3,563	3,563
R-squared	0.371	0.165	0.286	0.369	0.164	0.286			
Specification	IV	IV	IV	IV	IV	IV	IV	IV	IV
Standard Controls	Y	Y	Y	Y	Y	Y	Y	Y	Y
Total Siblings	Y	Y	Y	Y	Y	Y	Y	Y	Y
Reign Length	Y	Y	Y	Y	Y	Y			

Notes. Variables not shown include polity and decade fixed effects. Robust standard errors clustered at the polity level are shown in parentheses. *** is significant at the 1% level, ** is significant at the 5% level, * is significant at the 10% level.

Table 10

Queens and Internal Instability

VARIABLES	(1) In Civil War	(2) Reign length	(3) Monarch killed	(4) Polity ends	(5) Polity unites/ partitioned/captured	(6) Polity becomes republic
Queen	-0.024	-2.777	-0.440	0.113	0.040	-0.001
	[0.108]	[10.472]	[0.304]	[0.172]	[0.161]	[0.003]
Observations	3,586	3,586	3,058	3,586	3,559	3,559
R-squared	0.292	0.329	0.312	0.476	0.508	0.038
Specification	IV	IV	IV	IV	IV	IV
Standard Controls	Y	Y	Y	Y	Y	Y
Total Siblings	Y	Y	Y	Y	Y	Y

Notes. Variables not shown include polity and decade fixed effects. Robust standard errors clustered at the polity level are shown in parentheses. *** is significant at the 1% level, ** is significant at the 5% level, * is significant at the 10% level. Polity ends denotes it is the last monarchy of the entity, and Polity becomes republic denotes the monarchy becomes a republic.

Table A.1

Polities with Queens

Burgundy and the Low Countries
Portugal
Spain
Austria
The Duchy of Bourbonnais
The Duchy of Brittany
The Duchy of Lorraine
The Farnese and Bourbons in Parma
The Grand Duchy of Luxemburg
The polity of England
The polity of Navarre (Pamplona)
The polity of Scotland
The polity of Sweden
The polities of Leon and Castile
The Medici and their Successors in Florence
The Modern Netherlands
The Principality of Monaco
The Tsardom of Russia

Table A.2

Alternate Instrument Sets

	(1)	(2)	(3)	(4)
VARIABLES	In Balance of Power War	In Balance of Power War	In Balance of Power War	In Balance of Power War
Queen	0.306**	0.326**	0.341	0.364
	[0.147]	[0.148]	[0.214]	[0.266]
Observations	3,577	3,577	3,577	4,081
R-squared	0.374	0.369	0.363	0.337
Sample	Queen polities	Queen polities	Queen polities	Queen polities
Instruments	FBM_{r-1} & $Sister_{r-1}$ & FBM_{r-1} X $Sister_{r-1}$	FBM_{r-1} & $Sister_{r-1}$ & FBM_{r-1} X $Sister_{r-1}$ No $Children_{r-1}$	FBM_{r-1}	$Sister_{r-1}$
F	8.9	9.9	12.99	12.15

Notes. Variables not shown include polity and decade fixed effects. All specifications use Sister, First-born male and their interactions with an indicator of whether the polity ever had a queen as instruments for queen. Robust standard errors clustered at the polity level are shown in parentheses. *** is significant at the 1% level, ** is significant at the 5% level, * is significant at the 10% level.

Table A.3

Robustness Checks with Additional Controls and Outcomes

	Additional Controls					Additional Outcomes	
VARIABLES	(1) In Balance of Power War	(2) In Balance of Power War	(3) In Balance of Power War	(4) In Balance of Power War	(5) In Balance of Power War	(6) Number War Participants	(7) In External or Civil War
Queen	0.313**	0.299***	0.336**	0.314***	0.318**	-0.994	0.279**
	[0.147]	[0.111]	[0.133]	[0.115]	[0.152]	[2.715]	[0.120]
Observations	3,506	3,262	3,205	3,255	3,577	903	3,586
R-squared	0.380	0.396	0.379	0.392	0.377	0.764	0.431
Specification	IV	IV	IV	IV	IV	IV	IV
Standard Controls	Y	Y	Y	Y	Y	Y	Y
Total Siblings	Y	Y	Y	Y	Y	Y	Y
War in Previous Reign	Y						
Dead Siblings-Previous Monarchs		Y	Y	Y			
Dead Children-Previous Monarchs			Y				
Dead children-Current Monarchs				Y			
Age at Accession					Y		
Sample Restriction	None	None	None	None	None	War Years	None

Notes. Variables not shown include polity and decade fixed effects. Robust standard errors clustered at the polity level are shown in parentheses. Column (5) controls for the average age at accession of the monarchs in the reign, as well as a missing age indicator to account for missingness in this variable. The number of war participants in column (6) is the average number of participants conditional on war. *** is significant at the 1% level, ** is significant at the 5% level, * is significant at the 10% level.

Table A.4

Robustness to Sub-Samples and Additional Samples

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES	In Balance of Power War							
Queen	0.242*	0.350**	0.328**	0.344*	0.322*	0.236*	0.542*	0.348**
	[0.125]	[0.160]	[0.148]	[0.183]	[0.165]	[0.128]	[0.285]	[0.150]
Observations	3,158	3,177	3,550	3,446	3,229	3,227	1,675	6,395
R-squared	0.419	0.378	0.371	0.360	0.379	0.392	0.299	0.327
Specification	IV	IV	IV	IV	IV	IV	IV	IV
Standard Controls	Y	Y	Y	Y	Y	Y	Y	Y
Total Siblings	Y	Y	Y	Y	Y	Y	Y	Y
Sample	Queen polities - No England	Queen polities - No Russia	Queen polities - No Leon & Castile	Queen polities - No Navarre	Queen polities - No Portugal	Queen Polities - No Sweden	Drop all other Queen Polities	Queen & Non-queen polities
Instruments	FBM_{r-1} & $Sister_{r-1}$							$Sister_{r-1}$, FBM_{r-1} and interactions with Polity with queens indicator

Notes. Variables not shown include polity and decade fixed effects. Robust standard errors clustered at the polity level are shown in parentheses. Column (7) excludes all other queen polities except the six queen polities omitted in columns (1)-(6). *** is significant at the 1% level, ** is significant at the 5% level, * is significant at the 10% level.

Table A.5
Reign Level Specification

VARIABLES	(1) External War Years	(2) Balance of Power War Years	(3) Polity Attacked Years	(4) Territorial Gain	(5) External War Years	(6) Balance of Power War Years	(7) Polity Attacked Years	(8) Territorial Gain
Queen Coefficient	9.837**	10.49**	7.537**	0.546**	11.54**	12.15**	7.615**	0.510*
Standard Error	(4.979)	(4.601)	(3.365)	(0.264)	(5.332)	(5.050)	(3.381)	(0.287)
P-value	[0.027]	[0.008]	[0.021]	[0.000]	[0.031]	[0.015]	[0.051]	[0.009]
Bootstrapped p-value	[[0.034]]	[[0.004]]	[[0.078]]	[[0.01]]	[[0.04]]	[[0.008]]	[[0.064]]	[[0.024]]
Observations	193	193	193	166	193	193	193	166
R-squared	0.414	0.311	0.110	0.303	0.366	0.245	0.105	0.320
Specification	IV	IV	IV	IV	IV	IV	IV	IV
Standard Controls	Y	Y	Y	Y	Y	Y	Y	Y
Century Controls	Y	Y	Y	Y	Y	Y	Y	Y
Total Siblings					Y	Y	Y	Y
Reign Length	Y	Y	Y	Y	Y	Y	Y	Y

Notes. Variables not shown include polity and century fixed effects. Standard errors are clustered on polity. Analytical standard errors are shown in parentheses. The analytical p-value is shown in brackets. The wild bootstrapped p-value (using 1,000 replications) is shown in double brackets. *** is significant at the 1% level, ** is significant at the 5% level, * is significant at the 10% level.

Table A.6

Solo Queens

VARIABLES	(1) In External War	(2) In Balance of Power War	(3) Polity Attacked	(4) Polity was Attacked	(5) In Defensive War	(6) In Imperial War	(7) In Civil War
Solo Queen	0.366*	0.415**	0.337*	0.086	-0.036	0.095	-0.032
	[0.193]	[0.194]	[0.196]	[0.142]	[0.074]	[0.113]	[0.136]
Observations	3,586	3,577	3,563	3,563	3,574	3,586	3,586
R-squared	0.364	0.339	0.126	0.281	0.251	0.115	0.292
Specification	IV	IV	IV	IV	IV	IV	IV
Standard Controls	Y	Y	Y	Y	Y	Y	Y
Total Siblings	Y	Y	Y	Y	Y	Y	Y

Notes. Variables not shown include polity and decade fixed effects. Robust standard errors clustered at the polity level are shown in parentheses. *** is significant at the 1% level, ** is significant at the 5% level, * is significant at the 10% level.

Table A.7

Robustness Checks: Effects by Marital Status

VARIABLES	(1) Polity Attacked	(2) Polity was Attacked	(3) Polity Attacked	(4) Polity was Attacked	(5) Polity Attacked	(6) Polity was Attacked	(7) Polity Attacked	(8) Polity was Attacked
Queen	-0.310	0.747***			-0.377	0.761***		
	[0.325]	[0.239]			[0.262]	[0.222]		
Queen x Married in Reign	0.410*	-0.592***			0.504**	-0.720**		
	[0.212]	[0.213]			[0.235]	[0.358]		
Married in Reign	0.026	0.007	0.059	-0.005	-0.052	0.063	-0.048	0.024
	[0.058]	[0.050]	[0.070]	[0.055]	[0.093]	[0.107]	[0.128]	[0.098]
Solo Queen			-0.426	0.856***			-0.498	0.770***
			[0.346]	[0.263]			[0.318]	[0.257]
Solo Queen x Married in Reign			0.611**	-0.688***			0.773*	-0.694***
			[0.272]	[0.226]			[0.411]	[0.265]
Observations	3,551	3,551	3,457	3,457	3,558	3,558	3,454	3,454
Specification	IV	IV	IV	IV	IV	IV	IV	IV
Standard Controls	Y	Y	Y	Y	Y	Y	Y	Y
Control Total Siblings	Y	Y	Y	Y	Y	Y	Y	Y
Control Accession Age	Y	Y	Y	Y	Y	Y	Y	Y
Control Male Children-Current Monarch					Y	Y	Y	Y
Sample Restriction?	No weak queens	No weak queens	No weak queens / reigns with coruling queens	No weak queens / reigns with coruling queens	None	None	No reigns with co-ruling queens	No reigns with co-ruling queens

Notes. Variables not shown include polity and decade fixed effects. Robust standard errors clustered at the polity level are shown in parentheses. *** is significant at the 1% level, ** is significant at the 5% level, * is significant at the 10% level. Accession age is the average age of accession of the monarchs in the reign. Spousal military experience is one if the spouse had any military experience prior to marriage.