The Ties that (Un)bind:
A Network Analysis of Treaty Exit*

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Abstract
Withdrawal from international institutions, like the recent withdrawals from the International Criminal Court (ICC), the U.S. from the Paris Climate Accord, or Brexit, have often been explained with ad hoc state- or institutional-level theories without much consideration of the broader connections between states. This paper moves beyond this approach to provide a theory that explains treaty exit by considering a state’s position in the international network of treaties on the whole and within higher-order treaty clusters. States that have higher and long-lasting centrality may value each relationship less because it has many other pathways to obtain benefits or information, leading to a higher probability of ending those relationships. The theory is tested using a dataset of a random sample of treaties to find that enduring centrality within a treaty cluster affects the probability of treaty exit, especially when that centrality begins to shift within the treaty cluster. These individual state decisions also appear to ripple through the network, affecting other seemingly unrelated treaty relationships. The theory and findings open a new approach to understanding how the network of treaty relationships jeopardize the survival of international institutions.

Tags: international institutions, treaties, network analysis, cooperation, international law

Word Count: 7,820

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1 Introduction

The United Kingdom’s decision to withdraw from the E.U., better known as “Brexit;” members of the African Union calling for mass withdrawal from the International Criminal Court (ICC); and the United States’ withdrawal from the Paris Climate Accord, are all examples of an increasing number of institutions seemingly under threat by members formally withdrawing. Brexit and the tenure of U.S. President Donald Trump have highlighted treaty withdrawal, which states engage in more frequently than headlines might suggest. Treaty withdrawals include a number of other pending withdrawals from treaties and states with less media coverage than Donald Trump’s withdrawals. For example, media coverage of Guatemala’s recent announcement to withdraw from the International Coffee Agreement\(^1\) has been subdued—as is the case with most instances of treaty withdrawal. Other lesser known instances of withdrawal include Mauritania’s 2006 withdrawal from the Agreement for the Establishment of a Commission for Controlling the Desert Locust in North-West Africa and Canada’s 2011 withdrawal from the World Tourism Organization. Treaty withdrawal appears to be happening more frequently but has simply become more salient with various high profile withdrawals.

Why do states withdraw\(^2\) from treaties? Do their many relationships with other states influence this decision? Is it the case that a state like the United States, which appears to be central to the international community with strong influence is more likely to withdraw from a treaty given its position in the community? In this paper, I present a theory of treaty withdrawal based on the network of relationships between states to investigate how the structure of the overlapping relationships between states affects how each state approaches

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\(^2\) As Helfer (2012, 635–636, fn.6) explains, the terms “denunciation” and “withdrawal” are used interchangeably; however, withdrawal is likely the better term. Some also use “exit.” “Termination” results when all or all but one member withdraws from an institution. Here, I use “withdrawal” unless another term was used in an empirical case or explanation.
shocks that shift the weight of obligations or benefits of those treaty relationship. Treaty withdrawal should be more likely, all else being equal, when a state has a high number of treaty relationships or is influential, does not act as a bridge between clusters, and moves from one cluster of relationships to another. This theory builds on work examining a networked understanding of international institutions and considers how the relationship structure itself can affect, on the margins, a state’s willingness to break off a relationship with other states in the international community.

For example, in 2012, Uzbekistan left the Collective Security Treaty Organization (CSTO) with its former partners Russia, Armenia, Kazakhstan, Kyrgyzstan, and Tajikistan. The CSTO, also referred to as the “Tashkent Pact,” was created in 1992 after the collapse of the Soviet Union in 1991, and it provided for collective security of the former-Soviet states in central Asia. Uzbekistan’s decision was largely described as motivated by a desire to shift to closer ties with the United States, among other states in the West.\(^3\) This rearranging of ties to the international community appears to be a driver, at least in part, for Uzbekistan’s decision exit the CSTO. Uzbekistan’s many relationships with other states matter. Thus, the intuition for the theory appears plausible.

This paper builds on recent work, including Helfer (2005), on the phenomenon of international institution withdrawal in several ways. First, it expands beyond examining membership in international organizations.\(^4\) Prior work generally examines withdrawal from international organizations over time and across states. (Johns, 2015; Pauwelyn and Hamilton, 2018; Von Borzyskowski and Vabulas, 2019). Although providing insights on state behavior in international institutions, as well as interrogating existing theories regarding the spate of recent withdrawals, this work is limited to a subset of international institutions. Here, the formal relationships between states created by treaties gives a larger sample of re-

\(^3\) James Kilner. “Uzbekistan withdraws from Russia-lead military alliance” The Telegraph (July 2, 2002).

\(^4\) The Intergovernmental Organizations dataset has provided an essential foundation for this work. (Pevewhouse et al., 2020).
relationships to explore. International organizations are generally created by treaties (making theories about state behavior within them useful); however, many treaties do not create an organization. Thus, empirically, this expanded scope gives a broader, although not complete, understanding how state relationships affect their behavior.

Second, in examining a network of treaty relationships, this paper opens the door to considering how parallel and indirect relationships and pathways might marginally affect a state’s decision to withdraw. This leads to the possibility of investigating problems of contagion and issue linkage to episodes of treaty exit. A network theory can also provide cogent explanations for behavior, which may at first blush seem counterintuitive. When a state is highly engaged in the international community with many relationships, the prospect of treaty withdrawal would increase because with more treaty relationships comes more ways to assert one’s rights and achieve goals on the international stage.

This paper proceeds by first reviewing the underdeveloped literature on treaty withdrawal and lays the groundwork on which to the theory. The theoretical framework follows, with a general discussion of the network structure of treaty relationships and how that structure may influence a state’s decision to exit from a treaty relationship. From there, the paper discusses data on treaty withdrawal over the last 70 years collected from the United Nations Treaty Series [NOTE: Data collection is still in process.] Next, the paper presents a preliminary analysis of the theory using newly constructed network data using the random sample of treaties presented by Koremenos (2013). The paper ends with concluding remarks, implications of the theory, and future research questions.

2 Treaty Withdrawal Generally: What We Know

The literature on institution and treaty formation is fairly robust and addresses the design and inclusion of “exit” clauses. According to Koremenos (2016), 70 percent of her random
sample of agreements contain withdrawal clauses. Helfer (2005, 2010, 2012) argues that “exit” provisions help states to mitigate the uncertainties within the international environment by allowing for lawful, public mechanisms for a state to terminate treaty obligations and withdraw completely from membership in an institution. Generally, treaties include an “escape clause” to preserve the idea of state sovereignty. (Helfer, 2005). At the core of these theories is the basic idea that international agreements are rationally designed to solve various problems like cooperation, distribution, or coordination problems between states. (Stein, 1982; Morrow, 1994; Fearon, 1998; Koremenos, Lipson and Snidal, 2001; Rosendorff and Milner, 2001; Koremenos, 2016). Once cooperating within a rationally designed institution, the state generally will not defect from cooperation without some significant, motivating change. Koremenos (2005, 2016) argues that withdrawal from an agreement occurs when there is a significant shift in the underlying “bedrock” preferences of the withdrawing party away from cooperation. Although the design of these provisions is important to understanding state behavior, it does not by itself answer the question as to why and when a state will choose to exercise this option to exit.

The foundation of a theoretical explanation for treaty withdrawal comes from work in economics and organizational theory. Hirschman (1970) provides a theory of the choice a member of an organization—whether a consumer, business, or citizen—faces when the quality of the organization and benefit to the member are perceived to be decreasing. Members can choose to either exit the organization, an economic action; voice to reform the organization, a political action; or remain quiet. The choices interact and are impacted by members’ loyalty to the organization. In economics and business, research using formal models has considered the effect of including the option to exit on partner matching (Hauk and Nagel, 2001) and firm alliances (Arend and Seale, 2005). In an unilateral-choice setup of the partner-matching game, intending defectors are more likely to exit than intending cooperators. (Hauk and Nagel, 2001). This lends support to the idea that treaty exit and
breach are related, mentioned earlier; however, the underlying theory driving these decisions in the international treaty context needs additional exploration.

Helfer (2005)’s seminal work on treaty withdrawal bridges the early theories from Hirschman (1970), international relations, and law and then draws from empirical data to expand on them. In discussing international relations theories on collaboration, coordination, and defection, he notes that scholars have often conflated withdrawal and breach and presents a new way to conceptualize the traditional collaboration and coordination games in international relations theory. This work has influenced much of the theoretical and empirical research, limited as it is, on treaty exit over the last decade and a half.

One growing line of research regarding treaty exit focuses on the effect international courts and tribunals have on a state’s preference to leave the court’s jurisdiction by withdrawal. Pauwelyn and Hamilton (2018) provide two sets of changes that drive exit from international tribunals: tribunal-centered based on judicial activism and tribunal bias, and state-centered based on sovereignty costs and policy change. Johns (2015) provides a theory of how the strength of international courts affects dispute settlement, compliance, and the stability of the international institutions. As she explains: “[C]ourts must promote short-term compliance with the law and the long-term stability of the regime.” (p. 21) Using a formal model and investigating the International Court of Justice and the Dispute Settlement Body of the World Trade Organization (WTO), she finds that a strong court is ideal when laws are precise and the court is embedded within a robust political structure, for example the European Union. These strong courts increase compliance when it requires less effort and exit when compliance requires substantial effort. A weak court is ideal when law is imprecise and treaty exit has minimal political and economic repercussions. Johns (2015) gives us a rigorous theory by which we can understand state withdrawal from an international adjudicative body’s jurisdiction. However, Johns (2015, p. 60)’s theory collapses a state’s choices into cooperation or violation, where a violation can be resolved by dispute
resolution or exit.

Doctrinally, there is legal debate about the domestic political and legal parameters of treaty exit. The American Society of International Law’s (ASIL) recent symposium collected a number of articles that focused on the domestic constraints on the power to withdraw. (Helfer, 2017). McLachlan (2019) posits that international law places checks on the exercise of withdraw, to protect the collective interests of the member states—namely the peaceful resolution of disputes. Thus, he argues that national courts should constrain the unilateral acts of an executive to withdraw from an international court’s jurisdiction. Specifically, Bradley and Helfer (2017) examine how the court’s in the United Kingdom and South Africa have constrained the executive’s authority to withdraw from treaties in those countries, with implications for the U.S. In the U.S., the United States Supreme Court has determined that assessing whether the President has the power to withdraw from a treaty unilaterally, i.e. without the “advise and consent” of the Senate, is a nonjusticiable political question.\(^5\) Where the courts decline to provide guidance, legal scholars have posited various analyses of the historical practice of treaty termination (Schnitzer, 2012; Bradley, 2013) and with regard to the constitutional issues regarding separation of powers between the executive and legislative branches of government. (Eichensehr, 2012).

Interest in research on the determinants and covariates of treaty withdrawal has increased in recent years, possibly in light of the number of high profile withdrawals from significant and to-date durable international institutions. Much of the recent work focuses on a subset of treaty withdrawal, which focuses on withdrawal from international organizations. Von Borzyskowski and Vabulas (2019) use theories on why states join international organizations to understand why states leave them, testing these explanations against data

on international organizations from 1945. They find that geo-political factors including preference divergence and contagion are the principle drivers of exit from international organizations. Despite commentary regarding the recent withdrawals in America and Europe, they find that nationalism is not a driver of withdrawal from international organizations.

New work on treaty exit looks at the effects of withdrawal on future cooperation (von Borzyskowski and Vabulas, 2018) and investigates the overlap of international organizations influencing a state’s preference to withdraw from an organization or treaty (Clark, 2020). Treaty exit is also likely the result of bargaining failure based on treaty inflexibility and unsustainable asymmetric obligations. (Dalton, 2020). However, although empirical work on treaty withdrawal continues to expand, the theoretical underpinnings of exit still leave some questions open. Moreover, there is a dearth of work on how decisions to exit a treaty are influenced by parallel or indirect connections between states and a state’s position in the international community.

3 Theory

3.1 Basic Network Structure

In the international community, states have relationships with other states. These relationships vary in formality and context, but often become memorialized as agreements between the states. This might include a military alliance, defense pact, trade agreement, or a shared interest in promoting human rights. Most formally, these agreements become treaties that enumerate the parameters of the agreement and bind the states to each other through rights and obligations. Each state accumulates these formal relationships with other states in its community. It may have more agreements with some states rather than others, which might be thought of as a more robust or deeper relationship with those states. Figure 1 provides a basic representation of how these relationships start to form a network among a community
In Figure 1, the nodes of the networks represent states and the edges represent a relationship between two states. The weight (thickness) of the edge represents the number of treaties between two states. A thicker (thinner) edge represents a deeper (shallower) relationship between the states. For example, State A has treaty relationships with States C, D, and B. As shown by the thicker edge between States A and B, that relationship is the deepest. Moving from abstraction, one can map these varying levels of relationship depth on to relationships by historically friendly states like the United States and the United Kingdom. However, this would also apply to states that share a border, like the United States and Canada, or states that compete, like the United States and Russia. At its most basic level, the depth of the relationship is simply a measure of the number of formal relationships established by the
Of course, these legal relationships provide valuable routes of information about capabilities, resolve, and preferences. That information spreads more quickly the denser the network. (Granovetter, 1973). However, having this better insight may prompt a state to want to fine tune another’s preferences to its liking. As has been established, international institutions—especially international organizations—are fora within which states’ interests converge. (Bearce and Bondanella, 2007). Relatedly, participating in an international institution changes a state’s constellation of preferences over time. (Stein, 1982). As states interact and cooperate within the institution, they would be less likely to withdraw or exit from the institution. This likely captures the “culture of compliance” (Franck, 1990; Henkin, 1995) or the mutual persuasion regarding compliance (Chayes and Chayes, 1993).

The relationships might vary in depth by issue area, being deeper for security matters and shallower for economic matters. The variation of depth across issue areas may be informative in understanding the overarching nature of the relationship between two states. The most robust relationships will likely include a number of treaties for a range of issue areas. We might think that the U.S. and Russia have a more robust relationship in space cooperation or even arms control, but a more shallow relationship in other areas. Whereas the U.S. and Canada likely have treaty relationships on many issues from trade to security, energy to human rights, labor to intellectual property. As such, given not only the depth of the relationship on each issue area, but the breath of the issue areas covered, may lead to the conclusion that the U.S. and Canada have a more robust relationship than others based solely on one or a few issue areas.

The relationships between states include both bilateral and multilateral treaties. Naturally, a bilateral treaty creates a new relationship between two states. The same is true with regard to a multilateral treaty, which in effect creates a number of bilateral relationships at the same time. Thus, these various treaty relationships layer to increase the relationships
between the states. Bilateral treaties constitute a significant portion of the international network of agreements between states. (Kinne, 2013b)

This state-centric conception of the network is only one way to represent the relationships in the international community. In an associative network, there would exist two types of nodes, one for states and one for the treaty. In that type of network, the states would not have edges to each other but would have edges to the various treaties. The states’ joint membership in a treaty would represent the same relationship shown in the previous network between two states. For purposes here, the network with one type of node is used to focus on the states’ relationships with each other and network structure between the states.

The relationships between states of course are not completely captured by the formal treaties entered between them. The relationship between states includes shared cultures, languages, and histories, informal understandings and agreements, and distance, to name a few. Here, the focus is on the establishment of a formal relationship between states where states essentially grant a partner state some set of rights and expect some level of obligations in return. Through this formal process of exchanging promises, the states can learn information about another state, including that state’s preferences. Moreover, a state may build trust with another state if it has many of these relationships and these relationships last over time. The repeated game of cooperation and trust builds a relationship so that the shadow of future cooperation becomes more of a reality. Where these formal relationships are lacking, the level of trust between states may likewise be lacking.

Generally, network approaches to international institutions have focused on the effect of the network on outcomes central to the study of international relations. The literature on the pacifying effect of international law and institutions is fairly robust to date, relying on a view of the network of relationships forged by joint membership. Shared international organization membership has been linked to a reduced probability of interstate conflict. (Russett, Oneal and Davis, 1998; Boehmer, Gartzke and Nordstrom, 2004; Pevehouse and
Russett, 2006; Hafner-Burton and Montgomery, 2006; Dorussen and Ward, 2008; Shannon, Morey and Boehmke, 2010; Kinne, 2013; Lupu and Greenhill, 2017). In particular, theories built on the interconnected and networked nature of international institutions have posited that it is the structure and denseness of the connections or position in the network that provide many pacifying benefits to international relations. Lupu and Greenhill (2017) show that when two states sit in the same “cluster” of international organizations, or families of organization groups, they are less likely to engage in conflict. This occurs through better information sharing, principally through direct and indirect connections, which reduces uncertainty and the probability of conflict. (Russett, Oneal and Davis, 1998; Boehmer, Gartzke and Nordstrom, 2004; Lupu and Greenhill, 2017).

IO membership may also reduce conflict through costly signaling about capabilities, resolve, and interests. (Boehmer, Gartzke and Nordstrom, 2004). In addition, the literature on the effects of shared IO membership often focus on how those relationships can shape crisis bargaining (Chapman and Wolford, 2010); lead to interest convergence (Bearce and Bondanella, 2007); and other normatively positive outcomes like democracy promotion (Pevehouse, 2002) and the proliferation of human rights practices (Greenhill, 2015).

Economic ties, like trade, have been shown to generally decrease the likelihood of conflict, namely though indirect trade ties that create highly interdependent trading communities within which conflict is less likely. (Lupu and Traag, 2013). Moreover, states that are more central within a trading network initiate fewer conflicts, even when their trade ties are highly asymmetric. (Kinne, 2012). These ties are primarily created and maintained through international legal institutions like treaties and IOs.

Thus, the use of a network theory and understanding both the direct and indirect relationships between states in international relations is well established. However, the work has tended to focus on particular types of shared membership, membership in IOs—as opposed to the larger set of memberships in treaties or informal agreements, and the effect of the
network of treaties on conflict. There is less work on how states build connections and even less on how those connections change or are discarded.\textsuperscript{6}

### 3.2 Network Structure and Exit

Understanding the formal relationships as described above, we can ask whether and how the network structure might influence state behavior, in particular with regard to a state’s decision to leave a treaty relationship. A state’s position within the network is instrumental in how it interacts with other states, receives information, and leverages its rights. Moreover, in deciding to enter into and withdraw from treaty relationships, states balance various costs and benefits that include a state’s many direct and indirect connections with its international community. Some benefits a state might look to in a network is the ability to substitute or improve its relationships with other states by adding or subtracting relationships that might engender trust or establish new pathways for negotiation and information. Regarding costs, states may find layers of treaty obligations and rights constraining in achieving their goals. Further, a state may be in the wrong club, so to speak, and seek to shed the spill over costs of being a member of a group of states.

The network of treaties, as described above, is created and shaped by the states that make up the international community. States may join or exit treaties for various reasons, some of which include the network dynamics described herein. Here, the focus is on the network structure at any given time and how that structure may influence a state’s decision to exit in some time in the future. When establishing a treaty relationship, a state weighs its costs and benefits of membership with some level of uncertainty about how circumstances may change in the future. Moreover, simply creating a new treaty relationship itself may reveal before unknown benefits and costs within a network of treaties.

\textsuperscript{6}Pevehouse et al. (2020) note that “the work on the determinants of IGO membership (including accession, withdrawal, or expulsion) is relatively sparse, compared to membership in other international institutions such as alliances (Mattes, 2012) or preferential trade agreements (Mansfield & Milner, 2015).”
Using abstract network theory as a guide, we can consider various network features that may or may not affect a state’s willingness to exit from a treaty. Network theory provides a framework within which we might explore the logic of treaty withdraw in the network of treaty relationships and pair those expectations to empirical cases that can highlight the theory’s plausibility. As presented below, various aspects of a network are wrestled with and matched to examples where appropriate to probe the plausibility of the theory’s applicability.

To start, states have varying numbers of relationships with some states having more relationships than others. These states may have connections with many different states or many different connections. Figure 2 illustrates a measure of how central state is to the community based on the number of connections it has with other states. As shown in figure 2, State B is connected to four other states, followed by States A and D, and then States C, E, and F.
This volume of connections may make each individual connection less valuable to the state. This would be particularly true where the treaty relationships were overlapping or substitutable. If a state has a number of security agreements with a state or small group of states that cover a similar issue area, then losing one of those connections may not be as important where the same ends can be accomplished without the treaty relationship. Also, a state may have indirect ways of continuing a relationship with a state. Returning to figure 2, if State B abandoned its relationship to State D, it would still have at least two pathways of indirect connection (i.e. one through State A and one through States E and F). In this case, one might expect that states that have more connections might be more inclined to withdraw from any particular treaty. This leads to the following hypothesis:

**Hypothesis 1.** A state will be more likely to withdraw from an international institution when it has a high number of treaty connections to other states within the network of treaty relationships. *(Degree Centrality)*

This also would capture states that are simply more active treaty makers. Being a member of more treaties gives a state more opportunity to withdraw from treaties. But the proposition here posits more. Namely, that having more connections and being more active leads a state to not hold on too tightly to any one treaty. Whereas, if a state sits farther away from the center with fewer connections, each connection may be more meaningful and, thus, withdrawal would have a stronger impact and potentially constitute more of a risk to the exiting state. In short, a state that is more central to the network of treaty relationships is more likely to withdraw from an international institution.

It should be noted that having more relationships may potentially work in the opposite direction. As noted above, international institutions generally lead to preference convergence between states who share membership in the same institutions. Therefore, being more deeply enmeshed in the international community might actually restrain a state from exiting any one of the institutions. However, being that states select into a treaty calibrating their
expectations in light of the option to exit in the future, we might expect this convergence to be mitigated. Moreover, preference convergence may take time, so the lifespan of the treaty may play a role.

Additionally, a state’s influence on the community of states should also play a factor in determining how it behaves with individual treaties. We might expect more influential states to value each connect less, but value less important relationships over more important relationships. Influence in this way expands on the centrality described above and focuses on those states that are well connected to other well-connected states. This might be a more accurate representation of the dynamic discussed above with degree centrality. However, it also captures the leverage of the state has on those around it, or in other words, its power in the network. Again, here a highly influential state has many pathways to accomplish its goals and exercise rights through a range of treaty relationships.

**Hypothesis 2.** A state will be more likely to withdraw from an international institution when it has more influence within the network of treaty relationships. (*Eigenvector Centrality*)

A different type of centrality may function in the opposite direction. Where states have clustered, some states may serve as bridges between those clusters. The relationship between States E and G in figure 3 serve as a bridge between the community on the left and the communities on the right.

In such a case, those that “bridge” relationships are more meaningful in serving as a bottleneck in information, rights, or obligations in the network. Because of this, those relationships would be more meaningful for the state and its cluster. This may function in a number of ways. As a gatekeeper between clusters, the bridge relationship has outsized leverage in the community. A simplistic example might be one where an outsider country only has relationships with one state, for example the relationship between China and North Korea. In such a case, it might give the gatekeeper state, in this case China, leverage with other countries that seek information, trust, or other matters from North Korea. In such
a case, China would be more reluctant to abandon that relationship for fear of losing this leverage. The leverage gained from having a “bridge” to an isolated state or cluster of state is balanced against the costs of maintaining that relationship.

**Hypothesis 3. A state will be more likely to withdraw from an international institution when it is less central by acting as a bridge to other states within the network of treaty relationships (Betweenness Centrality)**

Beyond simply having connections with other states, groups of states likely have more treaty relationships within certain subsets of the the international community. These clusters of states might be made up of states that share similar histories and cultures. One might imagine that European states would have a high number of treaty relationships among themselves—notwithstanding the overarching framework of the European Union—simply because of their proximity and shared histories. We might also see clustering between consumer states and producer states, whereby trade agreements proliferate between states with differing endowments and demands. Likewise, clustering may coalesce around issue areas, with states entering into security agreements, like defense cooperation agreements, at higher
States are more likely to create bilateral agreements if they share agreements with common third parties, accede to more agreements generally, or share material characteristics with current bilateral partners. (Kinne, 2013b). This could lead to clusters of state relationships as shown in figure 4a, which illustrates an example of a community with three clusters of relationships. In the network, when states with a bilateral relationship share a third relationship they form a closed triad. A cluster exists among states when the set of closed triads in the group is large compared to all closed and open triads.

When states are within clustered relationships, we might expect to see treaty withdrawal when a state moves from one cluster to another, as shown in figure 4b. In figure 4b, State M is moving from the purple cluster with State L to the blue cluster with States I, J, and K. As State M establishes treaty relationships with this new cluster, the likelihood that State M will break off its relationship with State L, shown with the red edge. In the abstract, this would lead to the following hypothesis:

**Hypothesis 4.** A state will be more likely to withdraw from an international institution when it significantly changes its position in the network, moving from one cluster to another, substituting treaty relationships in the new cluster for the old relationships. 

(Changing
This hypothesis attempts to get a dynamic where a state simply adds additional treaty relationships, rather than substitutes old treaty relationships for new ones. Conceptually, a state could create a set of new treaty relationships across clusters in an additive way. This may lead to a modification of the clusters in a different way than simply switching teams, so to speak.

This dynamic is plausible when considering various historical cases, which primarily were driven by states reorienting their treaty relationships. This appears to occur most clearly during significant geopolitical shifts. In the final years of the Napoleonic Wars, various Germanic principalities shifted allegiances. The Confederation of the Rhine broke apart as members began to exit. By entering new treaties and establishing new relationships, Bavaria (Treaty of Ried) and Wurttemburg (Treaty of Fulda) moved from partnerships with France to those with her foes, including Austria and the Sixth Coalition.\(^7\)

More recent cases also serve as examples of withdrawals spurred on by shifting sets of relationships. The U.S.’s shift from a formal relationship with Taiwan to the People’s Republic of China led to the Carter Administration’s decision to withdrawal from the Sino-American Mutual Defense Treaty. As the U.S. sought more ties with the P.R.C., it shed ties with Taiwan by necessity. This highlights how in these cases, the treaty relationships at issue are incompatible and cannot both exist at the same time.

Also, as mentioned above, Uzbekistan withdrew from the CSTO as part of its changing suite of treaty of relationships, in particular, Uzbekistan’s desire to strengthen ties to the United States and other international organizations.\(^8\) Although officially ambiguous, it was

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\(^7\)The Sixth Coalition included Austria, Prussia, Russia, the United Kingdom, Portugal, Sweden, Spain and a number of German States.

\(^8\)Uzbekistan had previously suspended its membership to the CSTO from 1999 to 2006. Uzbekistan provided the U.S. a military base at Karshi-Khanabad for use in the wake of the September 11, 2001 terrorist attacks. Aziz Egamov and Rafael Sattarov. “What Uzbekistan Seeks From The United States” The Atlantic Council (May 14, 2018). Azerbaijan and Georgia also withdrew their membership from the CSTO in 1999. This was a result of the initial five-year life of the treaty expiring, which these three countries
Figure 5: Across Treaty Contagion

reported that Uzbekistan’s 2012 decision to withdrawal from the CSTO was a move away from Russia into the orbit of the U.S.\(^9\) Additionally, Russia obtained the right to veto the establishment of new foreign military bases in the member states on December 21, 2011.\(^{10}\) This would have made a burgeoning security—as well as economic—relationship with the West more difficult, thus, Uzbekistan decided to break with Russia in favor of new agreements.

Finally, withdrawal may be contagious: when one state withdrawals, another may be more likely to withdrawal. However, there are at least two types of contagion to be considered here. The first type is contagion across treaties as illustrated in figure 5. Here, a withdrawal from one treaty may influence a state’s decision to withdraw from another related treaty. For example, in figure 5a, State A withdraws from Treaty 1. Because Treaty 1 is bilateral, effectively terminates the treaty for State B. Moving to figure 5b, States A and B might be more willing to withdraw from Treaty 2 as a result of the first withdrawal from Treaty 1. State B may decide to withdraw from Treaty 2 in retaliation,\(^{11}\) especially if there is some link connecting the issues covered in Treaties 1 and 2. This leads to the first of two hypotheses regarding withdrawal contagion:

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\(^9\)James Kilner. “Uzbekistan withdraws from Russia-lead military alliance” *The Telegraph* (July 2, 2002).


\(^{11}\)A credible risk of retaliation may prevent any withdrawal in the first place.
Hypothesis 5. A state will be more likely to withdraw from an international institution when another institution to which it is a member suffers a withdrawal. (Contagion: Across Treaties)

The second type of contagion is contagion between members within the same treaty. Within a treaty framework, states may see a withdrawal by one or more members as a signal that the institution is unworkable. Moreover, the first exit may lower the threshold for others to prefer exit over remaining in the treaty. Figure 6 illustrates this type of contagion.

Contagion is likely dependent on the type of state contemplating exit. There are some states that are likely not powerful enough to cut off relationships on its own. These states are represented in blue in figure 6. These states would only be willing to exit an institution if they had cover from other states exiting, either in large enough numbers or with a powerful enough state. Some states, likely more powerful and self-sufficient states, would be more willing to exit unilaterally, even if no one else did. These states are represented in orange in figure 6. Additionally, certain states might have a low value for international relationships or obligations and thus may simply be more willing to withdraw. These unilateral exit-ers would be the power and pariah states discussed below. Contagion would be more of an issue with the bandwagoning type of states that may not be the first to leave a treaty, but would...
be more likely to do so after someone else has. As illustrated in figure 6b, if a unilateral type state, i.e. State A, exits the treaty, then a bandwagoner state, i.e. State C, would be more likely to do so using State A’s withdrawal as cover.

**Hypothesis 6.** *A state (especially if a bandwagoner) will be more likely to withdraw from an international institution when another member of the treaty withdraws from the same institution. (Contagion: Within Treaties)*

However, this cascading exit is not a forgone conclusion. After the United Kingdom voted to leave the European Union, no other state has yet to follow suit—even the most antagonistic members. Exit may be more or less difficult. As in the case of the European Union where exit is particularly difficult, as evidenced by the protracted exit negotiations between the U.K. and E.U., perhaps other member states have been effectively deterred. Moreover, in cases where a treaty creates an organization, the treaty organization may try to discourage bandwagoner states by increasing the costs of leaving and preventing the contagion from growing.\(^{12}\)

### 3.3 Additional Hypotheses Considered:

Beyond simply having a network of relationships in the international community through treaties, a state is also connected materially through integration into the global economy. This is another measure of a state’s relationship to the community, but on a community-wide scale. A state’s degree of integration should influence its willingness to withdrawal from institutions. A state that is significantly integrated economically should be less likely to withdraw from a treaty. This follows because as states become more enmeshed with each other’s economies, it would seem that their interests would come in more alignment

\(^{12}\)The E.U.’s position on preventing contagion can be summed up by the comments of Elmar Brok, member and chairman of the European Parliament’s Foreign Affairs Committee: “Out is out. We have to prevent copycats now.” “A splintering union: As Europe’s sceptics cheer Brexit, its enthusiasts mourn.” *The Economist.* (June 24, 2016).
with one another making cooperation more likely and defection less likely. For example, smaller, less powerful states, may be more dependent on the international community for their prosperity, e.g. in the context of trade. Moreover, withdrawal may be more painful to both the institution or withdrawing member. This captures private good provision, where the good is exclusive to the integrated members; a closeness in preferences given the integration; and institutional value in providing efficiencies. Thus, leading to the next hypothesis:

**Hypothesis 7.** A state is more likely to withdraw from an international institution if it has a low degree of economic integration with the international community. *(Economic Integration)*

Power dynamics may also play a role in a state’s decision to withdraw from institutional membership. Power dynamics are also at play with agreement formation. *(Koremenos, 2016).* If a state has significant power in the international system, for example the United States or China, it may be more willing to withdraw from an institution being that it is more self-reliant and assumes it will not suffer great consequences. Similarly, pariah states may make a similar calculation regarding the consequences of its withdrawal, believing it already sits on the outside of the international system. A pariah state, like North Korea, may believe that it is already shunned by the world and thus would not have much more to lose by withdrawing from an institution. Moreover, its audience costs are likely lower for doing so, having to only appease its small constituency and a limited range of benefactor states. For these states, reputations will be affected to a lesser degree as being tempered by their either importance or lack thereof to the international community. Additionally, goods provided by the agreement may be more or less crucial for these states on the extremes. In describing great powers and “outlaw” states, Simpson *(2004, p. 5)* explains “states can be differentiated in law according to their moral nature, material and intellectual power, ideological disposition or cultural attributes.” These outlaws may also be described as “recalcitrant.” *(Crampin, 2020).*
Hypothesis 8. A state will be more likely to withdraw from an international institution if it is a great power or pariah. \textit{(Powerful or Pariah)}\textsuperscript{13}

States may also value or weight treaties differently. One might believe certain treaties are more important, so to speak, than others. Where a treaty is particularly important, a state would be less willing to exit and cast those benefits aside. As a simple example, it is possible that certain issues like security or border agreements may be perceived as highly important because it touches on the integrity and security of the member states. However, other issue areas may have tremendous importance as well. For example, the progression of treaties leading to the E.U. started as focusing on economic matters (although security concerns were present in the background). Moreover, the importance of an issue area may be highly specific to a particular state. A climate agreement may be more important to an island nation than to others.

In looking at issue areas, it is apparent that assessing a level of importance to a treaty across states may prove difficult. Issue area alone may not capture a particular state’s value of a treaty. Other potential factors that may evidence importance could include the age of a treaty or the membership of the particular treaty. Regarding age, more established treaties may have gained more importance overtime, becoming part of the fabric of the relationship. Yet, older treaties may have become obsolete overtime, thus, age may not itself capture a treaty’s importance. In the case of membership, a state may value broad membership for a particular type of treaty. For example, broad membership would be highly valuable in the case of nuclear nonproliferation. Further, a state may value the membership of certain states as particularly important—perhaps having a great power or adversary bound by the same obligations. In the end, importance may best be addressed in assessing a state’s assignment of value to any particular treaty, through its balancing of the benefits and costs of continued

\textsuperscript{13}Simpson (2004) provides a detailed discussion of the descriptions of states as either great power or pariah within international law, with variation over time.
treaty membership. This something explored in more depth in Dalton (2020).

4 Data

[NOTE: Data Collection and cleaning is still on-going. Below is a description of the data collected on treaty exits over the last 70 years.]

I collected treaty information from the United Nations Treaty Series (UNTS), which includes “more than 250,000 treaties or treaty actions that have been registered and published by the Secretariat.”

I pull all instances of withdrawal or denunciation registered with the UNTS from 1947 to 2018. This includes 1,500+ exits (withdrawals and denunciations) from 396 treaties by 160 different exiting states.

Figures 7, 8, 9, 10 give descriptive statistics regarding exits registered with the UNTS. Figure 7 shows the annual number of exits from 1947 to 2018. On average, 22 exits were registered per year; however, it is clear exits fluctuated from year to year. Significant spikes in exits occurred in the late 1980s and late 1990s. This may be associated with the realignment of states after the collapse of the Soviet Union, lending plausibility to the hypothesis regarding cluster movement.

Figures 8 and 9 show the numbers of exits per state and per treaty, respectively. The average number of exits per state is 10 and the average number of exits per treaty is 4. As figures 8 and 9 show, most states exit infrequently and most treaties suffer from few exits (one exit is the median). Thus, a small number of states seem to be behind most exits and only a few treaties suffer from more than a couple withdraws.

Figure 10 shows the top 20 states with the most exits registered with the UNTS. Inter-

\footnote{The UNTS “is a publication produced by the Secretariat of the United Nations containing all treaties and international agreements registered or filed and recorded by the Secretariat since 1945, pursuant to Article 102 of the Charter.” (United Nations Office of Legal Affairs Treaty Section, “Overview,” United Nations Treaty Collection, available at: https://treaties.un.org/Pages/Overview.aspx?path=overview/overview/page1_en.xml.)}
Figure 7: Exits Over Time (Annual)

Interestingly, most of the states are western European states or North American states. At first glance, this may seem surprising to have so many of the advocates for international institutions appearing to be the most frequent exiters. This could be because these countries, mostly democracies, have frequently shifting preferences based on regular elections. It could also be that these states are so integrated into the international network of treaties, with more connections than most, that each simply has more opportunity to exit. This leads to the possibility that the hypothesis stated above regarding degree and eigenvector centrality might have traction where one would suspect that each of these states is central to the network.
5 Analysis

[NOTE: Because the dataset is still being cleaned, I have run a preliminary analysis using a random sample from Koremenos (2013). The size of the sample may make the finding difficult to uncover at this stage.]

Using the data from Koremenos (2013), I perform a preliminary test of the theory on the random sample of 146 treaties collected from the UNTS included in that study. Although the random sample of treaties is small, this preliminary test would be useful as a plausibility probe. I built network data from the Koremenos (2013) data as shown in Figure 11. In the figure, red nodes are states that exited from at least one treaty. Blue nodes are states that did not exit from any treaties. This gives a sense of how common treaty exit is among the
various states. Only 38 of the 199 states (less than a quarter) in the sample exited a treaty. Similar to the more expansive UNTS data above, the Netherlands withdrew the most (3), followed by five states\(^\text{15}\) exiting twice, and 32 states exercising their right to exit at least once. Many of the top 20 most existing states above, appear in this sample. European states make up 42% of all the states that withdrawal at least once. Half the number of states in Africa (13%) and Asia (18%) withdrawal at least once, compared to all the states that withdrawal, even though there are more total states in both regions. As such, European states appear to withdrawal more often than other states.

As presented, the network is quite dense, with an edge density of 0.998 and transitivity of 0.998. This may be the result of the small sample size of treaties or the number of

\(^{15}\)Australia, Croatia, Germany, Ireland, and Singapore.
multilateral treaties included, which make up almost a third of the treaties. For each multilateral treaty, the members are establishing a large set of relationships with other members. Yet, importantly, this network is collapsed overtime and static. Thus, the graph shows all connections over decades at the same time. This makes it difficult to see change overtime, where a states’ centrality or relationship to a cluster may change from year to year. [Work in progress.]

The results of a simple logit model on three different measures of centrality is shown in Table 1. Here, I am testing a state’s network attribute on the likelihood that it will exit a treaty. Although some of the results are not significant, they are in the correct direction in isolation. Interestingly, eigenvector centrality has a positive and statistically significant
relationship to treaty exit. However, when the measures are analyzed together, we see degree centrality reverses direction. This may be picking up the difference between power and influence and simple number of connections. Moreover, this may lend support to the alternative hypothesis that being more embedded in treaty relations promotes preference convergence and decreases a willingness to exit. Yet, as previously discussed, the temporally flat nature of this network presents limits to its usefulness in testing all the theories presented. Essentially, this analysis is looking at a state’s network attribute over decades, without accounting for the nuance or change overtime. This will be expanded in further work on this
Table 1: Network Attributes (Logit)

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<th>(3)</th>
<th>(4)</th>
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<td>Exit</td>
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<tr>
<td>Degree</td>
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<td>−2.173***</td>
<td>(0.313)</td>
<td>(0.703)</td>
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<td>8.447***</td>
<td>(1.579)</td>
<td>(2.083)</td>
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<td>−0.121</td>
<td>(0.139)</td>
<td>(0.137)</td>
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<tr>
<td>Constant</td>
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<td>−5.678****</td>
<td>−1.349***</td>
<td>422.151***</td>
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<tr>
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<td>−94.631</td>
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<td>196.875</td>
<td>180.398</td>
<td>193.262</td>
<td>174.780</td>
</tr>
</tbody>
</table>

*Note:* *p<0.1; **p<0.05; ***p<0.01

Data from UNTS and Koremenos (2013). Models run Mar. 22, 2021
6 Implications and Future Research

This project presents a theoretical framework within which to understand a state’s choice to withdraw in the context of the network structure of the state’s treaty relationships. The theory adds to our understanding as to when and how states decide to end their cooperation and exit an international institution. This project expands beyond investigations of isolated relationships between states in international organizations, and it allows for consideration of indirect and parallel relationships—which may have remained unnoticed before—in understanding when a state will decide to remain in a treaty or exit.

As a next step, examining what happens after withdrawal may prove insightful, adding to emerging work currently being done by von Borzyskowski and Vabulas (2018). Despite states or contracting entities drafting treaties to include withdrawal provisions, the actual exercise of withdrawal is likely a blow to the future cooperation between the exiting entity and the remaining institution. Moreover, a reputation of leaving treaty agreements may make it more difficult to enter into new treaties or treaties with favorable terms. Jilted states may be reluctant to enter into new agreements with the withdrawing state, and if they do, they may demand less flexible provisions in new agreements given their suspicion that withdrawal may occur again. This leads to a possible hypothesis: A state will be less likely to enter into a new treaty with a state that has recently withdrawn from a treaty of the same type.

Also, with an understanding of the network structure, one could investigate how the international community reacts to a state’s withdrawal. Do states with more robust connections react more or less strongly than those that have fewer connections? Are close friends more or less critical when a state decides to break off a connection? This perspective on the phenomenon opens a wide array of research questions on a core topic of interest in international relations.
Research on international cooperation and its undoing is fundamental to our understanding of the nature of international relations. Moreover, as the world moves into what is likely a more competitive era between states and international institutions are put under increasing pressure, our understanding of what causes institutions to fray and fall apart may prove crucial. Numerous challenges await the international community—from contagious economic turmoil to nuclear proliferation, from pandemics to climate change—and sustained international cooperation is key to meeting those challenges.
References


