Regime Type, Preferences, and War in Renaissance Italy

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The democratic peace has received substantial empirical support in the modern international system. The consistency of the results does not imply that reasonable critiques do not exist, that is, the effects of development, liberal economic structures, and preferences. These challenges, however, tend to strongly correlate with democracy, making direct statistical tests inefficient and not necessarily convincing. This study attempts to evaluate these challenges and extend the temporal domain of the democratic peace through an empirical analysis of Renaissance Italy. The data set contains the seven major powers of Renaissance Italy between 1250 and 1494, with measures of war, power, regime type, preferences, and contiguity. The analyses show that joint republicanism, power preponderance, and preference similarity decrease the probability of war.

Keywords: democratic peace; preference; affinity; war onset

The democratic peace has repeatedly received empirical support in the quantitative literature of international relations. Regardless of this consistency, scholars still challenge its theoretical and empirical foundations. The recent critiques fall into two main categories. First, some argue that democracy's correlation with additional causal factors, such as development or capitalism, leads to misleading results. This implies, at the least, that these alternative factors lead to peace, and at most, that the democratic peace is a spurious or conditional relationship. Second, some scholars contend that democracies share a similarity of preferences. This convergence of preferences, and not democratic institutions or norms, leads to peace simply because without conflicting goals, these states have little reason to fight. Disentangling the relationship between democracy, preferences, and alternative explanations has important consequences for future research; however, empirical work has already exhaustively analyzed the modern international system. This article expands the empirical domain of quantitative scholarship by investigating a second international system—Renaissance Italy between 1250 and 1494.

This study extends this research program in two main areas. First, it uses a larger and more complete data set. The data set on Renaissance Italy contains information on seven major powers—the Papal States, Florence, Siena, Pisa, Venice, Genoa, and Milan—over 244 years.[1] In addition, it has measures for war, regime type, power, contiguity, and preferences. Second, the study avoids the problem of democracy correlating with alternative explanations such as development and capitalism. The city-states during the Renaissance all exhibited similar levels of "development," and capitalism had yet to fully arise. These improvements should allow for a rigorous investigation of the applicability of the democratic peace to alternative systems and shed light on how regime type influences conflict in the modern system.

The empirical analyses of Renaissance Italy examine the influence of power, regime type, preferences, and contiguity on major power war. The results show that power preponderance, joint republicanism, and preference similarity lead to peace. The existence of a republican peace remains consistent and robust regardless of controls.[2] These findings reinforce the contention that representative domestic institutions lead to peaceful dyadic relationships, even when one controls for preferences.

The next section of the study examines the recent contributions to and critiques of the democratic peace literature. The applicability of examining Renaissance Italy will then be addressed, followed by a brief description of the data set. The study concludes by analyzing the dyadic results and placing them within a larger research program.

DEMOCRATIC, DEVELOPMENT, CAPITALISM, OR PREFERENCE PEACE?

It has become a stylized fact that democracies do not fight wars against each other and have a decreased probability of getting involved in lower level conflicts. This view has become so common that recent research into this topic has focused less on testing the democratic peace and more on the ancillary principles that follow from it (Russett and Oneal 2001; Ray 2001).[3]

Given the ubiquity of the democratic peace, this review focuses only on those works that have attempted to study it outside of the modern system. The first such example comes from Russett and Antholis (1992), who tested the democratic peace proposition during the Peloponnesian War. In their analyses, they found democracies fighting one another, but these democracies did not fight states that they perceived as having common interests. In addition, Weart (1994, 1998), who examined an exhaustive list of possible joint democratic wars, finds evidence that no two well-established, oligarchic republics fought one another in classical Greece.

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1. Weart (1998) also examined the Italian system in a qualitative framework and found warring "tribal" republics before 1350. After 1380, the republics, which had developed more capable institutions, stopped warring with one another.

2. As will be seen later, the regimes in Renaissance Italy were more republican than democratic.

3. For representative critiques, see Layne (1994); Gates, Knutsen, and Moses (1996); and Henderson (1998).

A number of criticisms exist regarding the evidence of the classical Greek system. Bachteler (1997) argues that the zone of peace between the democratic states in the Delian League resulted more from the hegemonic policies of Athens than shared democratic institutions. Furthermore, Robinson (2001a) casts doubt on the argument that the war between Athens and Syracuse was not a war between democracies. In general, Robinson believes that Weart's contention that no two democracies fought in classical Greece could not be supported by the evidence and agrees with Russett and Antholis (1992) that the data remain too fragmentary to reach a firm conclusion.

Weart (2001) responded to Robinson's (2001a) critique by arguing that Athens did not perceive Syracuse as acting like a democracy. This lack of perception, according to the normative explanation of the democratic peace, would explain the anomalous war between Syracuse and Athens. Robinson (2001b), however, doubts Weart's contention that Athens did not perceive the democratic nature of Syracuse because Thucydides, an Athenian, was well aware of the democratic constitution of Syracuse.

Although these studies adequately examined the classical Greek system and extended the domain of the democratic peace, they do not provide fully satisfying tests. First, they fail to include any control variables, which might mitigate the effect of democracy. Second, Russett and Antholis (1992) argue that the perception of interests played an important role in the peace between democracies, and this implies that preference similarity, not democracy, drives the results. Without a control for preferences, however, this question remains unanswered. In general, these studies used the information as best they could and found partial evidence of a democratic peace in classical Greece.

The next study attempted to extend the empirical domain of the democratic peace to nonstate entities (Ember, Ember, and Russett 1992). Using characteristics such as checks on power, the amount of consultations, and the extent of participation, the authors determined which states had democratic aspects to their political institutions. They then tested to see if these "democratic" institutions decreased the amount of violence and found robust support, even when controlling for factors such as an island location and population growth.

The Ember, Ember, and Russett (1992) study highlights an important point: the democratic peace may not simply be limited to nation-states. This means that the study of the city-states of Renaissance Italy can further our knowledge of modern international politics. Although Ember, Ember, and Russett's study finds support for the democratic peace, its impact is limited in that it does not control for factors such as power and preferences. In addition, the size of their samples remains small (ranging from 37 to 15), which makes generalizations difficult. Thus, although their study furthers the domain of the democratic peace, the data limitations did not allow for an exceptionally stringent test.

Finally, although he was not particularly testing the democratic peace, Crawford (1994) argued that democratic institutions affected the behavior of the Iroquois nations. Examining the history of the Iroquois League, Crawford found evidence that democracy helped maintain a durable 300-year peace. This peace arose from a security

regime that the five (and later six) nations developed, and it succeeded, among other reasons, because the various Indian nations had democratic institutions.[4]

Crawford's (1994) study furthers the democratic peace by looking at nations rather than states; however, it does not offer a stringent test. First, the analysis examines the Iroquois nations in a qualitative framework, which does not allow for adequate controls. Second, it remains unclear if democracy led to the formation of the league or if it helped with the league's durability.[5]

The present study extends the efforts of these authors by developing a new data set of an alternate international system (Renaissance Italy). Weart (1998) also examined the Italian system and found that before 1350, republics frequently went to war with one another. After 1380, however, Weart noticed a change in the behavior of republican states; they ceased fighting each other. This leads to an interesting question: Did the republics of Renaissance Italy generally not fight one another? Weart's conclusion implies that the statistical analysis should find that joint republican dyads have a lower probability of engaging in war. This study extends his work, among others', by quantitatively examining this system with the addition of controls.

ALTERNATIVE PEACE

Some studies argue that the democratic peace is either a statistical relationship that masks the ultimate underlying cause or is conditional on additional independent variables. In particular, Mousseau (1997) suggests that the democratic peace results from liberal economic structures such as capitalism. Hegre (2000a, 2000b), on the other hand, argues that the democratic peace occurs only in dyads that contain economically developed states.

Testing these claims remains difficult because democracy, development, and liberal economic structures remain highly correlated in the modern international system. This collinearity places strain on the ability of quantitative analyses to produce efficient estimates. The situation appears exceptionally difficult to untangle with current data resources because these correlations will persist into the foreseeable future.

This study obliquely tests these competing claims because the Renaissance Italy data set avoids the problem of collinearity. During this period, the level of development remained consistently low (as compared with today), and no city-state had a fully developed liberal economic system. Thus, if either of these variables ultimately causes or conditions the democratic peace, then this analysis should fail to find that joint republicanism decreases the probability of war.

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4. Rousseau and Mueller (1995, 37) argue that the peace of the Iroquois League was not the product of the democratic peace; rather, it was the result of a security regime, destructive "mourning" wars, matrilineal and matrilocal cultures, cross-cutting clan ties, and societal norms.

5. One must note, though, that the article never claimed to be making an exhaustive test of the democratic peace.

PREFERENCES

One of the strongest critiques of the democratic peace started with Farber and Gowa (1995, 1997b), who argued that the democratic peace results not from joint democracy but, rather, from the transient congruence of strategic interests associated with the cold war. According to Farber and Gowa, democracies did not fight simply because their joint strategic interest in stopping the Soviet Union overcame any squabbles.

Countering this claim, Thompson and Tucker (1997b) argued that the democratic peace was not limited to the cold war era. They showed that when one controls for the structure of rivalries, democratic dyads remain less likely to become involved in a militarized dispute. Farber and Gowa (1997a) replied that the logic used to justify the structure of rivalries control variable, especially United States–Britain, was unclear and did not dispute the underlying fact that before 1914, democratic dyads have a higher rate of dispute than nondemocratic dyads. Thompson and Tucker (1997a) justified the addition of the principal democratic rivalries variable because it highlights the fact that rivalries may, in the short run, overwhelm the effect of regime type.

Although alliance patterns may explain the convergence of interests, it also remains possible that democratic states' satisfaction with the status quo causes preference similarity. Rousseau et al. (1996) argued that status quo satisfaction explains a democracy's unwillingness to initiate or escalate interstate crises. In addition, they also found that democracies tend to be more satisfied with the status quo as compared to authoritarian regimes. According to Kacowicz (1998), even democratic states with territorial claims remain satisfied with the status quo. This line of argument implies that power transition theory, which examines status quo satisfaction, may actually encompass and explain the democratic peace (Organski and Kugler 1980; Kacowicz 1995; Lemke and Werner 1996; and Lemke and Reed 1996).[6]

Gartzke (1998) extended the "similar interests" critique of the democratic peace by examining the effects of preference similarity. Gartzke used UN roll-call voting as a rough measure of affinity (preference similarity) and found that the addition of affinity to a model of conflict onset caused the coefficient of joint democracy to fall to insignificance. In response, Oneal and Russett (1999) argued that affinity was instrumental, that is, a simple combination of other explanatory variables already in the model. They showed that the other independent variables of the conflict model explained 42% of the variation in affinity, which cast doubt on Gartzke's analysis.

Gartzke (2000) conducted a second, and more stringent, test of the affinity variable. In this article, Gartzke ran a model in which the affinity variable was the dependent variable and the independent variables were the explanatory variables of a militarized interstate dispute (MID) onset model. The unexplained variance of the affinity variable, the residuals from the first regression, was then added to a new model of conflict onset. In the second model, Gartzke still found that the effect of joint democracy became insignificant, whereas the affinity measure (the residuals from the first model) remained significant. In addition, Gartzke argued and found that democracy itself was

6. See Russett and Oneal (2001, 184-91) for a critique of this view.

instrumental, that is, democracy was a combination of the other independent variables in the model.

Russett and Oneal (2001) attempted to further disentangle the individual effects of joint democracy and preferences on conflict. Their analyses indicated that both preferences and democracy decrease the probability of conflict, even though it appeared that affinity had a slight mediating effect. In general, they concluded that preferences clearly matter, but not to the exclusion of joint democracy.

Regardless of the instrumentality arguments, preference similarity represents a strong challenge to the democratic peace: if democracies have similar preference (nothing to fight over), then joint democracy adds little additional information. This study attempts to place these two explanations in the same model to more clearly discern how joint democracy and preference similarity influence conflict behavior.

RENAISSANCE ITALY

This project remains contingent on the applicability of Renaissance Italy to modern international politics. This section attempts to address three main issues that may limit the applicability. First, city-states, and not nation-states, composed the international system in Renaissance Italy. Second, the democratic institutions of Renaissance Italian republics differ fundamentally from the democracies of today. Third, the operationalizations of the variables are so different from their modern counterparts that comparison is impossible. In general, each critique has some truth but does not eliminate the usefulness of Renaissance Italy.

It seems plausible to argue that city-states and nation-states require different institutional structures and logics; thus, comparison becomes difficult, if not impossible. Although differences do exist between nation-states and city-states, they do not necessarily make comparison useless. First, both the city-states of Renaissance Italy and the nation-states of the modern system confronted the anarchy of the "international system." Waltz (1979) cogently argued that anarchy structures the behavior of states. Structural anarchy existed for the period under investigation, and thus the city-states confronted the same fundamental problem as modern nation-states. Second, because the entire system consisted of city-states confronted by the fundamental problem of security in an anarchic international system, the domestic institutional constructions should share similarities with their modern brethren. In other words, the domestic institutional structures of the city-states and nation-states needed to confront the same functional problems, and they should, therefore, be comparable.

Some may argue that the republican city-states of Renaissance Italy deviate significantly from modern democracies. In general, these "republics" had more controls over citizenship and participation but fiercely protected civil liberties. These differences, however, make this analysis more, rather than less, useful. If, for instance, one finds no evidence of a republican peace, then this implies that the differences between modern democracies and Renaissance republics are necessary conditions for the democratic peace. If, conversely, one finds a republican peace, then the differences are not neces-

TABLE 1
Summary Statistics of the Renaissance Italy Data Set

Variable	Mean	Standard Deviation	Minimum	Maximum
War onset	0.012	0.11	0	1
Low republicanism	4.45	1.88	2	12
High republicanism	8.07	2.12	3	12
Preference similarity	0.42	0.49	0	1
Power ratio	0.53	0.24	0	0.93
Contiguity	0.27	0.45	0	1

sary conditions. Thus, regardless of the results, this project will provide valuable information as to the relationship between regime type and war.[7]

It is true that the quantification of the variables differs necessarily from the Correlates of War (COW) project and other modern data sets. This divergence does not mean that the conclusions of the analysis should be discarded. For example, the determinants of power change over time as technology advances. This does not imply that one cannot compare the effects of power in various time periods. As long as the construction of the variables reflects the underlying concept, comparison remains possible. Thus, if the power measure used in this project accurately reflects the power of the city-states, then one can contrast these results (not the measure) with the results of the modern system.

Renaissance Italy differs from the modern system just as the modern system will differ from the international system 600 years from now. These differences, if used correctly, allow for the accumulation of knowledge. Understanding the correlates of war of Renaissance Italy and comparing them with the correlates of war today allows scholars to develop a deeper and more fundamental understanding of the ultimate causes of international conflict.

RESEARCH DESIGN

A detailed description of the coding rules for the data set can be found in the appendix. This section describes how the raw data were transformed into the dyadic data set used for this article. In general, the analyses examine 15 dyads with an average of 215.7 observations per dyad (3,235 total observations). Table 1 provides descriptive statistics of the variables.

Table 2 provides some basic information about the seven major powers of Renaissance Italy. In general, Milan, Florence, and Venice remained the most powerful city-states throughout the time period. Pisa and Genoa started the period with more power

7. Weart (1998) uses this logic to explain why he found republics warring in Italy before 1350. In particular, he argues that before 1350, the city-states were more similar to "tribes" than states and, thus, were unable to adequately control their citizens.

TABLE 2
Descriptive Statistics of the Seven Major City-States of Renaissance Italy

City-State	Mean Power	Mean Republican Score	Guelf/Ghibelline Alignment
The Papal States	0.10	5.0	Exclusively Guelf
Sienna	0.07	7.8	Mainly Ghibelline
Florence	0.17	7.5	Mainly Guelf
Pisa	0.04	6.0	Exclusively Ghibelline
Venice	0.25	9.4	Exclusively Guelf
Milan	0.33	3.7	Exclusively Ghibelline
Genoa	0.07	5.2	Variable

and slowly declined, whereas the Papal States and Siena remained consistently low. As for the character of the regimes, Milan and the Papal States were the most consistently oligarchic, whereas Venice, Florence, and Siena tended to be republican. Genoa and Pisa, in contrast, varied throughout the time period.

In addition, this era was characterized by continual strife between the pope (Guelf) and Holy Roman Emperor (Ghibelline), and the alignment of states remains crucial to understanding the politics of these states. The Papal States and Venice remained loyal to the pope throughout the time period. In addition, Florence was almost exclusively Guelf, but at times, the Guelf party was forcibly removed from power. At the other end of the spectrum, Milan and Pisa remained loyal to the Holy Roman Emperor, whereas Siena occasionally switched its support to the pope. Last, Genoa had the most variable alignment, shifting from pope to emperor and occasionally even refusing to be aligned.

WAR ONSET

A war occurs when the official state forces (militia, hired *condottieri*,[8] and/or navy) of at least one major power engages, or attempts to engage, the official state forces of at least one other major power in at least two sustained battles over a 1-year period. The war ends on the last engagement, if no more battles occurred within the next year, or when the sides come to a specific agreement to end hostilities.

The dependent variable in the analysis (war onset) is coded 1 if a new dyadic war between these two states occurred in a given year and 0 otherwise. This means that wars count as an onset only in their first year.

POWER RATIO

The power ratio in a dyad is the quantity of the higher power score minus the lower power score all over the higher power score. One can write the equation as such:

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8. *Condottieri* were mercenary captains who wandered through Renaissance Italy until hired by a city-state for a set period of time.

$$PowerRatio_{dyad} = \frac{\left(power_{high} - power_{low}\right)}{power_{high}}.$$

The power ratio theoretically ranges from 0 *(complete parity)* to 1 *(complete preponderance)*. If the coefficient on the power ratio is positive, then it lends support to the power parity produces peace argument. A negative coefficient, however, implies that power preponderance produces peace.

REGIME TYPE

The regime type score for any given state ranges from 0 *(least republican)* to 14 *(most republican)*. It is important to note that these states are republican and not democratic. In all of these societies, women were not allowed to participate, and in the more authoritarian city-states, only wealthy men could be involved in politics. Given this limitation, however, this research design can still test the democratic (or republican) peace for two main reasons.

First, and theoretical, these states, even if not fully democratic, still contained democratic and republican institutions. In fact, some of the most republican states approached, at least in the political rights of citizens, the early 19th-century democracies of the United States and Great Britain. These city-states also had the "Captain of the People," who protected the civil liberties of the unrepresented and underrepresented. In addition, Russett and Antholis (1992) and Russett (1993) examined classical "democracies," which allowed and/or supported slavery. Hence, that the republics of Renaissance Italy did not have all of the modern democratic institutions does not disqualify them from exhibiting a "democratic peace." In fact, if one dismisses these states, then one must also dismiss the classical democracies and possibly those of the 19th century and essentially relegate the democratic peace to a relatively small spatial-temporal domain.

Second, and more methodological, the works that examine the democratic peace assume a monotonic relationship. In other words, if the dyadic democracy score moves from –10 to –7 on the polity scale, then that dyad is ceteris paribus less likely to experience a war onset. So if the relationship is truly monotonic, then simply examining the lower half of the distribution should not ex ante bias the results. In addition, the regime types of Renaissance Italy vary greatly across the time span, going from extremely oligarchic to extremely republican. There is no ex ante methodological reason to expect this minor truncation of the variation to bias the estimation of the coefficients.

This study uses the weakest link argument to create two measures of the dyadic republicanism: low republicanism and high republicanism.[9] In a dyad, low republicanism equals the lower of the two scores, and high republicanism is the higher value. Thus, if a dyad contained city-states with a score of 5 and 11, then low republicanism would be 5 and high republicanism would be 11.

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9. Russett and Oneal (2001, 99-100) provide an explanation as to the logic behind these measures.

The democratic peace literature implies that the coefficient on the republicanism variable will be negative and significant. An autocratic peace would entail a positive and significant coefficient on the high-republicanism variable (the more authoritarian the dyad, the more peaceful). A negative coefficient on high republicanism would indicate the opposite.

PREFERENCES

In analyses of the modern system, scholars typically use tau-b (alliance patterns), *s* scores (alliance patterns), or affinity scores (UN voting patterns) to measure preferences. None of these measures are available in Renaissance Italy, so this analysis uses a slightly more crude method of measuring preferences. As noted in the appendix, Renaissance Italy remained split between supporters of the pope and the Holy Roman Emperor. When city-states chose an allegiance (and almost all did), it signaled more than an alliance or partnership. In choosing a side, the city-state signaled its worldview, because supporting the pope meant that one felt that God and, by extension, the Pope, reigned over all mortal leaders. Supporters of the emperor, however, dismissed the pope's claim of suzerainty. Thus, the choice of pope (Guelf) or emperor (Ghibelline) represented more than a simple alliance; it became an ideology.[10] Over time, however, the religious aspect of this choice dissipated, and it became more of a communal identification.

The encompassing nature of the choice between Guelf and Ghibelline meant that these states tended to view the world differently and have dissimilar preferences. This implies that all Guelf states had similar views and ideologies and all Ghibelline states had similar views and ideologies. Because of these similarities, one can argue that a dyad with either both Guelf or both Ghibelline states would have more similar preferences than mixed dyads. Thus, the variable of preference similarity is dichotomous and is coded 1 if a dyad contains both Guelf or both Ghibelline city-states and 0 otherwise. One would expect this coefficient to be negative and significant.

It seems reasonable to argue that these relationships represent traditional alliances or that alliances may form between various Guelf or Ghibelline states. Although tacit agreements certainly occurred, alliance formation in this era simply did not resemble that of the modern era. These alliances, for lack of a better term, were short-lived agreements to fight on the same side of a conflict. They formed after the hostilities commenced and ended shortly thereafter (Mattingly 1988). Alliances, as known in the modern era, simply did not form in Renaissance Italy.

CONTIGUITY

States that share a common border are coded 1 (contiguous) and 0 otherwise. One expects the city-states that share a common border will be more likely to engage in

10. It is important to note that this way of measuring preferences may not be appropriate in all systems. It just so happens that the Guelf/Ghibelline divide was an exceptionally stark and vehement division in Renaissance Italy.

wars. This expectation, however, may not apply to Renaissance Italy for two main reasons. First, the "system" encompasses a relatively small land area. Second, the use of *condottieri* in fighting meant that a city-state's armies were already in the field and wandering throughout Italy. Thus, even the armies of noncontiguous city-states came into regular contact with one another.

ESTIMATION TECHNIQUE

The dichotomous dependent variable in this analysis means that ordinary least squares (OLS) will not produce unbiased and efficient estimates. In addition, one expects the dyads to exhibit some type of time dependence, which again biases the results if not corrected. Last, most pooled time series analyses suffer from heteroskedastic error structures based around the panels, and this leads to inefficient estimates that make statistical inference difficult.

To correct for the above problems, this paper uses the generalized estimating equation (GEE) (Diggle, Liang, and Zeger 1994; Russett and Oneal 2001). This quasi-likelihood method was developed for pooled time series research designs and can correct for the above-mentioned assumption violations. For the regressions, I specified an AR(1) (first-order autoregression) process in the data and had the errors clustered on the panels (dyads). This should correct for the biases and inefficiencies that result from the temporal dependence and heteroskedasticity.[11]

EMPIRICAL RESULTS

The empirical analyses examine the effects that joint democracy (republicanism), preference similarity, and power preponderance have on war onset. This section begins by first examining a series of war onset models (Table 3). These models consistently show that power preponderance, preference similarity, and joint republicanism lead to a decreased probability of war. The section ends by examining the substantive impact of the independent variables.

DEMOCRACY AND PREFERENCE MODELS

Model 1 examines the effect of joint republicanism on war onset while controlling for power and contiguity.[12] The negative and significant coefficient on low republicanism indicates that a republican peace does indeed exist in Renaissance Italy. The negative coefficient implies that as a dyad becomes more republican, the probability of war onset decreases. In turn, the negative coefficient on high republicanism indicates that

11. The regressions were run using Stata 7.0 with the following command line: xtgee depvar indvar, family(binomial) link(logit) corr(ar1) nolog robust.
12. Although the following models control for many important factors, they are not complete. For example, they do not account for bilateral trade, but this omission may not be as damaging as it appears. First, most trade occurred between the city-states and extrasystemic actors. Second, the reliability of the data is questionable enough to limit their usefulness. Perhaps future research into this matter can help illuminate these issues.

TABLE 3
Multivariate Models

Variable	Model 1 (Regime Type)	Model 2 (Preferences)	Model 3 (Full Model)
Low republicanism	–0.700 (3.66)***	—	–0.604 (2.82)***
High republicanism	–0.071 (1.61)	—	–0.072 (1.33)
Preference similarity	—	–2.002 (3.98)***	–1.250 (2.52)**
Power ratio	–1.893 (2.43)**	–2.570 (3.39)***	–1.430 (1.74)*
Contiguity	0.329 (0.60)	–0.155 (0.19)	0.386 (0.75)
Constant	–0.659 (0.77)	–2.973 (4.83)***	–0.933 (1.26)
Wald χ^2	37.26	18.44	67.23
Probability $< \chi^2$	0	.0004	0

NOTE: Dependent variable: war onset. Number of observations = 3,235. Student's *t* values are in parentheses.
*$p < .10$. **$p < .05$. ***$p < .01$.

an authoritarian/oligarchic peace does not exist, although the coefficient is not statistically significant. These two results provide support for the contention that joint democracy (or republicanism) leads to peace.

The negative and significant coefficient on power ratio indicates that power preponderance leads to peace. Empirical analyses of the modern international system consistently, although not exclusively, find this relationship (Bremer 1992; Gartzke 1998, 2000; and Russett and Oneal 2001). The insignificant coefficient on contiguity, however, represents an important difference. As noted above, this probably occurs because Renaissance Italy was a relatively small geographic area containing wandering armies and overlapping city-state boundaries. This essentially meant that city-states did not have to be contiguous to have the opportunity to fight.

Model 2 tests the effect of preference similarity on war onset while controlling for power and contiguity. The coefficient on preference similarity is significant and negative, which implies that dyads in which the city-states share similar preferences have a lower probability of engaging in a war. In addition, power ratio remains negative and significant and contiguity insignificant. In general, Models 1 and 2 confirm the intuitions of the modern system. The real test for joint republicanism and preference similarity, however, comes in the complete model.

COMPLETE MODEL

Model 3 contains all of the independent variables. The results appear consistent with Models 2 and 3, because low republicanism, preference similarity, and power ratio are negative and significant. In addition, high republicanism and contiguity fail to reach significance, although high republicanism remains relatively close ($p = .181$). These results reinforce the view that the city-states of Renaissance Italy fit the expectations of the democratic peace even with controls for preferences. In addition, that preference similarity decreases the likelihood of war confirms the expectations of Gartzke (1998, 2000).

TABLE 4
Correlations between the Independent Variables

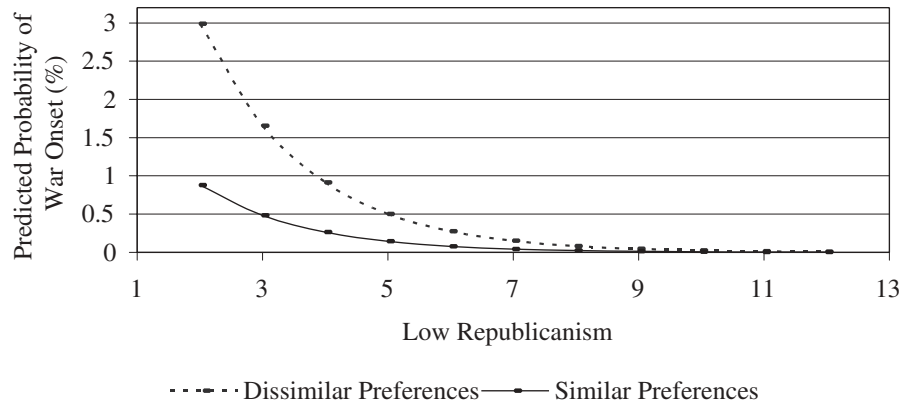|	*Low Republicanism*	*High Republicanism*	*Preference Similarity*	*Power Ratio*	*Contiguity*
Low republicanism	1				
High republicanism	.52	1			
Preference similarity	.07	.06	1		
Power ratio	−.07	−.05	−.08	1	
Contiguity	.01	−.06	.07	−.05	1

NOTE: Cell values are Pearson's *R*.

Having both joint republicanism and preference similarity reach significance in the full model is a minor deviation from the findings in the modern system. One explanation for this difference comes from the amount of correlation between the variables in Renaissance Italy. Table 4 presents the correlation matrix for the independent variables, where one sees that joint republicanism and preference similarity have a correlation coefficient of .07, indicating almost complete independent variation. This differs from the modern system, where democracy and a number of other control variables account for 40% of the variation in the affinity measure (Oneal and Russett 1999; Gartzke 2000). This seems to imply that the contradictory findings in the modern system result not from an inherent incompatibility of preference similarity and joint democracy; rather, the relatively high correlation in the measures leads to inefficient estimates. In Renaissance Italy, where the variables exhibit little to no correlation, one finds both variables consistently reaching significance in the expected direction.

This finding can bring to resolution one of the more intense debates in quantitative international relations. The dispute over the role of joint democracy and affinity implicitly assumed that the concepts were mutually exclusive; that is, either affinity or joint democracy caused peace. The analysis of Renaissance Italy, where preference similarity and joint republicanism both reach statistical significance, shows that they are complementary. Hence, the recent debate over which factor represents the more fundamental cause of peace seems misplaced. Both preferences and regime type influence the conflict behavior of states, and the conflicting findings of the modern system appear to result from high correlations and inefficient estimation of the coefficients.

Statistical significance provides only so much information. One also wants to know if the independent variables have a substantively important impact. One determines the substantive effect by increasing a given variable by a standard deviation (holding the other variables constant) and calculating a probability of war that is compared to a "baseline" probability.[13] The baseline probability is determined by setting the continuous independent variables at their mean and the dichotomous independent variables at zero. Using this method, one finds that preference similarity and low republicanism

13. Note that the dichotomous variables are changed from 0 to 1.

Figure 1: **The Effect of Joint Republicanism on the Probability of War Onset**

have the largest substantive impact on war onset. Increasing low republicanism by a standard deviation decreases the probability of war onset by 68%. In addition, moving from dissimilar to similar preferences decreases the probability of war onset by 71%. Last, increasing the power ratio by a standard deviation decreases the probability of war onset by 29%. Thus, all three of these variables have a significant statistically and substantive effect.

Figure 1 presents a graphical representation of how joint republicanism and preference similarity alter the onset of war. In this figure, power ratio and high republicanism are set at their means and contiguity at 0. Note how quickly the probability of war decreases as a dyad becomes more republican. Simply moving from 2 to 3 almost *halves* the probability. Once a dyad reaches a low republicanism score of 8, the probability of war onset, even for states that have dissimilar preferences, has become exceptionally remote (0.08%). One can conclude from this that preference similarity has the most substantive importance in nonrepublican dyads.[14] When dyads are rather oligarchic, moving from dissimilar to similar preferences has a relatively large substantive effect. In the more republican dyads, the absolute effect of preference similarity appears small.

In general, the analyses here confirm the expectations that joint republicanism, similar preferences, and power preponderance lead to peace. These findings remain consistent across the various models with differing amounts of controls. In addition to the statistical significance, these variables have a strong substantive impact on the probability of war.

14. It is important to remember that at all levels, joint republicans' moving from preference dissimilarity to similarity decreases the probability of war onset by 71%.

CONCLUSION

The democratic peace has received much empirical support in the modern international system. The consistency of the findings does not imply that reasonable critiques do not exist, that is, the effects of development, liberal economic structures, and preferences. These challenges, however, tend to covary with democracy, making direct statistical tests difficult and not necessarily convincing. This study attempts to both evaluate these challenges and extend the temporal domain of the democratic peace.

By conducting a quantitative analysis of Renaissance Italy, this project contributes to a number of debates in international relations. First, because development and liberal economic systems do not correlate with republicanism, they cannot be the underlying cause of any empirical finding. Because this study finds that joint republicanism leads to more peaceful relations between city-states, it reinforces the argument that joint democracy causes the democratic peace rather than development or liberal economic structures.

Second, the role of preference similarity in determining the strength of the democratic peace has been an ongoing debate within the literature. This study shows that both contribute to peace in Renaissance Italy. Low republicanism and preference similarity consistently have negative and significant coefficients across the models. This differs from the modern system, where preferences and joint democracy appear more highly correlated. The high correlation between these variables leads to inefficient estimation of the coefficient, which causes the significance of the coefficients to change between various models.

Finally, this study extends the literature of quantitative international relations by empirically examining an entirely different international system. This system diverges from the modern system in a number of ways, and understanding how these variations affect (or do not affect) the causes of war will contribute greatly to our understanding of international politics. This article represents a first step by demonstrating the existence of a "republican peace" in Renaissance Italy, even when one controls for preferences, power, and contiguity.

APPENDIX
The Renaissance Italy Data Set

This data set examines seven major powers—the Papal States, Siena, Florence, Pisa, Venice, Genoa, and Milan—between 1250 and 1494. These seven city-states had the necessary independence to formulate and execute their own domestic and foreign policies. This independence of action was severely limited before 1250 because of the dominance of the Roman Catholic Church and the Holy Roman Empire. In addition, the intervention of France and Spain limited the ability of the city-states to maintain independent policies after 1494.[15]

15. For a historical review of the time period, see Baron (1966) Hale (1981), Chamberlin (1982), Martines (1988), and Hay and Law (1989).

INTERNATIONAL SYSTEM

An international state system has two key attributes. First, the system must possess a number of sovereign states that have a knowledge of and legitimacy with one another. Second, the system itself must be free of outside influence, that is, independent. If a system possesses both of these preconditions, it sets the stage for the actors (states) to develop a series of norms and behaviors, such as the pacifying effect of joint democracy, that result solely from repeated interactions. It is these repeated behaviors and norms that are of interest to scholars.

In the post-Napoleonic system, it is easy to see both preconditions. Given that the Treaty of Westphalia in 1648 marks the beginning of the modern sovereign state system, it stands to reason that all political corporations after that time could be considered sovereign. In addition, these sovereign political corporations have set a series of ground rules that, over time, allow them to grant various levels of legitimacy. The Concert of Europe, the League of Nations, and the United Nations all represent a codification of ground rules. It seems tautological, but the post-Napoleonic system is independent by definition because it encompasses the entire globe. The key question is whether Renaissance Italy constitutes a legitimate international system.

The Italian city-states certainly possessed knowledge of one another. They fought wars, exchanged ambassadors, and signed treaties. In addition, a number of the larger city-states were considered sovereign and possessed a sense of legitimacy. Although the Italian system did not have a codified set of rules for the recognition of legitimacy, there certainly was an implicit one.

The sovereign city-states can be defined not by what they were but by what they were not. A number of political incorporations in Renaissance Italy were referred to in diplomatic discourse as *contados*. A *contado* is simply a political corporation that is under the control of a larger, more powerful, actor. In this sense, the *contados* were not considered sovereign and were treated as subject territories. Therefore, all political corporations in Renaissance Italian not considered a contado of another actor will be referred to as a *city-state* and assumed to possess sovereignty and legitimacy in the eyes of the other city-states. The sovereign entities can be further divided into major and minor powers.

The more difficult condition for Renaissance Italy to fulfill is the need to be independent. Because the system did not encompass the known world, it cannot be assumed independent. There were a number of drastically larger actors that could at any moment intervene in the system and become a dominant rival. These include, but are not limited to, the Ottomans, the Holy Roman Empire, the French, and the Spanish. It is not a question of whether these "extrasystemic" actors interacted with the Italian city-states but whether these interactions made the system nonindependent. The answer is a qualified no.

Members of the Italian city-state system made treaties and went to war with extrasystemic actors. The question becomes, What was the source of these interactions? Did the city-states conduct these interactions because they were under the control of the extrasystemic actors, or did they do so out of a decision-making process that was independent of the extrasystemic actors? In the time period under investigation, it seems clear that the decision-making process came from the domestic politics of the Italian city-states. For example, Venice went to war with the Ottomans because it wanted to expand its influence in the Eastern Mediterranean. Also, Genoa appealed to the French because it wanted to essentially rent the French forces to defeat Milan. So for the temporal domain of the data set, the decisions came from within; the moment they do not, the independence of the system ends. This end came in 1495.

DEPENDENT VARIABLE: CODING FOR MAJOR-MAJOR WARS

The data set codes a major-major war when the official state forces (militia, hired *condottieri*, and/or navy) of at least one major power engages, or attempts to engage, the official state forces of at least one other major power in at least two sustained battles over a 1-year period. This implies that wars in which a major power exclusively engages a minor power, *contado*,[16] extrasystemic actor,[17] or *condottieri* are not major-major wars.

Wars start on a joint declaration or the date of the first engagement, where the engagements and declaration apply only to the major powers. Minor power wars that pull in major powers do not count until a major power becomes involved on each side. The last engagement marks the end of the war only if no more battles occur within the next year, or the war ends when the major powers come to a specific agreement to end hostilities.

One notable difference between this definition of war and the one used by the Correlates of War (COW) project is that it does not factor into account the size of the forces engaged. This happened because minor clashes between the forces of two states occurred infrequently enough that most primary and secondary sources simply did not record them. In other words, the historical record almost exclusively contains those accounts of fairly significant engagements. When the sources did report minor clashes (events that looked more like militarized interstate disputes), they dissipated quickly enough to not reach the sustained level.

This leads to two other aspects of the definition: "sustained" and "at least two." The definition of war uses "sustained" to eliminate events that are obviously not wars. For example, one would not call an isolated border clash a war, which would have occurred if not for the use of the sustained caveat in the definition. The "at least two" caveat was also meant to discriminate between isolated clashes and wars. Changing this threshold would probably have limited effects on the data because the great majority of wars in Renaissance Italy involved a large number of troops over an extended period of time.

The next section examines the Second Tuscan War and describes how the war was coded. This war involved major, minor, and extrasystemic actors and included joiners and initiators. This war, then, provides a good opportunity to describe the logic of the coding in more detail.

THE SECOND TUSCAN WAR

Dates: December 1429 to April 26, 1433 (Milan); May 26, 1433 (Siena)
Actors: Florence and Venice versus Siena, Milan, and Lucca (Lucca is a minor power)
Sources: Bayley (1961, 95-110), Trease (1971, 263), and Schevill (1936, 350-1)

After crushing a revolt of Volterra, Florence turned its eyes toward Lucca. Lucca occupied a key strategic position in Tuscany and provided a possible foothold for Milan if the duke was able to secure the Lucchese support. This fear was reinforced because Lucca had backed Milan during the Lombard War. Florence felt that the only way to stop Milan from securing Lucca was to deprive it of its independence. On November 22, 1429, the campaign began. Fearing that the fall of Lucca would prelude a Florentine attack on Siena, the Sienese decided on war in December 1429 and hired Catalan pirates to raid Florence. In addition, Siena appealed to the duke of Milan for aid. The duke subsequently "released" his best condotteiri (Francesco Sforza), with 6,000 men, who then proceeded to Lucca and defeated the besieging Florentine army in July 1430.

16. *Contado* refers to minor political corporation under the direct control of a major power.
17. Political entities that exist outside of Renaissance Italy yet still influence some policies become classified as extrasystemic actors (for example, the Holy Roman Empire, France, Spain, and the Ottoman Turks).

Florence convinced Sfroza to leave Lucca with a payment of 50,000 florins and once again began its siege of the city. In response, the Duke of Milan released another *condottieri* (Niccolo Piccinino), who traveled to Lucca and routed the Florentine army. Florence, which was becoming desperate, sought assistance from Venice, which reluctantly agreed to aid it in January 1431. The war dragged on without a decisive battle—Venice pressed Milan from the east and Milan pressured Florence in Tuscany. The fiscal toll of the war and the growing possibility of extrasystemic intervention forced the sides to peace. The treaty mainly guaranteed the status quo ante bellum except that Milan gained Pontremoli (a foothold in Tuscany).

To begin, the war was coded as starting in December 1429. Even though Florence had been attacking Volterra and Lucca well before this, it was only in December 1429 that a second major power became involved (Siena). Additionally, this war contains two originating actors (Florence and Siena). Florence, in this case, was coded as the initiator of the war because its actions toward the minor powers of Volterra and Lucca led Siena to enter the conflict.[18]

This war contains a number of joiners. First, Milan was coded as joining the war in July 1430. This was a difficult decision because the duke of Milan's involvement was veiled. The duke never openly declared war on Florence, but his forces did engage the Florentine army. In the end, it appears clear that Milan wanted to be involved in the war, and the tactic of "releasing" the condottieri, who "independently" decided to attack Florence, seems fairly contrived. Milan, regardless of what the duke stated, was actively participating in the war. The second joiner entered on the side of Florence in January 1431 (Venice). Florence and Venice essentially entered into an anti-Milan alliance in which Florence would attack from the south and Venice from the east.

The war dragged on for a number of years, with Milan getting the better of Florence but losing to Venice. Milan eventually reached peace with Florence and Venice on April 26, 1433, and the only change from the status quo ante bellum was Milan's receiving Pontremoli. In addition, Siena ended the war with Venice and Florence on May 26, 1433, and the status quo remained unchanged. All of the dyadic wars were coded as stalemates except for the one between Florence and Milan, where Milan was coded the winner.

POWER

This project would imitate COW when constructing a measure of power for the Italian city-states, but this remains impossible because some information simply does not exist or has questionable reliability. Instead, this project uses population and expenditures as measures of power. Therefore, the power of a state is its share of systemic population and expenditures for a given year.[19]

This measure captures most of a city-state's ability to make war in Renaissance Italy because the city-states mainly fought wars with militias and *condottieri*. The militias (including national navies) were made up of select members of the population with maintenance provided by the state or private citizens. *Condottieri*, on the other hand, were wandering mercenaries hired by the city-states for various lengths of time. Given these conditions, population relates directly to a

18. Initiation and victory variables are part of the war data set but are not used in this analysis.

19. The data on population and expenditures came from secondary sources that either examine the economic history of Renaissance Italy (Waley 1988; Burke 1986; Hay and Law 1989; Hale 1981; Miskimin 1975) or the history of individual states (Hazlitt 1915; Noyes 1971; Okey 1971; Lane 1973; Epstein 1996; Martines 1988; Herlihy and Klapisch-Zuber 1978; Chamberlin 1982; Molho 1972; Ross and Erichsen 1970; Bowski 1981; Schevill 1936). These sources contain information on 20% to 25% of the data points; hence, the missing values were interpolated.

state's ability to raise and maintain a militia, and expenditure correlates with a state's ability to hire *condottieri*.[20]

For standardization, the monetary data were converted into lira (an increasingly popular monetary unit in Renaissance Italy). This allows for the construction of a systemic expenditure value, which represents the total amount of expenditures (for the system) in a given year. A state's share of expenditures is simply the percentage it contributed to systemic expenditures. In addition, each state had a population share calculated in the same way. The two shares were summed and halved to create a city-state's power measure.

This creation of the power variable assumes that systemic population and expenditures are equally important in determining the power of the city-states. However, given the high correlation between a state's share of population and expenditure ($r = .69$), it appears unlikely that changing the weights will have any effect on the results. In addition, this method of equal weights mimics the COW project, which gave equal weights to the six components in its measure of power (see http://cow2.la.psu.edu).

REGIME TYPE

The regime type measure attempts to duplicate the Polity and Freedom House data available for the post-Napoleonic system (see, respectively, http://www.cidcm.umd.edu/inscr/polity/index.htm and http://www.freedomhouse.org). However, because the city-states differ from the modern nation-states, the measures do not perfectly overlap. Regardless, the data available allowed for the construction of a regime type variable that accurately reflects when a state became more or less democratic/republican. The analysis divides this variable into six separate categories with the scores of these categories summed to arrive at a "democracy/republican" measure. This measure theoretically varies from 0 to 14, but in actuality the lowest measured value was 2 and the highest 12. This section goes through the six parts and explains the logic of including them and their coding.

Early in the 12th century, the Italian city-states began to elect a chief executive of sorts: the *podesta*. In general, the *podesta* had to uphold the laws and keep factional fighting to a minimum. In lieu of the second goal, many of the *podestas* came from outside the city-states, and actually, most city-states made it illegal to elect a citizen to act as *podesta*. The executive recruitment measure deals with the rules and procedures on selecting *podestas*. If the selections occurred randomly through coups or civil strife, or if the city-state did not have a *podesta* or *podesta*-like institution, it was coded as unregulated (0). If set procedures existed to determine when to choose the next *podesta*, but a dominant actor in the city (such as a *signori*) made the choice, then the category was coded as designated (1). Last, if the election of a *podesta* was institutionalized and done at regular intervals, it was coded as regulated (2).

The variable executive recruitment competition examines how many individuals were involved in the selection of the *podesta*. In most cases, a set of oligarchs selected the podesta, where a nominating committee chose a short list of candidates followed by a more general election (by the oligarchs). However, if a dominant actor designated the *podesta*, or if no set procedures for an election existed, this variable was coded as unregulated (0). If the selection of the *podesta* was done by a set of oligarchs, it was coded as either 1 (less than 100 oligarchs) or 2 (more than 100 oligarchs) depending on the number of oligarchs involved. Last, if the selection occurred by an election of all eligible citizens, then it was coded as an election (3). This last category was not used.

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20. These two measures are highly correlated with one another. Expenditure and population values are correlated at $r = .65$. In addition, the expenditure share and population share are correlated at $r = .69$.

The third variable (participation) examines political participation. Essentially, this variable looks at the laws on citizenship. The city-states in Renaissance Italy generally had more strict constraints on citizenship. In some instances, a citizen needed to be male, a guild member, and have set amount of money. In the city-states where all women and the majority of men were excluded, the city was coded as highly restrictive (0). When a city-state had regulations that excluded about half of the males and all women, it was coded as restrictive (1). Those states that included most males but excluded all females were coded as moderately open (2). Last, those states, of which there were none, that allowed virtually everyone to be a citizen were coded as open (3).

The fourth variable (executive strength) deals with the constraints on the executive (the *podesta*). As noted above, the *podesta* had to uphold the law and keep factional fighting to a minimum. However, given that a set of oligarchs selected the *podesta*, the actual power of the *podesta* to perform the job varied. Therefore, this category examines how much power the *podesta* actually possessed. In situations where the *podesta* either did not exist or was a puppet of the oligarchs or *signori*, the city-state was coded as highly constrained (0). When the *podesta* had an ability to go against the oligarchs but was still limited, the city-state was coded as constrained (1). Last, in those city-states where the *podesta* had complete authority and could successfully fight the oligarchs and nobles, the city was coded as unconstrained (2).

Although a large number of individuals were either not citizens or had little political rights, attempts to protect the unrepresented masses almost always existed. In some of the city-states, this effort led to the creation of the "Captain of the People," whose sole job was to protect the masses and unrepresented. On some occasions, the captain even had an army to better counter the oligarchs and nobles. The fifth variable (popular guarantees) codes the strength of the captain and reflects the civil rights of all individuals. In the cities where no captain existed or where he was unable to do his job, the variable was coded as highly constrained (0). When the captain existed and was able to provide some protection, the city was coded as moderately constrained (1). Last, in the cities where the captain had complete authority and ability to protect the masses, the variable was coded as not constrained (2).

The last variable (competitiveness of competition) examines the openness of the political system to nonelites. In other words, granting that only citizens could have offices in the government, what other limits did the state place on office holders? In city-states where only the ruling elites and oligarchs could hold office, the city was coded as suppressed (0). When the political system was open to wealthy merchants, families, and nobles outside the ruling elites, it was coded as moderately open (1). Last, when the city allowed virtually any citizen to hold a political office, it was coded as open (2).

GUELF/GHIBELLINE SIMILARITY

As noted above, the Holy Roman Emperor (Ghibelline states) and the pope (Guelf states) battled for the loyalty of the city-states of Renaissance Italy. In Renaissance Italy, these allegiances more closely resembled worldviews than pledges of support. Hence, the battles between these sides were violent and intense.

In general, it is fairly simple to identify to which side a city-state gave its support. The pledge normally involved some show of support by the city-state (both material and spiritual), and it was done in a public atmosphere. These allegiances were long-term and only rarely changed (Genoa was the exception). In addition, it was almost impossible to avoid involvement in the dispute, although Genoa managed to exclude itself at times. Hence, for each year of the data set, each state is coded as either supporting the Guelf, Ghibelline, or neither.

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