Why Do States Join Some Universal Treaties but not Others? An Analysis of Treaty Commitment Preferences[*]

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September 22, 2014
Forthcoming, *Journal of Conflict Resolution*

Abstract

Preferences are crucial to the analysis of many key questions regarding international institutions. This paper analyzes the key predictors of states' preferences over international institutions. It does so by using a spatial-modeling approach that conceptualizes a treaty commitment preference space that includes agreements across multiple policy areas. I analyze the treaty commitment preference space in order to better understand the key dimensions of these preferences. I find that economics, and particularly trade, is the clearest and most consistent predictor of treaty commitment preferences, including with respect to many treaties in non-economic policy areas.

Why do states join some international institutions but not others? Which factors explain the similarities and dis-similarities in states' decisions? These decisions may be explained in part by differences in gains from cooperation, treaty design, and the information environment. Yet a significant part of these decisions depends on state preferences, making an understanding of preferences crucial to our understanding of international institutions.

Many key questions regarding international institutions – why states create them, how states design them, and the extent to which they affect state behavior – all depend in

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part on an understanding of state preferences. States create institutions based on their preferences over possible solutions to international problems, so the design and subsequent effects of institutions are closely connected with the preferences of member-states (Downs, Rocke and Barsoom 1996). Uncertainty about other states' preferences often affects design choices and may impede negotiations (Koremenos, Lipson and Snidal 2001). State preferences can also shape the effects of international institutions. States may not comply with institutions with weak enforcement mechanisms unless they have an underlying preference for doing so. Conversely, observed compliance may result from underlying state preferences rather than mechanisms created by the institution itself (Downs, Rocke and Barsoom 1996).

International relations theory suggests that state preferences should vary systematically based on state characteristics and should, in turn, affect which institutions states join. Despite the attention paid to questions about international institutions and the recognition that preferences are crucial in answering those questions, few studies have systematically analyzed states' preferences with respect to international institutions. Several scholars have analyzed the demand for international cooperation, focusing on economic agreements (Milner 1997; Bagwell and Staiger 1997a,b; Downs, Rocke and Barsoom 1998). Others have studied the determinants of membership patterns in individual institutions or sets of institutions within a policy area, including human rights treaties (Vreeland 2008), environmental treaties (von Stein 2008), international courts (Simmons and Danner 2010), alliances (Morrow 1991), and economic agreements (Mansfield and Milner 2012). Yet the substantive areas addressed by multinational treaties are much broader, and states vary significantly in the extent to which they join such treaties.

This paper therefore addresses the following research question: which characteristics of states are the most important predictors of their treaty commitment preferences? To answer this question, I analyze states' decisions to join universal treaties across a broad range of substantive areas. I create new estimates of states' treaty commitment preferences

by using a spatial-modeling approach often used to estimate legislative ideal points. Several competing existing theories suggest that differing state characteristics should be most important in shaping treaty commitment preferences, and I empirically test these against each other. This analysis indicates that economics – specifically, trade – is the key factor underlying states' treaty commitment preferences, a result that is particularly significant because most of the treaties I analyze do not explicitly address economic relations. Which types of universal treaties states join depends in large part on their interest in being integrated into the global economy. This finding is consistent both during and after the Cold War. In addition, dyads that are more highly trade dependent are significantly more likely to have similar treaty commitment preferences, and this finding applies well beyond treaties that regulate commercial activities.

The results of this paper have several important implications. First, if states' preferences with respect to universal treaties are shaped primarily by their economic interests, then it may be the case that these interests also affect the joining of other institutions, including regional organizations, bilateral treaties and informal institutions. Second, to the extent that uncertainty about preferences can be an impediment to international cooperation, the results presented in this paper indicate that this problem may be most severe when states cannot reliably determine each others' economic preferences. Third, and perhaps most importantly, understanding the extent to which economics drives the joining of treaties not explicitly related to economic policy can significantly improve our understanding of the design, ratification and effectiveness of such agreements. Finally, this study builds on a broader literature that attempts the difficult task of estimating state preferences based on revealed choices (Bueno de Mesquita 1975; Altfeld and Bueno de Mesquita 1979; Gartzke 1998; Signorino and Ritter 1999; Voeten 2000) by providing new estimates of revealed state preferences over universal treaties. Much of this literature estimates states' policy preferences based on United Nations General Assembly (UNGA) votes. As discussed in more detail below, the monadic and

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dyadic estimates of treaty commitment preferences can be used in future studies either as complements or substitutes for UNGA-based measures.

1. Treaty Commitment Preferences

Following Frieden (1999, 42), I define a state's preferences as "the way it orders the possible outcomes of an interaction." States' preferences over international cooperation are key determinants of many important outcomes. They affect which treaties states join, how they design those treaties, with which other states they cooperate, and the extent to which they comply with their obligations (Downs, Rocke and Barsoom 1996; Koremenos, Lipson and Snidal 2001; Kydd 2001; Morrow 2001). Preference similarity and dissimilarity have important effects on the choice of cooperation partners and on the extent to which states perceive a need to create institutions with mechanisms that can encourage compliance despite preference dissimilarity. All else equal, states prefer to cooperate with others with similar preferences, so they often design institutions with restricted membership to prevent others from joining (Downs, Rocke and Barsoom 1996; Koremenos, Lipson and Snidal 2001). Likewise, states may attempt to minimize distributional and enforcement problems by working with specific partners whose preferences are compatible. Yet to note that states with compatible preferences tend to work together raises as many questions as it answers. Which types of states tend to have similar preferences? Which characteristics of states are more important in shaping these preferences? Answering these questions can allow us to better explain which states are more likely to cooperate and when they are likely to do so through institutions with certain design elements.

In other circumstances, there may be large potential gains from cooperation from working with states with dissimilar preferences. In such situations, potential cooperative partners may be especially concerned with the possibility of cheating and the possibility that others may prefer not to join the institution. States can use design choices to create institutions that facilitate cooperation among partners with dissimilar preferences. Institutions that feature delegation to dispute resolution bodies, for example, can foster

cooperation when the preferences of their members are diverse (Abbott et al. 2000; Keohane, Moravcsik and Slaughter 2000; Koremenos, Lipson and Snidal 2001). Similarly, states can use issue linkage to bring states into an institution that they may have preferred not to join otherwise. Again, noting that such mechanisms may be more important when members have dissimilar preferences begs the question of when this is likely to occur. Which underlying characteristics of states can explain when they are more likely to have dissimilar preferences over such institutions?

Finally, understanding states' preferences with respect to the treaties that are opened for signature and ratification can also provide insight into treaty negotiation dynamics. Not all treaty negotiations are concluded with a treaty that is open for states to join. Some negotiations fail; negotiations for other potential treaties may never even begin because the relevant parties do not expect them to be fruitful. Thus, the treaties we actually observe constitute a non-random subset of potential treaties. If we can better understand which factors explain states' preferences with respect to the treaties we do observe, it may be possible to make inferences about why we do not observe other treaties (or why the negotiations for such treaties fail). For example, if a particular variable does not appear to significantly explain states' treaty commitment preferences, then it may be the case that the extent to which states differ along this variable is more significant during the treaty selection and negotiation process.

A detailed analysis of states' preferences over international institutions, therefore, is critical to improving our understanding of international cooperation. States are complex actors, and their characteristics vary along many dimensions. Several strands of international relations theory imply that preferences affect strategies for international cooperation, but these literatures offer competing explanations of which state characteristics are most important in determining these preferences. A particular set of states may be quite similar to each other in terms of language and religion, for example, but have significantly different economic interests and regime types. Should we expect such

cultural similarities to be the primary determinant of these states' preferences over international cooperation or do the differences between them matter more? The goal of this paper is to conduct an empirical test of which of these characteristics is most important in shaping state preferences and, in turn, commitments to international institutions.

Economic Factors. The growth of global economic activity over the last several decades has been facilitated and institutionalized in part through the creation of multilateral agreements. Some treaties explicitly address economic policies, such as those related to trade liberalization and investment cooperation, yet many other treaties facilitate economic activity less directly. A large number of agreements, many of them universal, facilitate international exchange indirectly by coordinating activities and expectations with respect to issues such as container shipping, the transport of hazardous materials, and road signage. International relations scholarship provides several reasons to suspect that economic interests underlie states' interests in international cooperation and, as a result, their treaty joining decisions. Krasner (1995), for example, argues that international institutional joining may be based on economic grounds, and specifically that smaller economies may seek to join institutions to protect their interests from larger, more powerful economies. Functionalists often argue that governments cooperate with each other because of increasing material demands from domestic actors (Shanks, Jacobson and Kaplan 1996). Rich states tend to join more intergovernmental organizations (IGOs) (Shanks, Jacobson and Kaplan 1996; Beckfield 2003), and pairs of states that trade heavily with each other are more likely to join the same IGOs (Boehmer and Nordstrom 2008). Analyzing voting behavior in the UNGA, Kim and Russett (1996) find that, after the Cold War, voting preferences were generally defined based on states' level of economic development. The extent to which a state is engaged in international trade is an indicator of broader integration into global cooperation and reflects the extent of its dependence on global rules and regulations. States often use treaties to tie economic and non-economic policies, such as human rights (Hafner-Burton 2005), which further indicates that economic

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interests may affect the joining of non-economic treaties.

Domestic Politics. Many strands of international relations theory suggest that domestic political factors have wide-ranging effects on states' treaty commitment preferences. As Moravcsik (1997, 518) argues, "States ... represent some subset of domestic society, on the basis of whose interests state officials define state preferences and act purposively in world politics." The processes of aggregation of multiple domestic preferences into unified national decisions by governments differ when governments must appeal to voting constituents. Democracies may therefore have different treaty commitment preferences from autocracies. International cooperation is less likely when domestic state authority to ratify treaties is allocated to multiple branches of government, as it is within many democracies (Mansfield and Milner 2012). Democracies may also prefer to join institutions with other democracies, which might be more reliable partners. Democratic dyads are more likely to join the same IGOs (Boehmer and Nordstrom 2008), which further suggests that similarity of regime type affects states' choices of international institutions. Because democracy is a key determinant of treaty compliance (Simmons 2000), the intertwined relationship between treaty joining and compliance suggests democracy may also be a determinant of joining. Regime type is thought to affect a wide range of other international outcomes, including the ability of states to win wars (Reiter and Stam 2002) and the extent to which states make reliable allies (Lipson 2005). Finally, democratic peace theory suggests that regime type affects states' preferences in ways that shape conflictual and cooperative behavior.

Domestic veto players affect which treaties states join and may therefore be important in shaping states' treaty commitment preferences. Veto players are actors and institutions whose consent is needed to alter policy, including legislatures, courts and sub-national governmental units (Tsebelis 1995). Veto players make commitments to international institutions more credible across a range of policy areas (Milner 1997; Milner and Rosendorff 1997; Martin 2000; Mansfield and Milner 2012). In governments with more

veto players, there are fewer changes to tariff rates and non-tariff barriers (O'Reilly 2005), monetary policy is more rigid (Hallerberg 2002), independent central banks have a greater impact on inflation rates (Keefer and Stasavage 2003), and fewer changes are made to capital controls (Kastner and Rector 2003). Similarly, states with more veto players are less likely to conclude preferential trade agreements (PTAs) (Mansfield, Milner and Pevehouse 2007) and ratify European Union environmental directives (Perkins and Neumayer 2007). Finally, states with more veto players are more likely to make reservations when ratifying human rights agreements (Neumayer 2007).

Power and the Cold War. States' treaty commitment preferences may also depend on their relative capabilities in two ways. At the monadic level, powerful states may prefer to sign different treaties from weaker states and may prefer to cooperate with other sets of partners than weaker states. Some powerful states may place an especially large premium on national sovereignty, leading them to refrain from joining treaties. The United States often declines to join treaties on these grounds, notably including the Convention on the Elimination of all Forms of Discrimination against Women. Second, at the dyadic level, the similarity of states' treaty commitment preferences may depend on their power relationships. If states make decisions based on the distribution of capabilities, as theorists of international cooperation often expect, then we would expect them to choose treaties and treaty partners based on this factor. Iida (1988) argues that weak states may band together into blocs to counter more powerful states, and these blocs may extend to treaty commitment choices. Powerful states with broad global reach may have incompatible interests and therefore find it difficult to cooperate with each other. This might lead them to prefer to join different treaties and avoid working with each other when possible. On the other hand, powerful states may have the ability to keep treaties that run contrary to their interest off of the international agenda. Similarly, the treaties we observe may reflect bargains struck by the most powerful states. If so, we might observe powerful states joining similar treaties.

Likewise, Waltz (1993) predicted that European states would balance against the United States in the post-Cold-War period. Should we expect this type of behavior to affect only alliance decisions or to also affect other states' decisions with respect to other international institutions? During the Cold War, power politics had important effects on preferences for international cooperation. Voeten (2000) finds that the Cold War was a key factor in determining UNGA voting preferences. If the underlying factors that shaped these votes were similar to the factors shaping treaty-making, it may be the case that alliance/bloc membership during the Cold War was a key dimension of treaty commitment preferences, with members of the U.S. and Soviet blocs joining starkly different institutions.

Civilization and Region. Another key factor that may affect treaty commitment preferences, espoused most prominently by Huntington (1997), is the state's "civilization." Huntington argues that both international conflict and cooperation are shaped by cultural factors, independently of concerns over power and economics. In his view, the world consists of eight civilizations with varying degrees of similarity and difference from one another. If Huntington is correct, civilization may be a key factor in shaping treaty commitment preferences. Some recent evidence indicates that international institution membership may be affected by such factors. Beckfield (2003) finds that Western states tend to join more IGOs, and Greenhill (2010, Ch. 6) shows that many joint memberships in IGOs can be explained by shared linguistic and colonial ties. Underlying these results is the additional possibility that states in different geographic regions may have distinct treaty commitment preferences. Conflictual behavior varies considerably by region (Bennett and Stam 1999; Lemke 2002), which suggests that cooperative behavior may likewise vary. Accordingly, several studies of UNGA voting have found that geography was among the key determinants of state preferences (Kim and Russett 1996; Voeten 2000).

2. Data and Methodology

2.1 Revealed Preferences

In order to analyze which of these factors affect states' treaty commitment

preferences, we first need a measure of those preferences. Yet measuring state preferences is notoriously difficult. Preferences cannot be directly observed. In much of the international relations literature, preferences are therefore assumed. States are often conceived to be wealth-maximizing or security-maximizing – or as having a preference for maximizing the utility of sub-national actors in control of the state. Others take the approach of inducing state preferences from observed outcomes. The revealed preference approach has important limitations. Preferences affect the choices states make, but these choices are also affected by other aspects of the strategic environment. Nonetheless, because we cannot measure preferences directly, as Frieden (1999, 60) argues, "In many instances, it may be the best research strategy available."

Despite the limitations of revealed preference measures, this approach has made important contributions to the field. In a ground-breaking paper, Altfeld and Bueno de Mesquita (1979) argued that states' alliance portfolios can be used to estimate the revealed similarity of states' foreign policy interests. Although they propose a different measurement technique, Signorino and Ritter (1999) concur with the approach of using these choices to estimate revealed preferences. Others estimate revealed preferences by using states' voting records in the UNGA (Alker and Russett 1965; Kim and Russett 1996; Voeten 2000). Using these data, Gartzke (1998) proposed an alternative measure of dyadic interest similarity, known as the Affinity score, which has been widely used (Broz and Hawes 2006; Bearce and Bondanella 2007; Haftel 2007; Savun and Tirone 2011). As the measures of alliance portfolios and UNGA voting have shown, there is significant value in estimating revealed preferences despite their limitations.

2.2 Existing Measures

A rich literature has focused on measuring and analyzing states' foreign policy preferences by using states' voting decisions in the UNGA. These measures have been used to analyze a broad range of questions relating to issues such as interstate conflict (Gartzke 1998; Sweeney 2003), IMF lending (Dreher and Jensen 2007), and diplomatic missions

(Neumayer 2008). Yet, while they are useful, the UNGA measures represent estimates of states' preferences with respect to a certain subset of issues. Some international issues may be over- or under-represented on the UNGA agenda. The Arab-Israeli conflict, for example, represents a disproportionately large share of UNGA voting decisions (Voeten 2000). Preferences over UNGA voting decisions can be interpreted as estimates of revealed preferences only over the issue space addressed at the UNGA. A second important consideration with respect to UNGA preference measures is that UNGA voting decisions do not reflect long-term commitments, but rather are expressions of a state's preference with respect to current items on the international agenda that generally do not commit states to further actions. Depending on the hypothesis being tested, these estimates of states' preferences may be appropriate, but they are likely to be less useful as proxies for preferences for international cooperation. If, as is the case in this paper, the research questions address preferences for international cooperation, then a measure that estimates these preferences based on decisions that commit states to international cooperation is more appropriate. To better understand treaty commitment preferences, a new measure is needed.

2.3 Methods

A simple approach to estimating these preferences may be to count treaty commitments. Problems with such an approach include the fact that it ignores the extent to which many treaties are similar (and thus have similar members) and that it assumes that all treaties are equally informative about underlying preferences. At best, such an approach could crudely estimate states' propensity to ratify treaties in general, but would not be able to address preferences toward certain treaties versus others. A simple model of counting treaty ratifications would assume that states either have a preference for or against ratifying treaties in general, whereas it may be the case that states instead prefer certain types of treaties versus others.[1] From a dyadic perspective, a simple count of the

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[1] In Section 3, I will compare the efficiency of a model that simply counts treaty commitments to the model I outline in the remainder of this Section.

number of treaties the dyad members both belong to would also be a crude measure of preferences because it needlessly assumes that all treaty commitments are equally informative of preference similarity, which is likely not the case. By analogy, the literature on estimating state preferences with respect to UNGA voting does not simply count the number of resolutions states vote for or against because it is often the case that states prefer to vote for some resolutions while voting against others. Likewise, such a procedure would amount to attempting to estimate legislator preferences based on a count of bills they vote for, a procedure long recognized in the legislative studies literature as being misleading. Certain types of legislators tend to vote for certain types of bills, while others vote for other types of bills. Likewise, different types of states tend to ratify different types of treaties, making a count of treaty ratifications relatively uninformative.

In order to estimate states' treaty commitment preferences, we therefore need a method that can take into account the diversity of treaties and the complexity of joining decisions. The literature on UNGA voting has long recognized that methods designed to reduce the dimensionality of choice behavior are appropriate for estimating state preferences (Alker and Russett 1965; Voeten 2000). In order to estimate state preferences with respect to treaties, I rely on the spatial model of political choice. The basic notion behind implementations of the spatial model is that, by observing the choices political actors make, we can estimate their preferences relative to each other and relative to the options with which they are faced. In this model, the options of committing and not committing to a treaty are represented by points in an n-dimensional policy space. Each state decides whether or not to commit to a treaty by weighing the distance between these points and its ideal point in this space. Simmons (2009) has recently suggested that this logic applies to treaty commitment decisions: "To use the language of spatial models, the nearer a treaty is to a government's ideal point, the more likely that government is to commit" (p. 65, emphasis omitted).

Thinking of treaty commitment decisions in this way allows for the use of methods

traditionally applied to analyze other dichotomous choices, most importantly those used to study legislative roll-call voting. Specifically, I use the W-NOMINATE multi-dimensional scaling method to estimate states' treaty commitment preferences (Poole and Rosenthal 1997). W-NOMINATE is a random utility model of Euclidean spatial voting (Enelow and Hinich 1984) that assumes each actor assigns a utility to each of two options. This utility is determined both by the distance between the actor and the options as well as a stochastic error term. W-NOMINATE estimates can be derived in n-dimensions, and the analyst must choose the optimal number of dimensions (as discussed in the Supplementary Information). The resulting coordinates are quantifications of latent dimensions and therefore have no objective scale. In simpler terms, the coordinates of actors are only meaningful in terms of their relationship to other actors' locations. W-NOMINATE is an iterative optimization algorithm. The results of the algorithm define the locations of states and treaties in the n-dimensional space such as to minimize the distances between states and the treaties they have ratified while maximizing the distances between states and treaties they have not ratified. W-NOMINATE will place states that have signed many of the same treaties closer together, while states with few treaties in common will be far apart.

Poole and Rosenthal (1997) created W-NOMINATE as a tool for estimating legislator preferences and used it to analyze roll-call voting in the U.S. Congress. Other scholars have used W-NOMINATE estimation to study such areas as the repeal of the Corn Laws (Schonhardt-Bailey 2003), the Confederate legislature (Jenkins 1999), the European Parliament (Hix 2001; Noury 2001), and various national legislatures (Londregan 2000; Morgenstern 2003). In addition, many scholars have used the distances between points in the W-NOMINATE space for various purposes, including analyzing party cohesion (Desposato 2008), testing ideological compatibility differentials on party membership (Desposato 2006), measuring party polarization (Howell and Lewis 2002), and measuring the benefits associated with the differences between voting options (Rothenberg and Sanders 2000). W-NOMINATE has also been applied in the international context,

particularly to analyze voting by states in the United Nations General Assembly (Voeten 2000; Reed et al. 2008).

2.4 Data

While this methodology has many advantages, a key limitation is that it can only be used for universal treaties, which are open to all states. This is because, in order to be able to use the spatial modeling approach to analyze treaty decisions, we must be able to infer that any non-joining behavior is the choice of the states in question (i.e., the state was eligible to join the treaty but chose not to). I collected treaty ratification data from the United Nations Treaty Collection (UNTC), an online database that provides information regarding all treaties deposited with the U.N. Secretary-General. I analyzed the set of treaties included in the UNTC to determine which are de jure open to all states and which are limited to a specific set of states. The latter are excluded from the analysis, leaving 280 universal treaties.

The data set includes a broad range of substantive areas, including immunity, human rights, transportation, the environment, communications and arms control.[2] The UNTC includes conventions, treaties, protocols to treaties and treaty amendments, each of which I include in my data set as a separate treaty-commitment choice. I do this because each item reflects a separate decision made by states, regardless of whether the item amends a previous choice. For simplicity, I will refer to each such item as a "treaty" in this paper. For each treaty, I have thus created a matrix consisting of all of the states in the international system and an indication of whether or not each ratified the treaty. If a state has ratified a treaty as of a given year, I code that state as a "1" with respect to that treaty; otherwise the state is coded as a "0". Using these data, I create a matrix for each

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[2] The treaties included in the data set are coded by the UNTC as addressing the following subject matters: privileges and immunities (36), human rights (24), refugees (4), narcotics (13), traffic in persons (8), obscene publications (5), health (11), international trade and development (14), transport and communications (45), navigation (10), economic statistics (2), education and culture (9), the status of women (3), freedom of information (1), penal matters (18), commodities (19), maintenance obligations (1), law of the sea (10), commercial arbitration (1), law of treaties (3), outer space (2), telecommunications (2), disarmament (9), the environment (31), fiscal matters (2), and miscellaneous (1). A complete list of these agreements is available from the author upon request.

year between 1950 and 2008 that indicates, for each treaty then in force, which states then in existence had ratified the treaty as of the end of the year.

While much of the literature focuses on treaty commitment with respect to a given treaty or set of similar treaties, I focus on treaty commitment preferences across substantive policy areas. This approach has three advantages. First, it avoids the need to make potentially arbitrary decisions over which treaties belong in the same policy area. While the UNTC has a system of categorizing treaties, in many cases individual treaties can be interpreted as covering issues that cross multiple areas. Second, at the theoretical level, there are many reasons to suspect that broader concerns drive treaty commitments across various policy areas, as discussed above. This methodology can create a measure that allows us to test the extent to which that is the case. Finally, if treaty commitment decisions are driven by many different latent dimensions of state preferences, then the results of the W-NOMINATE models will demonstrate this. That is, if every policy area is affected by a different latent dimension, then a W-NOMINATE model that only estimates two latent dimensions will fit the data poorly. On the other hand, if a two-dimensional model fits the data well, this would be a strong indication that, although there are many substantive areas of treaty-making, states have preferences with respect to treaty commitment that cut across these policy areas.

Restricting the sample of treaties to universal treaties comes with some cost. Importantly, the universal treaty data set does not include many of the key international agreements governing economic relations. Agreements such as Bilateral Investment Treaties (BITs) and Preferential Trade Agreements (PTAs) are not universal. Also excluded are global agreements such as the General Agreement on Tariffs and Trade (GATT) and the World Trade Organizations (WTO), which restrict membership to states that meet strict accession requirements. On the other hand, analyzing revealed preferences with respect to universal treaties alleviates some (but certainly not all) of the limitations of inductive measures of preferences. Because these treaties are open to all states, there is more

consistency in the strategic environment with respect to universal treaties than with respect to treaties with restricted membership. While individual states may face differing strategic environments (most importantly, differing levels of information) and those differences may explain some of their joining decisions, differences in universal treaty joining are more likely to be reflective of underlying preferences than differences in restricted membership treaty joining. Overall, however, it should be noted that the inferences made in this paper are limited to state preferences with respect to universal treaty commitments.

3. Results

Measures of fit regarding the W-NOMINATE model are reported in the Supplementary Information. [3] The measures of fit are comparable to those of existing work using this methodology. The results also indicate that a single latent dimension explains the bulk of treaty commitment decisions. This is particularly important because treaties covering many different policy areas are included in the data.

3.1 Comparison to a Simpler Model

We can also compare the efficiency of the W-NOMINATE model to that of a much simpler model that attempts to predict treaty commitments based on counts of prior treaty commitments. The simple model is a logistic regression in which the dependent variable is the ratification decision of a given treaty by a given country, and the independent variable is the number of other treaties the country ratified. The regression is estimated for each country and treaty (n=53,760). Using the 2008 data, this model correctly predicts the outcome (i.e., ratification or non-ratification) in 68.35% of decisions, which is better than a random model that would correctly predict 50% of decisions. By comparison, the W-NOMINATE model for 2008 correctly predicts the outcome of 84.27% of decisions by using exactly the same data. The more complex model, therefore, is significantly more efficient at correctly predicting treaty ratification. Part of the reason for this is that W-NOMINATE does not estimate the probability of a single joining decision based on the

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[3] I use a two-dimensional model, which appears to be best suited for the analysis. For additional information on this issue, see the Supporting Information.

number of other treaties the state has joined, but also considers how many other states have joined the treaty and the extent to which those states are similar to the state in question in terms of which treaties they have joined.

The differences in the predictive power of the two models reveal something important about states' treaty commitment preferences. The simple model assumes that the dimension along which treaty commitment preferences vary is simply one of quantity: some states prefer to sign more treaties while others prefer not to. That is, the joining of Treaty A is always an indicator of an increased probability of joining Treaty B. The W-NOMINATE model, by contrast, does not make a similar assumption regarding the meaning of the dimensions along which such preferences vary. The model fits the data better because it takes into account the fact that, sometimes, the joining of Treaty A may be an indicator of a *decreased* probability of joining Treaty B. If this were never the case, then W-NOMINATE would not be more efficient than the simple model. In turn, this means that states do not simply have a preference for joining or not joining treaties in general, but instead have preferences that lead them to choose among the treaties they can join.

3.2 Interpreting the Ideal Point Estimates

The meanings of the ideal point dimensions are not specified in advance; instead, the results indicate where each state lies along the latent dimensions in the data, and we must determine what these dimensions mean. Interpreting ideal points may be relatively straightforward when using data on the U.S. Congress because we may have strong theoretical priors that Democrats and Republicans have significantly different ideologies. This is likely to be more difficult with respect to the international system, however, because, as described in Section 1, competing theories suggest multiple aspects of international relations that may drive treaty commitment preferences. If a variable is a key determinant of states' treaty commitment preferences, then it should be strongly associated with the first latent dimension in the W-NOMINATE results. This remainder of this

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section attempts to test the competing explanations provided in Section 1 against each other using the W-NOMINATE results.

In order to test competing explanations of treaty commitment preferences against each other, I rely below on several regression models. I conduct both monadic and dyadic analyses. Both approaches have advantages and, if they produce consistent results, should complement each other. The advantage of the monadic analysis is that it allows us to understand which factors predict a state's ideal point during a given time. The factors that best predict ideal points are most likely to explain the meanings of the dimensions of the W-NOMINATE space and, in turn, to explain states' treaty commitment preferences. International relations scholars often conceptualize and measure preferences in terms of similarity (Signorino and Ritter 1999; Gartzke 2006; Bailey, Strezhnev and Voeten 2013), so it is also useful to conduct a dyadic analysis. Below, I analyze the relationship between the W-NOMINATE results, existing measures of dyadic preference similarity, and the variables that may affect treaty commitment preferences discussed in Section 1.[4]

Standard regression models have two significant limitations in this context. Categorical factors such as culture and region may result in clustering in the W-NOMINATE space that may not be captured by a regression model. Second, the effect of the Cold War on treaty commitment preferences is best examined by analyzing the relative locations of the U.S. and Soviet blocs in the treaty commitment preference space. I therefore supplement the regression models with three additional analyses.

First, because W-NOMINATE is a spatial model, and the coordinates it produces are only meaningful relative to each other, it is useful to begin by analyzing the results visually.[5] Consider the analogy to the U.S. Congress: simple visual inspection reveals that

[4] One limitation of dyadic analysis is that, when dyadic similarity changes over time, this analysis may not reveal which of the dyad members' preferences changed and which factors explain the change. The monadic analysis, however, can address this limitation of the dyadic analysis.

[5] Because the second dimension of the model explains little of the variance in treaty commitment decisions, I focus this analysis on interpreting the first dimension of the model. A brief analysis of the second dimension is included in the Supplementary Information.

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the key cleavage in the preference space is between Democrats and Republicans. While it is unlikely that the treaty preference space will be so intuitively defined, it may be possible to visualize patterns. The notion that culture determines states' preferences does not offer specific predictions regarding where different regions or civilizations should be in relation to each other in the treaty space, but rather that a state's location will be significantly determined by its culture. This suggests that states should be clustered by region or civilization, and this clustering may be apparent visually. Likewise, clustering among the key rivals during the Cold War would support the notion that this conflict was crucial in shaping treaty commitment preferences.

A second way to interpret the W-NOMINATE space is to analyze the movement of states within the space over time. If states known to have transitioned in important ways over this period move significantly along a given dimension, this might suggest that the particular form of transition is correlated with the dimension. For example, if states were to move along the first dimension in the years after transitioning to democracy, this would support the notion that the first dimension is defined by regime type. The results of this analysis are presented in the Supplementary Information and summarized in Table 3 at the end of the paper.

A third method for analyzing the W-NOMINATE space is by plotting a known variable of the states as a normal vector in the preference space (Poole 2005). This analysis attempts to find the best fit of a vector in the W-NOMINATE space such that states that are toward one end of the line are likely to have different values of that variable than states are the other end of the line. Thus, if the best fitting normal vector for a particular variable is parallel to the first dimension, it may be that that variable embodies the meaning of the first dimension. By contrast, if the best fitting normal vector for a variable cuts through the W-NOMINATE space diagonally (i.e., where $x = y$), then that variable is orthogonal to the W-NOMINATE space and uninformative as to the meanings of the dimensions of the space. I conduct this analysis with respect to several of the variables

discussed in Section 1. The results of this analysis are presented in the Supplementary Information and summarized in Table 3 at the end of the paper.

As the discussion above suggests, some of these methods may be more useful with respect to certain variables. For continuous variables with reliable existing measures, such as income and population, the regression analysis may be especially useful. For categorical variables, however, it may be more useful to visually determine whether there is any clustering of states in accordance with the categories. This is likely to be the case for analyzing the effects of region and civilization, especially at the monadic level.

3.3 Visualizing the Treaty Preference Space

For each year, W-NOMINATE produces a set of coordinates indicating the locations of each state and treaty. Figure 1 shows the locations of states in a two-dimensional treaty preference space in 2008. Figure 5 in the Supplementary Information shows similar plots for 1980, 1990, and 2000. Table 6 in the Supplementary Information lists the position of each state along the first dimension in 2008. Because the first dimension explains much more of the variance than the second dimension, it is important to note that small differences along the second dimension may be less meaningful. The plots depict each state by region, which allows us to look for regional clustering. The plots also specify the locations of the five permanent members of the UN Security Council. Because region is a categorical variable, effects of this variable on the locations of states within the preference space may be most effectively analyzed visually.

[Figure 1 about here]

Several aspects of these results are worth noting. First, there is some regional clustering, especially among the European states, which tend to be in the northeast of the space in 1980 and 1990 and move toward the east more recently. The W-NOMINATE algorithm attempts to place states that ratify more treaties in common relatively close together and, by contrast, to separate from each other states that have not ratified many treaties in common. The European regional clustering therefore suggests that these states

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have ratified many of the same treaties. Other regions are less tightly clustered, except for a group of Asian states toward the western area of the space in 2000 and the southwest in 2008. Nonetheless, the regional clustering appears to be less stark than that found by Voeten (2000) for the UNGA. Most regions overlap significantly with each other. A significant cleavage existed in the space during 1980 and 1990 running at approximately the $x = y$ line, but this cleavage does not appear to have divided states along regional lines. The cleavage appears to be weaker in 2000 and to have dissipated as of 2008. Finally, during the Cold War the Western great powers do appear to be separated from the U.S.S.R. and China along the second dimension. Because the first dimension explains most treaty commitment decisions, this suggests that Cold War rivals had different treaty commitment preferences, but that these differences were not the key determinants of their decisions.

Because civilization is a categorical variable, its effects on the location of states in the treaty preference space can also be analyzed visually. Figure 6 in the Supplementary Information shows the locations of states in the treaty commitment preference space coded by civilization. The civilizations are coded according to the categories and map provided by Huntington (1997, p.xx). There appears to be weak civilization-based clustering. There are two clusters of Latin American states, for example, one on each side of the $x = y$ cleavage in 1980, 1990 and 2000. Western states also cluster in two groups on either side of this cleavage. As of 2008, states from most civilizations are spread fairly widely across the space. Overall, these results provide little support for the notion that treaty commitment preferences are based on civilization.

An additional possibility that can be analyzed graphically is the possible cleavage between members of NATO and the Warsaw Pact during the Cold War. Figure 6 in the Supplementary Information shows the locations of the members of these alliances in 1980. NATO members are mostly clustered together, as are most Warsaw Pact members. Yet the two clusters are not particularly far apart in the space, especially along the first dimension. The results for other years during the Cold War are fairly similar. If the Cold War were a

primary determinant of treaty commitment preferences, we might expect to see the members of the two alliances in opposite sides of the space (e.g., Democrats and Republicans in the U.S. Congress). The results therefore suggest the Cold War was not a major factor in determining treaty commitment preferences.

3.4 Monadic Analysis

To analyze the monadic locations of states in the treaty commitment preference space, I estimate a series of regression models. First, I compare the extent to which competing factors explain treaty commitment preferences by estimating OLS models using the state coordinates along the first dimension as the dependent variable. In each of these models, only one explanatory variable is included, and each model is run separately for each year from 1960 to 2000.

For regime type, I use the data from the Polity IV project (Marshall and Jaggers 2002). As a measure of domestic veto players, I use the *PolCon v* measure developed by Henisz (2002). Based on a spatial model of interaction between political actors, the measure takes into account three factors: (1) the extent to which there are effective veto points; (2) the extent to which these veto points are controlled by different parties from the executive's; and (3) the extent to which the majority controlling each veto point is cohesive. As a measure of state power, I use the natural log of the Correlates of War capabilities index (CINC). For trade and GDP per capita, I use the data provided by Gleditsch (2002). I take the natural logarithm of these two measures. Civilization is coded as described above.

The extent to which these variables fit the data can be analyzed by comparing the R^2 statistics of these bivariate models. Figure 2 shows the R^2 statistics of these models using the first dimension as the dependent variable. The models that include trade alone have a significantly better fit than the others, and this becomes increasingly true starting in the early 1970s. This indicates that, as globalization has increased and economic cooperation has become more important, states' interests in international trade

increasingly explain their treaty commitment preferences. Interestingly, capabilities are by far the weakest predictors of treaty preferences along this dimension. Several other factors, including regime type and income, fit the data fairly well, but because these variables are correlated with each other (and with trade), it is difficult to discern their independent impact from this analysis.

[Figure 2 about here]

To examine the independent relationships between these variables and treaty commitment preferences, I estimate several additional OLS models. These models also use the state coordinates along the first dimension as dependent variables, but include all of the variables analyzed in the models above. As above, I use the natural logarithms of capabilities, per capita GDP and trade. For each dimension, I estimate models for 1960, 1970, 1980, 1990 and 2000 separately because I am interested in analyzing the meanings of the W-NOMINATE dimensions at different times. The results of these models are shown in Table 1.

[Table 1 about here]

Trade is the only consistent predictor of states' treaty commitment preferences. This is the clearest evidence that the first dimension captures states' economic interests. Substantively, this means that the extent to which states engage in global trade is closely associated with their treaty commitment preferences and thus predicts which universal treaties they will join. The result is especially striking because treaties explicitly focused on issues such as reductions to barriers to trade or the opening of financial markets are generally not universal so are not included in the UNTC data. Nonetheless, the UNTC does include several universal treaties that facilitate economic cooperation, as discussed above. Another factor that predicts treaty commitment preferences along the first dimension is the Sinic civilization, although this is not the case as of 1980. Interestingly, the decreased predictive power of this variable coincides with China's opening of economic relations, further suggesting that treaty commitment preferences are explained well by

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economic interests. The democracy variable becomes significant as of 2000, which means that in the current era regime type may also play a key role in shaping treaty commitment preferences. Competing variables such as capabilities, regime type and veto players are not consistently significant in these models, further indicating that these are not key drivers of treaty commitment preferences.

3.5 Dyadic Analysis

In order to conduct the dyadic analysis, I calculate the Euclidean distance between the W-NOMINATE ideal points for each dyad-year (TREATY COMMITMENT DISTANCE). I begin the analysis by comparing this measure to existing prominent measures of dyadic preference similarity. The first is the S-Score measure of alliance portfolio similarity created by Signorino and Ritter (1999). Second, I analyze the Affinity scores (Gartzke 2006), which are S-Scores based on UNGA voting. Finally, I use the measures of UNGA voting preference similarity proposed by Bailey, Strezhnev and Voeten (2013). Like my measure, the Bailey, Strezhnev and Voeten (2013) measure uses an ideal point model and estimates dyadic preference similarity by calculating the Euclidean distance between each dyad's ideal points.

The pair-wise correlations between these measures are shown in Table 2. The correlation between TREATY COMMITMENT DISTANCE is positive, but relatively weak. This is because states often have different preferences with respect to different types of decisions, so dyadic similarity can vary when we compare different preference spaces. A dyad may have very similar preferences with respect to its alliance partners, but this does not necessarily mean the same dyad would choose to join similar universal treaties, especially given that many of these treaties cover substantive policy areas that have relatively little relationship to the factors that drive alliance decisions. The same logic explains why the Signorino and Ritter (1999) measure is weakly correlated with the Gartzke (2006) and Bailey, Strezhnev and Voeten (2013) measures; alliance joining and UNGA voting are decisions made in difference preference spaces, so these measures capture

different aspects of dyadic preference similarity. The weak correlations between Treaty Commitment Distance and the existing measures of dyadic preference similarity therefore indicate that Treaty Commitment Distance is picking up a dimension of dyadic preference similarity that has not been picked up by existing measures.

[Table 2 about here]

To better understand the dimension of state preferences that is measured by Treaty Commitment Distance, I conduct a dyadic analysis to complement the monadic analysis above. The data sources are the same as those used in the monadic analysis. In the dyadic models, I operationalize the variables in ways intended to capture the relationship in the dyad and other aspects of dyadic similarity. I include a measure of trade dependence within the dyad. I follow much of the literature by calculating trade dependence using the formula provided by Oneal and Russett (1997).[6] As this is a monadic measure, I use the lower of the two values in the dyad.

$$w_{t,ij} = \frac{x_{t,ij} + m_{t,ij}}{GDP_{t,i}}, \tag{1}$$

where $x_{t,ij}$ is the total exports from country i to country j in year t, $m_{t,ij}$ is the total imports to country i from country j in year t, and $GDP_{t,i}$ is the total GDP of country i for year t.

I include binary variables that indicate whether or not both members of the dyad belong to the same region and civilization. With respect to regime type, veto players, capabilities, and GDP, I use the difference between the values of the dyad members. The models are estimated using ordinary least squares with Treaty Commitment Distance as the dependent variable. In all models, I include fixed effects for the year of the observation and use standard errors that are robust toward arbitrary heteroskedasticity and clustered by dyad. To address serial correlation, I include a lag of the applicable dependent

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[6] This measure is preferable to including the amount of bilateral trade because doing so would not account for the extent to which the dyads' economies are dependent on their dyadic trading relationship.

variable for year $t - 1$. In Model 2, I add the Signorino and Ritter (1999) measure of alliance portfolio similarity and the Bailey, Strezhnev and Voeten (2013) measure of UNGA voting ideal point distance.[7] Adding these variables makes it possible to analyze whether the relationship between the other variables and TREATY COMMITMENT DISTANCE are independent of other dimensions of dyadic preference similarity.

I estimate the percentage change in TREATY COMMITMENT DISTANCE resulting in an increase in value of a variable from its minimum value to its maximum value, while holding other variables at their mean.[8] The effect sizes (with 95% confidence intervals) are shown in Figure 3. The results strongly support the notion that changes in dyadic economic variables predict the largest changes in TREATY COMMITMENT DISTANCE. Trade dependence has the largest effect. Dyads in which the lower value of trade dependence is very low are likely to have very different treaty commitment preferences. By contrast, dyads in which both members are highly trade dependent on each other are likely to prefer to commit to similar treaties. Economic development has a smaller, but still notable effect size. Dyads with very different levels of GDP per capita are about 5% more likely to have different treaty commitment preferences than dyads with very similar levels of economic development. Overall, therefore, the dyads that tend have similar treaty commitment preferences are those with important trading relationships and similar levels of economic development. That is, states that are economically interdependent and otherwise have similar economic interests tend to prefer to join similar treaties–and this preference extends to many treaties that do not explicitly govern economic relations. While the remaining variables have statistically significant coefficients, their effects on TREATY COMMITMENT DISTANCE are comparatively very small. This is especially striking because

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[7] The Gartzke (2006) measure is not included because it is highly correlated to the Bailey, Strezhnev and Voeten (2013) measure, but including it does not change the other results.

[8] The complete regression results are shown in Table 7 in the Supplementary Information. Given the large sample, it is both unsurprising and not particularly informative that most of the variables are significant. It is much more informative to compare the effect sizes on TREATY COMMITMENT DISTANCE of changes in these variables.

the effect sizes are calculated based on minimum and maximum values. Thus, a dyad at the complete extremes of the Polity scale is likely to have only very slightly different treaty commitment preferences than a dyad with similar regime types.

[Figure 3 about here]

3.6 Robustness Tests

To test the robustness of the results reported above, I have conducted several additional analyses. Although treaty ratifications and roll-call voting decisions are analytically similar in some ways, they also differ in ways that could be problematic when using methods designed for analyzing roll-call voting in the treaty context. A key way these decisions differ from each other is that roll-call voting decisions must be made relatively quickly, but treaty ratification decisions can be made over long periods of time. This introduces the following problem: if a legislator does not vote for a bill, that decision is generally informative about his or her preferences. A state, however, may not ratify a treaty for reasons that are significantly less informative. New states, in particular, often have many higher priorities than universal treaty ratification and thus often do not ratify such treaties immediately upon independence. Non-ratifications in such circumstances may not be informative of a new state's preferences. To address this issue, I re-estimate the W-NOMINATE models with the following modification to the treaty data set: when a new state joins the international system, it does not enter the data set for 2 years, thus allowing the state time to make informative ratification decisions. Table 8 in the Supplementary Information reports the results of regression models based on this modified treaty data set. The results of all of this analysis are substantially similar to those reported above.

The main data set includes some treaties related to economic cooperation as well as many other treaties. To ensure that the results are not driven by the small number of economic cooperation treaties included in the data set, I conduct the analysis again with these treaties removed. Specifically, I remove all of the treaties coded by the UNTC as addressing international trade and development, economic statistics, commodities,

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commercial arbitration or fiscal matters. Table 9 in the Supplementary Information reports the results of regression models based on this modified treaty data set. Strikingly, trade remains the strongest predictor of states' treaty commitment preferences even with respect to treaties that do not address economic cooperation. These models fit the data less well than the main results reported above; in other words, adding the economic cooperation treaties improves the fit of the models, which further suggests that economic concerns are crucial.

Finally, there is an important debate in the legislative studies literature regarding the most appropriate algorithm for estimating actors' preferences. In particular, Clinton, Jackman and Rivers (2004) propose a Bayesian estimation model that assumes quadratic utility functions rather than the Gaussian utility functions assumed by W-NOMINATE. Table 10 in the Supplementary Information reports the results of regression models based on treaty commitment preferences estimated using the Clinton, Jackman and Rivers (2004) methodology. The results of all of this analysis are substantially similar to those reported above.

4. Conclusions

Table 3 summarizes the results of my analysis. The results indicate that the key predictor of universal treaty commitment preferences is the extent of states' interest in international economic cooperation. While no single method can fully interpret the W-NOMINATE results, across the various analyses, economics – particularly trade – is by far the best and most consistent predictor of states' revealed treaty commitment preferences. This finding would perhaps be more intuitive if it were based on a data set consisting of PTAs, BITs and other instruments explicitly related to economics. Yet that is far from the case; PTAs, BITs, regional economic cooperation agreements and wider agreements such as the WTO are not universal, and therefore not included in the data. Nonetheless, the extent to which states are engaged in trade is a strong predictor of states' decisions to join universal treaties in other policy areas, i.e., which treaties they will join

and which they will not. In addition, the extent to which states are highly trade-dependent on each other is a strong predictor of the similarity of treaty commitment preferences. Trading states are therefore not only more likely to join similar trade treaties, but more likely to cooperate with each other through treaties that govern other policy dimensions.

[Table 3 about here]

Economic interests appear to be key predictors of treaty commitment preferences in other domains, including human rights, the environment, and arms control. One way to interpret these results – albeit one that would require further investigation – is that states' economic interests shape their interests in other areas. In other words, that states with certain types of economic interests tend to develop certain preferences with respect to policies such as the protection of the environment or weapons proliferation. A related interpretation of the results is that economic globalization and other underlying economic interests have driven the creation and design of treaties in policy areas that may not appear to be economic on the surface. Treaties governing areas such as arms control and human rights protection may not at first appear to further economic goals, yet the effects on stability of compliance with such agreements likely also improves the prospects for international economic cooperation. Although we have long understood that these issues have important economic consequences and are often linked to economic cooperation in specific instances, the results in this paper provide more comprehensive evidence regarding the close relationship between states' economic interests and their treaty commitments in these areas.

These results have important implications for our understanding of the effects of trade dependence on international cooperation. Rational design theory argues that uncertainty about preferences can hinder cooperation through such institutions (Koremenos, Lipson and Snidal 2001). We might thus expect that when states cannot overcome this information problem they will not join similar treaties. Because the results in this paper indicate that states that depend on each other for trade have more similar

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treaty commitment preferences, this may, in turn, indicate that uncertainty about preferences may also be lower among such states. Although this should be viewed as a tentative conclusion and merits further investigation, it supports an important strand of scholarship that argues that interdependence promotes peace by reducing uncertainty (Gartzke, Li and Boehmer 2001; Gartzke 2007).

Regime type and domestic veto players do not appear to predict treaty commitment preferences. Neither of these variables is significantly associated with the first dimension of the W-NOMINATE results. Both variables are significant in the dyadic models, but have very small substantive effects. The result is striking given the emphases on domestic politics in much of the literature on international institutions. We should be wary, however, of reading too much into this result. The result indicates that these factors do not predict treaty commitment preferences, but does not indicate that they do not have important effects on international cooperation. As much of the literature shows, the presence of constraints on national governments, such as elections or veto players, can make it more difficult or costly for states to commit to international cooperation, regardless of their preferences. My estimates of preferences likely may not capture such dynamics, but instead indicate that, controlling for other factors, these types of checks do not predict which types of treaties states prefer to join.

My results with respect to domestic politics may also inform the ongoing debate regarding whether the relative peace observed over the past decades is based primarily on national regime type or economic ties. The Democratic Peace literature focus on regime type (Doyle 1986; Maoz and Russett 1993), while some recent work argues that the key explanatory factors are economic relations, including trade, open financial markets, and monetary policy coordination (McDonald 2007; Gartzke 2007). Resolving this debate is well beyond the scope of this paper, but nonetheless my results may have implications for the debate. Both sets of theories rely in part on the notion that cooperation reduces the likelihood of conflict. If and to the extent to which international cooperation reduces

conflict through one of the mechanisms proposed by these theories, the factors that explain states' preferences with respect to international cooperation are themselves crucial to the causal path toward peace. My results do not fully capture the factors that explain international cooperation, but they do demonstrate one important point: economic interests are better predictors of universal treaty commitment preferences than regime type, both at the monadic and dyadic levels. The results therefore provide evidence in favor of the argument that economics, more so than regime type, is a key determinant of international cooperation and, potentially, of the recent peace.

An additional implication of this paper is that economic factors appear to be much more important than factors like capabilities and the balance of power in explaining preferences over universal treaty commitment. Cold War alignment appears to vary along the second dimension, yet members of both NATO and the Warsaw Pact tend to be on the positive end of this dimension. This means that, even during the Cold War, members of these two rival alliances nonetheless had similar treaty commitment preferences and cooperated with each other on a broad range of issues. The broader meaning of this second dimension, especially during the Cold War era, appears to have been primarily a distinction between states with a Judeo-Christian background and others. National capabilities appear to have little relationship to treaty commitment preferences. I have found no evidence that indicates that more powerful states systematically prefer to ratify different treaties than weaker states. Likewise, the extent to which power disparities in a dyad predict differences in treaty commitment preferences is statistically significant but has a very small substantive effect.

As above, it is important to not overstate the meaning of these results. The result does not demonstrate that international cooperation is unaffected by power dynamics. A more reasonable inference from this result is that powerful states use their power to place on the international agenda treaties to which they can agree. Power dynamics likely come into play in the treaty negotiations phase, meaning that treaties that are open for signature

and ratification often represent bargains to which the most powerful states have already agreed. By contrast, negotiations that fail because the most powerful states cannot agree would not result in a treaty and thus would not enter the data. The results therefore simply indicate that, with respect to the treaties we do observe, capabilities do not predict commitment preferences, but this may be a reflection of the power dynamics that brought those treaties into existence.

The dyadic measures of treaty commitment preferences in this paper provide a complement to existing measures based on alliance portfolios and UNGA voting. Each of these measures has limitations, both because they measure revealed preferences and because each measure takes into account only certain dimensions of state policymaking. As with the extant measures, the W-NOMINATE measures can be used to test important hypotheses regarding international institutions. For example, scholars are often interested in estimating the effects of individual treaty membership on policy outcomes (Simmons 2000; von Stein 2005; Hill 2010). A key problem in such research is that both the dependent and independent variables in such a model may be driven by underlying preferences,(Downs, Rocke and Barsoom 1996; Lupu 2013) and more precise estimates of treaty effects can be obtained by controlling for preferences. In such a context, because the dimension of state preferences one needs to control for is directly related to treaty joining, the measures of treaty commitment preferences developed in this paper are likely to be more appropriate than measures based on UNGA voting. Scholars of institutional design may be interested in testing hypotheses about the effects of state preferences - or in controlling for these while testing the effects of other factors. In addition, socialization theorists are often interested in understanding the extent to which membership in international institutions leads to changes in state interests over time (Checkel 2005; Hooghe 2005; Johnston 2005). Statistical tests of these theories can be challenging (cf. Bearce and Bondanella 2007), in part because of the difficulty of measuring preferences, and the W-NOMINATE measures may prove useful for this purpose. Finally, scholars often

use the alliance and UNGA measures as controls for interest similarity when testing hypotheses about other factors that affect dyadic relations, and the W-NOMINATE measures could be in lieu of or alongside these measures depending on the dimension(s) of interest similarity that is relevant to the question at hand.

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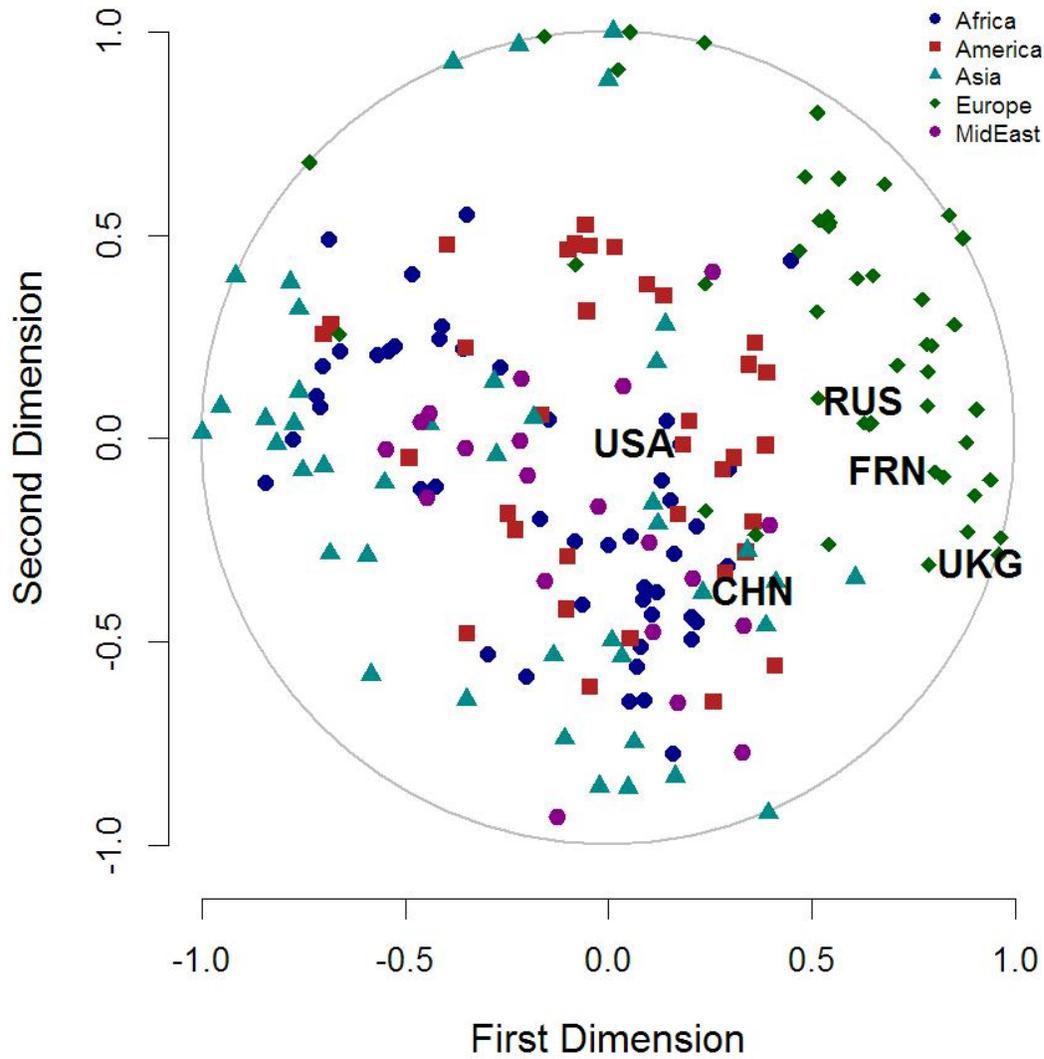
Figure 1: W-NOMINATE coordinates by region in 2008. The locations of the five permanent members of the U.N. Security Council are noted.
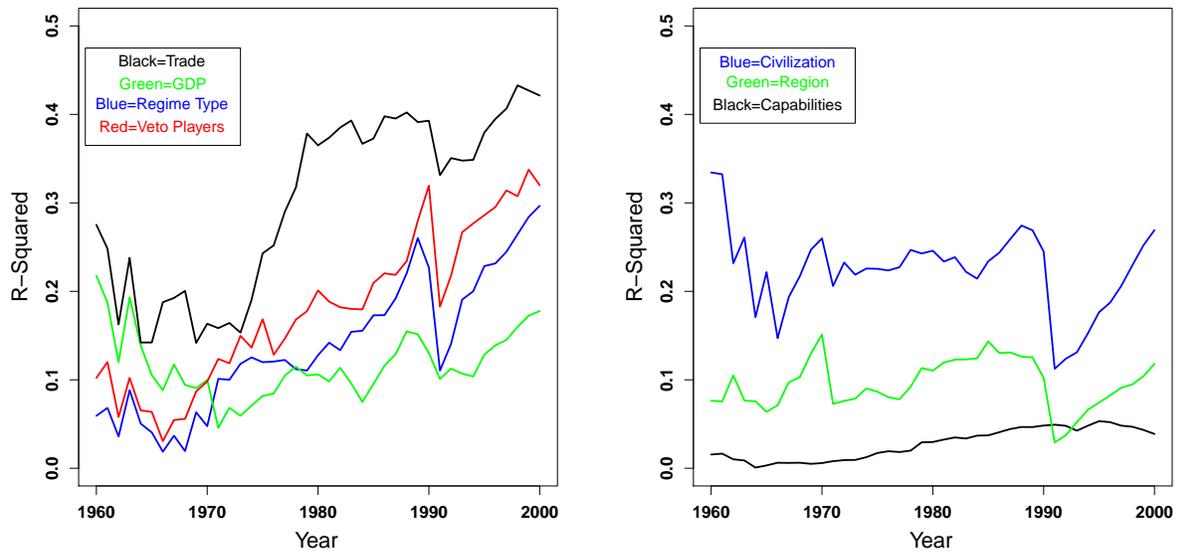
Figure 2: Fits of competing bivariate OLS models of W-NOMINATE first dimension.

Table 1: OLS Models of First-Dimension W-NOMINATE Coordinates

Variable	1960	1970	1980	1990	2000
Democracy	-0.027*	-0.000	-0.003	0.006	0.004
	(0.014)	(0.014)	(0.009)	(0.008)	(0.006)
Veto Players	0.508	0.036	0.246	0.223	0.216*
	(0.391)	(0.379)	(0.240)	(0.200)	(0.113)
Capabilities	-1.366	-1.009	-2.355	-1.661	-0.929
	(2.355)	(2.287)	(2.075)	(2.130)	(1.461)
GDP Per Capita (logged)	0.107	0.024	-0.124**	-0.101*	-0.026
	(0.116)	(0.078)	(0.050)	(0.056)	(0.037)
Total Trade (logged)	0.084*	0.070*	0.118***	0.110***	0.096***
	(0.046)	(0.037)	(0.026)	(0.028)	(0.020)
Asia	-0.012	0.137	-0.230	-0.133	-0.082
	(0.326)	(0.212)	(0.156)	(0.156)	(0.125)
Europe	0.241	0.496*	0.163	0.190	0.251*
	(0.327)	(0.252)	(0.184)	(0.187)	(0.142)
MidEast	0.144	0.066	-0.184	-0.131	-0.099
	(0.370)	(0.265)	(0.190)	(0.195)	(0.148)
Africa	-0.455	0.174	-0.125	-0.147	0.004
	(0.363)	(0.253)	(0.183)	(0.184)	(0.150)
Western	-0.334	-0.247	-0.120	-0.135	-0.121
	(0.310)	(0.240)	(0.166)	(0.167)	(0.125)
Islamic	-0.373*	-0.193	-0.120	-0.058	-0.052
	(0.209)	(0.180)	(0.127)	(0.130)	(0.098)
African	-0.148	-0.306	-0.187	-0.046	-0.111
	(0.303)	(0.207)	(0.151)	(0.155)	(0.127)
Latin	-0.596*	-0.310	-0.205	-0.211	-0.127
	(0.348)	(0.215)	(0.159)	(0.160)	(0.130)
Orthodox	-0.753**	-0.403	0.012	0.006	-0.147
	(0.358)	(0.316)	(0.234)	(0.231)	(0.146)
Sinic	-0.837***	-0.759***	-0.267	-0.246	-0.242
	(0.264)	(0.229)	(0.192)	(0.196)	(0.162)
Constant	-1.040	-0.538	0.374	0.202	-0.452
	(0.746)	(0.524)	(0.358)	(0.406)	(0.289)
N	86	115	126	125	144
R^2	0.516	0.351	0.447	0.488	0.584

Standard errors in parentheses.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$
The baseline region is America.
The baseline civilization includes the states coded by Huntington as "other".

Table 2: Cross-Correlations

	Treaty Ratification Ideal Point Distance	UN Voting Ideal Point Distance	UN Voting Affinity Score
UN Voting Ideal Point Distance	0.1866		
UN Voting Affinity Score	0.1722	0.8052	
Alliance Portfolio S-Score	0.1385	0.4155	0.4405
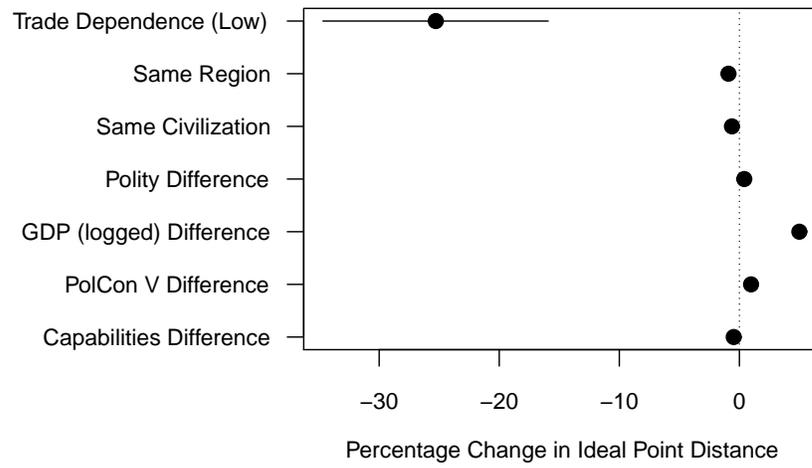
Figure 3: Effect Sizes

Table 3: Summary of Findings

Method	Economics	Regime Type	Power	Cold War	Civilization	Region
Visual Inspection	—	—	—	Minor clustering by alignment	Clustering among Western and Latin states	Clustering among European states
State Movement	States move along the first dimension when opening up economic relations	No evidence in favor	No evidence in favor	No evidence in favor	—	—
Normal Vectors	Trade is the closest normal vector to the first dimension in 2000	Regime type is closer to the first dimension by 2000	No evidence in favor	No evidence in favor	—	—
Monadic Regression	Trade levels predict placement along the first dimension	No evidence in favor	No evidence in favor	—	No evidence in favor	No evidence in favor
Dyadic Regression	Trade dependence has a significant association with dyadic similarity; large effect size. GDP also significant with substantial effect size	Significant but small effect	Significant but small effect	—	Significant but small effect	Significant but small effect