Market Prosperity, Democratic Consolidation, and Democratic Peace

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A model is introduced that yields a single parsimonious explanation for a diverse range of political phenomena, including the processes of democratic consolidation and peace among democratic nations. The model predicts democratic values to arise from the norms of contract that are endemic in developed market economies and yields the novel contingent claim that the peace among democratic nations may be a pattern limited to those democracies with developed economies. Analyses of a large number of interstate dyads from 1950 to 1992 show strong support for this hypothesis. It seems that the pacifying impact of democracy is about twice as strong among developed countries compared with other dyads. Among conflict-prone contiguous dyads, the pacifying impact of democracy does not appear statistically significant among the poorest decile of joint democratic dyads. The study demonstrates the wide explanatory power of the simple postulate that social values and political preferences derive from socioeconomic norms.

Can a single explanation account for the processes of democratic consolidation and the peace between democratic nations? Although democratic nations may fight other nations, it is well established that they rarely, if ever, fight each other. Most explanations for this pattern have their roots in institutional approaches to explaining political behavior. Although varying in the margins, institutional theories hold the preferences of political actors constant and predict that if there are democratic institutions, peace will follow. In direct contrast, however, many studies of democratization and democratic consolidation give importance to the presence of democratic values and preferences, although this literature has yet to identify the origins of such values (Kowert and Legro 1996). At the same time, both the democratic peace and democratic consolidation literatures overwhelmingly reject a role for economic prosperity as a source of democratic values or peace (Diamond 1997, xxxii), although empirical studies have clearly established that economic development and stable democratic government go hand in hand (Burkhart and Lewis-Beck 1994).

Might economic prosperity offer the missing link of democratic values, democratic consolidation, and the peace between democratic nations? Classical studies in sociology have long observed a connection between economic development and a common culture associated with the democratic values of individualism and the rule of law (Durkheim [1893] 1933; Tönnies [1887] 1957). These studies tended to place the origins of such values either in "Western" culture (Weber [1904-5] 1958) or as part of an evolutionary process of political development (Parsons 1964). Both of these views fell out of favor in the 1970s, however, as either ethnocentric or unable to account for economic structural conditions. As a consequence, most explanations for democratic consolidation today give importance to economic structure and reject culture (e.g., O'Donnell 1973), or give importance to political culture but reject structure (e.g., Huntington 1968).

In this article I argue that culture and structure go together, and demonstrate how economic development may foster the values and preferences that lead to both democratic consolidation and democratic peace. I draw on the plausible but long ignored assumption of "cultural materialism," and demonstrate its robust explanatory value for the democratic peace and democratic consolidation research programs. I show how culture and structure can go together as an explanation for political development—and do so without ethnocentric or evolutionary implications. Moreover, this approach traces the origin of democratic values to the market norms of contract that are endemic in prosperous market socioeconomies—yielding the novel expectation that the democratic peace may be limited to the prosperous market nations.

Whereas previous studies in the democratic peace literature have considered economic development and shown that the peace between democratic nations does not occur "*because* they are rich" (Maoz and Russett 1992, 257), no systematic study has examined the possibility that the democratic peace may rest on the *condition* of economic development. Nor do theories of democratic peace predict an economic limitation to the notable pattern. In this way, the model identifies—and the empirical test examines—a novel contingent claim that represents a significant departure from previous studies of democratic peace and cooperation, with implications for the literature on democratic consolidation.

Because the linkage between economic development and democratic consolidation is already well established (Burkhart and Lewis-Beck 1994; Przeworski and Limongi 1997), I begin by reviewing the main theoretical debates and empirical developments in the democratic peace research program. I then introduce the potential causal linkage of market prosperity, democracy, and interstate peace. Next, I present the empirical examination of a large number of interstate dyads from 1950 to 1992. I conclude by summarizing the results and highlighting the significance of this research for studies of democratic consolidation and democratic peace.

ECONOMIC DEVELOPMENT AND DEMOCRATIC PEACE

Until the fall of the Berlin Wall in 1989, little attention was given to the few quantitative studies that showed that the seeming rarity of wars between democratic nations

was highly unlikely to be attributable to chance (Babst 1964; Rummel 1979). Today the scope of the pattern has been extended to lower level militarized interstate disputes (e.g., Maoz and Russett 1992; Gleditsch and Hegre 1997) and reconfirmed at the level of disputes and wars after testing for several possible confounding influences (Bremer 1992, 1993). It also seems unlikely that the democratic peace may be explained by reverse causality (Mousseau and Shi 1999; Oneal and Russett 2000) or temporal dependence in the dependent variable (Beck, Katz, and Tucker 1998; Raknerud and Hegre 1997). As reported by Bremer (1993) in an analysis of all nations from 1816 to 1965, joint democracy appears to reduce the probability of a war between nations by about 30 times and decreases the probability of militarized disputes between nations by about 3 times.[1]

Although the democratic peace is now empirically stronger than ever, few systematic studies have examined the potential role of economic development in the relationship. This absence is notable given the well-known association between democratic institutions and economic development and an early report by Haas (1974, 464-65) of a cluster of peaceful conditions among nations characterized as developed and democratic. Perhaps the main reason for this absence is the surprising dearth of theory linking economic prosperity, democracy, and interstate peace. Although a number of studies *talk* about such a connection, they universally make this link not with economic development but with interstate trade. Schumpeter (see Doyle 1986, 1153), for instance, claimed that democratic capitalism favors peace but, like Weede (1996) and the classical liberals (Oneal and Russett 1997, 1999), rested his argument on the predicted pacifying benefits of interstate trade. Interstate trade is a dyadic-level phenomenon that is not the same thing as the national-level phenomenon of economic development. In any case, most studies have shown that dyadic democracy has a robust ameliorating impact on militarized conflict after accounting for trade interdependence (e.g., Oneal and Ray 1997; Oneal and Russett 1997, 1999).[2]

The notable exceptions in the empirical literature that have looked at economic development directly include Bremer (1992, 1993) and Maoz and Russett (1992, 1993). Although Bremer found that wealth diminished the likelihood of dyadic disputes and war onsets, the ameliorating impact of joint democracy on conflict remained robust and significant. Maoz and Russett (1993) examined the impact of wealth and found results similar to Bremer (1993), but in an earlier study Maoz and Russett (1992) report results that suggest a potential economic limitation to the democratic peace. The authors classified as "developed" the states with gross domestic product per capita

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1. A "militarized interstate dispute" occurs when at least one state threatens, displays, or uses force against at least one other state (Jones, Bremer, and Singer 1996, 169-71). Wars are a small subset of militarized interstate disputes that escalate to large numbers of battlefield-connected deaths (Jones, Bremer, and Singer 1996). For clarity, I use the term *militarized conflict* to refer to the combined set of militarized interstate disputes and wars. Note that most studies report a peace only between democratic nations, though a minority of studies claim that democracies are more peaceful than other states overall (see Ray 1995).

2. Rosecrance (1986) argues for pacifying influences of both trade and development, but does not link these factors with democracy. Rosecrance's thesis is addressed later on. For a recent report that the democratic peace might be a consequence of trade among developed states or driven by the wealthier democracies, see Hegre (2000).

(GDPpc) of 30% or more of the U.S. GDPpc. The authors then observed the "population of dispute dyads as the basis for computing relationships between wealth and the dispute participation of dyads" (p. 256), reporting with a Del statistic that *"wealth does not affect conflict among specific types of regime types"* (p. 257). A review of the tables from which the authors drew this conclusion, however, shows that the number of expected dispute participation–years among joint democratic, joint less developed dyads, is quite low, because of the small number of such dyads in their sample. Maoz and Russett observed the population of geographically contiguous and major power dyads from 1946 to 1986. Perhaps as a consequence of the limited size of their sample, the difference between the expected and actual frequencies of dispute involvement–years among joint democratic, joint less developed dyads appears potentially insignificant.[3]

Thus, the analyses by Maoz and Russett (1992) and Haas (1974) do not preclude the possibility that the democratic peace may be a pattern driven by the more prosperous democracies. Although the phenomenon may not be explained by a pacifying impact of wealth on conflict (Bremer 1992, 1993; Maoz and Russett 1993), the evidence remains unclear whether the zone of democratic peace may be *contingent* on the supplemental presence of wealth and prosperity. Notably, the institutional-cultural hypothesis addressed by Maoz and Russett provides a basis for expecting such a limitation. According to this view, democratic leaders who rise to power through the democratic political process are thought to be accustomed to the norms of negotiation, compromise, and tolerance, and thus apply these norms in their foreign relations (Dixon 1993, 1994; Maoz and Russett 1992, 1993; Mousseau 1997, 1998; Russett 1993, chap. 2). The hypothesis thus predicts a causal relationship from democratic institutions to the norm of peaceful conflict resolution. As we will see in the following section, however, the origin of democratic norms may rest not with democratic institutions, but with market prosperity. From this perspective, democratic institutions are the effect and not the cause of democratic norms.

MARKET PROSPERITY AND DEMOCRATIC VALUES

Whereas constructivist and institutional-cultural approaches for explaining democratic consolidation and peace outline a causal relationship from democratic institutions to democratic values (Peceny 1999, 98-99; Russett 1993, chap. 2), the classical sociologists long ago identified a distinct culture of individualism and the rule of law associated with developed economic systems (Durkheim [1893] 1933; Tönnies [1887] 1957). Seeking to explain economic development, the classical sociologists tended to identify "Western" culture as the explanatory variable (Weber [1904-5] 1958). Later, modernization theorists viewed political development as an evolutionary process (Par-

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3. Specifically, I am referring to Tables 4 and 5 of Maoz and Russett (1992, 256-58). Table 4 reports that, compared to the population of all states, among joint democratic, joint developed dyads the actual and expected frequencies of dispute involvement–years are 6 and 37.79 (row 1), among joint democratic, mixed developed–less developed dyads these frequencies are 6 and 27.16 (rows 3 and 4), but among joint democratic, joint less developed dyads these frequencies are 2 and 4.47 (rows 8 to 10).

sons 1964). Both of these views fell into disrepute, however, with the waves of postcolonial autocratization in the 1960s and 1970s. As a consequence, today academics generally scorn any explanations for political phenomena that associate cultural values with economic prosperity (Peceny 1999).

However, a link between prosperity and cultural values does not need to rest on Western or any other indigenous culture. Nor does such a link require evolutionary assumptions. Instead, economic conditions may affect social values, a view common among anthropologists and sociologists (e.g., MacPherson [1962] 1977). That is, economic behavior that becomes regularized over time may influence, consciously or unconsciously, our social values and worldviews—a path of causation coined *cultural materialism* by Harris (1979).

Within the field of anthropology, cultural materialism directs that two indigenous cultures that have never been in contact yet share common economic systems—such as hunters and gatherers in the rain forests of Brazil and the Congo—will share common social values and worldviews (Murphy and Margolis 1995). It follows that those divergent indigenous cultures that share the norms of modern developed society—such as the Americans, Germans, and Japanese—will also share common social values and worldviews.

Although there may be a degree of simultaneous causation between economic norms and cultural values, studies have documented the impact of economic change on cultural change (e.g., Mintz 1985; Sider 1986). The assumption of cultural materialism, therefore, is not only tenable, but also observable and has even been documented. From this simple assumption, in the following section I demonstrate how market prosperity may foster democratic values.

MARKET PROSPERITY AND THE EMERGENCE OF DEMOCRATIC VALUES

If the postulate of cultural materialism is empirically true, then a very relevant question is, How do the daily economic norms in economically prosperous societies differ from those in other societies? By definition, economic development requires a complex division of labor. In addition, in the most prosperous economies and in the stable democracies the complex divisions of labor have been historically linked with market forces.[4] This means that in prosperous market economies, the complex divisions of labor are linked with contracts—or agreements among individuals to cooperate and modify their behavior for mutual gains. Individuals regularly engage in contract when they sell their labor and skills, exchange their goods, and purchase what they consume. In contrast, in poorer or nonmarket economies, material acquisition and commercial

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4. Even in Sweden, famous for its social democracy, most economic production has remained in private hands, with the government share of gross domestic product (GDP) not exceeding 25% from 1950 to 1992 (Penn World Tables, Mark 5.6, http://www.nber.org/pwt56.html, June 10, 1999). Note that government share of GDP can include capital that is exchanged on the market, such as government ownership of industrial firms. Thus, the market would seem to constitute 75% or more of all economic activity in the wealthy democracies from 1950 to 1992.

consumption are less intense because individuals are more likely to consume products that they have produced. For products not directly produced, successful acquisition often rests less with the fortunes of individualistic exchange than with the fate of one's family, clan, feudal, or other collective links. Hence, what predominantly differentiates the day-to-day life of people in prosperous market economies from virtually all other economies is the intensity in which they regularly engage in contract forms of economic cooperation.

Consider the social implications of a community linked by contracts. First, in contract forms of cooperation, each party explicitly and unashamedly pursues its own interests. In other forms of economic cooperation—as occurs within families and in less prosperous societies within extended families, tribes, and other collectivities—economic arrangements are more likely to be consciously and explicitly rationalized by a common group utility.[5]

Second, by definition, contracts are entered into by individual volition. If a person has little or no choice in a matter—or if the economic cooperation is based on notions of common utility—then the arrangement is not based on contract. Unfortunately, in less prosperous societies too many people lack the economic leverage to engage in bargaining, and thus enter into economic arrangements without choice and hence without volition. If a person has little or no choice in a matter, then the economic arrangement is not a contract but exploitation or slavery.

Third, whether through a process of direct bargaining or with prices set by the market, individuals arrange contracts with negotiation and compromise. Among individuals sharing an explicit common utility, negotiation and compromise are not the normal methods that facilitate economic cooperation. This is because the processes of negotiation and compromise require each party explicitly and unashamedly to pursue its self-interest and disregard the interests of economic partners. This neglect and unabashed self-interest is incompatible with a common utility explicit in economic collectives—as occurs within families—rendering the processes of negotiation and compromise abnormal aspects of noncontract forms of economic cooperation.

Fourth, to enter into contract, a person must have some element of trust that all contractees will fulfill their obligations. This is a form of trust present among individuals even though each explicitly pursues his or her own interests. This form of trust thus differs from the trust sanctified by common identities found within families, clans, and other collective economic units, and is therefore nonparticular. Moreover, all contractees expect all parties to the contract to fulfill their obligations not because they happen to be within a common in-group—for example, your sibling, cousin, and so forth—but because the contract commits everyone to the terms of the contract. In this

5. Some readers may object to the model on the grounds that all forms of economic cooperation are in the form of contract. But what matters is that in developed market socioeconomies actors tend to *perceive* their cooperation in the form of contract, whereas in other socioeconomies actors tend to *perceive* their cooperation as motivated, or rationalized, by some sort of common utility. Because most readers will share market values, I draw on the last remaining bastion of noncontract forms of economic cooperation that still regularly occurs in prosperous market cultures: the cooperation that occurs within nuclear families. One provides food for his or her children or parents because one perceives a common utility with them. Compared to prosperous market economies, in less prosperous societies a higher portion of individual-level economic activity occurs within such common utility frameworks.

way, contract forms of economic cooperation may occur across divergent within-group identities, and the form of trust derived from the regularized engagement in contract—the trust in the sanctity of contract—is nonparochial or universal.

Finally, because a contract has no meaning in the absence of provisions that are equally binding for all members, a contract imposes equity among contractees. An equitable agreement does not mean that all parties must be equal in wealth, nor does it mean that all parties must derive an equal utility from their agreement. It simply means that contractees have an arrangement, such as in the purchase of apples, in which the parties, the seller and the buyer, face explicit mutual obligations—the buyer pays cash, and the seller furnishes the apples. Because each party is consciously equally obligated to fulfill his or her side of the deal and has choice and free will whether to enter the contract, the arrangement is explicitly equitable. In this way, if a prince and a serf regularly engage in contract, each is aware that each is equally obligated to fulfill the terms of the contract, and their relationship becomes based not on hierarchy but equity.

With the assumption that economic norms translate into social values and worldviews, if the above empirical statements are true, then individuals in developed market economies tend to share the social and political values of exchange-based cooperation, individual choice and free will, negotiation and compromise, universal equity among individuals, and universal trust in the sanctity of contract. This expectation is supported by studies in anthropology: "In individualistic societies individuals interact with others on the basis of such principles as competition, equity, and exchanges based on contracts" (Bierbrauar 1994, 246). Studies have traced the role of merchant capital in the breakdown of traditional norms during the development process (e.g., Sider 1986).

Still, the model does not preclude the possibility that market norms cannot have, in turn, a positive impact on the proliferation of exchange. Indeed, simultaneity between norms and action may explain the "take off" stage of development made famous by Rostow (1960). That is, once a rise of exchange, however small, fosters some change toward contract values in a society, then the increasing norm of trust in the sanctity of contract would likely lower transaction costs, fostering in turn an increase in exchange. In this way, a positive feedback loop renders the system unstable, and after a certain point socioeconomies take off—not unlike, in recent years, perhaps South Korea and Taiwan. The assumption of cultural materialism, however, cannot explain a rise in exchange directly, because it identifies the primary flow of causation as moving *from* rational economic norms *to* social norms and values. The next section explores how a rise in market values provides the basis for stable democratization.

MARKET VALUES AND DEMOCRATIC CONSOLIDATION

Since Seymour Martin Lipset's classic 1959 article on the social prerequisites of democracy, social scientists have well established the correlation of economic devel-

opment with democratic governance (Burkhart and Lewis-Beck 1994; Przeworski et al. 1997). Most explanations for this relationship draw on cultural, instrumental-rational, or structural-functionalist foundations. Starting with the latter, structural-functionalist models assert that democracy is simply more functional with development (Fukuyama 1992; Parsons 1964). Instrumental-rational approaches, in contrast, tend to give importance to the changing class structures with development (Huntington 1968; Rueschemeyer, Stephens, and Stephens 1992). Lipset (1959), for example, gives importance to the increasing size of the middle class, which is thought to alleviate class conflict.

Cultural models, in contrast, tend to reject a role for economic prosperity as a source of democratic values (Diamond 1997, xxxii). Instead, democratic values are thought to arise from high levels of education (Lipset 1959), economic integration with the West (Chu, Hu, and Moon 1997), or the operation of democratic institutions over time (Peceny 1999)—all factors that may or may not correlate with economic development. In addition, academics frequently claim that "economic development can alter a country's culture" (Huntington 1997, 5), but I have not found anyone who offers an explanation for how this process may occur. As Dahl (1997) asserts, "The exact nature of the relationship among socioeconomic modernization, democratization, and the creation of a democratic culture is almost as puzzling today as it was a quarter-century ago" (p. 35).

If economic norms translate into social and political norms, however, then the relationship between economic development, democracy, and democratic culture may not be so puzzling. If individuals in developed market economies tend to share the social and political values of exchange-based cooperation, individual choice and free will, negotiation and compromise, universal equity among individuals, and universal trust in the sanctity of contract, then individuals in developed market economies tend to share democratic values. If norms and values tend to institutionalize, then it follows that market values favor democratic institutionalization. This expectation holds even if institutions, in turn, reinforce norms. Indeed, a second positive feedback loop between norms and institutions may explain why democracies with per capita incomes greater than $6,000 are "certain to survive, come hell or high water" (Przeworski et al. 1997, 305).

Consider that the democratic form of government is itself a social contract—an agreement among free individuals to abide by a common set of rules limited to resolving political conflict through a process of negotiation and compromise. Voting is an act of equitable exchange: All votes are juridically equal, and voters are obligated to abide by the terms of the social contract and tolerate, among other things, opposition victories. Moreover, because rational individuals who value their freedom will prefer as few obligations as possible in their contracts, individuals sharing the norms of contract will resist obligations to the state. They will emphasize their individual rights over collective duties. It follows that for a community that values contract forms of cooperation, individual equity, trust in the sanctity of contract, and common law, the democratic

social contract can be the only legitimate form of government. In corollary, in the absence of such values it is difficult to see the grounds for the legitimacy of unabashed free will, the individual-based voting system, tolerance for others' free opinions, and, more significantly, trust that the opposition in power will respect the sanctity of the social contract.

As Lipset, Seong, and Torres (1993) have observed, "People with more income, in complex and widely interdependent work situations . . . are more likely to ask for political freedom" (p. 166). Both Marx in *Capital* ([1867] 1952) and Weber in *Economy and Society* (1978) linked the rise of common law in Great Britain with the emergence of the merchant class. Consistent with the notion of the sanctity of contract, studies have found gross national product (GNP) per capita (Inkeles and Diamond 1980) and democratic government (Muller and Seligson 1994) to be associated with higher levels of interpersonal trust. It also appears that societies experiencing rapid economic development undergo a cultural change toward cooperation, compromise, tolerance of different interests—and stable democratization (Diamandouros 1997). Indeed, the rise of commerce in 16th century Europe may explain the emergence of the principle of equity—the value that served as the basis for both the Protestant Reformation and the Westphalian interstate system (Watson 1992).[6] In the next section I explicate how, once market values consolidate democratic institutions, they affect relations between prosperous market democracies.

MARKET VALUES AND DEMOCRATIC PEACE

Beyond pressure from democratic values emerging with market prosperity, there are numerous other reasons why a nation may become democratic. These include foreign intervention and occupation, colonial experience, the influence of prodemocratic charismatic leaders, the contagion of democratic ideas across borders, or simply an absence of alternatives to democratic rule.

If democratic legitimacy rests predominantly on the values derived from contract forms of economic cooperation, however, then democracies without prosperous market economies will tend to be unstable. The leaders of less prosperous democracies are not likely to be constrained by constituents to respect individual choice, free will, and the sanctity of the social contract. Instead, such leaders are likely to be constrained to pursue other values, such as religious norms, ethnic particularism, or some sort of nationalist revanchism. In the absence of the universal form of trust in the sanctity of contract, the model predicts no basis for the leaders of democracies without supplemental market economies to respect the rules and procedures of the democratic social contract.

Similarly, in foreign affairs the market norms model predicts no basis for the leaders of less prosperous democracies to behave according to market values. Market

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6. Of course, a rise in the value of equity may also decline, just as a rise in exchange may also decline. The rise and fall in exchange may explain, for instance, the rise and subsequent fall in the value of equity in ancient Greece, 7th century Mecca, and 13th century Italy.

forms of cooperation are noncoercive: Conflict is managed with exchange based on the principles of equity and common law. Robbery and extortion are predatory: Conflict is managed with the threat or use of force. It follows that domestic market values constrain leaders of prosperous democracies from arbitrarily engaging the threat or use of force in foreign and domestic affairs. Nevertheless, just as the domestic audience supports the presence of a police force and prisons in domestic relations, market values do not preclude the use of force in foreign relations. If an adversary is perceived, like a criminal, as unwilling to resolve a conflict with negotiation, compromise, equity, and the rule of law, then the application of force concords with the enforcement of contract. In this way, leaders of market democracies may manage a separate peace but still engage in force and coercion in their relations with other states.

To be sure, elected leaders can and often do engage in a fair amount of manipulation of the domestic audience, through control of information and the staging of events. At the same time, leaders constrained by market values but not sharing such values may violate them in secret (James and Mitchell 1995). When the use of force comes to the attention of constituents, however, we should expect leaders to justify their actions according to contract logic or risk losing power at the next election. Many studies support the view that democratic leaders pay close attention to the preferences of the domestic audience when formulating foreign policy (Hinckley 1992; Page and Shapiro 1992; Wittkopf 1990).

In this way, representing constituents who hold in common norms of cooperation managed with equity and universal trust, we should expect the leaders of prosperous market democracies to manage joint cooperation in much the same way that merchants in market cultures buy and sell their wares. It follows that such leaders will be more likely than others to cooperate in solving international problems and, considering the norms of social contract and common law, form equitable and law-based alliance structures (collective security networks) and initiate and participate in international organizations. Sharing constituents who value individual freedom, human rights, and the resolution of conflicts with equity, contract, and law, such leaders will likely share common positions on global issues.

In addition, sharing in common the domestic norms of equity, negotiation, compromise, and trust, we should expect the leaders of prosperous market democracies to be more likely than others to resolve their joint conflicts with mutual respect, trust, negotiation, and compromise sanctified by contract. Studies have shown that, once in militarized conflict, democracies are more likely than other kinds of disputants to settle their joint differences with negotiation (Dixon 1994), compromise (Mousseau 1998), equity (Dixon 1993), and law (Raymond 1994). That these outcomes can be traced to the preferences of constituent voters has been shown in studies in anthropology: Individuals from individualistic communities tend to prefer equitable adjudication to mediation, compared to individuals from collective societies (Leung 1987). Although none of these studies—including my own (Mousseau 1998)—distinguish the market-oriented from the other democracies, the model predicts that these studies are underspecified—that explanatory power would be enhanced if the developed market democracies were not grouped with the other democracies. Institutional-based theories of democratic peace, whether institutional-cultural (Dixon 1993, 1994) or struc-

tural (Bueno de Mesquita et al. 1999), do not predict an economic limitation to the democratic peace. Nor do classical liberal prescriptions (Oneal and Russett 1997, 1999) make such a prediction. In this way, the market norms model yields the novel contingent claim that the democratic peace is a pattern that may be limited to the developed market democracies.

Of course, confirmation of this claim will not overrule other possible explanations for the result. Just as higher levels of education associated with development may consolidate democratic institutions (Lipset 1959), higher levels of education among wealthy democracies may explain the peace. Education, however, is not economic development and can be examined directly by advocates of this view. Other explanations may include an instrumental-rational focus on class structure and foreign policy (Lipset 1959; Rueschemeyer, Stephens, and Stephens 1992), or perhaps the structural-functionalist (Fukuyama 1992; Parsons 1964) position that democratic structures simply function better with economic development (in which case institutional explanations become more viable with development).

These alternative explanations are tenable but appear relatively weak on two important criteria: (1) they do not seem to yield a great deal of explanatory power and (2) they do not seem to yield clear, disconfirmable predictions. The power of the market norms model is that it generates a relatively wide range of explanatory power and yields a large number of easily disconfirmable predictions. Just in the field of international relations, these include the expectations that developed democracies are more likely than other states (including less developed democracies) to jointly cooperate, ally, agree on issues, and join international organizations. Moreover, the presence of market values can be examined directly with quasi-experimental analyses of survey and party platform data.

These additional contingent claims will be investigated in future research. For now, the market norms model predicts that the peace among democratic nations may be limited to, or more robust among, the developed market democracies. If this claim is not supported with the evidence, then the market norms model would appear to offer little explanatory improvement over competing models of democratic behavior. The following sections examine this hypothesis.

RESEARCH DESIGN

Although the cultural materialist model addresses the factors of development, democracy, and interstate peace, it represents a significant departure from classical liberal approaches in international relations. The latter draw on Kantian prescriptions regarding the pacifying impacts of democracy, trade interdependency, and membership in international organizations (Oneal and Russett 1999). Thus, the classical liberals identify these factors as independent variables, each with its unique theoretical impact on interstate conflict, but all within the classical liberal family.

The market norms model, in contrast, uniquely identifies a relationship from market development to democracy, and then an interaction effect of these factors on interstate peace, cooperation, trade *openness*, membership in international organizations,

and common preferences across the global policy spectrum. Thus, in international relations, the model places the interaction of development and democracy as the independent variable and all the other factors as dependent variables.[7] Note that the market norms and classical liberal models are not mutually exclusive—both can be right or wrong at the same time.

One of the more prolific research programs in international relations in recent years has been the empirical work carried out by Russett and his colleagues on classical liberalism (Maoz and Russett 1992, 1993; Oneal et al. 1996; Oneal and Russett 1997, 1999, 2000; Russett, Oneal, and Davis 1998).[8] In a series of studies, Russett and his colleagues demonstrated the pacifying influences of democracy (Maoz and Russett 1992, 1993), trade interdependency (Oneal et al. 1996; Oneal and Russett 1997), and membership in international organizations (Russett, Oneal, and Davis 1998). In all of these studies democracy was shown to have a significant negative impact on conflict. The market norms model predicts, however, that these studies are underspecified in regard to the democratic peace proposition: that the impact of democracy will be found to be more robust if the developed democracies are distinguished from the smaller pool of less developed democracies. Indeed, unless democracy has an impact on conflict that is not predicted by the market norms model, it is expected that the separation of the developed democracies from the less developed democracies will show the latter to have no effect on conflict.

Because of the prominence of the research program of Russett and his colleagues, I report empirical tests conducted on Oneal and Russett's own most recent data set (1999), which the authors have generously made publicly available. Although all the analyses to be reported have been conducted on a myriad of samples, measures, and data sources, I report the results with Oneal and Russett's own data to advance the replicability of the findings and ease the identification of potential differences in results from other studies. After accounting for missing observations, the Oneal and Russett data set (O/R) contains just under 150,000 dyad-year observations from 1886 to 1992. However, O/R do not include a variable for economic development, and data for this variable (GDP) are limited in time. Consequently, the analyses in this study observe 114,375 dyad-years from 1950 to 1992.[9]

Beyond democracy, Oneal and Russett (1999, model 2 in Table 1) also include as independent variables trade interdependency, membership in international organizations, alliances, relative capability, major power status, geographic contiguity, and geographic distance. I include all of these variables except membership in international organizations and alliances because both of these factors are predicted in this

7. Indeed, the market norms model predicts that the rise of classical liberalism itself and its vision of evolving rationalization, law, and equity were a result of the rise in commerce and subsequent change in values in 16th century Europe.

8. One study reports that, up to 1997, more than 75 articles were published or presented relying "on case selection criteria, variable measurement, or substantive foci originally developed or pursued by Russett and the members of his group" (Beck, Katz, and Tucker 1998, Note 32). In all likelihood this number has grown substantially larger since then.

9. The hypothesis was also tested with a measure of development based on per capita energy consumption (logged)—data that are available for most countries back to about World War I. Analyses with these data yield results substantively identical to the one reported in this study.

study as dependent variables. This means that their inclusion on the right-hand side may obscure the impact of developed democracy on conflict (King, Keohane, and Verba 1994, 173). However, to assess the standing of competing explanations, the analyses will also consider, in separate regressions, the impact of alliances, the potentially intervening factor of democratic regime maturity, and an interactive effect of development with trade. In addition, to render the estimates even more rigorous, I add control for hegemonic power and status. Below, I address the data sources and operationalizations of the dependent and primary independent variables, followed by a discussion of the theory, operationalizations, and data sources of the control and intervening variables. For greater detail on the construction of most of the measures, I refer the reader to Oneal and Russett (1999).

DEPENDENT VARIABLE:
MILITARIZED INTERSTATE DISPUTES

Militarized interstate disputes. Following O/R, the dependent variable is a dichotomous indicator of whether a dyad engaged in a militarized interstate dispute (MID) in a given year. A MID is an event where the government of at least one state threatened, displayed, or used force against the government or citizens of at least one other state worldwide (Jones, Bremer, and Singer 1996).[10]

INDEPENDENT VARIABLES

Institutional democracy. Data on national levels of democracy were derived from the Polity III data set, with the 11-point scale of autocracy subtracted from the 11-point scale of democracy. I subsequently added 11 to this value, creating a measure of democratic institutions that ranges from 1 to 21. Following Dixon's "weakest link" principle (Dixon 1993, 51), O/R converted the national measure to a dyadic one by assessing the level of democracy of the less democratic state for each dyad-year, a variable I call *democracy low.*

Economic development. As discussed above, the market norms model predicts that the democratic peace may rest not on democratic institutions, but on the interaction of democratic institutions with market values endemic in developed market economies. In this way, if the postulate of cultural materialism is empirically true, then the democratic norms of social contract (and peace) may be gauged by the intensity of economic norms of contract within nations. To attain such a measure, I first obtained data on GDP per equivalent adult and the government share of GDP for each nation-year from the Penn World Table (Mark 5.6) 1985 prices. Reasoning that it is usually adults who

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10. The hypothesis was also tested with the examination of the onset of militarized interstate disputes or inclusion of only the first year of disputes, with substantively identical results. The militarized interstate dispute data can be obtained via the Web page of the Peace Science Society (International) at http://pss.la.psu.edu.

vote and private activity is usually market activity (government activity may or may not be market activity), I subtracted from the GDP per equivalent adult figure the government share of GDP. The resulting value, market prosperity, thus roughly indicates for each nation-year the income available for adults to purchase consumer goods on the market, and hence the intensity in which adults regularly engage in contract forms of economic cooperation.

However, subsequent tests of the relationship of market prosperity (logged) with GDPpc (logged) demonstrate a correlation of 0.998 (Pearson's *r*). This high correlation shows that GDPpc serves as a robust gauge of market prosperity. Given the advantages of using a conventional measure that is easily comparable and replicable, I opted to report analyses of GDPpc rather than market prosperity.[11] I obtained GDPpc data from the Penn World Table's variable real GDPpc calculated in constant dollars with the Chain Index (RGDPCH; Summers and Heston 1991). As discussed above, data from the Penn World Table are available for most countries from 1950 to 1992, setting the temporal limits of the analyses. Because GDP varies little from 1 year to the next, I filled missing values with the values of previous years up to a period of 3 years. The market norms model predicts that for two democracies to be more peaceful than other kinds of dyads, both must share market values. Therefore, I followed the weakest link principle in the construction of this constituent term, and converted the national measure of GDPpc (logged) to a dyadic one by considering the level of development of the less prosperous state for each dyad-year, a variable I call *development low*.

Apart from the predicted interaction of this variable with democracy low (see below), economic development may also have a separate independent impact on conflict. On one hand, development may increase the opportunity and willingness (Siverson and Starr 1991) for two states to engage in conflict. The greater demand for resources and markets with development creates an interest in the affairs of other states, particularly those that are situated beyond a nation's immediate frontiers. Leninists argue that competition among rich states over markets and resources spurs conflict among them (see also Choucri and North 1975). At the same time, whether a country is large or small, the sophisticated division of labor, higher levels of education, and advanced industrial infrastructure with development all contribute to a nation's capability to manage the complex logistics involved in overcoming the loss-of-strength gradient (Boulding 1963) that occurs as nations are separated in space.

On the other hand, many argue for a pacifying impact of development. Rosecrance (1986), for instance, contends that the costs of seizing and holding territory increase with development, whereas the utility of occupying territory decreases (see also Hegre 2000). Whether development ameliorates or encourages conflict, both arguments seem to predict both additive and similarity effects: that increasing (or decreasing) development in any state will increase (or decrease) the probability of dyadic conflict and increasing joint development will increase (or decrease) the likelihood of dyadic conflict. To capture these divergent predicted effects, in addition to development low, I

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11. The hypothesis was also tested with the measure of market prosperity (logged and not logged), with substantively identical results to the one reported.

also include a measure of development high, the GDPpc (logged) of the more prosperous state for each dyad-year.

Developed democracy. To assess the market norms prediction that the democratic peace may be limited to—or more robust among—the economically developed democracies, the interactive term *developed democracy* is calculated as the product of development low and democracy low. Of course, an important caveat of the market norms prediction is that the term development means market-based development, where a socioeconomy's complex of division of labor is linked with contracts. Although most developed economies have been market oriented (Bremer 1992, 317), there are a few that were not. East European communist regimes, for instance, had relatively high levels of GDPpc, but the divisions of labor were not linked with contracts. Similarly, the tiny oil-rich kingdoms of the Persian Gulf have very high levels of GDPpc but not very complex divisions of labor. The wealth in these countries is generally distributed not through the market but by monarchs (in this way encouraging the values of hierarchy and loyalty over equity).

Nevertheless, these few states with high GDPs but weak or nonexistent markets will not violate the epistemic assumptions of the interactive term. This is because, historically, virtually all democracies that have had high GDPs have had them because they had complex divisions of labor linked with contracts (see Note 4). In corollary, virtually all nations with high GDPs that were not based on complex divisions of labor linked with contracts have been highly autocratic. Given that low values on democracy low will yield low values of developed democracy, the interactive term serves its epistemic function: It assesses the degree to which both countries in a dyad are democratic and both have a developed market economy.

CONTROL VARIABLES

Trade interdependence. Inspired by Rosecrance (1986), Hegre (2000) has shown that the democratic peace may be the consequence of trade among developed nations, most or all of which are democratic. Democratic nations trade a lot and thus may tend to be more interdependent than others (Bliss and Russett 1998). Moreover, if trade does promote prosperity, then any impact of market prosperity on peace may be a consequence of interdemocratic trade. Drawing on International Monetary Fund (IMF) statistics, O/R assess country i's dependence on trade with j as the sum of trade ij divided by the GDP of i. The dyadic variable *trade interdependence* is gauged with the level of dependence of the less dependent state for each dyad-year. To test Hegre's finding that the democratic peace may be the consequence of trade among developed nations, the variable *trade*development* is the product of trade interdependence and development low.

Relative capability. Realist theories of international conflict give importance to the relative power, or capability, of nations. Nations with prosperous market economies will tend to have more capability than others. The Correlates of War Composite Index

of National Capabilities (CINC) data set (Singer and Small 1995) gauges national capabilities from a summated index of national shares of global population (total and urban), economic production (energy consumption and iron/steel production), and military capability (number of military personnel and expenditures). O/R assess *relative capability* as the level of the stronger state's CINC score divided by the weaker state's score (logged) for each dyad-year.

Major power status. Major powers are those states that have or seek to have global influence. Numerous studies have shown that major powers are more likely than minor powers to engage in militarized conflict. From 1950 to 1992, the Correlates of War identifies the major powers as Great Britain, France, the United States, Russia, China, and, after 1990, Germany and Japan. Five of these seven states are democracies with developed market economies. This means that major power status may serve as a suppressor variable, the absence of which may mask the true pacifying impact of market democracy on militarized conflict (Bailey 1994, 51-52). Consequently, if at least one state in a dyad is a major power, the variable *major power* equals 1; otherwise it equals 0.

Contiguity. Studies have well established that geographic contiguity is associated with increasing conflict (Bremer 1993; Oneal and Ray 1997). The variable *contiguity* equals 1 if the two states (or their colonies) share common borders or are within 150 nautical miles of open water, and 0 otherwise.

Geographic distance. Beyond contiguity, geographic distance imposes a severe restraint on a nation's capacity to engage or credibly threaten to engage in militarized conflict. Following O/R, I include a measure for intercapital geographic *distance*, logged, for each dyad year.

Hegemonic power. Hegemonic stability theory posits that the most powerful state, the hegemon, can constrain the other states in the system from initiating militarized conflict (Gilpin 1981). The more powerful the hegemon relative to the other states, the lower the level of militarized conflict in the system. During the temporal era to be analyzed, few would object that the hegemon was the United States—a developed democratic nation well known for mediating conflicts among its allies, many of whom are democracies rich and poor. It is thus plausible that the more influence the United States has over other nations—particularly with democracies—the less likely the other democracies will fight each other. O/R assess *hegemonic power* as the proportion of all the major powers' CINC capabilities possessed by the hegemon for each year. Whereas O/R include this variable in a separate estimate that does not test the dyadic democratic peace proposition, I add control for it in my model.

Hegemonic status. Beyond hegemonic power, hegemonic stability theory expects the hegemon to enforce the rules of the international system. Given that the hegemon has been a developed democratic nation during the period analyzed, it follows that hegemonic status may serve as a suppressor variable, the absence of which may mask

the true pacifying impact of developed democracy on militarized conflict (Bailey 1994, 51-52). Consequently, the variable *hegemonic status* equals 1 if the dyad contains the hegemon (the United States), and 0 otherwise.

INTERVENING VARIABLES

Alliance. As discussed above, the model predicts alliances to form among democracies with prosperous market economies. This means that alliance links are intervening rather than confounding factors in any examination of market democracy on international behavior. Statistical control for this variable is thus not appropriate, as it may obscure the impact of developed democracy on conflict (King, Keohane, and Verba 1994, 173). If developed democracy is found to have a negative impact on conflict, however, it is plausible that this pattern may be explained by common interests among the allied wealthy democracies during the cold war (Farber and Gowa 1995). Therefore, to assess the viability of this competing explanation for the results, I report separate analyses with statistical control added for alliances. O/R updated the Correlates of War (COW) alliance data (Singer 1995) with material from Rengger and Campbell (1995) and assess *alliance* with a dichotomous measure that equals 1 if the two states are linked by a mutual defense treaty, neutrality pact, or entente, and 0 otherwise.

Democratic maturity. Recall that the assumption of cultural materialism yields the prediction that market prosperity causes democracy and stabilizes and consolidates democratic institutions. This means that democratic regime maturity, like the presence of alliance, is an intervening rather than confounding variable, and therefore statistical control for it should not be included. However, if developed democracy is found to have a negative impact on conflict, it is plausible that this pattern may be explained by the fact that democracies with developed economies tend to be more stable (Przeworski and Limongi 1997). Constructivist and institutional-cultural approaches to political development and democratic peace predict democratic institutions to affect norms and values (Dixon 1994; Peceny 1999, 99).

Therefore, to assess the viability of this competing explanation for the results, I report separate analyses with statistical control added for democratic maturity. To gauge this factor, I obtained the DURATION variable from the Polity III (version 98) data set, which gives a count for the number of years since a nation's last abrupt change of institutions, or the year 1900.[12] In accordance with the weakest link principle, the variable *democratic maturity* is the product of democratic institutions and DURATION (logged + 1) of the less democratic state. If both states share the same value of democracy, I used the DURATION value of the least mature state.[13]

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12. For the years 1950 to 1954, the durability data are missing. I filled in these 4 years by extrapolating backwards in time and noting abrupt changes of regime.

13. It may seem that if democratic maturity is an intervening variable, then so is democracy. However, the market norms model predicts transitions to democracy and democratic stability only among those countries that are (or recently became) economically developed. With the full model including the interaction of development and democracy, the constituent democracy low variable assesses joint democracy only among the non–joint developed countries—democracy that is not predicted by the model.

ANALYSES AND RESULTS

All the analyses were performed with logistic regression (SAS 6.12), with control for temporal dependence managed with Beck, Katz, and Tucker's (1998) cubic spline variables. To ensure that the independent variables were not affected by a dispute to be explained, all were lagged 1 year. Statistics for all the variables are reported in Appendix A, and a correlation matrix of the independent variables is reported in Appendix B. To further replicability and intercomparability, the analyses start with an estimate of the impact of democracy on conflict with the control variables: trade dependency, relative capability, major power status, contiguity, distance, hegemonic power, and hegemonic status. From this knowledge base, control is then added for economic development, followed by the interaction term developed democracy.

Accordingly, the first model in Table 1 reports the impact of dyadic democracy on militarized conflict with the control variables. As can be seen, the democracy low coefficient (–0.05) reconfirms the democratic peace. Also, all the control variables are highly significant and in their expected direction. Greater trade interdependency (–28.95), relative capability (–0.20), geographic distance (–0.38), and hegemonic power (–7.29) all appear to lower the probability of conflict. Major power status (1.66), geographic contiguity (1.77), and hegemonic status (0.92) all increase the likelihood of conflict. These results concord with that reported by Oneal and Russett (1999).[14]

The second model in Table 1 adds control for the development variables, low and high. Consistent with Bremer (1992) and Maoz and Russett (1992), the estimate confirms the democratic peace (–0.06) after holding constant dyadic levels of economic development. The χ^2 statistic (44) indicates that inclusion of the development coefficients very significantly improves the estimate compared to model 1. The negative affect of development high (–0.24) shows that increasing development in the wealthier state, while holding the GDPpc of the poorer state constant, lowers the likelihood of militarized conflict. The positive impact of development low (0.40) indicates that increasing joint development increases the probability of conflict. The positive sum of these coefficients (0.40 – 0.24 = 0.16) demonstrates that, overall, development has a net positive impact on conflict. This outcome is inconsistent with Rosecrance's (1986) expectation that joint development pacifies dyads but is consistent with the view that competition among rich states over markets and resources spurs conflict among them.

The third model in Table 1 introduces the interactive coefficient, developed democracy. As can be seen, the interaction term is significant and negative (–0.02). This indicates that there is an interaction affect of democracy and development on conflict, and thus the estimates without the multiplicative term are underspecified (Friedrich 1982). This conclusion is also reached by the significance of the χ^2 statistic (7). The difference in the log-likelihood values of models 3 and 2, $e^{3.4}$, shows that the model with the interactive term is about 30 times more likely to be true than the model with it. We cannot

14. Model 1 differs from Oneal and Russett's (O/R; 1999) model 2 in Table 1 in four ways. First, as discussed, I exclude the variables for alliance and international organization membership. Second, my temporal domain is constrained by adding the development variables. Third, O/R do not include the controls for hegemonic power and status. Lastly, O/R reverse the scales for contiguity and major power status.

TABLE 1

Logistic Regressions of Dyadic Measures of Institutional Democracy,
Economic Development, and the Interaction of Development with Democracy
on the Probability of Militarized Conflict Between Nations, with Control Variables

	Model 1			Model 2			Model 3		
Variable	β	SE	t	β	SE	t	β	SE	t
Democracy low	−0.05	0.01	−6.5***	−0.06	0.01	−7.7***	0.11	0.06	a
Development high				−0.24	0.06	−4.0***	−0.27	0.06	−4.4***
Development low				0.40	0.06	6.5***	0.51	0.07	a
Developed democracy							−0.02	0.01	−2.7***
Trade interdependence	−28.95	10.25	−2.8***	−40.28	11.12	−3.6***	−31.07	11.20	−2.8***
Relative capability	−0.20	0.03	−7.2***	−0.19	0.03	−6.8***	−0.19	0.03	−6.9***
Major power	1.66	0.10	17.3***	1.60	0.10	15.8***	1.62	0.10	16.0***
Contiguity	1.77	0.10	18.4***	1.73	0.10	17.7***	1.72	0.10	17.7***
Distance	−0.38	0.04	−9.2***	−0.33	0.04	−8.0***	−0.34	0.04	−8.0***
Hegemonic power	−7.29	1.05	−6.9***	−6.21	1.08	−5.7***	−6.38	1.08	−5.9***
Hegemonic status	0.92	0.13	6.9***	1.01	0.14	7.3***	1.04	0.14	7.4***
Intercept	2.01	0.45	4.5***	0.55	0.64	0.9	−0.07	0.68	−0.1
Log-likelihood (LL)		−3,256			−3,235			−3,231	
χ^2		1,788[b]			44[c]			7[d]	
Significance χ^2		< 0.0001			< 0.0001			0.0089	

NOTE: N = 114,598, number of events = 856. Coefficients for the cubic spline variables not shown.
a. Standard error is conditional with the interactive term and cannot be interpreted directly.
b. Calculated at 12 degrees of freedom.
c. Calculated as 2(|LL$_{model1}$| − |LL$_{model2}$|); significance of χ^2 calculated at 2 degrees of freedom.
d. Calculated as 2(|LL$_{model2}$| − |LL$_{model3}$|); significance of χ^2 calculated at 1 degree of freedom.
***p < .01, one-tailed test.

directly interpret the constituent coefficients, democracy low and development low,
however, because the significance of the interaction term means that these coefficients
and their standard errors must be interpreted conditionally (Friedrich 1982). This
is because the reported direction, size, and significance of each constituent term in
model 3 is conditional on the other having a value of 0 (Friedrich 1982)—a value that
represents an extrapolation beyond the possible range of each term.

Accordingly, to accurately interpret the direction and strength of the coefficients for
democracy, development (low), and the interaction term in model 3, I computed the
conditional effects. I present the results in Figure 1 for a dyad where one state is more
developed and the dyad is contiguous, contains at least one major power, does not
contain the hegemon, and has mean values on all the remaining coefficients (with dis-
tance set at the mean value among contiguous dyads: 6.63). The vertical dimension in
Figure 1 shows the probability of militarized conflict. The left horizontal axis repre-
sents the level of democracy of the less democratic state. The right horizontal axis rep-
resents the level of GDPpc of the less developed state, expressed as the exponent of the
logged coefficient in $1,000 per capita. To reflect the real world in Figure 1, I identify
the more developed state as one having a development high level of just one standard
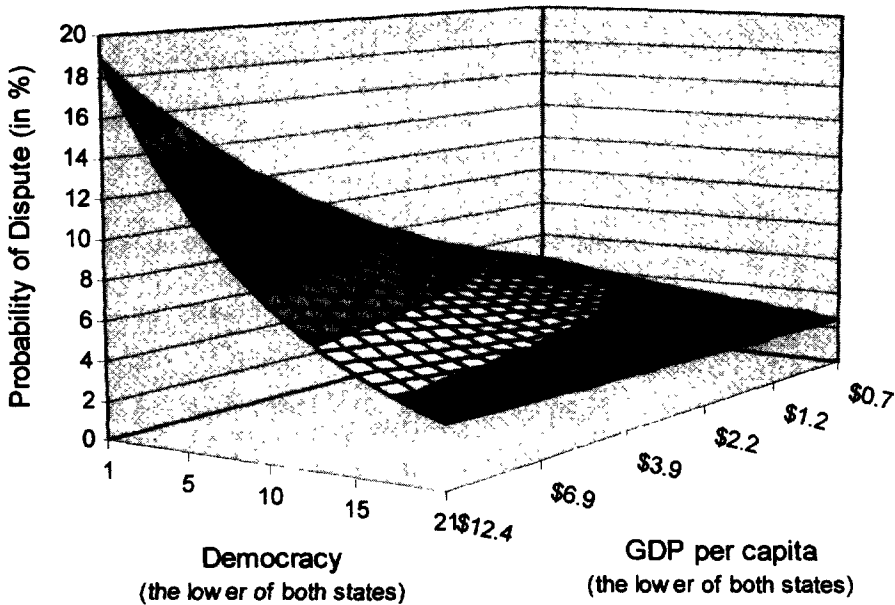
Figure 1: **The Combined and Separate Impacts of Dyadic Democracy and Development on Militarized Conflict among Nations**
NOTE: GDP = gross domestic product.

deviation above the mean—a GDPpc of $12,418, about the level of Italy in 1991. I then present the impact of development low ranging from this high level to as low as one standard deviation below the development low mean—a GDPpc of $681, about the level of Zambia in 1991.

The most obvious feature that stands out in Figure 1 is the dominant positive impact of development on conflict. Because we already know that democracies tend to have developed economies (Lipset 1959), this feature immediately suggests that if we distinguish the developed democracies from the other states, the democratic peace will be found to be more robust than previously understood. This suggestion is confirmed when we observe the left front axis, where among developed states an increase of democracy from the lowest value of 1 (left corner) to the highest value of 21 (front corner) appears to decrease the probability of militarized conflict from about 18.7% to about 3.1%—a six-fold decrease of 84%. Among mixed developed dyads, in contrast, joint democracy appears to decrease the probability of militarized conflict a much smaller amount—from about 4.5% (back corner) to about 2.5% (right corner)—a decrease of only 45%. If both states are less developed (not in the figure), joint democracy has the same 45% effect. Thus, consistent with expectations, it appears that the pacifying impact of democracy is roughly twice as strong among developed states compared to dyads where at least one state is less developed.

Nevertheless, it does appear that democracy has a pacifying impact among the less developed dyads, as predicted by the institutional-structural (Bueno de Mesquita et al. 1999), institutional-cultural (Dixon 1994), and classical liberal (Oneal and Russett 1999) models of democratic peace. Of interest is whether democracy's pacifying effect among less developed countries is statistically significant. As discussed above, the significance of the interaction term means that the standard errors of the constituent terms must be interpreted conditionally. Therefore, to ascertain the significance of the impact of democracy on conflict across particular levels of development, I calculated the conditional *t* values for the democracy low coefficient and present the results in Figure 2.[15]

As can be seen in Figure 2, democracy does not appear to have a significant negative impact on conflict at very low levels of joint development (at \$221 *t* = –0.28). But as long as the poorest state in a dyad has a GDPpc of about \$531 or more, the impact of democracy does appear to be significant at the usual threshold probability of 0.05 (where *t* = 1.65, one-tailed test). A GDPpc of \$531 is very low, below which the sample contains mainly just one democracy (democracy low ≥ 15): Malaya in the 1950s. This fact illustrates that the absence of significance does not mean that the evidence goes against a peaceful impact of democracy at very low levels of development—only that we have less confidence in drawing the inference that there *is* such an impact. Given that the sample contains few democratic cases below \$531, we can safely conclude that democracy appears to have a significant pacifying impact among all democracies, rich and poor—albeit with a less robust impact on the latter.

Sensitivity tests indicate that the estimate of model 3 in Table 1 is very robust. The interactive term remains significant with the omission of most control variables: the exceptions are major power status, contiguity, and distance. This outcome is expected, however, as major powers tend to be developed, particularly democratic ones. As discussed above, it is also likely that development has a stronger positive impact on conflict among geographically distant dyads, because development furnishes the opportunity and willingness for a state to engage in conflict with geographically distant states (Choucri and North 1975). Indeed, further sensitivity tests demonstrate that the absence of control for economic development (high) renders the estimate more sensitive to other missing variables. Again, this should not be surprising: If development (high + low) has a strong positive impact on conflict except among democracies (as seen in Figure 1), then estimates of the interactive term without control for development will render the interactive term insignificant or even positive. This is no reason to abandon the interactive model, however, because estimates of democracy on conflict without the interaction term would be underspecified. Rather, it seems that a minimum-specified

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15. The *t* value for the conditional effect of b_1 on *Y* can be calculated as:

$$(b_1 + b_3 (e)) / \text{SQRT} (\text{variance}(b_1) + e^2 * \text{variance}(b_3) + 2*e*\text{covariance}(b_1 b_3)),$$

where b_1 is the constituent term whose *t* value is being computed, b_3 is the interactive term, and *e* represents a particular value of the other constituent term (Friedrich 1982, 820).

Figure 2:   The Significance of Dyadic Democracy on Militarized Conflict Across Levels of Dyadic Development

NOTE: GDPpc = gross domestic product per capita. Covariance of democracy low and the interactive term is –0.00049.

model is one that includes the interactive term *and* the suppressor variables: economic development, major power status, contiguity, and distance.

Because most democracies tend to have developed economies—and vice versa—we should expect the interactive term (developed democracy) and the constituent term (democracy low) to be highly correlated (Pearson's $r = 0.989$). Although multicolinearity does not effect conditional interpretations of the coefficients or their standards errors (Friedrich 1982), it will render the interpretations sensitive to particular sets of sample data. Again, however, this is no reason to abandon the interactive model, for if there is interaction it will provide a better fit than the model without it (Friedrich 1982, 810-11). An interactive model simply asks more from the data than an additive one, and the conditional standard errors in the interactive model will reflect how sensitive the data are (Friedrich 1982, 817). Because the impact of democracy among the poorest democracies is statistically significant (with just one country

exception), it appears that there are enough cases of poor democracies from which to draw meaningful inferences.[16]

To assess the sensitivity of the estimate to the sample, I reestimated model 3 in Table 1 on the sample of politically relevant (PR) dyads—those that are geographically contiguous or contain at least one major power. Russett and his colleagues have often limited their sample to PR dyads, in recognition that the measures of geographic contiguity and distance may not fully account for the loss-of-strength gradient that occurs as dyads are separated in space. As can be seen in Table 2, on the sample of PR dyads the interactive term developed democracy (–0.01) is negative but not significant at usual thresholds (though it is significant at $p < .11$).

Should we conclude from model 1 in Table 2 that there is no interaction effect of development and democracy on militarized conflict? The answer is clearly no. It cannot be true that a more limited sample is more representative of the population than the whole sample.[17] Moreover, the PR sample is not representative of the population—compared to the population, the PR sample overrepresents those dyads that are contiguous or contain at least one major power. Turning to the question at hand, the sample of PR dyads will be biased because, as discussed above, major powers tend to be developed, particularly democratic ones. If this conjecture is correct, it follows that a reestimate of the model on a sample of geographically contiguous dyads—PR dyads without noncontiguous major power dyads—will yield results similar to the analysis of all dyads in model 3 of Table 1.

The second model in Table 2 reports the estimate of the sample of geographically contiguous dyads. As can be seen, the interactive term developed democracy (–0.04) is again quite significant. Figure 3 shows that, as before, the strongest pacifying impact of democracy occurs among jointly developed dyads (baseline is the same as with Figure 1). Among developed states, an increase of democracy from the lowest value of 1 (left corner) to the highest value of 21 (front corner) appears to decrease the probability of militarized conflict from about 7.1% to about 1.4%—an 80% decrease. Among contiguous dyads where one state is poor and one rich, in contrast, joint democracy appears to *increase* the probability of militarized conflict from about 4.3% (back corner) to 6.3% (right corner). If both states are poor (not in the figure), joint democracy has the same positive effect. A closer examination indicates that joint democracy has a pacifying impact only when the poorest state in a dyad has a GDPpc level of about $1,152 or more—about the level, in the last year of the sample, of Senegal ($1,120) and India ($1,251).

The positive impact of democracy on conflict among nonjoint developed dyads appears as a difference from the previous analysis of all dyads (see model 3 in Table 1). One reason for this difference may be a bias in the sample of contiguous dyads. How-

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16. To minimize the correlation between the interaction term and democracy low, one reviewer suggested that I might 'center' the interaction term. Subsequent tests determined that with gross domestic product per capita (GDPpc) (logged) brought to the 7th power, the interaction term correlates with both constituent terms (democracy low and development low) at 0.77. Subsequent analyses with this centered measure show that the interactive term remains significant. I report the noncentered term to ease intercomparability and interpretation, and because the centered measure may seem arbitrary.

17. Unless, of course, missing values in the whole sample are not random. Tests conducted by Oneal and Russett show that their data are unlikely to be biased due to missing values (1999, note 34).

TABLE 2
Reestimates of Model 3 in Table 1 on Samples
of Politically Relevant Dyads and Contiguous Dyads

Variable	Politically Relevant			Contiguous[a]		
	β	SE	t	β	SE	t
Democracy low	0.03	0.06	[b]	0.26	0.07	[b]
Development high	−0.18	0.07	−2.5***	0.06	0.09	0.6
Development low	0.38	0.08	[b]	0.22	0.12	[b]
Developed democracy	−0.01	0.01	−1.2	−0.04	0.01	−3.8***
Trade interdependence	−29.47	11.79	−2.5***	−19.66	11.22	−1.8**
Relative capability	−0.24	0.03	−8.0***	−0.25	0.04	−6.1***
Major power	0.32	0.14	2.3**	0.16	0.15	1.1
Contiguity	0.67	0.13	5.1***			
Distance	−0.05	0.05	−1.0			
Hegemonic power	−2.20	1.15	−1.9**	−5.68	1.40	−4.1***
Hegemonic status	0.69	0.14	5.1***	0.93	0.24	3.8***
Intercept	−1.43	0.76	−1.9**	−0.94	0.78	−1.2
Log-likelihood		−2,332			−1,441	
χ^2		898			416	
Significance χ^2		< 0.0001			< 0.0001	
Cases		21,397			7,461	
Events		744			509	

NOTE: Coefficients for the cubic spline variables not shown.
a. The fourth cubic spline variable not included to achieve convergence.
b. Standard error is conditional with the interactive term and cannot be interpreted directly.
**$p < .05$, one-tailed test. ***$p < .01$, one-tailed test.

ever, this explanation seems unlikely: On the sample of all dyads, the contiguity vari-able correlates with democracy low and development low at no more than 0.05 (Pearson's r; see Appendix B). I suggest that the more likely reason for the difference in results is that with contiguous dyads the loss-of-strength gradient is held constant—and hence poorer states have an equal opportunity and willingness to fight. If this con-jecture is correct, then the development variables (high and low) should not act as sup-pressor variables with the sample of contiguous dyads. Sensitivity tests confirm this expectation: It seems that with contiguous dyads the estimate is very robust, with the interactive term remaining significant even with control for development (high and low) and all the other suppressor variables removed from the estimate.

To assess the significance of democracy in model 2 of Table 2, I calculated the con-ditional t values for the democracy low coefficient (0.26) across particular levels of development and present the results in Figure 4. As can be seen, the positive impact of democracy on conflict does appear significant at very low levels of joint development (at \$221 $t = 2.56$). However, as with the sample of all dyads, there are few joint demo-cratic dyads at this level of joint development. Adopting the probability threshold of 0.05 (where $t = 1.65$, one-tailed test), the positive impact of democracy on conflict becomes insignificant at \$588. Below this very low level of development, the sample
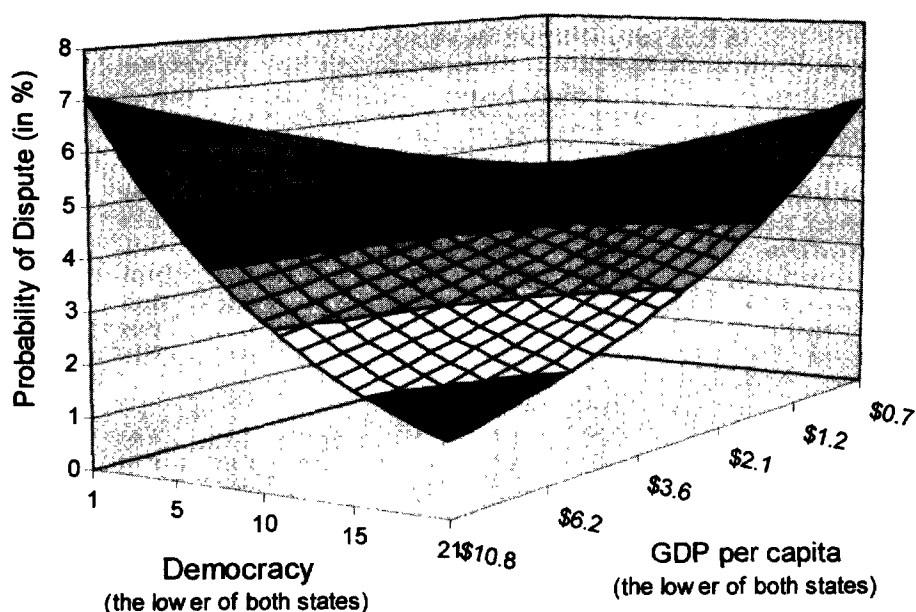
Figure 3:   The Combined and Separate Impacts of Dyadic Democracy and Development on Militarized Conflict among Nations, Sample Contiguous Dyads
NOTE: GDP = gross domestic product.

contains very few joint democratic dyads (democracy low $\geq$ 15), consisting mostly of those democracies that bordered Malaya in the 1950s: India, Pakistan, and France (through colonies).

As can be seen in Figure 4, after $588, the positive impact of democracy remains insignificant until it enters the negative range and reemerges as significant at the usual threshold of 0.05, when the less wealthy state (development low) reaches a level of about $1,646—not far below the development low mean of $1,933. Joint democratic dyads (democracy low $\geq$ 15) below this level constitute 10% of all joint democratic dyads in the contiguous sample. In recent years this grouping includes Bangladesh and India, Honduras and Guatemala, and the Comoro Islands and France. In addition, Bolivia is very close to this level ($1,696) and forms a series of joint democratic dyads with its neighbors Peru, Brazil, Argentina, and Chile.

Two primary conclusions can be drawn from the analyses at this point. First, the significance of the interactive term among the samples of all dyads and contiguous dyads confirms that tests of the impact of democracy on conflict are underspecified without the interactive term. Second, analyses of both samples, all dyads and contiguous dyads, confirm that the pacifying impact of democracy is more robust as the level of development of the less developed state in a dyad increases. Indeed, among contiguous
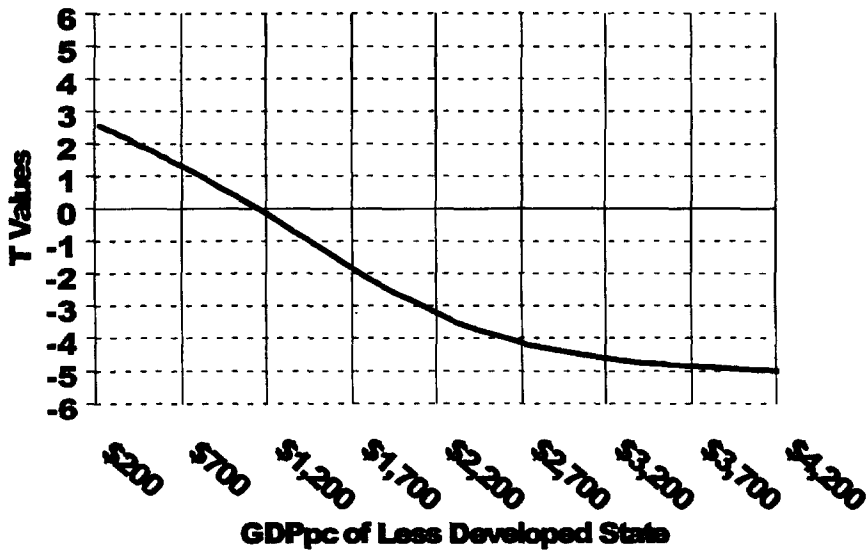
Figure 4:   The Significance of Dyadic Democracy on Militarized Conflict across Levels of Dyadic Development, Sample Contiguous Dyads
NOTE: GDPpc = gross domestic product per capita. Covariance of democracy low and the interactive term is –0.00071.

dyads, the pacifying impact of democracy does not appear statistically significant among the poorest decile of joint democratic dyads. These results are consistent with the expectation that the democratic peace is more robust among the more developed countries.

Thus far, however, the analyses do not give reason to discount two leading rival hypotheses for the results: that the wealthy democracies share common strategic interests or that the peace results not from market norms but from the institutional stability associated with prosperity. In addition, inspired by Rosecrance (1986), Hegre (2000) reports a negative interaction effect of trade and development, and this effect appears to render the impact of democracy on conflict insignificant. Accordingly, the estimates in Tables 3 and 4 investigate the viability of these rival hypotheses: Table 3 reports the estimates on the sample of all dyads and Table 4 examines contiguous dyads.

If the peace between developed democracies is the result of common alliances during the cold war (Farber and Gowa 1995), then control for alliances should render the interactive term developed democracy insignificant. As can be seen in model 1, the

TABLE 3
Reestimates of Model 3 in Table 1 with Considerations
of Rival Hypotheses on Sample of All Dyads

Variable	Model 1			Model 2			Model 3		
	β	SE	t	β	SE	t	β	SE	t
Democracy low	0.06	0.06	a	0.09	0.07	a	0.08	0.07	a
Development high	−0.34	0.06	−5.4***	−0.27	0.06	−4.4***	−0.27	0.06	−4.4***
Development low	0.49	0.07	a	0.50	0.07	a	0.51	0.08	a
Developed democracy	−0.01	0.01	−1.9**	−0.02	0.01	−2.1**	−0.02	0.01	−2.0**
Trade interdependence	−30.65	10.91	−2.8***	−30.21	11.18	−2.7***	96.62	79.13	a
Relative capability	−0.19	0.03	−7.0***	−0.19	0.03	−6.9***	−0.19	0.03	−6.8***
Major power	1.59	0.10	15.7***	1.63	0.10	16.0***	1.62	0.10	16.0***
Contiguity	1.77	0.10	18.0***	1.73	0.10	17.7***	1.72	0.10	17.6***
Distance	−0.41	0.04	−9.2***	−0.34	0.04	−8.1***	−0.34	0.04	−8.0***
Hegemonic power	−6.41	1.09	−5.9***	−6.39	1.09	−5.9***	−6.46	1.08	−6.0***
Hegemonic status	1.24	0.15	8.5***	1.04	0.14	7.5***	1.05	0.14	7.5***
Alliance	−0.48	0.10	−4.7***						
Democratic maturity				−0.00	0.00	−1.0			
Development*trade							−15.31	9.53	−1.6*
Intercept	1.29	0.75	0.1	0.00	0.69	1.0	−0.05	0.69	0.9
Log-likelihood		−3,220			−3,229			−3,230	
χ²		1,825			1,815			1,815	
Significance χ²		< 0.0001			< 0.0001			< 0.0001	
Cases		114,598			114,539			114,598	
Events		856			856			856	

NOTE: Coefficients for the cubic spline variables not shown.
a. Standard error is conditional with the interactive term and cannot be interpreted directly.
*p < .10, one-tailed test. **p < .05, one-tailed test. ***p < .01, one-tailed test.

expectations of this rival hypothesis are not borne out. The alliance coefficient is negative (−0.48) and significant, but so is the interaction term developed democracy (−0.01). It seems the pacifying impact of developed democracy holds even after accounting for strategic interests.

The second model in Table 3 adds control for democratic maturity. If the peace between the prosperous market democracies is a function of the durability of these states and the development of democratic norms over time (Dixon 1994; Peceny 1999), then the democratic peace should appear in the democratic maturity coefficient rather than the developed democracy coefficient. Instead, the opposite scenario appears. The pacifying impact of developed democracy (−0.02) remains significant, but the coefficient for democratic maturity (−0.00), though negative as expected, is not significant. This outcome is consistent with analyses by Przeworski et al. (1997, 306), who found the age of democratic regime to have no effect on its durability once income levels were taken into account.

The third model in Table 3 examines the presence of an interaction effect of trade and development. As can be seen, the coefficient for the interactive term trade*devel-

TABLE 4

Reestimates of Model 3 in Table 1 with Considerations of Rival Hypotheses on Sample of Contiguous Dyads

Variable	Model 1			Model 2			Model 3		
	β	SE	t	β	SE	t	β	SE	t
Democracy low	0.19	0.08	ᵃ	0.27	0.08	ᵃ	0.30	0.08	ᵃ
Development high	−0.05	0.09	−0.5	0.06	0.09	0.7	0.07	0.09	0.8
Development low	0.22	0.12	ᵃ	0.22	0.12	ᵃ	0.20	0.11	ᵃ
Developed democracy	−0.03	0.01	−2.9***	−0.04	0.01	−3.8***	−0.04	0.01	−4.3***
Trade interdependence	−19.79	10.90	−1.8**	−20.69	11.37	−1.8**	−196.80	91.21	ᵃ
Relative capability	−0.26	0.04	−6.2***	−0.25	0.04	−6.1***	−0.27	0.04	−6.3***
Major power	0.06	0.15	0.4	0.15	0.15	1.0	0.16	0.15	1.1
Hegemonic power	−5.84	1.41	−4.1***	−5.53	1.41	−3.9***	−5.58	1.40	−4.0***
Hegemonic status	1.14	0.26	4.4***	0.91	0.25	3.7***	0.90	0.25	3.7***
Alliance	−0.49	0.11	−4.4***						
Democratic maturity				0.01	0.01	0.8			
Development*trade							21.29	10.65	2.0****
Intercept	0.17	0.83	0.2	−1.04	0.79	−1.3*	−0.96	0.77	−1.2
Log-likelihood		−1,432			−1,440			−1,439	
χ²		426			417			418	
Significance χ²		0.0000			0.0000			0.0000	
Cases		7,461			7,450			7,461	
Events		509			509			509	

NOTE: Coefficients for the cubic spline variables not shown. The fourth cubic spline variable not included to achieve convergence.
a. Standard error is conditional with the interactive term and cannot be interpreted directly.
*$p < .10$, one-tailed test. **$p < .05$, one-tailed test. ***$p < .01$, one-tailed test. ****Significant but in the wrong direction, one-tailed test.

opment (−15.31) is negative and significant. The coefficient for developed democracy (−0.02), however, is also negative and significant. This result is not consistent with that reported by Hegre (2000), who counted as disputes only those with at least one fatality, used different trade data, measured democracy differently, and observed a different sample of dyads (dyads where both states were major powers, allied, and contiguous or had intercapital distances of less than 3,000 km). Future research should aim at pinpointing the differences between this study and Hegre's.

Table 4 reestimates the models in Table 3 on the sample of contiguous dyads. As can be seen, the interactive term for developed democracy remains very significant and robust in all three estimates. Whereas alliance (−0.49) remains significant in model 1, democratic maturity (0.01) remains insignificant in model 2. In model 3, the trade* development interaction term is significant (21.29), but in the wrong direction. This indicates that development does not have a pacifying influence directly or in conjunction with trade, as Rosecrance (1986) would predict. Instead, the pacifying impact of development appears in conjunction with democracy, as the market norms model predicts. In sum, among the samples of all dyads or contiguous dyads, the interaction of

development and democracy appears to remain significant even with consideration of the rival hypotheses.

The relative pacifying impact of the variables in model 2 of Table 2 (contiguous dyads) can be illustrated with a look at the United States–Canada dyad in the last year of the sample, 1991 (for disputes occurring in 1992). All kinds of signs predict that these two nations should frequently engage each other in militarized conflict. Not only do these states share a common border, but the United States is also a major power and a hegemon, and both states are wealthy with per capita GDPs of $16,368 (Canada) and $17,594 (the United States). With all other variables set at their means, the estimate yields a probably of 9.5% that these states will have engaged each other in a militarized dispute in 1992. From this base, four factors found significant in model 3 reduce this probability: democracy, trade interdependence, relative capability, and hegemonic power. Figure 5a presents the relative pacifying impact of each of these factors, with each calculated assuming the others are at their means. As can be seen, among wealthy states, the variable with the greatest pacifying impact on militarized conflict is democracy. It seems a one standard deviation higher level of democracy decreases the probability of militarized conflict about 52%. The next closest factor is relative capability, with a 30% decrease, followed by trade dependency at 22% and hegemonic power at 21%. Canada's GDP is slightly more than two standard deviations above the mean. If we change this value to one standard deviation below the mean—$687 (contiguous dyads)—then we can see in Figure 5b that democracy loses its pacifying impact and the influence of the remaining variables remains the same.

Together, these outcomes indicate that developed democracy is not alone in fostering peace among conflict-prone bordering nations. It seems that realist notions of relative capability and hegemonic power and classical liberal notions of trade interdependence are each powerful but separate influences on interstate conflict. This is a plausible outcome, because the approaches are not mutually exclusive. Market prosperity may affect values in democratic nations, fostering equitable legal relations among them. At the same time, trade interdependence may pacify relations between trading partners, whereas relative capabilities and the persuasive power of force and coercion may regulate relations in all other kinds of dyads. Democracy, however, in the absence of economic development, does not appear as robust a force for peace as previously thought. Consistent with expectations, the democracy's force for peace seems predominantly among those states with developed market economies.

IMPLICATIONS AND CONCLUSIONS

I began this study with four documented empirical facts: (1) economic norms affect social and political norms, (2) democratic norms of individualism and the rule of law are associated with economic prosperity, (3) economic prosperity and stable democratic government go hand in hand, and (4) democratic nations share a separate peace. Whereas any or all of these facts may not be true, they have all been documented across a myriad of studies in the fields of anthropology, sociology, comparative politics, and international relations.
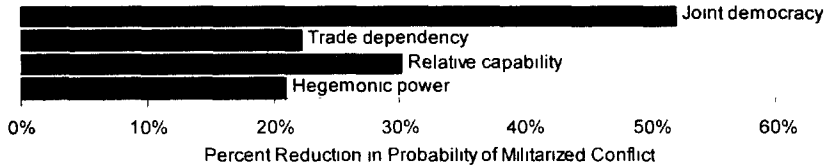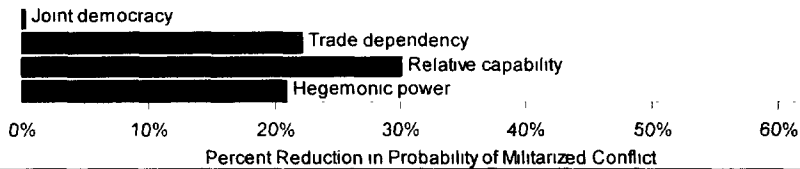
Figure 5a. Joint Developed Dyads

Figure 5b   Non-joint Developed Dyads

Figure 5a: Impacts on Conflict of One Standard Deviation Increases in Democracy, Trade Interdependence, Relative Capability, and Hegemonic Power among Joint Developed Contiguous Dyads

Figure 5b: Impacts on Conflict of One Standard Deviation Increases in Democracy, Trade Interdependence, Relative Capability, and Hegemonic Power among Nonjoint Developed Contiguous Dyads

Starting with these empirical facts, I drew on the postulate that economic norms translate into social and political values and showed how contract forms of economic cooperation endemic in prosperous market economies may generate the social values of the democratic social contract. Specifically, I showed that if the postulate of cultural materialism is true, then individuals in developed market economies tend to value exchange-based cooperation, individual choice and free will, negotiation and compromise, equity among individuals, and universal trust in the sanctity of contract. Addressing the democratic peace, I developed the novel contingent claim that if democratic values are derived from market norms and these values are at least one cause for the peace, then the democratic peace may be a pattern limited to or more robust among those democracies with developed economies. Neither institutional-structural (Bueno de Mesquita et al. 1999), institutional-cultural (Dixon 1994), or classical liberal (Oneal and Russett 1997) explanations for the democratic peace make such an empirical claim.

With analysis of a large number of interstate dyads from 1950 to 1992, I found robust support for the hypothesis that levels of development condition the pacifying effects of democracy. Even with control for the potent effects of trade interdependence, relative capability, major power status, contiguity, distance, hegemonic power, and hegemonic status, the significance of the interactive term developed democracy confirmed that tests of the impact of democracy on conflict are underspecified without it. In addition, the interactive and constituent coefficients indicate that the pacifying impact of democracy is more robust as the level of development of the less developed state in a dyad increases—results that sensitivity tests show to be quite robust. Also, the interactive term remained significant even with consideration of three leading

rival hypotheses: that the peace among developed democracies may be the consequence of joint alliances, democratic regime maturity, or an interaction effect of trade with development.

The evidence is mixed whether democracy has a pacifying effect in the absence of economic development, as predicted according to the institutional (structural and cultural) and classical liberal models of democratic peace. On the sample of all dyads, the impact of democracy, albeit less robust, is significant among even the poorest democracies (with the exception of Malaya in the 1950s). On the sample of contiguous dyads—where poor states enjoy an equal willingness and opportunity to fight—the pacifying impact of democracy does not appear statistically significant among the poorest decile of joint democratic dyads. The good news is that both samples agree that when the poorest state in a dyad has an income of $1,650 or more, joint democracy has a significant pacifying effect on conflict.

Still, both samples also agree that as levels of development rise, so does the pacifying impact of democracy. Although this interaction effect does not seem to be predicted by institutional (structural and cultural) and classical liberal models of democratic peace, these models and the market norms model are not mutually exclusive: Institutional models may explain the pacifying impact of democracy at all levels of joint development, whereas market norms explain democracy's stronger pacifying effect among economically developed democracies. Other explanations for the latter phenomenon include a possible role for education (Lipset 1959), class structure (Rueschemeyer, Stephens, and Stephens 1992), and structural-functionalism (Fukuyama 1992; Parsons 1964). Certainly, future research would be useful to assess the viability of these alternative explanations and the possibility that the developed democratic peace may be explained by strategic interests (Farber and Gowa 1995), democratic regime maturity (Dixon 1994; Peceny 1999), or trade among developed states (Hegre 2000).

In the meantime, this study demonstrates the wide explanatory power of the tenable, testable, and simple postulate that economic norms affect our social values and preferences. With the additional axiom that market prosperity is a complex division of labor linked by contracts, the postulate yields a single parsimonious explanation for a diverse range of political phenomena: democratic peace and cooperation, democratization and institutional consolidation, and the seeming existence of common norms and values across divergent indigenous but economically prosperous cultures—from Japan to Iceland. Moreover, the model brings economic structure and culture back together in comparative politics and, more important, does so without ethnocentric or evolutionary implications. If empirically true, the model also yields several clear and relevant policy recommendations: (1) that the developed democracies face a difficult task if they insist on enforcing their values and standards of democracy on less developed countries, (2) that believers in democratic peace should not expect poorer democracies to behave like the rich ones, and (3) if U.S. policy makers want real peace with Russia and China, they must tolerate their democratic imperfections, encourage their private sectors, and have patience. Democratic or not, only with economic develop-

ment will these countries truly respect human rights and be allies as steadfast as are England, Germany, and Japan.

The empirical results also show the limits of the model for scholars of international conflict. Whereas a one standard deviation increase in democracy appears to cause a 52% decrease in militarized conflict among more developed countries, an equivalent increase in relative capability yields a respectable 30% decrease in militarized conflict. This shows the relevance of power in international relations and underscores that the model yields an explanation for relations between developed democracies only. Whether our actors are people or nations, in the absence of common norms, values, and worldviews, the raw power of force is probably the most persuasive regulator of interactions. In the presence of market norms, however, this study demonstrates how the people in the developed democracies may really share the "common values of democracy, human rights and the rule of law," and that these values may be the source of both democracy and peace.[18]

18. Quoted in "NATO's New Strategic Concept," www.nato.int/docu/comm/ c911107a.htm, June 7, 1999.

APPENDIX A

Descriptive Statistics of the Variables

Variable	All Dyads[a]				Contiguous Dyads[b]			
	M	SD	Minimum	Maximum	M	SD	Minimum	Maximum
Dispute years	0.01	0.09	0.00	1.00	0.07	0.25	0.00	1.00
Democracy low	7.63	6.82	1.00	21.00	8.66	7.57	1.00	21.00
Development low	7.40	0.87	5.40	9.90	7.57	1.03	5.40	9.77
Development high	8.64	0.79	5.80	10.37	8.29	1.00	5.92	10.37
Developed democracy	59.06	57.40	5.55	205.20	70.40	67.63	5.62	205.20
Trade interdependence	0.00	0.00	0.00	0.17	0.01	0.01	0.00	0.17
Relative capability	2.01	1.52	0.00	9.10	1.80	1.41	0.00	6.92
Major power	0.14	0.35	0.00	1.00	0.30	0.46	0.00	1.00
Contiguity	0.07	0.25	0.00	1.00				
Distance	8.07	0.85	1.87	9.42				
Hegemonic power	0.30	0.04	0.26	0.42	0.31	0.04	0.26	0.42
Hegemonic status	0.03	0.18	0.00	1.00	0.06	0.25	0.00	1.00
Alliance	0.16	0.37	0.00	1.00	0.55	0.50	0.00	1.00
Democratic maturity	18.18	21.16	0.00	94.96	23.16	25.89	0.00	94.96
Development*trade	0.01	0.04	0.00	1.60	0.05	0.12	0.00	1.60

a. Sample contains 114,598 observations, with 4,500 missing observations for democratic maturity.
b. Sample contains 7,461 observations, with 5 missing observations for democratic maturity.

APPENDIX B

Correlation Matrices of the Independent Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Democracy low	1.00	0.27	0.44	0.99	0.19	0.03	0.07	0.04	0.03	0.13	0.09	0.03	0.82	0.19
2. Development high	0.48	1.00	0.45	0.30	0.12	-0.01	0.18	-0.12	0.14	-0.17	0.21	-0.30	0.28	0.12
3. Development low	0.62	0.79	1.00	0.53	0.27	-0.06	0.08	0.05	-0.09	-0.09	0.08	0.01	0.48	0.27
4. Developed democracy	0.99	0.53	0.69	1.00	0.22	0.02	0.08	0.05	0.00	0.10	0.10	0.05	0.85	0.23
5. Trade interdependence	0.40	0.30	0.45	0.44	1.00	-0.11	0.04	0.26	-0.33	0.00	0.00	0.13	0.26	1.00
6. Relative capability	0.09	0.22	0.02	0.07	-0.18	1.00	0.40	-0.04	0.16	0.01	0.26	-0.06	0.04	-0.10
7. Major power	0.29	0.45	0.26	0.29	0.01	0.41	1.00	0.12	0.02	0.05	0.46	0.04	0.09	0.04
8. Contiguity								1.00	-0.45	0.07	0.05	0.28	0.06	0.25
9. Distance									1.00	-0.02	0.06	-0.43	-0.03	-0.32
10. Hegemonic power	*0.15*	*-0.03*	*-0.09*	*0.11*	*-0.09*	*0.13*	*0.18*			*1.00*	0.04	0.04	0.06	-0.01
11. Hegemonic status	*0.19*	*0.30*	*0.16*	*0.19*	*-0.03*	*0.34*	*0.41*			*0.11*	*1.00*	0.13	0.11	0.00
12. Alliance	*-0.03*	*-0.25*	*-0.07*	*-0.01*	*0.04*	*-0.10*	*-0.11*			*-0.03*	*0.15*	*1.00*	0.05	0.13
13. Democratic maturity	*0.87*	*0.49*	*0.65*	*0.89*	*0.47*	*0.08*	*0.24*			*0.06*	*0.23*	*-0.01*	*1.00*	0.26
14. Development*trade	*0.41*	*0.31*	*0.46*	*0.46*	*1.00*	*-0.17*	*0.02*			*-0.10*	*-0.03*	*0.05*	*0.48*	*1.00*

NOTE: Pearson's r correlation coefficients. Coefficients in italics are from sample of contiguous dyads.

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