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Evaluating the Monadic Democratic Peace*

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The democratic peace is a well established empirical law in the international relations literature. Two key findings mark the cornerstone of the democratic peace: first, democracies almost never fight other democracies, and second, democracies regularly fight non-democracies. Although most empirical analyses and theoretical explanations have focused on the dyadic nature of the democratic peace, some have argued that democratic norms make democracies more peaceful than other regime types in general, not just in their relations with other democracies. In this article, we evaluate the monadic democratic peace to examine support for the claim that democracies are more peaceful in general than non-democracies. Examining the frequency of conflict and the likelihood of dispute initiation using four different measures of democracy, our results indicate that, while the dyadic democratic peace is strongly supported, there is little, if any, empirical support for the monadic democratic peace.

KEYWORDS: democracy; democratic peace; militarized interstate disputes; unit of analysis

The democratic peace is a well established empirical law in the international relations literature. Two key findings are generally considered to mark the cornerstone of the democratic peace: first, democracies almost never fight other democracies, and second, democracies regularly fight non-democracies (Maoz and Russett, 1993). These points have been argued and found in many previous studies (e.g. Wright, 1942; Doyle, 1983; Dixon, 1994; Starr, 1992; Morgan and Campbell, 1991; Kilgour, 1991; Geva et al., 1993; Bueno de Mesquita and Lalman, 1992; and Weede, 1992). As Maoz and Russett summarize, there appears to be "something in the internal makeup of democratic states that prevents them from fighting one another *despite the fact that they are not less conflict-prone than nondemocracies*" (1993: 624, emphasis in the original).

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Given this strong consensus that the democratic peace is purely a dyadic phenomenon, one might wonder whether an evaluation of the monadic democratic peace—the idea that democracies are more peaceful than other regime types in general, not just in their relations with other democracies—is necessary, or even useful. We argue that such an evaluation is essential, for several reasons. First, although most empirical analyses and theoretical explanations have focused on the dyadic nature of the democratic peace, arguments in favor of a monadic democratic peace have become increasingly prominent (e.g. Rummel, 1995; Ray, 2000; Huth and Allee, 2002; MacMillan, 2003).

Unfortunately, empirical evaluations of the monadic democratic peace have tended to be bivariate and rely upon simple statistical tests such as comparison of means. Furthermore, the 2001 attack by the United States and other democracies on Afghanistan and the 2003 attack by the United States and other democracies on Iraq are recent, very salient events that call for the monadic democratic peace argument to be re-examined.

Accordingly, we seek to evaluate the monadic democratic peace to examine empirical support for the claim that democracies are more peaceful in general than non-democracies. We begin with a discussion of the monadic democratic peace proposition and then lay out the logical implications of monadic peace expectations in terms of the likelihood of conflict involvement and initiation. Utilizing data from 1816–2001, we examine the relationship between regime type and the likelihood of conflict involvement and initiation in an attempt to provide the most comprehensive test of the monadic democratic peace argument to date. Our results indicate that, while the dyadic democratic peace is strongly supported, there is little, if any, support for the monadic democratic peace.

The Monadic Democratic Peace Proposition

The conventional wisdom within the democratic peace literature is that democracies are peaceful *only* in their relationships with other democracies (e.g. Bueno de Mesquita et al., 1999, 2003; Chan, 1997; Dixon, 1994; Maoz and Russett, 1993; Oneal and Russett, 1997), not in general. Furthermore, substantial empirical evidence has supported this idea (e.g. Babst, 1972; Bennett and Stam, 2004; Bueno de Mesquita and Lalman, 1992; Buhaug, 2005; Chan, 1997; Dixon, 1994; Doyle, 1983; Geva et al., 1993; Kilgour, 1991; Maoz and Abdolali, 1989; Maoz and Russett, 1993; Morgan and Campbell, 1991; Oneal and Russett, 1997; Pickering, 2002; Russett and Oneal, 2001; Small and Singer, 1976; Starr, 1992; Weede, 1992). While these studies find strong support for the dyadic democratic peace, their findings yield little support for a national level peace.

Nonetheless, Rummel (1979, 1983, 1985, 1995), considered by many the father of the monadic peace argument, argues that democracies are more pacific than other regimes in general. Furthermore, several recent studies have focused on theoretical explanations (MacMillan, 1998, 2003; Ray, 2000) or found empirical support (Bremer, 1992; Caprioli and Trumbore, 2006; Huth and Allee, 2002; Leeds and Davis, 1999; Oneal and Ray, 1997; Rousseau et al., 1996; Russett and Starr, 2000; Souva and Prins, 2006) for the idea that democracies are peaceful in

general, not just in their relations with other democracies. Thus, they argue that the democratic peace is not purely a dyadic phenomenon but rather a monadic reality. Furthermore, this idea of a monadic democratic peace fits nicely with the traditional liberal ideas of Immanuel Kant and Woodrow Wilson regarding the pacific nature of democracies.

Even though the debate over the monadic peace started in the early 1980s, recent studies, both pro (e.g. Huth and Allee, 2002; MacMillan, 2003) and con (e.g. Pickering, 2002; Buhaug, 2005) stimulated renewed interest in the topic. Unfortunately, there is a decidedly large gap within the literature. No single study has systematically examined and tested the main components of the monadic democratic peace proposition. A brief examination of the literature should illuminate this gap.

Most of the empirical analyses of the dyadic democratic peace have used multivariate analyses focused on the onset of militarized interstate disputes across wide spans of time and space (e.g. Oneal and Russett, 1997). On the contrary, most of the empirical support for the monadic democratic peace proposition has come from studies that (1) employ bivariate analyses, typically using simple methods such as comparison of means tests (e.g. Rummel, 1983, 1995, 1997; Rioux, 1998), (2) test the relationship over a short time interval (Benoit, 1996), or (3) focus on territorial disputes (Huth and Allee, 2002) or events data (Leeds and Davis, 1999).[1] These differences potentially reduce the studies' generalizability and likely explain conflicting results within the literature.

One exception to these trends within monadic peace studies is Bremer (1992), who found that jointly non-democratic dyads are more dangerous than dyads containing at least one democracy. While Bremer's original study provides evidence for a monadic democratic peace, Buhaug (2005) finds that Bremer's results are very sensitive to model selection and measurement issues. When one uses a statistical model (such as logit with cubic splines, general estimating equations [GEE], or a Cox proportional hazard model) more appropriate for dealing with temporal dependence than Bremer's Poisson regression, the impact of regime type disappears. Furthermore, when one uses the more widely accepted Polity-based measure of democracy rather than the one Bremer used (from Chan [1984]), the relationship reverses direction. Therefore, this result should be retested to confirm that Bremer's (1992) findings are not driven by the method or the operationalization of the data.

Even though Bremer's work comes under question, other studies (Rousseau et al., 1996; Benoit, 1996; Rioux, 1998; Huth and Allee, 2002) also generated evidence that democracies are less conflict prone than other regime types. Benoit (1996) found even stronger evidence than Bremer (1992) for a monadic peace, at least during the 1960–1980 time frame of his study. Rousseau et al. (1996) examine both the monadic and dyadic effects of democracy on crisis initiation and escalation. They find that dyadic effects of democracy are more influential than monadic effects, in both initiation and escalation. However, they also find a weak pacifying effect of

[1] We are not arguing that the use of events data itself is problematic. Nonetheless, events data involve a range of different behaviors than just militarized conflict. Thus, the comparability to studies focusing on militarized interstate disputes and wars is subject to question.

one democracy, although this result disappears after they control for satisfaction with the status quo.

Huth and Allee (2002) find that established democracies are much more likely to negotiate rather than threaten or use force when there is a territorial dispute. They find that democracies are more likely to resolve territorial conflicts through non-violent means when compared to non-democracies. Other studies examining the monadic democratic peace have relied primarily on bivariate analyses and comparison of means tests. One such example is Rioux (1998), who finds that democracies are less likely to initiate a crisis when compared to non-democracies.

The Logic of Democratic Peace Expectations

We leave the theoretical development of the relationship between regime type and international conflict to other studies. Rather, we focus on evaluating the empirical support for the monadic democratic peace. Nonetheless, an exploration of the logic of democratic peace expectations is useful in focusing attention on appropriate tests of the monadic peace.

The fundamental argument of the dyadic democratic peace is that pairs of democracies are less likely to fight than any other pairs of states. We can state this more formally as

$$\Pr(\text{fight} \mid \text{joint-D}, \mathbf{x}) < \Pr(\text{fight} \mid \text{not joint-D}, \mathbf{x}) \quad (1)$$

where fight represents militarized interstates disputes and wars, joint-D represents a jointly democratic dyad, and **x** represents a vector of other factors explaining international conflict.

The similar expectation for the monadic democratic peace argument is that democracies are less likely to fight than other states. More formally,

$$\Pr(\text{D fights} \mid \mathbf{x}) < \Pr(\sim\text{D fights} \mid \mathbf{x}) \quad (2)$$

where D represents a democracy and ~D represents a non-democracy. Note that in Equation 1, the pacifying nature of democracy is contingent upon the opponent's regime type; democracies are only more peaceful when facing other democracies. However, in Equation 2, the expectation is not contingent; democracies are expected to be more peaceful regardless of the opponent.

Strong empirical support for Equation 2 would be the strongest possible support for the monadic proposition. However, some argue that the key to the monadic peace is that democracies are less likely to initiate conflicts than non-democracies (Huth and Allee, 2002):

$$\Pr(\text{D initiates} \mid \mathbf{x}) < \Pr(\sim\text{D initiates} \mid \mathbf{x}) \quad (3)$$

Thus, even if Equation 2 is not empirically supported, empirical support for Equation 3 would provide some evidence in favor of the monadic democratic peace.

If democracy truly pacifies relations between states, then we believe that democracies should also be less likely to be targeted than non-democracies. Thus, we would expect that

$$\Pr(\sim D \text{ initiates} \mid D, \mathbf{x}) < \Pr(\sim D \text{ initiates} \mid \sim D, \mathbf{x}) \quad (4)$$

Together, Equations 3 and 4 lead to explicit expectations for the probability of initiation for any pair of states, as follows:

$$\begin{aligned} &\Pr(D \text{ initiates} \mid D, \mathbf{x}) < \Pr(D \text{ initiates} \mid \sim D, \mathbf{x}) < \\ &\Pr(\sim D \text{ initiates} \mid D, \mathbf{x}) < \Pr(\sim D \text{ initiates} \mid \sim D, \mathbf{x}) \end{aligned} \quad (5)$$

Equation 5 shows the combined expectations that democracies are less likely to initiate conflict than non-democracies and that democracies are less likely to be targeted than non-democracies.

A clear logical implication of Equation 5 is that dyads with at least one democracy are less likely to fight than jointly non-democratic dyads. More formally,

$$\Pr(\text{fight} \mid \text{not joint-}\sim D, \mathbf{x}) < \Pr(\text{fight} \mid \text{joint-}\sim D, \mathbf{x}) \quad (6)$$

Together, Equations 1 and 6 nicely capture MacMillan's (2003: 233) argument "that while liberal states are *especially* peace prone in relations with other liberal states, they are not *only* peace prone with other liberal states, but also more broadly."

Most of these hypotheses have been tested in previous studies. However, empirical support for the monadic hypotheses has been inconsistent, as have the statistical models and operationalizations used in testing them. Therefore, we endeavor to test each of these hypotheses in a consistent manner using data from 1816–2001.

Research Design

A proper test of these hypotheses requires three different datasets, each covering the 1816–2001 time period.[2] First, we use a monadic, country-year dataset. This enables the most rudimentary evaluation of Equation 2, where we observe dispute involvement for each year, and Equation 3, where we observe dispute initiation for each year. For a more complete examination of dispute involvement pointed to by Equations 1 and 6, we employ a non-directed dyad year dataset. Thus, for

[2] Some might question whether any 19th-century country was really a democracy, and thus, whether our analysis should extend back as far as 1816. However, the original finding of the democratic peace was through an analysis of the 1789 to 1941 time period (Babst, 1972). Furthermore, Kant's assertion that democracy produces peace was focused on an elective government, not more modern characteristics of democracy such as (nearly) universal suffrage. In addition, a simple focus on post-World War II relations is problematic, since most of the world's democracies were aligned together during the Cold War. For these reasons, we seek a general analysis aimed at the entire span of available data. However, in other analyses (not reported here), we analyze each model in the 1816–1945 and 1946–2001 time periods and find no significant difference in results.

each year, we observe whether a dispute occurred within each dyad, regardless of who initiated. However, because dispute initiation is the subject of the Equations 3 through 5, we employ a directed dyad year dataset to test them. Rather than simply observing each pair of states annually, the direction of interaction is observed when a directed dyads dataset is utilized. Thus, for example, Germany→France is one directed dyad and France→Germany is another. Testing Equations 3 through 5 requires us to differentiate between the initiator and the target, which we are only able to do by using directed dyads. For example, in the France→Germany directed dyad, France is 'state A' (the potential initiator) and Germany is 'state B' (the potential target), while in the Germany→France directed dyad, Germany is state A and France is state B.[3]

For the dyadic analyses, we focus on politically active dyads (Quackenbush, 2006), which is a refinement of politically relevant dyads typically used in studies of the democratic peace (e.g. Maoz and Russett, 1993; Oneal and Russett, 1997).[4] We select politically active dyads because they provide a better measure of the opportunity for conflict than previous measures. Applying a standard test for necessary condition hypotheses (Braumoeller and Goertz, 2000), Quackenbush (2006) finds that politically active dyads is the only measure that captures opportunity as a necessary condition for international conflict.[5] In order to avoid over-counting multi-year disputes, we drop dyad years with ongoing disputes from our analysis, unless a new dispute is initiated. Furthermore, we eliminate joiner dyads and focus only on pairs of states involved in the dispute at the outset.[6]

Dependent Variables

Two dependent variables are used for this analysis. The first dependent variable, *MID*, simply codes whether or not a militarized interstate dispute (MID) occurred for each country-year or non-directed dyad year under consideration. If a MID occurred during a particular country or dyad year, *MID* equals 1; otherwise, it is 0. The second dependent variable, *MID initiation*, codes whether a state initiates a dispute within the country-year or directed dyad year. When a state initiates a MID in a country

[3] EUGene, ver. 3.1 (Bennett and Stam, 2000a) was instrumental in the creation of each dataset.

[4] Politically active dyads use contiguity, global/regional power status, and alliances to identify the opportunity for conflict. For a detailed explanation, see Quackenbush (2006).

[5] Politically active dyads capture 95.0% of all dispute-dyad-years, while politically relevant dyads capture only 88.1%. Nonetheless, we also conducted the analyses using all dyads and politically relevant dyads, with no significant changes in the results.

[6] Including joiner dyads is problematic particularly in directed-dyad analyses, since it is unclear whom should be coded as the initiator (Bennett and Stam, 2000c). Nonetheless, we did analyze each model including joiners and found nearly identical results.

or dyad year, initiation equals 1, otherwise it is 0. Both of these dependent variables are derived from version 3 of the MID dataset (Ghosn et al., 2004).[7]

Independent variables

Democracy Our primary independent variables all seek to measure the regime type of each state in the international system from 1816 to 2001. As Casper and Tufis (2003) demonstrate, using different measures of democracy can significantly impact results. While Casper and Tufis (2003) examine democracy as a dependent variable, it is also reasonable to anticipate differences between measures of democracy as an independent variable. Thus, in order to obtain a robust understanding of the impact of regime type on conflict, we use several different measures of democracy to test our hypotheses. We utilize four different sources to generate our democracy variables: the Polity IV data (Marshall and Jaggers, 2002), the Freedom House data (2008), Vanhanan's Polyarchy data (Vanhanen, 2000), and Cheibub and Gandhi's (2004) measure of regime types.

First, we use a dichotomous measure by coding each state as a democracy or non-democracy. When a state is democratic it is coded as a 1, otherwise 0. From the Polity IV data, the polity2 variable, which ranges from –10 to 10, is used. A state is considered a democracy if its polity score is greater than or equal to 5, or a non-democracy otherwise.[8]

From Vanhanen, a dichotomous democracy variable is created from three separate variables which are index of democracy, level of participation, and level of competition. Vanhanen contends that only when the index of democracy variable is greater than 5, the level of participation is greater than 10%, and the level of competition is greater than 30% is a country democratic (Vanhanen, 2000). Therefore, when all three conditions are met, a country is considered democratic, otherwise it is coded as a non-democracy.

From Freedom House, we use the Status variable which tells whether a state is free, partly free, or not free. To dichotomize this variable, partly free and not free countries are put in one category and considered non-democracies while free countries are considered democratic. Status is derived from two 1–7 scales of countries' political rights and civil liberties. A score of 1 indicates a high level of rights or liberties while a 7 indicates almost no rights or liberties. A country's status is considered free—and

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[7] A militarized interstate dispute is a conflict between two or more states involving a threat, display, or use of military force. We focus on MIDs because they are the most frequent form of serious international conflict. Furthermore, while war was the primary focus of the democratic peace in early studies (e.g. Babst, 1972; Small and Singer, 1976; Rummel, 1979), MIDs have been the primary focus of empirical analyses of the democratic peace in more recent studies (e.g. Maoz and Russett, 1993; Oneal and Russett, 1997; Senese, 1997). We also examined each model using only (1) MIDs involving the use of force and (2) wars, and found no significant difference in our results.

[8] Our results remain consistent across different thresholds (such as 6 or 7) for the dichotomization of democracy.

thus democratic—when the sum of a country's political rights and civil liberties is less than or equal to 5.

Finally, from Cheibub and Gandhi, the *reg* variable is used but reversed. This is a dichotomous variable that generally follows the minimalist definition of democracy where a country is democratic if the major political offices are filled through elections (Cheibub and Gandhi, 2004). Thus, the variable is coded 1 for democratic countries and 0 for non-democracies.

Accordingly, for the monadic analyses, *democracy* equals 1 if the state is a democracy in that year, and 0 otherwise. For the non-directed analyses, *both democratic* equals 1 if both countries are democracies, and 0 otherwise. Similarly, *one democratic* equals 1 if either regime is democratic, or 0 if neither or both states in the dyad are democratic. Finally, for the directed analyses, we include separate measures for the two states: *State A democratic* equals 1 if the potential initiator is a democracy and *State B democratic* equals 1 if the potential target is a democracy; each variable equals zero otherwise.

These measures of democracy provide the key variables needed to test our hypotheses. However, a number of alternative explanations of international behavior exist. Therefore, several control variables, representing the major foci of recent conflict studies, are used to test the robustness of the results obtained.

Relative Power There is little dispute that relative power has an important effect on international conflict behavior. It is therefore important to control for its effect in the present analysis. We use the composite indicator of national capabilities (CINC) from the Correlates of War project (Singer et al., 1972) to measure military capabilities for each state. To determine the balance of forces in a dyad, we create a ratio of State A's capabilities to the total capabilities of the dyad. The final variable, *relative power*, ranges from 0 (when State A is weak compared with State B) to 1 (when State A is very strong compared with State B).

Power Parity Considerable evidence exists that power parity between states increases the probability of conflict (Reed, 2000; Bremer, 1992). To measure *power parity*, we again use each state's CINC scores. The procedure is simple; the weaker state's CINC score is divided by that of the stronger state to generate a power ratio. The ratio ranges from 0 (total preponderance) to 1 (exact parity between the two states).

ln(Power) For the monadic analyses, consideration of relative power or power parity is not possible because it entails comparison with another state (and thus requires a dyadic analysis). However, it has been well established that more powerful states are more likely to be involved in international conflict. Therefore, we control for *ln(power)*, which is the natural logarithm of the state's CINC score for that year. We take the natural log in order to capture the declining marginal effects of increases in power.

S score Signorino and Ritter's (1999) *S* score measures the similarity of foreign policy positions between states. Some (e.g. Gartzke, 1998, 2000) have argued that the "democratic peace" is a spurious correlation driven by similarity of interests. To control for this, we include the *S Score* in our analyses. The variable ranges from –1 to 1, with positive values indicating increasingly similar alliance portfolios and negative values representing increasingly dissimilar portfolios.

Distance Geographic proximity has repeatedly been found (e.g. Bremer, 1992) to be an important predictor of international conflict. To control for the effects of proximity, the distance between states in a dyad is measured. We take the natural logarithm of the distance between capital cities, except for the USSR and USA when other cities are included, and states with land borders are considered to be zero miles apart (Bennett and Stam, 2000a).

Peace Years Spline The final control variable is of more methodological than substantive character. Beck et al. (1998) argued that it is important for studies using pooled dyadic time series to account for time dependence within dyads. In other words, while the standard statistical assumption is that each observation is independent, observations of different years of the same dyad are not truly independent. We account for time dependence by employing Beck et al.'s method of including peace years and three cubic spline variables that account for time dependence.

Methods of Analysis

In order to test our hypotheses regarding the impact of regime type while controlling for the effects of these other variables, we utilize logit models.[9] We analyze MID onset and MID initiation using logit models because our dependent variables are dichotomous. However, the assumption of independence between observations is violated because of the cross-sectional time series nature of the data (Beck, 1996; Bennett and Stam, 2000b). To correct for this, we use robust standard errors clustered on the dyad for the dyadic models and on the state for the monadic analyses.

A Monadic Analysis

We begin our empirical evaluation of the monadic democratic peace at the monadic level of analysis. By focusing directly on each state's conflict behavior individually, monadic analyses seemingly provide a useful way to test Equation 2 regarding dispute involvement and Equation 3 regarding dispute initiation. The expectation laid out by these equations is that the coefficients on *democracy* would be negative and significant, indicating that democracy makes dispute involvement or initiation less likely. The results, shown in Table 1, present mixed findings that are very dependent on the measure of democracy employed.

In the first model, we estimate the impact of *democracy* (measured using Polity) on MID involvement, controlling for power. The coefficient is positive but insignificant ($p = 0.938$). We also ran the same model using the other measures of democracy, and the effect is found to be insignificant in each case. Thus, rather than making conflict less likely, democracy has no effect on the likelihood of dispute involvement, contradicting Equation 2.

For the next four logit analyses, we examine the relationship between democracy and MID initiation. In Model 2, Polity is used to measure democracy. Although the coefficient for democracy is negative, it again is not significant ($p = 0.980$). Freedom House is used as an alternative measure for democracy in Model 3. In this model, the coefficient for democracy is negative and does attain statistical significance ($p = 0.035$).

[9] We use Stata 9.2 for all of the statistical analyses.

Table 1. Logit Results for Monadic Analyses

	Involvement	*Initiation*			
Variable	*Model 1: Polity*	*Model 2: Polity*	*Model 3: Freedom House*	*Model 4: Vanhanan*	*Model 5: Cheibub*
Democracy β	0.0109	–0.0042	–0.3534*	–0.0054	–0.3887*
Se_β	0.1404	0.1647	0.1676	0.1405	0.1701
ln(Power)	0.2860***	0.3479***	0.4725***	0.3453***	0.4627***
	0.0326	0.0347	0.0497	0.0330	0.0477
Constant	0.7092***	0.2990	1.4970***	0.3225	1.441***
	0.2155	0.2072	0.3375	0.2041	0.3267
Wald χ^2	77.5***	104.2***	91.7***	114.0***	94.2***
Log-likelihood	–6573.2	–4821.6	–1915.3	–4850.5	–3009.2
N	11,654	11,654	4,894	11,911	7,524

*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.
Unit of analysis is nation-state years. Standard errors are robust standard errors adjusted for clustering by state.

Vanhanen's Polyarchy data are used in Model 4. Similar to Model 2, the coefficient for democracy is negative but does not even approach significance ($p = 0.970$). Finally, Model 5 utilizes Cheibub and Gandhi's (2004) measure of regime types. Similar to Model 3, the coefficient for democracy is negative and significant ($p = 0.022$). Thus, two models support the third equation—that democracies are less likely to initiate disputes than other regime types—while two models do not.

When democracy is measured by either Freedom House's or Cheibub and Gandhi's data, democracy is negative and significant. When it is measured by either Polity or Polyarchy data, democracy is highly insignificant. Thus, the monadic peace receives some support but the findings are not robust. One possible explanation for the contradictory results is that the democracy measures from Polity and Polyarchy dataset start in the early 1800s while Cheibub and Gandhi's dataset starts after World War II and Freedom House dataset starts in the early 1970s. So it is possible that the effects of democracy change over time and these different results are the product of democracy's inconsistent effect over time. Yet, when all four models are examined after 1970, the results once again present questionable findings. The Polity and Freedom House measures are negative and significant after 1970, but the Cheibub and Gandhi and Polyarchy measures are insignificant. Thus, it appears that time is not driving these inconsistent findings.

This inconsistency between different measures is not surprising. As Casper and Tufis (2003) illustrate, while most measures of democracy are highly correlated, when placed in regression models and compared with one another, they consistently deliver divergent results. In fact, finding consistent results for the second equation should be more surprising than the inconsistent results found for the third equation.

However, these results are based on the monadic level of analysis, which we argue is not appropriate for the research question at hand. We argue that the (directed or non-directed) dyadic level of analysis is more appropriate because interstate conflict—by definition—can only occur (at least) at the dyadic level. As Most and Starr (1989: 76–8) state, when international conflict "is conceived as the outcome of the interactions of at least two parties, the attributes of all of those parties—not just one of them—must be considered in one's attempts to understand and explain when" conflicts will and will not occur. Decisions to fight are not made in a vacuum. Furthermore, they are not made by only one state, since it "takes two to tango." Thus, dyadic analyses are the most appropriate for studying international conflict (Bremer, 1992) since they allow one to account for the international context in which conflict occurs.[10]

Furthermore, recall that the monadic democratic peace expectations as expressed in Equations 2 through 6 above are that democracies are less likely to fight or initiate given **x**, a vector of other factors explaining international conflict. However, it is not possible to control for important factors such as relative power, contiguity, etc. in a monadic analysis, because these factors require one to know information on two states. For example, France and Germany are contiguous, but France and India are not, but if our analysis is looking only at France individually, then the idea of contiguity does not make sense.

Frequency of Democratic Conflict

Accordingly, we turn to the dyadic level of analysis, beginning by examining the impact of regime type on the frequency of international conflict. The baseline expectation of the monadic democratic peace is that democracies are less likely than other states to fight. However, there are different ways to specifically test this basic expectation. We begin here by examining the impact of democracy on involvement in militarized disputes.

Table 2 displays the results of a series of logit models where the dependent variable is the occurrence of a militarized interstate dispute within a (non-directed) dyad year. In Model 1, we test the expectations expressed in Equations 1 and 6 that conflict is least likely in jointly-democratic dyads and most likely in jointly-non-democratic dyads, with mixed dyads in between. The coefficient for *both democratic* is negative and highly significant, indicating that when both states in a dyad are democratic, disputes are much less likely to occur than if neither is. On the contrary, *one democratic* is positive and significant, which indicates that dyads containing exactly one democracy (i.e. mixed dyads) are significantly more likely to fight than jointly-autocratic dyads. The effects of the control variables are all in the expected directions, although power parity is not significant.

Although the direction and significance of the coefficients suggest the effect of democracy on dispute involvement, we can get a better idea of the substantive effect by examining the predicted probabilities. Setting the control variables to

[10] Note that studies claiming support for the monadic democratic peace (e.g. Huth and Allee, 2002; Oneal and Ray, 1997; Rousseau et al., 1996) also employ dyadic analyses.

Table 2. Logit Results for Prediction of Militarized Interstate Dispute Occurrence

Variable		*Model 1: Polity*	*Model 2: Freedom House*	*Model 3: Vanhanan*	*Model 4: Cheibub*
Both	β	–0.3527***	–1.005***	–0.4531***	–0.2649
democratic	Se_β	0.1279	0.2206	0.1173	0.1530
One		0.4586***	0.2351*	0.1538*	0.4877***
democratic		0.0776	0.1066	0.0786	0.1112
S Score		–0.2747***	–1.7647***	–0.6689***	–1.2933***
		0.2330	0.4802	0.2508	0.3848
ln(Distance)		–0.2469***	–0.3287***	–0.2661***	–0.3464***
		0.0131	0.0166	0.0142	0.0163
Power Parity		0.0477	0.6255***	0.1260	0.3565
		0.1514	0.1911	0.1524	0.1830
Peace Years		–0.2979***	–0.3186***	–0.2998***	–0.3139***
		0.0171	0.0238	0.0175	0.0228
Constant		–1.1699***	0.3408	–0.7173***	–0.2481
		0.1909	0.4354	0.2103	0.3324
Wald χ^2		2094.7***	1714.5***	1988.1***	1735.2***
Log-likelihood		–8631.5	–3361.3	–8754.0	–5336.8
N		163,920	89,446	181,066	144,136

*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.

Unit of analysis is dyad-years. Peace years cubic spline variables not shown. Standard errors are robust standard errors adjusted for clustering within dyads.

their means and just varying the regime type, we find that the probability of conflict within a jointly democratic dyad is 0.0034. As expected, the predicted probability for non-democratic dyads is higher, at 0.0049, but the predicted probability that mixed dyads fight is 0.0077, the highest overall. Thus, while Equation 1 is supported, these results are the opposite of the prediction made by the monadic democratic peace in Equation 6; instead, the presence of a single democracy within a dyad significantly *increases* the likelihood of international conflict.[11]

While the results in Model 1 strongly contradict the monadic democratic peace proposition, it is possible that this is driven by some peculiarities in the Polity data that we use to measure democracy. As Casper and Tufis (2003) point out and the monadic analysis above demonstrates, different measures of democracy can produce very different results in various applications. Accordingly, in Models 2 through 4, we rerun the same analysis but using alternative measures of democracy from the Freedom House, Vanhanen, and Cheibub datasets. The results are very consistent, with *one democratic* being positive and significant regardless of the measure employed. The most surprising

[11] Of course we cannot determine from this result whether democracies are the targets or initiators; we examine that below. However, we believe that there should be an increased likelihood of peace when a democracy is in a dyad in order to meaningfully speak of a monadic democratic *peace*.

finding is that, although *both democratic* is negative and highly significant with every other measure, it is insignificant with the Cheibub measure of democracy. Although future research is likely warranted to uncover the source and significance of this surprising finding, the key for our purposes is to note that, regardless of the measure of democracy employed, we find no support for the idea that democracies are less likely to fight than are non-democracies.

Democracy and Conflict Initiation

These dyadic results make it clear that whereas jointly democratic dyads are the most peaceful, mixed dyads of one democracy and one non-democracy are the most conflict prone. Thus, when we focus on the frequency of international conflict, there is strong support for the dyadic democratic peace, but no support for the monadic democratic peace.

However, supporters of the monadic democratic peace (e.g. Huth and Allee, 2002; Rioux, 1998; MacMillan, 2003) have argued that while democracies may indeed fight as frequently as other states, they are less likely to initiate conflict. This argument is well summarized by Equation 5. Therefore, it is important to examine the impact of democracy on militarized interstate dispute initiation. We do this through an analysis of directed dyad years, where the dependent variable is dispute initiation as shown in Table 3.

Model 1 begins to address the impact of regime type on conflict initiation by including separate variables for whether State A (the potential initiator) and State B (the potential target) are democratic. The effect of *State B democratic* is positive and highly significant, indicating that democracies are indeed more likely to be targeted by non-democracies. However, although the effect of *State A democratic* is negative, it does not come close to a reasonable level of significance ($p = 0.15$). Again, the expectations of the monadic democratic peace argument are not supported.

The control variables are all in line with expectations. As states' foreign policy positions become more similar (as reflected by the *S-score*), as the distance between the states increases, or as the number of peace years since the last dispute increases, each state is less likely to initiate conflict. Finally, the stronger that a state is relative to its potential adversary, the more likely it is to initiate a militarized interstate dispute. The results for these control variables are consistent across each of the five models.

Although Equation 5 indicates that the probability of initiation is contingent on the target's regime type, Model 1 does not allow this. In order to do so, we include an interaction term, *State A democratic * State B democratic*, in Model 2. This allows us to account separately for monadic and dyadic effects of democracy in the same fashion as Rousseau et al. (1996). Once the interaction between regime types is controlled for, we find that not only are democratic states significantly more likely to be targeted by autocracies, they are also significantly more likely to initiate disputes against non-democracies. However, democracies are significantly less likely to initiate disputes against other democracies, as indicated by the strong, highly significant, negative effect of the interaction term.[12]

[12] Cox and Drury (2006) find that democracies also initiate economic sanctions against non-democracies with considerable regularity, but not against other democracies.

Table 3. Logit Results for Prediction of Militarized Interstate Dispute Initiation

Variable		*Model 1: Polity*	*Model 2: Polity*	*Model 3: Freedom House*	*Model 4: Vanhanan*	*Model 5: Cheibub*
State A democratic	β	–0.1213	0.3499***	0.0450	0.0590	0.3123**
	Se_β	0.0842	0.0985	0.1220	0.0956	0.1120
State B democratic		0.1821*	0.5954***	0.3632**	0.2434*	0.6651***
		0.0760	0.0905	0.120	0.0966	0.1310
State A democratic*		–	–1.2622***	–1.6042***	–0.7291***	–1.3302***
State B democratic			0.1522	0.2485	0.1556	0.1804
S Score		–0.4162	–0.3162	–1.7419***	–0.7081**	–1.2891
		0.2363	0.2365	0.5070	0.2551	0.3825
ln(Distance)		–0.2627***	–0.2729***	–0.3671***	–0.2934***	–0.3781***
		0.0139	0.0162	0.0173	0.0145	0.0168
Relative Power		0.6359***	0.6326***	0.4986***	0.5783***	0.4708***
		0.0865	0.0860	0.0966	0.0833	0.1028
Peace Years		–0.2787***	–0.2758**	–0.2840***	–0.2754***	–0.2710**
		0.0180	0.0178	0.0235	0.0180	0.0230
Constant		–1.8822***	–2.0603***	–0.3230***	–1.5507***	–1.0059***
		0.2158	0.2132	0.4879	0.2315	0.3603
Wald χ^2		1751.7***	1902.8***	1603.3***	1745.8***	1579.5***
Log-likelihood		–10443.9	–10373.4	–4159.4	–10518.0	–6518.7
N		325,990	325,990	178,160	360,281	287,115

*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.

Unit of analysis is directed-dyad years. Peace years cubic spline variables are included in the analysis but not shown in the table. Standard errors are robust standard errors adjusted for clustering within dyads.

Together, these results strongly contradict the monadic peace expectations laid out in Equation 5. The likelihood of initiation in a jointly democratic dyad ($p = 0.0019$) is reduced by 30% when compared with a dyad with no democracies ($p = 0.0027$).[13] However, initiation is more likely in a mixed dyad than in a non-democratic dyad: the probability that the democracy initiates versus the autocracy ($p = 0.0038$) is increased by 41%, and the probability that the non-democracy initiates versus the democracy ($p = 0.0048$) is increased by 78%. Thus, contrary to the expectations of the monadic democratic peace argument, democracies are more likely to initiate disputes versus non-democracies than non-democracies are. Rather than Equation 5, the true relationships between regime type and initiation are

[13] These predicted probabilities are calculated based on Model 2 in Table 3. Only the democracy variables are changed; other variables are held at their means.

$$\Pr(\text{D initiates} \mid \text{D}, \mathbf{x}) < \Pr(\sim\text{D initiates} \mid \sim\text{D}, \mathbf{x}) < \Pr(\text{D initiates} \mid \sim\text{D}, \mathbf{x}) < \Pr(\sim\text{D initiates} \mid \text{D}, \mathbf{x}). \quad (7)$$

As with the analyses above, it is important to determine if these results are merely an artifact of the Polity measure of democracy. Accordingly, in Models 3–5 we re-estimate Model 2 using the Freedom House, Vanhanen, and Cheibub measures of democracy. The results are largely the same; the major difference is that with the Freedom House and Vanhanan measures, the impact of *State A democratic* is insignificant. Nonetheless, Models 3 through 5 still indicate that dispute initiation is most likely to occur in mixed dyads leading to the same overall relationship as expressed in Equation 7.

Conclusion

In this article, we have evaluated empirical support for the monadic democratic peace. We described and tested the logical implications of monadic peace expectations in terms of the likelihood of conflict involvement and initiation, using data from 1816 to 2001. At the monadic level of analysis, we found no support for the idea that democracies are less likely to fight than are non-democracies. The results for dispute initiation were mixed, as two measures estimated democracy to have no effect while the other two measures estimated that democracy decreased the likelihood of initiation. However, the dyadic level of analysis is more appropriate to use, and whether we focus on the militarized interstate dispute involvement or initiation, the monadic democratic peace argument receives no empirical support.

Given these findings that democracies not only fight non-democracies with considerable regularity, but are also more likely to initiate disputes against non-democracies than autocracies are, we are hard pressed to understand the empirical basis for claims that democracies are more peaceful in general than other states.[14] While we have no illusions that this is the final word on the monadic peace, we feel safe in concluding, for now at least, that the democratic peace is a dyadic phenomenon, not monadic.

Given the strong dyadic effects of regime type found here, one promising avenue for future research is continued research on the effects of political distance between states (e.g. Bennett, 2006; Werner, 2000). Our results indicate that joint democratic and joint non-democratic dyads are quite peaceful, while mixed dyads are much more conflict prone. Therefore, it appears that political distance—or the dissimilarity between regime types—has a more important effect on international conflict than the distinction between democracy and non-democracy. Certainly this issue is an important area of focus as scholars seek to further our understanding of the relationship between regime type and international conflict.

[14] Thus, we are troubled by claims that (monadic) democracy leads to *peace*, not that regime type has important effects on state behavior, which is well established.

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