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Kantian Dynamics Revisited: Time-Varying Analyses of Dyadic IGO-Conflict Relationships

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ABSTRACT

The literature on international organizations (IGOs) and interstate conflict in world politics produces a series of contradictory theoretical arguments and empirical findings about how IGOs help to prevent conflict and promote peace between member states. Empirical studies find a range of inconsistent results, ranging from pacifying effects of shared IGO memberships on dyadic militarized disputes to conflict-inducing effects of shared IGO memberships to null relationships. Theoretically, we consider how IGOs promote the rule of peace preservation through the mechanisms of coercion, self-interest, and legitimacy, and we describe how these mechanisms help explain the time-varying relationships between shared IGOs memberships and militarized conflict since WWII. Analyses of time-varying parameter models of dyad-year data from 1948 to 2000 suggest that shared IGO memberships reduce the likelihood of militarized conflict in some historical periods (Cold War) but increase the chances for dyadic conflict in other periods (post-Cold War). The design of IGOs is relevant as well, with security-based, highly institutionalized IGOs best suited to prevent militarized conflict between member states. The results suggest that evolutionary dynamics in the Kantian peace vary across legs of the Kantian tripod and that we cannot understand the Kantian peace without considering dynamic relationships over time.

KEYWORDS

Compliance, conflict, disputes, international organizations, time

Kantian conditions for peace have become staples in academic research and course work on international conflict. The three elements of the Kantian tripod purported to reduce the chances for militarized conflict between states include democracy, economic interdependence (trade), and international organizations (Russett and Oneal 2001).[1] The democratic

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[1]These correspond to Immanuel Kant's (1795/1991:99–115) three conditions for perpetual peace: (1) republican forms of government domestically, (2) an international federation of free states, and (3) a principle of cosmopolitanism, or universal hospitality, as well as the supplements of perpetual peace including a "spirit of commerce."

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peace refers to the absence of interstate wars between democratic states and the unlikely escalation of democratic militarized disputes to high levels of violence.[2] Empirical findings relating joint democracy to lower probabilities of dyadic interstate conflict are found in hundreds of published studies. Evidence relating dyadic trade and dyadic peace is more mixed, reflecting in part the difficulties with measuring trade and coding decisions that must be made with large amounts of missing trade data (Barbieri 1996; Gleditsch 2002). Research on the third leg of the tripod, international organizations, also produces a series of contradictory empirical findings.[3] Some studies show significant pacifying effects of shared IGO memberships on dyadic conflict (for example, Russett, Oneal, and Davis 1998), other studies show positive effects of shared IGO memberships on militarized disputes (for example, Fausett and Volgy 2010), while other analyses find insignificant relationships between shared IGO memberships and interstate conflict (for example, Kinsella and Russett 2002).

We believe these inconsistencies in the empirical record linking IGOs and conflict may occur due to researchers' usage of static parameter models and the selection of different time periods for analysis. If the underlying theory and data-generating process suggests a time-varying relationship between IGOs and militarized conflict and if IGOs have conflict-inducing effects in some periods but pacifying effects in other time periods, this could confound results obtained in static parameter models. Theoretically, we build upon research on international organizations and the evolutionary relationship between democracy and militarized conflict to explore the dynamic relationships between dyadic IGO memberships and the occurrence of militarized disputes. We argue that IGOs promote peaceful interactions among member states through mechanisms of coercion, self-interest, and legitimacy. The prevalence of these incentives for peace varies temporally, which helps us understand how the relationship between IGOs and conflict changes over time.

Our empirical analyses of time-varying parameter models of dyad-year data from 1948 to 2000 show that shared IGO memberships reduce the likelihood of militarized conflict in some historical periods (1948–1980) but increase the chances for dyadic conflict in other periods (1990–2000). As predicted by our theory, the effect of IGOs on militarized conflict depends on the design of the international organizations, with security-based, highly institutionalized IGOs best suited to prevent conflict between member states and to preserve the rule of peace. Our empirical evidence demonstrates the importance of considering the evolution of relationships in the Kantian

[2]For reviews of this literature, see Chan (1997), Ray (2000), Rosato (2003), Russett (1993), and Russett and Oneal (2001).

[3]"An IGO can be defined as a formal, continuous institution established by treaty or other agreement between governments, long-range in nature, multilateral … (three or more member states), with a secretariat and more-or-less regular meetings, and an 'international legal personality' with legal standing" (Russett et al. 1998:443). Pevehouse, Nordstrom, and Warnke (2004) code data for 495 IGOs from 1816–2000.

system and illustrates the problems with treating all IGO memberships as equivalent in dyadic conflict models.

Our study is organized as follows. We begin by summarizing empirical findings relating dyadic IGO memberships and militarized conflict. We then construct a theoretical model that allows for dynamic relationships between IGOs and conflict. This is followed by a description of the data, research design, and statistical models employed to evaluate the time-varying IGO-conflict relationship and a summary of our empirical findings. Our study helps us understand the inconsistent set of findings in static parameter models examining how international organizations promote peace between members and suggests that institutional scholars need to incorporate dynamics into their models.

Empirical relationships between IGOs and militarized conflict

The flurry of IGO creation that followed World War II (Ikenberry 2001) coincided with increased academic attention to the question of how states' shared memberships in international organizations might influence interstate conflict and cooperation between IGO member states.[4] Deutsch (1954:5) articulated the conditions for successful pluralistic security communities, defined as integrated groups of people that seek to resolve social and political problems peacefully; his in-depth analysis of the emerging cooperation in the North Atlantic region provided the foundations for broader work on cooperation through institutions in the international sphere. This was juxtaposed against more skeptical realist analyses of organizations, such as Claude's (1966) analysis of the United Nations.

Singer and Wallace (1970) provided one of the first quantitative studies of the relationship between IGOs and militarized conflict from 1816–1964, identifying over 200 IGOs for analysis. Their correlational analysis suggests that IGO creation tends to follow periods of interstate war, while the reverse relationship suggests a weak positive correlation between IGO numbers and war in the system. Numbers of IGOs in the system correlate with nation-months of war or battle deaths begun in the next period at a level of 0.22 to 0.26 (Singer and Wallace 1970:539). An additional study by Jacobson, Reisinger, and Mathers (1986) also produced mixed findings regarding the question of whether IGOs would serve to promote peace as the Kantian model suggested. At the monadic level, the authors found no evidence that states belonging to higher numbers of IGOs were less war prone overall (Jacobson et al. 1986:156). At the systemic level, however, their correlations suggest a weak negative relationship between the number of IGOs in the system and the amount of war.

When much conflict research in the early 1990s turned to dyadic analyses (for example, Bremer 1992), the literature linking IGOs and conflict moved in a

[4]There is a large literature relating international organizations, regimes, and cooperation broadly speaking; see Simmons and Martin (2002) for a review. Our literature review is more focused on studies that examine the linkages between states' shared membership in international organizations and dyadic militarized conflict.

similar direction. Russett et al. (1998) articulated the Kantian perspective and identified several causal mechanisms that would help account for the positive correlation between dyadic IGO comemberships and peace. First, IGOs could coerce norm-breakers in the international community through collective security threats (for example, through the United Nations). Second, IGOs could serve as active mediators in conflicts between member states and provide legal forums for dispute resolution (Mitchell and Hensel 2007). Third, IGOs could increase information available to state leaders in bargaining situations, reducing the deleterious effects of uncertainty (Boehmer, Gartkze, and Nordstrom 2004). Fourth, IGOs could expand states' individual interests to incorporate the community's interests through such mechanisms as issue linkage and trade, which could induce more similar foreign policy preferences (Bearce and Bondanella 2007). This coincides with a fifth function whereby IGOs can socialize states into certain norms and practices, such as the use of third-party conflict management (Mitchell 2002). Finally, IGOs could create narratives of mutual identification, building upon Deutsch's (1954) idea of pluralistic security communities.

Russett et al.'s (1998:457) empirical analyses of dyad years from 1950–1985 provide support to the Kantian theory, showing that an increase of shared IGO memberships by one standard deviation reduces the likelihood of militarized disputes by 23%. They also find that IGO memberships correlate with other aspects of the Kantian tripod (what they call "virtuous cycles"): 0.52 with democracy and 0.32 with trade dependence (1998:455). A follow-up analysis by Russett and Oneal (2001:171) produces similar substantive findings; a higher density of shared IGO memberships reduces the chances for dyadic militarized conflict by 24%. Oneal, Russett, and Berbaum's (2003) study also shows a negative link between IGOs and Militarized Interstate Dispute (MIDS) with fatalities from 1885–1992.

As noted in the introduction, empirical findings linking IGOs and peace uncover positive, negative, and null relationships. Kinsella and Russett (2002) observe a positive relationship between shared IGO memberships and dispute initiation in a sample from 1951–1992. Boehmer et al.'s (2004) analysis of dyad-years from 1950–1991 shows that all IGO memberships have a positive and significant effect on MIDs, while interventionist (security) IGOs reduce the likelihood of militarized disputes. Chan (2005) finds that IGO memberships have no constraining effect on major powers' use of force, sometimes even increasing great powers' foreign policy belligerence.[5] Using events data, Blanton (2006) finds that shared IGO memberships negatively correlate with economic conflict and military conflict but have no significant relationship with economic cooperation or with military cooperation. Crescenzi's (2007) results are consistent with earlier Kantian analyses, showing a negative and significant effect of joint IGO memberships on MID onset. Goldsmith (2007) finds that IGOs reduce MIDs from 1950–1975, yet

[5]Analyses of the reverse correlations show that major powers also tend to withdraw from IGOs in times of war.

increase conflict risks from 1976–2000, with no pacifying effects for IGOs in the Asian region. Gleditsch, Salehyan, and Schultz (2008) find no relationship between IGOs and MID onset in a politically relevant dyad year sample from 1948–2000. Shannon, Morey, and Boehmke (2010) find that increased joint IGO memberships reduce the duration of militarized disputes, but have no effect on dispute onset. Cornwell and Colaresi (2002) find that joint IGO memberships have no effect on the likelihood of termination in rivalry dyads, while Prins and Daxecker (2008) show that membership in peace-promoting IGOs has a positive effect on rivalry termination. In short, the IGO leg of the Kantian tripod for peace is built upon a shaky empirical foundation.

Some of these discrepancies have been addressed through work that considers the characteristics of IGOs, as well as the broader context within which IGOs are embedded. It might be unrealistic for all IGOs to have equal effects on member states given the wide range of design features that vary across institutions such as membership size, geographical focus, institutionalization, and mandate. Drawing upon the bargaining model of war (Fearon 1995), Boehmer et al. (2004) argue that information asymmetries in bargaining are best reduced by IGOs that have clear mandates for security, strong internal member cohesion, and strong institutional mechanisms for sanctioning and enforcement. In other words, security-based institutions that are highly institutionalized have an advantage in the act of costly signaling, revealing private information most effectively to IGO member states in bargaining situations. As noted, their dyadic analyses from 1950–1991 confirmed this intuition, showing that interventionist IGOs significantly reduce the onset of militarized disputes, while minimalist and structured IGOs have no effect.[6]

In an analysis of diplomatic conflicts involving land and water borders, Mitchell and Hensel (2007) show that international organizations improve the chances for compliance with peaceful agreements to resolve these contentious issues both *actively*, through their direct involvement as conflict managers, and *passively*, through an increase in shared IGO memberships between disputants. As active conflict managers, IGOs' success rate depends on the tools they employ to manage interstate conflicts. Agreements brokered by an IGO and reached through binding procedures, such as arbitration and adjudication, have much higher success rates than nonbinding settlement attempts by IGOs (for example, mediation) or negotiations involving the disputants themselves (for example, bilateral talks). In terms of the passive effect of IGOs, an increased web of shared ties in international organizations increases the chances for nonbinding third-party conflict management

[6]The authors define these types of IGOs as follows (Boehmer et al. 2004:18):
1. *Minimal organizations* contain plenary meetings, committees, and possibly a secretariat without an extensive bureaucracy beyond research, planning, and information gathering. 2. *Structured organizations* contain structures of assembly, executive (non-ceremonial), and/or bureaucracy to implement policy, as well as formal procedures and rules. 3. *Interventionist organizations* contain mechanisms for mediation, arbitration and adjudication, and/or other means to coerce state decisions (such as withholding loans or aid), as well as means to enforce organizational decisions and norms.

(Hensel 2001) and active intervention by IGOs (Hansen, Mitchell, and Nemeth 2008).

Mitchell and Hensel (2007), focusing on IGOs that call for peaceful dispute settlement in their charters, find that shared membership in these organizations increases the probability of agreement over geopolitical issues by 0.147 and the probability of compliance with agreements struck by 0.246 when increasing shared IGOs from its minimum to its maximum. Security organizations have similar effects, with shared alliance ties increasing the chances for third-party mediation (Terris and Maoz 2005), peaceful dispute settlement (Dixon 1993, 1994; Dixon and Senese 2002; Mitchell and Hensel 2007), and increasing states' shared IGO memberships (Russett and Oneal 2001). Collective security agreements involving democracies are more typically designed with consensual and compromise-oriented decision-making procedures and rules, as illustrated in the case of the North Atlantic Treaty Organization (NATO) (Risse-Kappen 1996). Thus, disputes involving IGO members could be less likely to escalate, especially in situations where the IGO has the institutional capacity to handle such issues.

Another characteristic of IGOs that has been identified to help explain varying findings in the IGO-conflict literature is the composition of the membership with respect to member states' regime types. Pevehouse and Russett (2006) find that IGOs densely populated with democratic states promote peace between members more strongly than IGOs comprised of more regime heterogeneous states. Hansen et al. (2008) also show that IGOs with more democratic members are more capable of helping disputing member states strike peaceful agreements when they intervene as active conflict managers. The presence of a greater number of diplomatic disputes between IGO members might be expected, especially given the geographical focus of many organizations. Fausett and Volgy (2010) show that shared IGO ties increase the likelihood of low-level diplomatic conflicts, yet reduce the chances for conflicts with high severity levels. This fits the mechanisms described earlier in terms of IGOs intervening as both active and passive conflict managers, even when disputes arise between member states. In summary, we might expect IGO shared memberships to prevent diplomatic conflicts from escalating to severe levels, such as MIDs involving battle deaths, while observing a certain degree of lower severity conflict between IGO members.

Scholars have also examined broader networks of IGO ties between states. Perhaps the effects of shared IGO memberships on militarized disputes vary because IGO networks connect states not only directly but indirectly as well. It may be that states are more likely to cooperate if they have higher degrees of indirect independence in the IGO membership

network. Dorussen and Ward (2008) reach this conclusion in their study of dyad-years from 1948–2002; while direct ties have a positive effect on MID occurrence, they find that a higher density of indirect IGO ties reduces the likelihood of dyadic conflict. Kinne (2013) looks at IGO network convergence, or whether countries have similar patterns of IGO ties to other states (see also Hafner-Burton and Montgomery 2008). He finds that while the dyadic shared IGO measure is positively related to MID onset, increasing network convergence reduces the chances for conflict. Using network analysis measures to capture IGO ties, Maoz, Kuperman, Terris, and Talmud (2006:683) report time-varying effects across historical periods: "IGO-related affinity does not significantly affect dyadic conflict in the nineteenth century; it positively affects conflict propensity throughout the twentieth century but has a negative impact on conflict in the post-World War II era." Even in models that consider the broader network of IGO relationships, findings are inconsistent across time periods. In the next section, we build upon theoretical arguments in the IGO and democratic peace literatures to develop a richer account of the dynamics of the IGO-conflict relationship.

Building the theory: IGOs and interstate conflict

Early work on functionalism emphasized that international organizations are created to fulfill specific goals and purposes. One broad goal identified by most international and regional organizations involves the *preservation of peace* between member states and the resolution of interstate disputes with peaceful strategies. The League of Nations Covenant emphasized the need for peaceful dispute resolution, for reductions in states' armaments, and for coordinated responses against aggression. The United Nations Charter reiterated these goals with Chapter VI identifying mechanisms for pacific settlement of disputes and collective action against threats to peace. Many regional organizations call for peaceful dispute settlement as well, such as the Organization of American States (Chapter V), the Association of Southeast Asian Nations (Chapter VIII), and the Arab League (Article V). Our theory begins with an assumption that preservation of peace is a rule that IGOs expect member states to follow. While preserving peace could be agreed upon as a reasonable rule for international institutions, the mechanisms by which compliance with such rules are enforced vary across institutions and time.

We draw upon Hurd's (1999) argument that states obey rules in international relations because of coercion, self-interest, and legitimacy, perspectives that roughly correspond to the realist (Hobbesian), rational/institutionalist (Grotian/Lockean), and liberal (Kantian) schools of thought in international relations (Bull 2002; Wendt 1999). We can

think about how IGOs preserve the rule of peace through each of these mechanisms. Coercion occurs if major powers or strong regional powers create institutions and design the rules in ways to promote their security and economic interests. Self-interested states may create and design institutions to facilitate interactions, reduce transaction costs, and improve information sharing, all of which may mitigate the rationalist processes that lead states down the path to war. IGOs can also preserve the rule of peace through legitimacy, whereby member states come to view each other's security as their own and members' foreign policy preferences are reconstituted by their participation in international organizations. We describe each of these perspectives on IGOs in more detail. We then discuss why we think these mechanisms may vary across time.

Coercion

International organizations are often created following large wars in the international system, with the major power victors seeking to redesign the post-war order (Ikenberry 2001). The high costs of conflict combined with the shift in the distribution of power among great powers presents an opportunity for new institutions to emerge. Major powers can benefit from institutionalizing a new international order by creating rules that favor their power (for example, UN Security Council) and preferences (for example, free trade). Leading states use IGOs to bind weaker states to a set of rules and institutions to preserve post-war order, which helps make their behavior more predictable, all the while preserving the hegemon's freedom from the same institutions (Ikenberry 2001). In the 1815 Congress of Vienna agreement, the British agreed to security guarantees through alliances and mechanisms for settling territorial disputes in Europe, while leaving their interests in America and maritime spaces off the negotiating table. The United States has been involved in the creation of most major international organizations operating today, while at the same time refusing to officially join many of these institutions.[7]

Major powers benefit by constraining other states to follow the rules embedded in IGOs, including the preservation of peace. Hurd (1999) notes that coercive systems are likely to collapse over time as weaker states in the system become dissatisfied with the current order and as the institutional rules shift against the dominant power's favor as its capabilities decline. The League of Nations, for example, crumbled when faced with territorial aggressions by several member states in the 1930s in the midst of British hegemonic decline. The Central American Court of Justice was supported by the United States in upholding its judgments

[7]For example, the League of Nations, the International Criminal Court, and the United Nations Convention on the Law of the Sea.

until 1916, when the case of *Costa Rica v. Nicaragua* negatively affected US interests with respect to the Chamorro-Bryan Treaty (Allain 2000). Recent threats of the United Kingdom leaving the European Union are reminiscent of how institutional orders can collapse when the major powers supporting them no longer reap the same benefits as in the past.

Self-interest

Neoliberal institutionalists take a more optimistic view of major powers regarding their role in creating institutional orders, arguing that they have more benevolent intentions when establishing hierarchical orders (Keohane 1984; Lake 2009). Neoliberal institutionalists argue that IGOs are created to solve particular coordination problems and that the originators of such institutions design treaties in ways to maximize their interests. Member states' loyalty to IGOs can be maintained as long as they reap the benefits envisioned in the institution's creation.

Institutionalist (Keohane 1984; Keohane and Martin 1995) and rationalist (Boehmer et al. 2004; Koremenos, Lipson, and Snidal 2001) theories of international organizations, both of which view compliance with IGO rules as stemming from self-interest, treat state preferences as fixed and exogenous. Because states are rational egoists, they have incentives to defect from cooperative agreements and free ride in the provision of international public goods. Institutions help to mitigate these tendencies for free riding and defection in a variety of ways. First, international institutions establish patterns of legal liability or accountability that reduce the costs of negotiations and raise the costs of reneging (Keohane 1984; Mitchell 1994). Second, institutions facilitate cooperation by reducing transaction costs and making it easier for states to negotiate agreements. The centralization and independence of IGOs enhance their efficiency and reduce the costs of bargaining for member states (Abbott and Snidal 1998). Institutions transform single-shot games into iterated games and lengthen the shadow of the future, reducing transaction costs of legitimate contracts and raising the costs of illegitimate ones. Institutions also provide regular forums for meetings and negotiations and link various clusters of issues together, facilitating the arrangement of side payments (Keohane 1984:90–91). Third, international institutions increase the flow of information among member states, reducing the deleterious effects of asymmetric information about states' capabilities, resolve, and interests in interstate bargaining (Abbott and Snidal 1998; Fearon 1995). Fourth, institutions increase the chances for peace by raising reputational costs for noncompliance with IGO rules and norms (Duffield 1992; Keohane 1984).

IGOs also play an important role in promoting the rule of the preservation of the peace by resolving conflicts directly as third parties. This includes both

facilitative intervention in the form of good offices, mediation, conciliation, and fact-finding, and binding intervention in the form of arbitration or adjudication (Abbott and Snidal 1998). When such techniques are employed, the institution plays a much more active role in conflict settlement than simply increasing the flow of information or reducing transaction costs. Instead, the institution itself can be called upon to help resolve the contentious issues in question, perhaps even through a binding settlement that both disputants agree in advance to accept. As noted previously, IGOs with mandates for security and highly institutionalized procedures for conflict management are better tasked with mitigating the information, commitment, and issue indivisibility problems that plague successful bargaining (Boehmer et al. 2004).

Legitimacy

Constructivist theories of international organizations emphasize the constitutive effects of IGOs, whereby the rules espoused by such institutions become more legitimate to member states over time. Member states also come to view each other's security as their own. IGOs do more than aggregate median member states' preferences; they have complex bureaucracies, where bureaucrats can have agendas independent from member states and where multiple agendas and agencies are possible (Barnett and Finnemore 1999; Finnemore 1993; Ness and Brechin 1988). Because entrepreneurs can capture the attention of IGO bureaucrats, new ideas and policies can emerge in international organizations, and member states may be socialized to accept them. The extent to which IGO norms or rules become internalized depends on the distribution of power among groups inside the state and their agenda-setting capabilities (Checkel 1999; Cortell and Davis 1996; Haas 1989).

Neoliberal institutionalists assume that shared interests create the conditions for institutional formation, whereas constructivists focus on how IGOs produce new norms once established (Barnett and Finnemore 1993; Finnemore 1993; Schimmelfennig 2003). IGOs present themselves as neutral, objective actors that serve others' interests, encouraging states to accept their authority and actions with legitimacy. This authority status allows IGOs to engage in a number of activities that influence member states, including classification of actors and actions, the fixing of meanings, and the diffusion of new norms (Barnett and Finnemore 1993:710). In other words, IGOs are able to engage in a process of collective legitimization (Claude 1966). However, this authority status also comes with a price for member states, as IGOs often engage in pathological or dysfunctional behavior that goes against members' interests.

Sociologists articulate similar ideas about the role of IGOs in building world society (Meyer 2010):

> IOs are seen as important carriers of global … culture largely through the distribution of rationalized scientific information and findings as well as professionalized knowledge and practices… . Institutions confer status, identity, and rights to social actors … with schemata for making sense of the world. (Brechin and Ness 2013:29)

The socialization effects of IGOs may extend to both member and nonmember states. Internally, IGOs socialize member states by promoting democratization of member states (Pevehouse 2002), promoting economic liberalization, and encouraging members to adopt peaceful conflict management strategies (Mitchell 2002). More broadly, "international organizations may … encourage states to expand their conception of the interests at stake, promoting more inclusive and longer-term thinking; shape general norms and principles of appropriate behavior; or encourage empathy and mutual identification among peoples" (Russett and Oneal 2001:37). IGOs produce a convergence in state behavior and interests over time (Schimmelfennig 2003), with the internal socialization effects having their strongest effects on the institutions' oldest members (Hooghe 2005).

One example of this socialization process involves the encouragement of peaceful conflict management strategies by international organizations. As noted earlier, the charters of the OAS, Arab League, ASEAN, and other organizations emphasize the peaceful settlement of disputes. International courts, such as the International Court of Justice, also encourage pacific dispute settlement out of court for members recognizing the court's jurisdiction (Bilder 1998) and provide a last-resort forum for resolving disputes. IGOs that emphasize peaceful conflict resolution techniques in their charter will socialize member states to be more open to peaceful settlement techniques and to view settlements reached through peaceful means with greater legitimacy. Such benefits could extend beyond IGOs, creating systemic expectations about peaceful conflict management practices (Mitchell 2002).

Another example of the constitutive effect of IGOs is through their influence on member states' foreign policy preferences. Bearce and Bondanella (2007) empirically examine the influence of shared IGO memberships on interest convergence. Using a dyadic affinity measure based on states' voting in the United Nations General Assembly, the authors find that increasing numbers of shared IGO memberships result in more similar dyadic voting patterns in the UNGA. The long-term constitutive effects are significant as well, permanently increasing the mean similarity of member states' UN General Assembly votes. Taninchev (2015) finds that pairs of states who share more IGO memberships in organizations with many substructures are more conducive to convergence in their foreign policy

preferences. Given that many IGOs that focus on peaceful conflict management create a series of institutional mechanisms to manage disputes, such organizations more readily promote cooperation and convergence over time.

Much like the rationalist literature, constructivists have also identified a series of institutional design features that influence the process of IGO socialization. Johnston (2001) identifies two key microprocesses of socialization: persuasion and social influence. States are more likely to be persuaded by IGOs that are novel, authoritative, characterized by agents autonomous from their principals (much like Finnemore's [1993] UNESCO technocrats promoting a science bureaucracy), and populated by states that receive "counter-attitudinal information repeatedly over time" (p. 499). Similarly, IGOs are better able to wield social influence over their member states if states join IGOs in the absence of threats or sanctions, if arguments in favor of joining "stress backpatting and image benefits, diffuse reputation benefits, and opprobrium costs" (Johnston 2001:506), and if remaining out of the IGO is "highly isolating" for potential member states. Hooghe's (2005) theory of socialization processes in the European Commission also points to the importance of novelty (initial experiences have stronger socializing effects than later experiences) and primacy (new members are socialized more quickly than old ones). In short, states will be socialized to the norms and practices of IGOs, and long and deep IGO commitments will alter member states' behavior in world politics.

Dynamic relationships between IGOs and conflict

The IGO literature is rich in articulating how coercion, self-interest, and legitimacy influence states' compliance with IGO rules. Yet, most theories predict IGO effects that are invariant across time. For example, work on the design of IGOs suggests that security-based, highly institutionalized organizations may best prevent militarized conflict between member states, but there is no discussion about whether this effect is stronger or weaker in recent decades compared with the initial years of the Cold War. Scholars focusing on legitimacy effects get closer to identifying dynamic effects when they predict an accumulating process whereby IGOs could have stronger effects on states' preferences and behavior today than in earlier periods when IGOs were few in existence or newer. The problem is that the vast majority of empirical studies of IGOs and conflict test for static relationships. Some authors separate data into historical epochs or regions and show that the IGO-conflict relationship varies in time or space. But the IGO literature has not theoretically addressed the question of why the relationship between IGOs and conflict might evolve over time. This is surprising given that IGOs are part of the Kantian tripod for peace and because the democracy leg of the tripod has been analyzed from a more dynamic perspective. In this

section we begin by describing some of the work on the democratic peace that focuses on the evolutionary relationship between democracy and conflict. We then connect this research to the work on international organizations to develop a more dynamic theory of how shared IGO memberships influence interstate conflict.

The dynamic democratic peace

The democratic peace literature has explored dynamic patterns in the relationship between regime type and interstate conflict, both at the dyadic and systemic levels of analysis. The systemic democratic peace literature (Crescenzi and Enterline 1999; Harrison 2002, 2004, 2010; Huntley 1996; McLaughlin 1997; Mitchell, Gates, and Hegre 1999; Mitchell, Kadera, and Crescenzi 2008) correlates the number of democratic states in the international system with the incidence of global conflict, noting that the number of democratic states has risen substantially over time, with democracies now comprising a majority of states in the system. Initial examinations of systemic democratic peace hypotheses utilized an aggregation approach, seeking to determine if the distribution of democratic regimes at the monadic or dyadic level translates into different levels of war at the systemic level. Maoz and Abdolali (1989) evaluate the systemic democratic peace theory with autoregressive moving average (ARMA) regression models from 1817–1976. They find that the proportion of jointly democratic dyads in the system typically has a *positive* effect on systemic conflict (for example, the number of militarized disputes begun and underway), contradicting the expectation of a peaceful system with an increasing proportion of democracies. Their results on war, however, support the systemic democratic peace proposition:

> while more democracies made for more disputes and more dispute involvements (number of dyads involved in disputes), they tended to make for less war, and they tended to reduce the probability that a low-level militarized dispute would escalate to an all-out war. (Maoz and Abdolali 1989:29–30)

These last findings are confirmed in a study evaluating the post-World War II era; the proportion of democracies in the system decreases the proportion of states participating in war (Crescenzi and Enterline 1999).

Gleditsch and Hegre (1997) criticize previous tendencies to assume either that an increase in the proportion of democracies globally will decrease the level of systemic conflict (which follows from the dyadic level) or that the spread of democracy will have no impact on the overall level of conflict in the system (which follows from the monadic level). The authors model the relationship between regime types in the international system and systemic conflict as a function of (1) the probability of war in jointly autocratic dyads, (2) the probability of war in democratic-nondemocratic dyads, (3) the

proportion of democracies in the system, and (4) the total number of nations in the system. If the probability of war is greater in mixed dyads than in jointly autocratic dyads (Raknerud and Hegre 1997), then the relationship between the proportion of democracies in the international system and the frequency of international conflict is bell or parabola shaped. In other words, if the proportion of democracies in the system is low, then the initial effect of new democracies entering the system is an overall increase in the level of global conflict. This increases up to a threshold point, where the proportion of democracies is large enough to produce greater levels of systemic peace. The threshold point is a function of the probability of war in mixed and jointly autocratic dyads. Thus, the Gleditsch and Hegre (1997) model predicts an increasing historical level of democracy to have produced more war. Their empirical analysis provides some support for this predicted theoretical relationship, with the pre-World War II time period being associated with more democracy and more war and the post-World War II time period being characterized by more democracy and less war in the international system.

Mitchell et al. (1999) compare this parabolic relationship to a time-varying parameter model that allows for the relationship between democracy and war in the system to change over time. They argue that the relationship between democracy and war at the systemic level is endogenous and evolutionary (McLaughlin 1997; Mitchell 2002). War in the system increases the proportion of democratic states, which in turn reduces the amount of systemic war. The argument draws upon Kant's (1784) claim that the experience of civil and interstate war compels human beings to improve the institutions of their governments and that these governments would, in turn, seek to protect those gains by promoting a democratic rule of law internationally (Huntley 1996:58). Mitchell et al. (1999) also point to the findings relating regime type and success in interstate war. If democracies are more likely to win the wars they fight (Lake 1992; Reiter and Stam 1998), and if losing states in wars are most likely to experience regime changes (Bueno de Mesquita, Siverson, and Woller 1992), then democratic regimes will increase in the system over time. Mitchell et al. (1999) find that global levels of democratization are inversely related to the proportion of states at war and that the pacifying effect of democracy on war has become more pronounced over time.

Analyses of learning processes at the dyadic level confirm these systemic findings as well (Cederman 2001; Cederman and Rao 2001). Using a dyadic time-varying parameter logit model, Cederman and Rao (2001) find that dispute probabilities for jointly democratic dyads have gotten smaller over time. Their nineteenth-century findings reveal some time periods in which dyadic democracy has a positive effect on militarized conflict, which provides indirect support to the parabolic relationship (Gleditsch and Hegre 1997). It is surprising that the dynamic patterns of the IGO-conflict relationship have not been examined using similar methodologies. In the next section, we

describe our theoretical predictions for these dynamics and present our methodological approach for testing our time-varying hypotheses.

The dynamic IGO peace

Coercion

Ikenberry's (2001) analysis of post-war order creation provides insights into the dynamics of coercion as a mechanism connecting IGOs to peace. As the victors of major power-wars have increasingly become democratic states with larger margins of victory, the post-war orders have also become more democratic in their design. On the plus side, this implies that the decline in hegemonic power has fewer deleterious consequences for preservation of peace among major powers. More negatively, though, major powers have less control over IGOs created in more recent decades. One piece of evidence we can point to is the change in IGO voting rules since World War II (Blake and Payton 2014). While major powers benefit from weighted voting systems to protect their interests, IGOs have evolved to adopt more democratic voting rules, including unanimity and majoritarian procedures. IGOs also gain a higher degree of independence the longer they exist, not only in terms of more democratic voting roles but also through more active supranational bureaucracies and dispute settlement mechanisms (Haftel and Thompson 2006; Lundgren 2016). International courts, often embedded within regional and global IGOs, have increasingly required mandatory jurisdictional acceptance among member states (for example, ICC). IGOs have also gained legal personality, with the ability to sign treaties and create other IGOs. We believe that while increasing democratic procedures and IGO independence have made IGOs more active players in world politics, these dynamics have also weakened the coercion mechanism whereby powerful states use IGOs to promote their interests. Thus, we would expect from the coercion perspective that IGOs would have stronger effects on preserving peace among member states earlier in the Cold War, when major powers had more control and buy-in to the post-WWII institutions. The general effects of all IGOs on militarized conflict may decline over time and even become positive as a larger percentage of countries buy into this institutional order. In other words, the rise of IGOs constructed by democratic major powers increases the membership of nondemocratic countries but may paradoxically reduce hegemonic control over such institutions.

Self-interest

Neoliberal institutionalists see positive benefits for IGOs maintaining peace even in the face of hegemonic decline. Yet the rationalist strand of this literature suggests that not all IGOs are equally positioned to preserve peace. First, IGOs with more centralized decision making and diplomatic

capacity are more effective at helping member states reach peaceful agreements (Lundgren 2016). This accords with arguments that IGOs are best suited to reduce the onset of militarized conflict if they focus on security issues and have highly institutionalized procedures for dispute settlement (Boehmer et al. 2004). The increasing independence of IGOs may be beneficial for their role as active conflict managers, as states are increasingly pressured to accept IGO or other forms of mediation when conflicts heat up. As countries design IGOs with deeper conflict management provisions, they also screen out more conflict-prone members that can upset the peaceful order within the institution (Donno, Metzger, and Russett 2014). The increasing presence of highly independent and highly institutional organizations has also been met with moves by countries to create more informal IGOs that give members more flexibility and autonomy (Vabulus and Snidal 2013). If self-interest forces best explain why IGO members accept the rule of peace, then we would first expect that IGOs with strong design mechanisms for conflict management should be better positioned to promote peaceful negotiations (either actively or passively). Thus, the effect of shared IGOs with such provisions on militarized conflict should remain negative over time. However, we could see a diminishing pacific effect as more countries become democratic and have internal institutions that promote peaceful conflict management. The combination of a broad set of countries joining many IGOs (including conflict-prone states) along with the creation of more informal mechanisms to promote cooperation suggests that the effects of shared IGOs on conflict may decline over time. IGOs with democratic members can effectively screen out revisionist states, but the rise of general regional organizations for other purposes (for example, free trade, human rights) makes it harder to keep conflictual states out of the institutions, reducing the peaceful benefits for any given IGO. As noted, we expect IGOs with conflict management design to more effectively promote peace given the focus of their missions. The conflict-reducing effects of IGOs may be strongest overall at the start of a new post-war order. The buy-in by all major powers at Bretton Woods, for example, created a relatively small number of highly effective organizations to establish post-WWII peace. Yet, the rise in the number of IGOs with conflict management provisions suggests that these types of IGOs should help reduce militarized conflict between member states.

Legitimacy

The Kantian logic based upon the legitimacy process would anticipate a strengthening of the pacifying effect of IGOs on interstate conflict in the international system as the density of IGOs increases over time. IGOs' roles as mediators, norm enforcers, and norm creators all point to increased conflict management efforts by IGOs when conflicts between their members

arise. As the number of IGOs available for membership increases, this should create greater opportunities for peaceful conflict resolution to occur (Mitchell et al. 2008). There is a higher supply of potential IGO mediators available in a system with a higher number of IGOs to actively and passively manage conflicts. Extensions of the systemic democratic peace logic to the IGO-conflict relationship would anticipate an increasingly larger and negative correlation between shared IGO memberships and dyadic conflict as we move from the nineteenth to the twenty-first century. This would be similar to the effect Cederman and Rao (2001) observed for the evolving relationship between dyadic democracy and dyadic conflict. Many IGOs that serve as active conflict managers have existed for decades and thus we would expect these organizations to have reconstituted members' identities into accepting the preservation of peace rule more readily. The rise of a higher density of international courts with mandatory jurisdiction also points to increased pacifying effects for IGOs in more recent times. We turn now to a discussion of the methodology and data we employ to test these ideas empirically.

Research design

In classic regression analysis, it is assumed that the relationships between covariates and outcomes are invariant across observations and over time. Many theories in political science, including the one tested in this study, assume a more dynamic process whereby the causal relationship between two variables changes over time (Cederman and Rao 2001). Introduced by Hastie and Tibshirani (1993), varying coefficient models have been around for quite a few years. Such models allow coefficients to vary as smooth functions of other variables.

The most common way that time-varying effects have been studied has been through the use of multilevel modeling (MLM). MLM uses between- and within-unit effects in order to capture the potential influence of a time-varying coefficient. The between-unit effect is assumed to be constant, while the within-unit effect is used to determine how much deviation there is from the unit average for each observation. However, MLM is limited in its ability to model all potential patterns of change. It can be used for simple patterns with very few parametric terms, such as linear and quadratic functions. Most individual patterns are actually more complex and do not follow a simple parametric pattern. The model used in this analysis overcomes this limitation because we do not impose any constraints on the effects, assuming only that there will be a smooth change across time (Shiyko, Lanza, Tan, Li, and Shiffman 2012).

TVEM model

A time-varying effect model (TVEM) is employed in this analysis. The shapes of the intercept and slope functions are estimated from the available data rather than imposed on the data by the researcher. In a situation in which there is a single time-varying covariate x_{ij}, the model using TVEM would be as follows:

$$y_{ij} = \beta_0(t_{ij}) + \beta_1(t_{ij}) \cdot x_{ij} + \varepsilon_{ij}.$$

The random errors are assumed to be normally and independently distributed. The slope β_1 represents the strength and direction of the relationship between the covariate x_{ij} and y at time point t_{ij}. Both of the coefficients change their values at different points throughout the analysis. Thus, not only do they predict the relationship between the covariate and the outcome, but they are also vary according to t_{ij} (Tan, Shiyko, Li, Li, and Dierker 2011).

The time-varying parameters are commonly represented in graphical form as a function of time because they can be estimated numerically at each separate time point. Since there are no parametric assumptions imposed on the coefficient functions, the model generates smooth time-varying parameter effects. In order to achieve the smooth changing pattern, the coefficient function is estimated based on a P-spline that is implemented through two steps. First, it approximates the parameter function by partitioning it into subintervals and finding lower-order polynomials that fit the relationship. These basic functions are then used in a linear combination, which creates a basic OLS model for each coefficient. Using the previous basic time series cross-sectional model, the linear combinations for β_0 and β_1 would be as follows:

$$\beta_0 = \hat{a}_0 + \hat{a}_1 t + \hat{a}_2 t^2 + \sum_{j=1}^{K} \hat{a}_{2+j}(t - \tau_j)^2$$

and

$$\beta_1 = \hat{b}_0 + \hat{b}_1 t + \hat{b}_2 t^2 + \sum_{j=1}^{K} \hat{b}_{2+j}(t - \tau_j)^2,$$

where K is the number of intervals, τ_K is the knots for each of these intervals, and $\hat{a}_0, \hat{a}_1, \ldots, \hat{a}_{2+K}$ and $\hat{b}_0, \hat{b}_1, \ldots, \hat{b}_{2+K}$ are estimates of $a_0, a_1, \ldots, a_{2+K}$ and $b_0, b_1, \ldots, b_{2+K}$. Second, rather than just running the simple OLS model for each of the coefficients using the linear combinations of the previous functions, these functions are smoothed using a penalty that restricts the coefficients on each subinterval to prevent them from becoming too large (Tan et al. 2011). With this process, any function can be approximated if a sufficient number of intervals (K) are specified (Shiyko et al. 2012).

The form that the TVEM functions can take are directly derived from the data, removing the vulnerability that MLM modeling approaches face with respect to misspecifying the model as a consequence of no prior knowledge. However, the implementation of TVEM requires more data than would be necessary to fit a similar parametric model. This is because the TVEM is estimating functions rather than just the unknown parameters that are dealt with in parametric models. The simple model of one time-varying covariate can easily be adapted to multiple time-varying covariates as well as to covariates that are assumed to be constant over time (Tan et. al. 2011).

In order to select the appropriate model, it is necessary to specify the appropriate number of knots, *K*, that will best fit the model. In order to choose the optimal value of *K*, it is necessary to run numerous iterations of the models varying the value of *K*. Akaike Information Criterion (AIC) or Bayesian Information Criterion (BIC) indices can then be used to determine the ideal number of knots for a given model (Shiyko et al. 2012; Tan et al. 2011). All models presented in this study were estimated with time-varying variables having six knots. This value for *K* gave us the overall lowest AIC and BIC values.[8]

Data

Our dyad-year data set is taken from Dorussen and Ward's (2008) study, which analyzes all dyads from 1948 to 2000. We use two key binary dependent variables, both of which come from the Correlates of War (COW) project's MID data set (version 3.0; Ghosn, Palmer, and Bremer 2004). The first variable indicates whether or not a militarized interstate dispute (MID) has taken place between members of a dyad in a given year. This variable takes a value of 1 in any year in which one member of the dyad displayed, threatened, or used force against the other member.[9] Our second dependent variable, fatal MIDs, also comes from the Militarized Interstate Dispute (MID) data set. Any conflict situation that resulted in at least one fatality between the members of the dyad takes a value of 1.

As reviewed earlier, there are a number of ways to define and conceptualize IGOs; we investigate two different conceptualizations of IGOs. We first use a measure of total shared dyadic IGO memberships in each dyad for each year. We use the count variable in the Dorussen and Ward (2008) study, which captures the total number of direct IGO network ties in the dyad. Our second key independent variable measures the number of total shared dyadic

[8]All of the time-varying effects models were estimated with a SAS macro developed by the methodology center at Penn State University. The SAS macro allows for the estimating and graphing of time-varying effects of covariates in longitudinal models. https://methodology.psu.edu/downloads/tvem

[9]Dorussen and Ward (2008) use a lead for this measure, keeping all other independent variables measured at time *t*. They also employ a version of the MID data constructed by Zeev Maoz, which retains only dyadic MIDs where the two countries' troops faced each other on the battle field.

memberships in security-mandated IGOs (Boehmer et al. 2004:38). Security-mandated IGOs are any "organizations with overt security or conflict-resolution statements in their official missions that allow them to inject themselves into interstate conflicts through established structures and mechanisms of mediation, arbitration, and adjudication." While the Dorussen and Ward IGO comembership data allow us to run our models over a 50-year time frame (1950–2000), Boehmer et al.'s (2004) security IGO data limit us to a smaller temporal sample (1950–1990).[10] The Correlates of War project is also releasing an updated yearly version of the IGO data set that extends back to 1920; thus we report the results using this longer data set as well.

Our models include standard controls for the other two legs of the Kantian tripod for peace (Russett and Oneal 2001): democracy and economic interdependence. The democracy score is taken from Polity IV and measures the democracy minus autocracy scores of the lesser democratic state in the dyad. As per Russett and Oneal (2001:99), the state with the lower democracy score should be less constrained to start a conflict. Our economic interdependence control measures the bilateral dyadic trade-to-GDP ratio. The dyad member with the lower dependence score is expected to be more likely to begin a MID (Russett and Oneal 2001:142). We also include a dummy variable for noncontiguity given that distance is a significant predictor for militarized conflict (Bremer 1992). While we focus on models that estimate time-varying effects for the IGO variables, we also report the results of models where we allow IGOs and democracies to both have time-varying effects given that previous work on the democratic peace suggests dynamic processes for the regime variable.

Empirical analyses

We begin by estimating a static time series cross-sectional model, similar to the one estimated by Dorussen and Ward (2008) but with fewer covariates.[11] In this model, the effect of shared IGO memberships is assumed to be time invariant, producing only a single estimated coefficient for the effect of IGOs on MIDs across the 1950–2000 time frame. We can see in Table 1 that a static approach for this particular data set would side with previous findings in the literature, showing a conflict-inducing effect of shared IGO memberships on militarized conflict. We should note, however, that the IGO variable is correlated at a level of 0.50 with the peace years and cubic spline variables; a model without these variables reverses the IGO parameter to a negative and

[10]We drop the years 1948–1949 and 2001–2002 from our analyses because the error bands are extremely large around the estimates near the end points of the sample.

[11]Dorussen and Ward adopt the approach of Beck, Katz, and Tucker (1998) to control for temporal dependence in the data by including a variable for dyadic peace years as well as three cubic splines. For a critique of this approach, see Carter and Signorino (2010).

Table 1. Static Logit Model of MID Occurrence, 1950–2000.

Shared IGOs	0.0322**
	(0.0026)
Trade Dependence	–30.568**
	(8.762)
Democracy	–0.085**
	(0.006)
Noncontiguity	–3.263**
	(0.067)
Peace Years	–0.657**
	(0.020)
Constant	–1.579***
	(0.094)
N	469,517
Pseudo R^2	0.40
Wald χ^2	8527.05**

Note. *$p < .05$, **$p <. 01$.

statistically significant relationship. The effects for the other variables are consistent with the Kantian peace literature, showing that militarized conflict is less likely in dyads that are more democratic, economically interdependent, and have a longer history of peace.

The results of our time-varying effect models (TVEM) are presented in a series of figures where each graph plots the time-varying parameter for the effect of IGOs on the likelihood of dyadic militarized conflict. In general, we find that there exists a complex, time-varying relationship between the number of shared IGOs and the probability of two states experiencing a militarized dispute. While the general dynamics of the relationship appear stable across our two dependent variables (MID and fatal MID), the strength of the relationship varies across IGO measures, as anticipated by our theory. The general effect of IGOs on MIDs appears to weaken throughout the 1950s, strengthen throughout the 1960s, weaken throughout the 1980s and 1990s, turning into a conflict-inducing effect in the latest years of our sample.

Figure 1 shows the time-varying relationship of IGOs and MIDs over time, using all IGOs for analysis. The graph indicates that the relationship is negative until about 1976, when the coefficient becomes nonsignificant. In other words, until 1976, an increase in the number of shared IGO memberships would result in a decreased chance of having a MID within the dyad. This pattern is consistent with the coercion perspective that views shared IGO memberships as peace-promoting in periods where hegemonic influence over the organizations was strong. However, from around 1989 until 1997, the effect of IGOs on MIDs becomes positive and statistically significant. A higher number of IGO comemberships results in an increased likelihood of having a militarized dispute later in the post-Cold War period.[12]

[12]The pattern of our coefficients is similar to Ward, Siverson, and Cao (2007)'s analysis of dyad-year data from 1950–2000 using a Bayesian, Hierarchical, Bilinear, Mixed Effects model, although they find mostly null results for the effect of IGOs on MIDs in the 1950–1980 period.

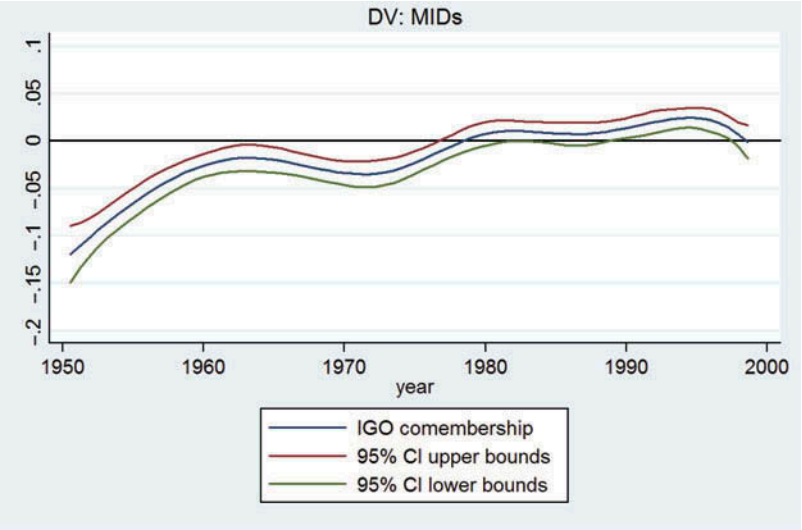

Figure 1. Time-varying effect of shared IGO memberships on MIDs.

This is surprising for Kantian theory that views IGOs as promoting rules of peace preservation through legitimacy, especially given the dynamic patterns observed in the democratic peace literature showing evolutionary relationships toward stronger substantive effects for democracy on peace in more recent years. However, the declining effects of shared IGOs on MIDs is consistent with the coercion perspective that these institutions' effects on conflict are weakening as they become more independent and democratic in their procedures. Given that this captures all international organizations, it could also fail to distinguish between IGOs based on their design and purpose, as the self-interest theoretical perspective articulates.

These results show the limitations of using static parameter models for time-varying relationships. The positive coefficient in the static model (Table 1), while consistent with the findings for the later years in the sample, fails to capture the periods in which IGO memberships had pacifying effects. Beyond providing basic support for the coercion theoretical perspective, there are other patterns that could help explain these trends. First, the dynamic pattern we observe in the IGO parameter could reflect in part the trend after 1989 toward less IGO formation and higher IGO termination. Thus, there may be a somewhat smaller number of IGOs relative to states in the post-Cold War sample. The increasing multilateral size of IGOs in the 1980s and 1990s may also have diminished the pacifying effects of membership on any given state members if we consider potential collective action problems that arise in larger organizations (Pevehouse et al. 2004). Some IGOs may stay out of partners' conflicts if they perceive that there are a large number of potential IGO members that could

intervene. More recent IGO creation has also been initiated more frequently by other IGOs, a pattern that could diminish the security-enhancing effects of newer IGOs (Shanks, Jacobson, and Kaplan 1996). States may have more at stake in IGOs that they actively create and design; future analyses could separate out the IGOs created by other IGOs to see if there are differential effects in these IGO groups on militarized conflict between member states compared with IGOs that were created by major powers in the creation of post-war orders.

In Figure 2, we present the time-varying relationship between security-based IGOs and militarized disputes to see if these organizations, more actively focused on conflict management, are better suited at preventing conflict and escalation of diplomatic disputes among their member states. The overall effect is more in line with the self-interest and legitimacy expectations of IGOs having a negative effect on MID occurrence. Although the relationship varies over time, the graph clearly shows that the effect of security-oriented IGOs remains firmly negative throughout the entire sample. Unfortunately, data limitations do not allow us to see if the relationship becomes positive in the 1990s. For comparison, we estimated models using Paul Hensel's Multilateral Treaties of Pacific Settlement data (MTOPS). The MTOPS data identify any international organization that calls for the peaceful resolution of disputes in its charter, making it similar to Boehmer et al.'s (2004) definition of an interventionist IGO. Analysis of models with the MTOPS data set can give us an estimate of what the time-varying relationship between security IGOs and MIDs looked like during the 1990s due to the longer temporal coverage of the MTOPS data. Figures 3 and 4 show the overall dynamics of TVEM models using the MTOPS variable. They show a pattern similar to what we observed

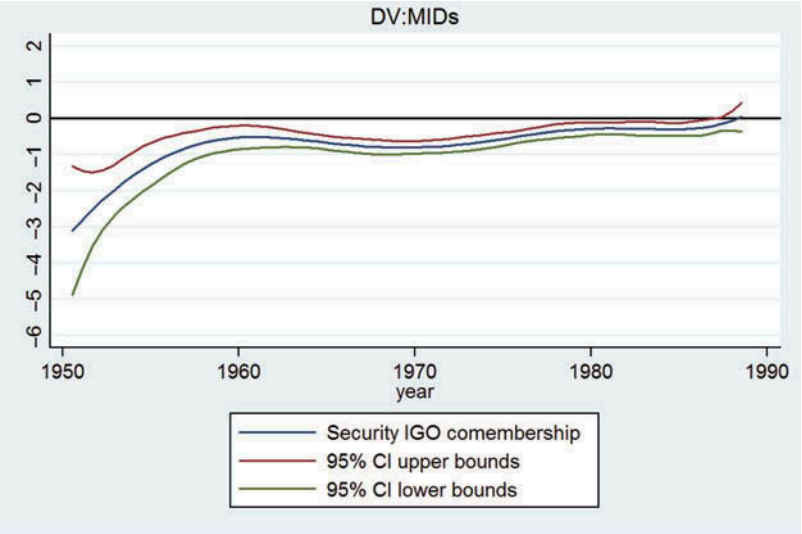

Figure 2. Time-varying effect of shared security IGO memberships on MIDs.

previously for the all IGOs variable, with a negative and significant effect early in the time sample, moving to an upward trend in the late 1980s, and a statistically significant and positive relationship throughout the mid-1990s. Interestingly, the time-varying dynamics for the MTOPS measure better resemble the dynamics in Figures 1 and 5, which show the relationship between shared IGO memberships and MIDs, rather than the relationship with security IGOs from Figure 2. It is difficult to know if the security IGO measure would produce a similar pattern if we had data post-1990 given that the dynamics for this measure look different from the MTOPS variable.

We should point out, however, that the substantive effects of security IGOs are much stronger than the effect of all shared IGO memberships on dyadic conflict. Throughout the entire period, the effect of each additional security IGO decreased the chance of a MID by a much larger amount than simply adding another (general) IGO comembership. This makes intuitive sense when we consider that, on average, states belong to a fewer number of security IGOs than to other types of IGOs; the average number of shared security IGO memberships per dyad over time is just above one, while the average for all IGO memberships is around 19. It also accords with our theoretical expectation (based on the self-interest mechanism) that security-based IGOs should have a stronger influence on reducing the chances for militarized conflict between IGO member states than other types of organizations.

Figures 5 and 6 present the results of our TVEM models using the second dependent variable, fatal MIDs. Figure 5, showing the relationship between total IGO shared memberships and fatal MIDs, depicts very similar

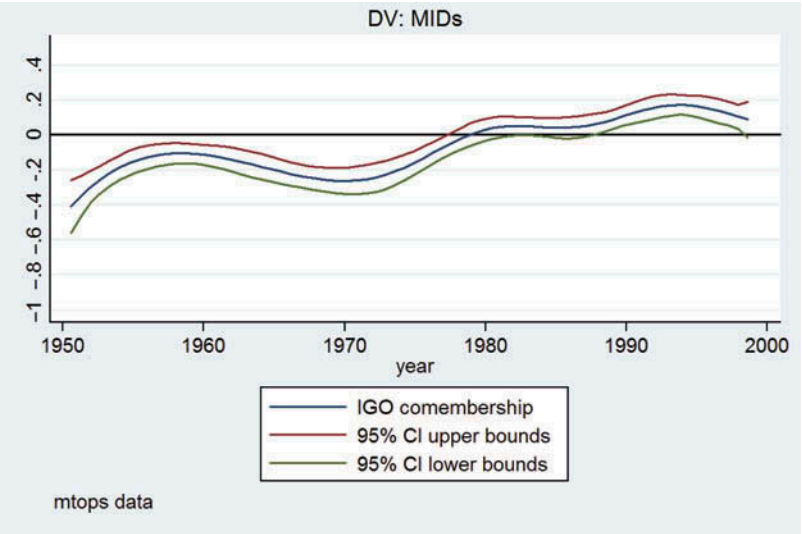

Figure 3. Time-varying effect of shared security IGO memberships on MIDs (MTOPS).

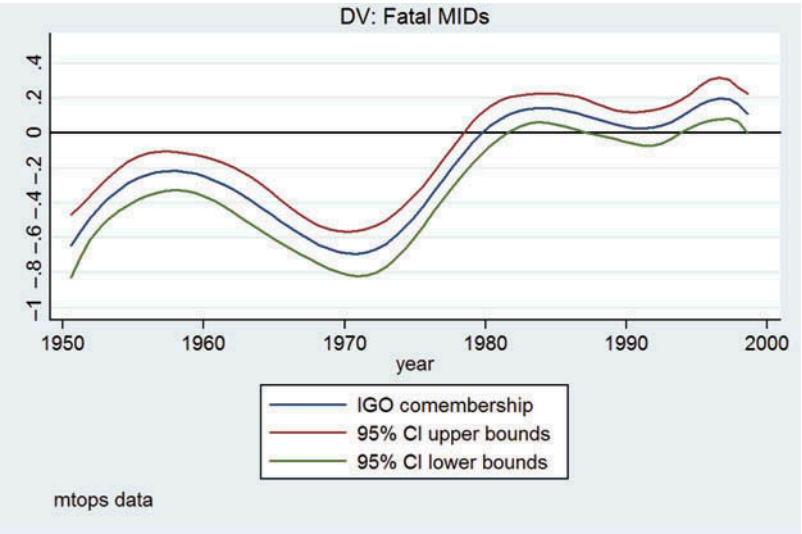

Figure 4. Time-varying effect of shared security IGO memberships on fatal MIDs (MTOPS).

parameter dynamics to Figure 1. The most immediate difference is that the relationship becomes positive and significant in the early 1980s and lasts until the mid-1990s. In other words, it appears that for much of the two-decade period prior to the end of the Cold War, higher numbers of shared IGO memberships in a dyad increased the probability of militarized disputes with fatalities. This result is surprising given that other studies have found high levels of low-intensity conflict among IGO members but not higher degrees of severe conflict (Fausett and Volgy 2010).

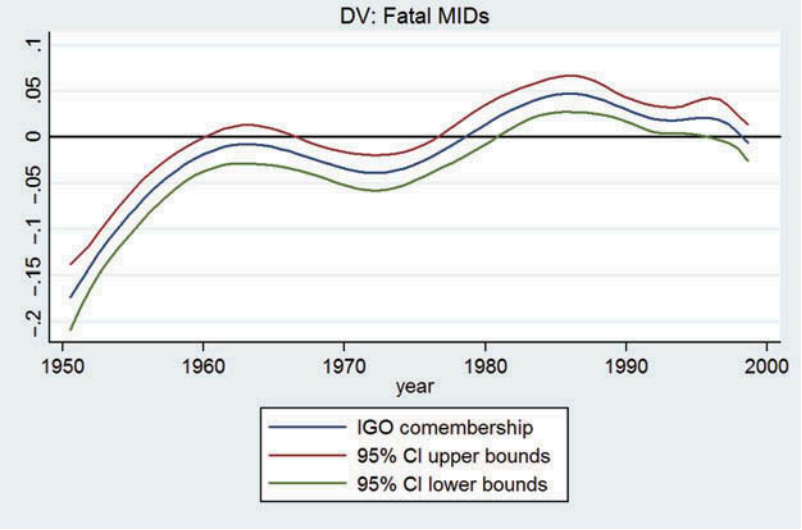

Figure 5. Time-varying effect of shared IGO memberships on fatal MIDs.

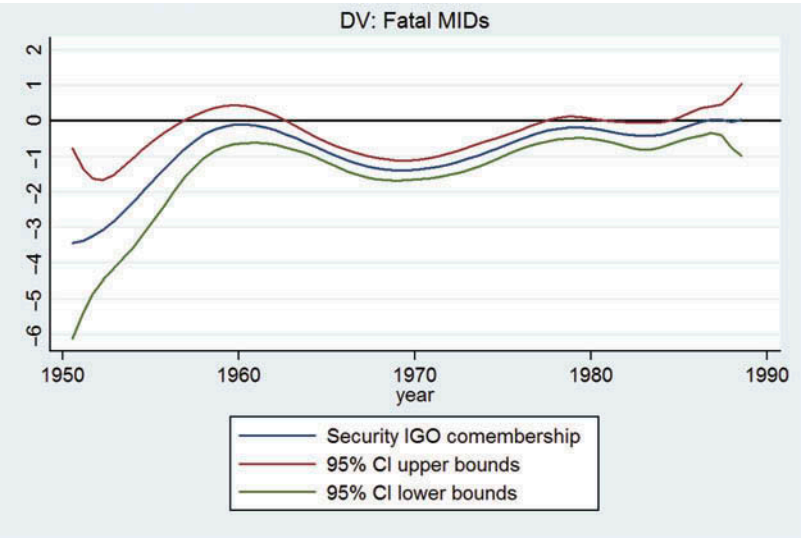

Figure 6. Time-varying effect of shared security IGO memberships on fatal MIDs.

Figure 6 presents the time-varying parameters for the relationship between security IGOs and fatal MIDs. In contrast to Figure 2, in which the relationship remained negative over nearly the entire time period, the 95% error bands clearly cross into insignificance in two distinct periods. Only the periods 1963–1977 and then, briefly, 1981–1984 show a negative relationship. This finding seems to confirm earlier work indicating how sensitive the IGO-MID relationship is to variable operationalization (Boehmer et al. 2004). In general, the patterns for security IGOs are mostly negative, as we would expect based on previous literature, but the weakening of effects in more recent years is surprising given that IGOs should become more credible conflict managers over time in the legitimacy theory; the positive relationship with fatal MIDs in some periods is even more puzzling. One possibility is that as more nondemocratic countries have bought into the democratic IGO order, the growing density of autocratic states in the IGO increases the number of mixed and autocratic dyads, pairs of states with higher baseline levels of militarized disputes. Thus, while democratic regimes have an accumulating Kantian effect at the dyadic and systemic level, the peace promoting nature of IGOs is more mixed. It seems to be tied closely to the strength of states that created the institutions and the proximity to large shifts in post-war orders that generated new systems of IGOs.

We check the robustness of our results with several strategies. First, we estimated models using a more recently released version of the COW IGO data set that captures annual membership data from 1920–2014. What we observe in those analyses is a very similar pattern to what we present for the 1948–2000 period. Shared IGOs have negative effects on MIDs and fatal

MIDs earlier in the century, especially after World War II, and then the parameters move into the positive and significant range in the 1960s, 1980s, and 1990s. Additionally, we know from the democratic peace literature that the effect of joint democracy on MID onset changes over time; thus, we also estimate models allowing for the parameters of the IGO and democracy variables to vary. We confirm the earlier results of Cederman and Rao (2001) with an accumulating and increasingly negative effect of lowest polity score on the chance for MID onset in a dyad. The dynamic patterns for the IGO-conflict relationships are not altered by varying two Kantian factors simultaneously. Future analyses may compare IGOs with more democratic members to those with more autocratic members, to see if the former screen out conflict-prone states more readily and thus preserve the Kantian peace through virtuous democracy-IGO networks.

Conclusion

Global and regional international organizations have become important features of the modern international landscape. Over the past century, the number of intergovernmental organizations and nongovernmental organizations increased from around 200 to over 68,000 institutions.[13] (http://www.uia.org/uiastats/ytb199.htm). Scholars disagree about how much influence these international organizations wield over countries' behavior and interstate interactions, with arguments relating IGOs to conflict ranging from negative to positive to nonexistent.

The research presented in this study has two primary conclusions. The first, as the popular adage goes, time matters! All of our models clearly indicate that the strength of the relationship between shared IGO memberships and two dependent variables, MIDs and fatal MIDs, varies considerably over time. The early decades of the Cold War appear to be the pinnacle of IGOs' pacifying effects on militarized disputes, while the relationship has reversed in the 1990s, indicating that IGO comembership is positively related to MID occurrence in the most recent years of our analyses. We also need to explore in more detail why the pacifying effects of IGOs are seen more clearly in the Cold War than in the post-Cold War era. While democracy has been shown to have evolutionary effects toward stronger, more pacifying influences on systemic and dyadic militarized conflict, our analyses suggest that the IGO branch of the Kantian tripod may be witnessing a weakening effect as time moves forward. However, our measures are simply counts of IGO memberships and do not capture the possibility that fewer organizations have stronger influences today than they may have in the past. For example, many of the IGOs in Europe have strong mechanisms for conflict resolution,

[13]For more information, see the Union of International Associations website: http://www.uia.org.

with courts like the European Court of Justice and European Court of Human Rights having mandatory jurisdiction. Thus, a lower density of IGOs could theoretically be more effective in promoting peace if they were designed with more institutional "teeth." There are, for example, more IGOs with a higher density of democratic members in recent times, which also points to increased success for a lower overall number of IGOs in the international system.

The second conclusion highlights the importance of how we conceptualize and operationalize IGOs. These data analyses show that security-based IGOs are better equipped to prevent militarized conflict between member states than all types of IGOs, showing that the neoliberal institutionalist literature's emphasis on IGO design is warranted. Yet, we also find time-varying effects for security IGOs, weakening somewhat in the post-Cold War era. This is a dynamic that rationalist models are hard-pressed to explain. The coercion dynamic, whereby powerful states create IGOs as part of a larger systemic order, appears to matter as well. With declining hegemonic power and increasing democratic procedures and independence for modern IGOs, they may be losing some of the influence they wielded in earlier eras to keep peace between member states. While the democracy piece of the Kantian tripod for peace finds support in empirical models that adequately capture dynamic relationships, the IGO leg of the tripod for peace may be weakening, even as its defenders succeeded in growing the number of organizations and in making them more democratic and inclusive for more member states.

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