It’s the Relationships

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This paper has been prepared for presentation at the Annual Meeting of the International Studies Association, Chicago, IL February 28, 2007. The authors would like to acknowledge the research assistance of Hasan Yonten, April Collins, Charlotte Freeman, Markus Lang, Lauren Twist, and Stephen Walls. This research was supported by the Center for International Studies and Undergraduate Research Program at the University of Delaware.
Introduction

The nature of international structure is a matter of perennial debate along a number of dimensions. Is it primarily material, ideational or discursive? (Waltz 1979; Wendt 1999; Ashley 1986) Is it primarily economic or political? (Wallerstein 1974; Keohane 1984; Thompson 1983; Bull 1977; Smith and White 1992). The debates on the nature of international structure are foundational for examinations of the influence or importance of international structure on behaviors in world politics—how it constrains or constitutes actors and political activity. However, with the exception of a few important world-systems studies (Wallerstein 1974; Snyder and Kick 1979; Smith and White 1992), the structure of the international or global system is almost exclusively conceived in distributional terms. We have come to understand system structure in terms of the distribution of material resources (Waltz 1979; Gilpin 1981; Keohane 1984) or ideational commitments (Wendt 1999; Adler and Barnett 2002), essentially understanding global structure by studying the attributes of the components (mainly states) of the global system. This is not the only way to approach social structure and it may not be the best way to apprehend it.

We offer a different perspective on global system structure, one that is relational rather than distributional. In other words, rather than focusing on the attributes of components of the global system to ascertain structure, we propose examining how structure emerges from the way that the components of the system are related to one another—how “structures are built from relations” (Scott 1991: 4). Calls for a relational approach to the study of global politics and social inquiry writ large have grown in both the political science and sociology literature (Jackson and Nexon 1999; Emirbayer and Goodwin 1994; Emirbayer 1997; Wellman 1983; Smith and White 1992), though operationalization of this perspective in international relations has been rare. Our attempt begins with the conjecture that a key organizing principle of the global system is multilateralism (Ruggie 1993a; 1993b; Keohane 1999; Denemark and Hoffmann 2006), which is fundamentally a way to organize relations amongst states.¹ Multilateral relations embedded in multilateral treaty signings must build a particular kind of global structure. Using the tools of social network analysis—an established method for analyzing social ties in sociology (Wellman 1983), but one that has only recently and rarely been employed in international relations (Hafner-Burton and Montgomery 2006; Faber 1987; Smith and White 1992; Knoke 1990; Snyder and Kick 1979)—we address two questions. First, what are the nature and dynamics of a global structure built through multilateral treaty relations. Second, what can such analysis tell us about the place of multilateralism as an organizing principle in the global system?

Our paper proceeds in three steps. First, we briefly outline the philosophy and methods of a network approach to social science. We then justify our focus on multilateral treaty

¹ As a baseline assumption for this analysis we take states as unproblematically given entities—a move critiqued by relational scholars (Jackson and Nexon 1999; Emirbayer 1997). However, this move is made to facilitate analysis of global structure, which we argue is at least in part emergent from the relations of states. In addition, we do explore the possibility that treaty relations constitute states as states in important ways, thus relaxing the substantialist assumption that states exist prior to relations.
relations as an important observable marker of global structure and provide details on our specific operationalization of a multilateral treaty network. Finally we present the results of a social network analysis of multilateral treaty signings from 1945 – 1995. In brief we find that the multilateral treaty-making networks that emerged in the latter half of the 20th century mirror such phenomena as the emergence of East and West blocs in the early Cold War; the emergence of regional systems in the aftermath of decolonization; the deepening of integration in Western Europe; the enduring links between post-colonial states and their former colonizers; and the demise of Eastern and Western blocs as the Cold War waned. That we can observe such phenomena emerge in the networks of treaty-making—whether or not the treaty networks are reflecting or constituting these patterns—suggests that multilateralism is indeed a key organizing principle in the global system and further that a relational approach has the potential for deeper insight into the nature and dynamics of global structure than has heretofore been available in distributional approaches. We conclude with some thoughts on the implications of the network analysis and avenues for continuing research.

**From Who has What? To Who is connected to Whom?**

It is ironic that the discipline of international relations has all too often failed to be relational in its approach to scholarship (Jackson and Nexon 1999), yet most studies of international structure focus squarely on the attributes of actors as the key to describing the nature of structure and its influence on the behaviors of actors embedded in international structure (Gilpin 1981; Waltz 1979; Jackson and Nexon 1999). Such an analytic commitment—to substances rather than processes (Emirbayer 1997)—is, according to relational scholars, fraught with potential pitfalls like reification and an inability to understand change. Jackson and Nexon (1999: 297) warn that “substantialist responses to the observation that entities actually do change their properties over time must choose between ahistorical denial or logical contradiction.”

Rather than equating structure or society with the distribution of attributes possessed by distinct and pre-constituted entities, relational approaches give analytic primacy to the connections between entities. This position entails three main implications. First the structure of any given society emerges from relations. As Scott (1991: 56) argues “social relations are social constructs, produced on the basis of the definitions of the situation made by group members.” Structure is continually recreated and changed through relations. This is a well-defined argument in social theory as well. Emirbayer (1997: 286-289) finds support for this argument across Marx, Simmel, and Durkheim. Second, relations constitute actors. Emirbayer (1997: 287) states it most clearly when he claims “units involved in a transaction derive their meaning, significance, and identity from the (changing) functional roles they play in that transaction.” Finally, structure is dynamic because the relations that compose structure are dynamic (Jackson and Nexon 1999; Emirbayer 1994; 1997).

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2 These implications are ideal typical (see Emirbayer 1997 on this point). Whether relations constitute or reflect other social forces or attributes remains an open question.
One way to pursue a relational perspective on global politics is to turn to social network analysis and explicitly focus on connections and relations between actors as determinative of social structure as well as actors’ identities, roles, and behavior.\(^3\) Social network analysis has a relatively long lineage in the sociology literature (e.g. Wellman 1983; Boissevain and Mitchell 1973; Coleman 1958; Scott 1991; Wasserman and Faust 1997). While the method draws upon graph theory and practitioners have developed a number of sophisticated quantitative analytics, the base concept of social network analysis is relatively simple. A network is made up of nodes and edges. The nodes are actors in the social system of interests (corporations, people, families, states, organizations). The edges are relations between the nodes (friendship, enmity, common corporate board membership, membership in intergovernmental organizations, trade, war, familial, and more). Organizing information about social systems in this manner is done to pursue knowledge on “regular network patterns beneath the often complex surface of social systems” (Wellman 1983: 157). Network analysts thus “try to describe these patterns and use their descriptions to learn how network structures constrain social behavior and social change” (Ibid: 157).

There are thus two main classes or categories of studies that we can undertake with social network analysis. First, we can undertake descriptive work. Essentially this entails conceiving and observing the structure of the global system in very different ways than is conventionally understood. Whereas most conceptions of structure look at the distribution of attributes (either material or ideational—who has what things or believes what ideas or identifies in what ways), a network approach allows us to conceive of the structure of the global system in reference to how actors relate to one another—who trades with whom? Who signs multilateral treaties with whom? Who cooperates with whom? Structure, in this sense, emerges from the relations of the components of the system. Barry Wellman (1983: 157) considers that applying this approach to World-systems analysis moves away from sorting countries into traditional or modern categories on the basis of their internal characteristics (such as level of industrialization) and leads to the categorization of units on the basis of their structural relationships with each other.

We employ this kind of descriptive analysis to address our main research questions. We would like to ascertain the nature and dynamics of the global structure that emerges from multilateral treaty relations.

Going beyond description, the move to social network analysis is potentially useful because social structure as conceived of as the relations between units conditions much of social life. The second category of studies undertaken with network analysis utilizes the quantitative tools of social network analysis to examine how network structure influences identities, roles, and behaviors. The goal is to examine how “the pattern of ties in a network provides significant opportunities and constraints” (Wellman 1983: 157). Sociologists (Wellman 1983; Scott 1991, Wasserman and Faust 1997) have

\(^3\) This is not a major departure from constructivist claims about the malleable nature of anarchy and the way that relations of states contribute to the structural implications of a lack of central authority. See Wendt 1992.
developed a number of measures for such examinations at both the agent level and network level that may be of use for addressing concerns in international relations.

In particular, different measures of the centrality of particular nodes provide information on how closely tied a node is to the rest of the nodes in the system or the ability of a node “to play the part of ‘broker’ or ‘gatekeeper’ with a potential for control over others” (Scott 1991: 89-90). Also at the level of individual nodes, there are measures of structural equivalence that can detect when different nodes have essentially the same position in a network (in different places) and therefore may play similar roles. At the network level, centralization measures provide information on “how tightly the graph is organized around its most central points” (Scott 1991: 92)—an obviously important measure for studying polarity and bloc politics. Further, network-level measures/procedures like clusters, cliques, and blockmodeling provide a way to discover and examine how certain groups of nodes emerge as distinct groups, without a priori categorization—it is possible to see how categories and groupings emerge from relations. For this paper, we do not provide a quantitative analysis of the multilateral treaty networks. Instead, it is important to first establish whether this method has any face validity for students of international relations. Fortunately, network analysis offers us an exceptional ability to do that, as one of its outputs is a network presentation of the data we input. That is, we can see a ‘picture’ of the system, and if that picture looks familiar to us, then it makes absolute sense to proceed with applications and the utilization of some higher-order analytics. Below we provide these initial pictures of the system based on multilateral treaties. If the pictures make sense, we can and should proceed with further quantitative analysis.

Examining Multilateralism through Multilateral Treaty Networks

We are interested in the place of multilateralism as an organizing principle in the global system and we are thus interested in understanding what kind of structure multilateral relations—operationalized as multilateral treaty signings—constitute. Obviously this is not the only choice available for a network analysis of international relations, but importantly, assumptions about key organizing principles of the system determine what kind of networks will be examined.

For instance, Hafner-Brown and Montgomery (2006) are interested in social power as a determinative aspect of global structure and they examine IGO networks as a way to examine this principle. Their analysis is not so much designed to discern what global structure looks like as much as it is to ascertain how states’ positions in these networks influence propensities for conflict. They argue (8) that States…form networks of relational ties in this system through common affiliations. These networks…influence the behaviors of the members by endowing some with greater social power and by shaping common beliefs about behavior. These, in turn, make certain strategies of action more rational than others.
They thus take quantitative measures of states’ centrality and structural positions in the network and use them as variables in an econometric conflict model.\(^4\)

With a different understanding of organizing principles shaped by World-systems theory, Smith and White (1992) analyze a trade network. For them, “network analysis of exchange patterns provides a rigorous way to determine the empirical status of world-systems models and arbitrate some of the theoretical disputes” (859). In that one of their goals is to observe what kind of structure emerges from trade relations—they use a block modeling approach to apprehend core and periphery—we find important analogues to our goal of ascertaining the kind of structure that emerges from treaty relations. Our understanding of the organizing principles of the global system includes multilateralism, so we turn to treaty networks. Before moving to the data, however, it is necessary to briefly justify the choice of treaty networks for studying multilateralism.

We treat multilateral treaties as observable markers of multilateralism. Ruggie argues that the generic multilateral form entails more than arrangements of three or more states and includes the generalized principles of indivisibility (participants see themselves as a unit), and diffuse reciprocity (participants expect roughly equivalent benefits over time) (Ruggie 1993b: 7). Multilateralism is thus more than a quantitative description; it is also the quality of an institutional arrangement (Ruggie 1993b: 7-12). We recognize multilateral treaties mainly in the quantitative sense (formal agreements among three or more actors) and accordingly it is legitimate to ask whether this is an appropriate proxy for multilateralism—whether looking at multilateral treaty networks can tell us anything about multilateralism as an organizing principle. Individual treaties can be signed for a number of reasons. It would be incorrect to suggest that all treaties are consistent with the principles of indivisibility and diffuse reciprocity. Some treaties (especially alliances) are discriminatory and others do little to promote reciprocity. Yet, while there may not be an exact match between multilateral treaties and multilateralism, multilateral treaty-signing dynamics have much to offer us in terms of the relevant dynamics.

While negotiating an agreement may be a competitive act, signing an agreement is essentially cooperative. Even if an agreement does not entail the altering of intended actions, the time and effort necessary to open issues for negotiation, the inherent signal to others that negotiations and treaties are the appropriate way to address global problems, and the broadcasting of ones’ intended future behavior as communicated by entering into an agreement, are elements of indivisibility.

Multilateral treaties are also consistently employed to serve the purpose that Ruggie (1993b: 8) defines for multilateralism, namely to “define and stabilize international property rights of states, to manage coordination problems, and to resolve collaboration problems.” Such treaties are therefore important markers of multilateralism. If norms and principles of multilateralism take hold, and the subject of these norms and principles (international interaction) grows, the practices associated with those norms and principles should grow as well. The simple fact that a multilateral agreement is signed does not

\(^4\) This is really a hybrid relational and substantialist approach in that they study both relations and attributes.
mean that multilateralism is thriving. But if multilateral agreements (in their various forms) are few in number or in decline, it is likely that multilateralism is failing as a norm or principle in the global system. We cannot assess the status of (Ruggie’s more sensitive understanding of) multilateralism without reference to the vibrancy and patterns of one of the important institutional forms in which it manifests itself.

While multilateral treaties are not the only component of multilateralism, they are a particularly important one—Figure 1 presents the number of multilateral treaties signed each year from 1595-1995. Multilateral treaties emerge in antiquity and enjoy a prominent place in the history of global cooperation. The international conferences of the 18th and especially the 19th century played important roles, but large conferences numbered only a few hundred in total and their outcomes were often codified in treaty form. Another option, international arbitration, did not catch on as a significant multilateral form. International organizations play a vital role in the global system, and one that is often both underappreciated and difficult to capture. Such organizations are often the result of important treaties, and the provision of a forum for airing global problems has subsequently led to the facilitating of even more formal agreements. Finally, international organizations themselves have become frequent signators of treaties. We conclude that while multilateral treaty-making is not necessarily equivalent to multilateralism, an examination of multilateral treaty networks takes us a long way toward capturing this broader global dynamic.

Figure 1: Multilateral Treaties Signed Per Year 1596-1995

Data and Method
The data for our network analysis is drawn from a new database of multilateral treaty making developed at the University of Delaware—the Multilateral Agreements and Treaties Record Set (MATRS)—which reports on 6974 multilateral treaties signed between 1595 and 1995. The MATRS dataset was constructed by consolidating information from compendia of multilateral agreements, and contains data on the title, date of signature, and two substantive categorizations (one broader and one more specific). For about 6,000 treaties we also have information on signators and place of
signing. We choose a broad metric for counting multilateral treaties and included all agreements signed by three or more actors found mainly in three compendia (Bowman and Harris 1984; Mostecky 1965; Wiktor 1998), and supplemented by additional national histories and specialty sources.

Our treatment of the multilateral treaties in the MATRS dataset differs from other orientations. Most analyses of multilateral treaties have been concerned with the specific content or architecture of agreements (Goldstein et al 2000; Leeds 2003; Koremenos, Lipson, and Snidal 2001). Such research has produced a rich array of insights across a variety of important issues, but is not organized to identify or analyze any underlying multilateral order. Rather, these studies are looking for the factors that influence the probability of reaching a specific agreement and the likelihood of compliance or effectiveness in a specific context. While these avenues of research are important for questions of current status and institutional design, they contribute to a bias in the international relations literature toward viewing multilateral interaction as the epiphenomenal result of specific, ahistorical factors rather than as a feature of a larger pattern of behavior that might constitute a central organizing principle of the global system.

In contrast, the MATRS dataset is designed to facilitate research into exactly those questions of multilateral order. Treaties are considered here as discrete and observable instances of cooperative multilateral relations, as opposed to indications of specific agreements in specific issue areas. This focus allows us to consider what the pattern of treaty-making tells us about multilateralism as a constitutive element of the global structure. We treat multilateral treaty signings as key relations that create networks of multilateral interactions.

We recognize, of course, that not all treaties are of equal importance. The founding instruments of the United Nations play a very different role in global politics than the 1934 agreement unifying methods of analyzing cheeses. But we are interested in the constitutive role of multilateral accords in the global system, and it is therefore crucial to consider both system-defining agreements, and the day-to-day business of global affairs that are manifested through multilateral treaties. The global pattern of treaty-making relations, rather than the role of ‘crucial’ treaties, is our focus.

The networks presented and interpreted below resulted from a series of methodological choices that need clarification. First, we defined a treaty network to be one where the network nodes are states in the system and the edges are multilateral treaties signed in common. So, for instance, the US and Great Britain are linked by their common signings of both the UN charter and the NATO instruments. The edges can be presented as value-free (i.e. no difference between a link that represents a single treaty signed in common

5 Our sources are not without their shortcomings. Of the broadest and most impressive collection (Wiktor 1998), the editor notes his focus on treaties published in English or French. An earlier attempt (Mostecky 1965) collects agreements from a broader range of languages but a narrower range of subjects. Beyond the variables already noted, we also record how treaties are linked to one another, and when they come into and go out of force.
and a link representing 50 treaties signed in common) or valued (the links representing one and 50 treaties would be different). In addition, the links can be censored or truncated (i.e. only display links representing four or more treaties).

The network graphs below contain value-free edges truncated at degree 4. The choice of degree 4 is relatively arbitrary (but justifiable for this exploratory analysis) and arose from examination of multiple network graphs from degree 1 through higher orders (up to degree 50 in some cases). Very simply degree 1 graphs are a mass of nodes and edges that reveal very little about the structure of the system except that it is clear that almost all states have signed at least one treaty in common with a significant number of other states. At higher degrees, the network graphs reveal which actors are most connected, but they are too sparse to provide much information about the system as a whole. Thus we present network graphs that we feel provide a significant picture of the overall system without being inundated with information (See Appendix A for a degree 1 graph and a degree 23 graph for the first network graph presented below).

Second, there is simply too much data to report in a single paper for a network analysis of 400 years of treaty signings. For this paper we thus focus on the 1945-1995 period. This 50 year period saw prodigious treaty-making and our database contains 4063 treaties signed in these years. The question then becomes how many networks to examine in these 50 years. We could have just looked at a single network that covered the entire 50 years. This would be a massive network that gave us the whole picture of multilateral treaty relations. However it would not give a sense of potential changes over time. Specifically it would not capture the dynamics of new states treaty relations, as the treaties signed by newly independent states post-decolonization (1960s and 1970s) would be indistinguishable from the treaties that those countries signed in the 1980s and 1990s. It is thus necessary to look at treaty networks in slices of time. At the other extreme, we could have produced a network for each year and examined 50 treaty networks. This would appear almost as a movie. Yet, this would be too much information to process and would contain too much year-to-year noise making discernment of larger patterns difficult.

Our choice was thus to break the 50 years of data into periods (1945-1960, 1961-1975, 1976-1989, 1990-1995) and construct a treaty network for each period. These periods are somewhat arbitrary but accomplish a number of goals. First, they each provide enough treaty signings (1000 or more treaties except for 1990-95) to get a sense of patterns within the period, so the edges connecting the nodes on each graph represent 4 or more treaties signed between the connected states in the given period. Second, they allow us to see change over time or at least in between the different periods. Finally, the periodization allows us to capture at least some known political developments like phases

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6 Obviously the strength of network ties (i.e. how many treaties signed in common a tie represents) can tell us important things about structure, but for this first analysis, we wanted to examine a value-free network. In addition, adding strengths to the network ties will, in almost every case, merely serve to strengthen the conclusions that we’ve drawn below.

7 We do not control for states emerging or dissolving in this analysis. Thus if a state signed at least 4 multilateral treaties in common with at least one other state it shows up in the network. This happens no matter how many years of the given period the state existed.
The Multilateral Treaty Networks 1945-1995

We approached the treaty network analysis without preconceived notions about how the results would appear. We speculated that multilateralism is a crucial organizing principle of the global system. We then posited that examining treaty relations would provide us with an understanding of global structure so organized. However, we did not know what kind of structures would emerge from the treaty relations. It turns out that, on one level, the results are entirely unsurprising. In the descriptions and pictures presented below, we present the second half of the 20th century in very familiar terms. We ‘see’ East and West blocs emerge after World War II. We see the emergence of regional systems of post-colonial states. We see the demise of the Cold War blocs and the impressive increase in the density of relations in Europe. In short we see familiar global political dynamics and trends. Yet, on another level, these very results are surprising. It is not a priori obvious that treaty-relations would mirror these global political dynamics, especially not so clearly. In this section we first present a descriptive analysis of the multilateral treaty network in four periods. We then turn to a discussion of the implications of the descriptive analysis.

Establishment of the Cold War – 1945-1960

One immediately apparent feature of Figure 2 is the emergence of a distinct Soviet bloc in which East European states only have treaty links (beyond 4 treaties) with each other and with the Soviet Union. In fact, other than Poland, none of the East European states signed more than two treaties in common with any states outside of the Eastern bloc. Classic to bloc politics, the Eastern European states are only indirectly connected to the West—through their links to the USSR. All the Eastern Europe states signed multiple treaties in common with the Soviet Union and the Soviet Union did engage in significant treaty making with the West (the Soviet Union does not disappear from the network until edges are set at 38 or more treaties). Notice also, that true to our understanding of the schism in the communist world, Yugoslavia remained independent from the Eastern bloc.

The Western bloc of liberal democracies is unsurprisingly dense and centered on the core Western European states of France and Great Britain (by all measures the most central states in the entire network—see below for more on centrality). Yet the Western and Eastern blocs are not the only patterns evident. In the midst of the Cold War rivalry we also observe a Central American regional network that was actually developed in the 19th century and remained robust in the post World War II period. A nascent Southern cone treaty network emerged amongst the Andean nations and a number of newly independent and developing states join the treaty network in a piecemeal fashion. These nations are

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8 Each figure in this section displays the degree four network for the period. In other words, the edges of each graph represent four or more treaties signed in common.
9 In order to facilitate analysis over time (our database has treaties from 1595 – 1995) we have used the common label Russia for the whole period. In the analysis presented here, Russia is the label for the Soviet Union for the 1945-1991 dates.
often connected to the network through former colonizers (i.e. Indonesia and the Netherlands).

**Figure 2: Degree 4 Treaty Network from 1945-1960**

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**Emergence of Regional Treaty Networks—1961-1975**

As we move forward into the 1960s and early 1970s the treaty network reflects a dominant theme of this era—decolonization. We do observe the continuation of the East-West split. It is not the entirely disciplined split from the first period as some Eastern European states begin to have significant treaty-relations with the West—perhaps reflecting the détente that characterized part of this period. However, the East – West dynamics in Figure 3 are less significant than the emergence of regional treaty systems in the wake of decolonization. Joining the ongoing Central American regional system are a more robust Southern cone treaty network now containing virtually all South American states, a nascent Southeast Asian network, and a relatively (unexpectedly) dense African treaty network, especially amongst francophone, sub-Saharan states.

It is interesting and not altogether expected that decolonization would be accompanied by the development of regional treaty networks. New states and developing states in general turn to multilateral treaties as the way to relate to one another and the wider global system—note that at degree 4 only the Central American regional network is
disconnected from the rest of the graph. This pattern is evident even in Southeast Asia, a region generally dominated by informal relations (Ba 2003; 2006). This would appear to be significant evidence that as states become independent and assertive they join the multilateral system as part of enacting that statehood (See Finnemore 1996a; 1996b), suggesting that multilateralism is a key component of their understanding of statehood.

Figure 3: Degree 4 Treaty Network from 1961-1975

The last decade plus of the Cold War saw some familiar patterns re-emerge in the treaty network and trends appear for the first time. Figure 4 demonstrates that after détente, the east-west dynamics reverted to the immediate post-war period. Again Eastern Europe is cut-off from the West and only makes significant numbers of treaties within the bloc and with the USSR. Regional treaty networks proliferate, yet moderate. There are now five distinct regional treaty networks where at least four treaties have been signed in common by the members: Africa, Southeast Asia, the Middle East, Central America, and South America (the last two being linked for the first time in a greater Latin American treaty network). However, while the Middle East has a newly emergent regional treaty network and the Southeast Asia treaty network is now distinct (and disconnected at this degree), the density of the African network has decreased significantly.
What is the lesson of this period? Cold War politics resume their chilliness and the Eastern bloc becomes more isolated in what we now know to be the last throes of the conflict. Africa, after a flurry of post-independence treaty making retreats either because the institution building in the prior period was sufficient or the states turn to different tasks and modes of interaction (we know from Figure 1, that this period saw a general decline in treaty-making throughout the system). The structure is in flux.

Figure 4: Degree 4 Treaty Network from 1976-1989

End of the Cold War—1990-1995

The data set that produced the treaty network graph in Figure 5 contains fewer treaties than the previous three graphs due to only having five years in the dataset, but nonetheless provides compelling glimpses of the political dynamics of the early post-Cold War world. First, it is striking just how quickly the East/West bloc system collapses in the wake of the end of the Cold War and demise of the USSR. In only five years, the Eastern European states had become incorporated into the core of the European treaty network. Now at this point the Eastern European states are not making a whole lot of treaties (most disappear from the graph by degree 10), but their treaty connections have been significantly reoriented. Russia is now connected, instead, to its former republics, which, following the pattern observed in post-independence Africa, quickly develop their own treaty network after the dissolution of the USSR. Other notable trends come from the regional treaty networks. The African network has almost entirely disappeared in this
period as has the Middle Eastern network, while the Southeast Asian network and Central American networks remain relatively unchanged. In addition, even with only six years of treaty data for the graph, it is also remarkable just how dense the European network has become.

Figure 5: 4 Degree Treaty Network from 1990-1995

Implications
So what are we to make of the multilateral treaty network? What are the nature and dynamics of the structure we see emerging from treaty relations? The above analysis provides snapshots of swaths of history and the swaths picked are important (we would likely see somewhat different trends and patterns if we looked at different periods and this is a subject of ongoing research), yet, there are some identifiable structural patterns over time that are evident and have significant implications.

First, most simply but perhaps most importantly, the pictures look familiar. We see familiar political dynamics by observing treaty relations. For example, consider the Cold War. We clearly see the ebb and flow of the Cold War and its effect on East-West connections in ways that a distributional analysis is hard pressed to match. Treaty
relations certainly mirrored the initial freezing of the East and West blocs and relative disconnection of East Europe, the partial thaw of détente along with the refreeze at its conclusion, and the collapse of the blocs at the end of the Cold War. We know from historical studies that these dynamics were present in the Cold War (Gaddis 1989). What is remarkable is that simply looking at treaty relations—multilateral treaties signed in common—provides evidence of these patterns and more closely matches (temporally) political events than any longitudinal analysis of the distribution of material resources. In addition, the treaty relations seem to react very quickly to political changes both in terms of the response to decolonization and the incorporation of Eastern European states into the European treaty network at the end of the Cold War.

The results of the network analysis make a plausible case for a new way to conceive of international structure that is less dependent on the distribution of attributes and more focused on how elements in the system interact. If the treaty networks did not, in the very least, mirror known political trends, we would be less inclined to take seriously the structure that emerges from treaty relations and less inclined to pursue further network analysis.

The network graphs also revealed a key area for the pursuit of further analysis—regionalization. One of the first things we see in the network graphs is the regional patterning. It is striking how distinct and sometimes disconnected regional treaty systems emerge and change over time. An African network emerged in 1961-1975 and then receded in the 1976-1989 years, disappearing almost altogether after the Cold War. The Southeast Asian treaty network grew more distinct over time. A South American treaty network started small and grew over time. The pre-existing Central American treaty network continued throughout the fifty year period, sometimes connected to a greater Latin American network, sometimes distinct.

The regional patterns raise two sets of important questions. First, they provide an intriguing new way to think about defining regions. Geographic proximity must have played a role in the development of regional blocs—if only because geographical proximity is a proxy for sharing similar transnational issues. Yet, the network graphs remind us that regions like Southeast Asia or Central America or the Middle East are not objective categories (See Ba 2003; 2006 on SE Asia, Rajaee 2005 on the Middle East). Certainly states are making treaties with contiguous neighbors, but why do we see these groupings? The idea of a region may be constructed through the practices that instantiate our understanding of a group of states as a distinct region. The analysis of the treaty networks forces us to consider that multilateral practices are a crucial component of the construction of region. The network analysis raises the question of whether we can recognize both states and regions by their multilateral practices and whether further quantitative network analysis (cluster analysis and blockmodeling) can illuminate regional dynamics in a heretofore unavailable manner.

The second set of questions raised by the regional network patterns concerns the interaction of smaller and larger powers. We often think in geostrategic terms when considering this question—i.e. how smaller powers relate to larger powers—but the
network graphs show us something different. Regions are coalescing through the use of multilateral agreements sometimes apparently indifferent to connections with power centers. While in the Soviet sphere there were clear connections between the superpower and the satellite regions, no easy analog appears in the west. The Latin American networks developed and function with few to no significant treaty ties to the US (only in the 61-75 period are there significant links). The Southeast Asian and Middle Eastern treaty networks are entirely disconnected (at degree 4) from the rest of the global system. While treaty connections (mutual treaty signings) between the US/Western Europe and regional treaty networks may be significant at early stages, it is clear that these regions have developed independent treaty networks. Some, like that found in Southeast Asian are quite robust.

Yet, the apparent independence of regional network from dominant powers also exists in an overall network that displays remarkable continuity over time in regards to core-periphery dynamics—clearly a dynamic of power and domination. The Western European core has significantly denser treaty relations than any other region. The Benelux countries, France, Germany, and Great Britain, along with an accompanying Scandinavian network are clearly the most connected states in the global system. Further network analysis on treaties may help reveal how peripheral states and regions are connected to the core in much the same way that the analysis of trade networks (Smith and White 1992) has been employed to examine core-periphery relations in world-systems analysis.

Finally, the network graphs are a provocative catalyst for discussion and further research on the place of multilateralism as an organizing principle of the global system. We suggest three broad interpretations or lines of debate that are justifiable given the network graphs presented. The first, or null, interpretation is that treaty-making and therefore multilateralism are epiphenomenal to other social forces. Perhaps treaty relations are not simply reducible to the distribution of material resources, but social forces other than a commitment to multilateralism as an organizing principle in the global system may be driving treaty relations. In this sense, treaty networks may be reflecting social forces other than multilateralism. Plausible social forces include ideological commitments, geography, polarity, and capitalism. Clearly, the emergence of East and West blocs in the initial stages of the Cold War had ideological underpinnings and, as mentioned above, geography must have played a role in the emergence of regional treaty systems. However, it is not altogether obvious that treaty networks should reflect other forces—that we should be able to observe these dynamics solely by observing who signs treaties in common with whom if ideology and geography are the main social forces at play. Even though other social forces are clearly influential, it is interesting in itself that such forces would be reflected in treaty relations.

A second interpretation sees treaty-making as a mechanism of operationalizing larger principles of multilateralism and thus constitutive of global system structure. In other words treaty-making defines and creates, in important ways, the patterns and trends

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10 This statement arises from analysis that looked for the subnetworks with the highest degree of connection.
familiar to international relations scholars. Taken to its logical extreme this more radical interpretation would consider that without treaty relations we would not have the familiar patterns to recognize in the first place.

This constitutive perspective on treaty relations may provide insight into why some regional networks emerge and then recede while others emerge and strengthen.\(^{11}\) If multilateralism is an organizing principle and the associated practice of multilateral treaty making is a constitutive force of global structure, then part of how states understand themselves—i.e. what they consider to be the key aspects of statehood—is tied to multilateral interactions. Presumably there are a number of conceivable ways that newly independent or newly assertive states in the South could relate to one another (in geographic proximity) and the wider global system. Yet, they all turned to multilateral treaty-making and they did so very quickly post independence (Africa is the clearest example of this in the latter half of the 20\(^{th}\) century and we also observe similar dynamics in Latin America in the 19\(^{th}\) century, and the former Soviet republics in the post Cold War world). These new and newly assertive (Middle East region in the 1970s) enacted statehood through multilateral treaty signings.\(^{12}\) In some places, this enacting of statehood took the further step of constructing the notion of a coherent region. Notice that areas of the world where we readily conceive of the states in regional terms (Southern cone, Central America, Southeast Asia) the treaty network continues to be robust, while in areas where ‘region’ is much less coherent (like Africa), the treaty network has eroded significantly.

A third interpretation walks a middle line between the first two and posits feedback between multilateralism and other social forces. Treaty-making may not have created ideological blocs or regional treaty-networks, but once they begin to emerge, treaty-making, as a key constitutive element of statehood and multilateralism, comes to shape the familiar historical patterns. Thus a change in treaty-making patterns potentially signals a change in other social forces \textit{and} is indicative of how treaty-making (and multilateralism more generally) is causing changes in observable patterns of organization/international structure. While ideological differences may have caused the initial East/West split, treaty-making reified those differences and contributed to the continual reconstruction of the East-West blocs. After the Cold War, treaty-making relations helped begin the construction of Eastern Europe as a part of a European whole. Similarly, the lack of follow-up to a post-independence enactment of statehood through treaty-making in Africa helped construct Africa as lacking regional coherence.

This perspective is more nuanced than either of the first two and neither ignores multilateralism as an organizing principle nor elevates it to the primary organizing principle of global structure. It forces us to consider that the treaty networks may both reflect and constitute global structure.

\(^{11}\) Of course, evaluating this claim entails comparing it with alternative explanations based on factors like polarity and economic relations.

\(^{12}\) It is also plausible that the post Cold War incorporation of East European states was a matter of these states enacting modern, liberal statehood, signaling their break from the ‘inappropriate’ statehood of the communist bloc.
The network analysis presented in this paper does not allow us to adjudicate between the three interpretations, but it does raise important questions. Can multilateralism and multilateral treaty-making be entirely epiphenomenal to other social forces like material power and ideology when it appears that in the very least other social forces like geography and ideology are reflected through treaty-making? If multilateralism through multilateral treaty-making helps us to define regions and relations, is it plausible that multilateralism as an organizing principle both constitutes and reifies important structural features of the global system like ideological blocs and regions? Further analyses may shed light on these questions. For instance quantitative comparison of multilateral treaty networks and networks derived from other relations (trade, international organization membership) along dimensions of centrality of nodes and emergent blocks/clusters may help us understand the various roles of material power, material exchange and multilateralism in organizing the global system. In addition, further analysis of regions and their connections in terms of density and structural equivalence of the nodes may help us to explain the simultaneous independence of regions from dominant power connections and inclusion in a clear core-periphery dynamic.

Conclusion

The appropriate conclusion for this exploratory analysis is that a social network approach to international relations has enormous potential. Considering that structures emerge from relations and influence political behavior opens up new ways to theorize about world politics and social network analysis provides tools to do empirical work along these lines.

Our network analysis exercises also demonstrate the plausibility of the claim or at least the question that multilateralism is a crucial organizing principle in the global system. It is possible that other networks (trade, participation in IGOs, conflict/cooperation event) would demonstrate similar dynamics, but the fact that the dynamics of multilateral treaty networks mirror the political dynamics of the second half of the 20th century is important. Whether or not treaty-making relations constitute or reflect the dynamics discussed above, multilateralism may structure global politics in important ways.

Having established the face validity of studying multilateralism and multilateral treaty relations through network analysis (and laid out possible steps for adjudicating debates about multilateralism), the next step is to ask questions better suited for classical network analysis—namely how do states’ network positions or the structure of the networks themselves influence political behavior, actors’ interests/identity, the flow of norms and ideas through the system, and political dynamics more generally. Fortunately, social network analysis tools are ideally suited for addressing these questions and provide the potential for a rich research agenda.
References


Appendix A -- Degree Choices

Figure 6: Degree 1 Treaty Network from 1945-1960

Figure 7: Degree 23 Treaty Network from 1945-1960