Democracy and Alliance Treaty Depth

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Abstract

Why do states add formal commitments of defense coordination and cooperation to military alliance treaties? I argue that states use treaty depth to increase the credibility of their alliance commitments while also managing the risk of involvement in unwanted conflicts. Democracies are especially inclined to form deep alliances because depth increases treaty reliability without exposing leaders to entrapment or domestic audience costs from violating unconditional military support. Therefore, I expect that democratic alliance leadership increases treaty depth but decreases the probability of unconditional military support. I test this claim on offensive and defensive alliances from 1816 to 2007 and offer a short case study of the North Atlantic Treaty Organization. I find that as the polity score of the most capable alliance members when the alliance formed increases, treaty depth increases, but there is mixed evidence that allied democracy decreases the likelihood of unconditional military support. I then disaggregate the concept of democracy and find that inferences about democracy and treaty depth are driven by competitive elections, while the null findings for unconditional military support are the result of offsetting effects from competitive elections and executive constraints. The argument and findings challenge claims that democracies prefer limited alliance commitments.

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1 Introduction

Why do states make deep alliance treaties? While some alliance treaties only include military support, others add further commitments of peacetime defense cooperation and policy coordination. Deep alliances include promises like basing rights, international organizations, policy coordination, and integrated military command. I argue that states use treaty depth to increase the credibility of their alliance commitments while managing the risk of entrapment.

The sources of treaty depth are worth studying. States frequently employ treaty depth and depth has important consequences. At least half of all ATOP alliances with offensive or defense obligations have some treaty depth. As for the consequences, credibility from deep alliances encourages non-major power members to reduce military spending. Thus, treaty depth affects alliance politics by shaping treaty credibility and the distribution of military spending among members.

Despite the consequences of alliance treaty depth, we have little idea when states add depth to their alliances.[1] In this paper, I explain when states make deep alliance treaties. I start with the premise that depth is one of several ways that states can increase the credibility of their alliance commitments, and argue to domestic political institutions lead states to prefer treaty depth to other sources of credibility. The alliance negotiations that produce treaty designs center on the nature of military support (Poast, 2019) and ensuring promises of intervention are credible. Treaty depth and unconditional military support are two costly ways states can increase the credibility of their alliance commitments. Democracies prefer to reassure allies with deep alliance treaties because depth increases alliance credibility with less exposure to domestic audience costs. Unconditional military support exposes democratic leaders to entrapment or the audience costs of treaty violation, but limited commitments of military intervention are harder to violate (Mattes, 2012*b*; Chiba, Johnson and Leeds, 2015). Therefore, I expect that democracies will often form deep alliances with conditional promises of military support.

[1] Mattes (2012*b*) examines the causes of military institutionalization.

I test the argument with a statistical analysis of offensive and defensive alliances from 1816 to 2007 and an illustrative case study of the North Atlantic Treaty Organization (NATO). I estimate a series of statistical models, including several that connect decisions about treaty depth and unconditional military support by adjusting for unobservable correlations between the two processes (Braumoeller et al., 2018). The case study shows that democratic states often fear entrapment, but are willing to use treaty depth to reassure allies (Seawright and Gerring, 2008; Seawright, 2016). I find consistent evidence that alliances with democratic leaders have higher treaty depth. Evidence that democratic membership decreases the probability of unconditional military support is less consistent, however.

This paper contributes to three strands of scholarly inquiry. First, they add to a nascent literature on alliance treaty design. Existing scholarship examines parts of treaty design in isolation (Benson, 2012; Mattes, 2012*b*; Chiba, Johnson and Leeds, 2015), but different sources of credibility in alliance treaty design are connected. Theories and models that consider one alliance characteristic at a time may generate misleading conclusions. For example, previous studies found statistically insignificant associations between democracy and alliance institutionalization, perhaps because they did not account for the connection between treaty depth and unconditional military support.

Second, this paper adds to knowledge of how domestic politics affect alliance politics. Scholars have long acknowledged that democracy and alliances are connected (Lai and Reiter, 2000; Gibler and Wolford, 2006; Mattes, 2012*b*; Warren, 2016; McManus and Yarhi-Milo, 2017). Existing scholarship suggests that democracies prefer limited commitments (Mattes, 2012*b*; Chiba, Johnson and Leeds, 2015) because they are more likely to make conditional promises of military support. Chiba, Johnson and Leeds (2015) write that "domestic costs can make democratic states wary of engaging in agreements requiring broad and/or deep cooperation." My argument suggests that even if democracies screen the scope of their commitments carefully, they form deeper alliances on other dimensions. Scholars often claim that audience costs make democratic commitments are more credible (Gaubatz, 1996; Leeds, Mattes and Vogel, 2009; DiGiuseppe and Poast, 2016),

but this relationship is disputed (Gartzke and Gleditsch, 2004; Downes and Sechser, 2012). The net effect of the connection between democracy, alliance design and treaty credibility requires further research. Third, I contribute to the rich literature on domestic politics and international cooperation, e.g. (Downs and Rocke, 1995; Fearon, 1998; Leeds, 1999; Mattes and Rodríguez, 2014). If democracies reassure partners with deep alliance commitments because these are less salient for voters, audience costs sometimes push democracies to undertake international commitments with less salience.

The process of alliance treaty negotiation and design is understudied (Poast, 2019), and there is even less research on treaty depth. In the nascent alliance treaty design literature, most scholarship examines conditions on military support. Benson (2012) shows that foreign policy disagreements and revisionist protege states increase the likelihood of limited military support and Kim (2011) claims that states use conditional obligations to escape entrapment. Mattes (2012*b*) finds that joint democracy increases the probability of conditional alliance obligations, as well as little evidence that alliance symmetry and history of violation affect conditionality. Chiba, Johnson and Leeds (2015) added to to existing work on limited obligations by showing that democracies are more likely to form alliances with conditional military support or consultation.

Two studies that examine concepts that are similar to treaty depth. First, Mattes (2012*b*) argues that members of symmetric bilateral alliances where one partner has history of violation will be more likely to use conditions on military support, issue linkages, and military institutionalization to increase treaty reliability. Her measure of military institutionalization (Leeds and Anac, 2005) is close to my conceptualization of treaty depth, and Mattes finds that symmetric alliances where one partner has a history of violation have higher institutionalization. This paper makes an important contribution, but it does not differentiate between the costs and benefits of different sources of alliance credibility, and the military institutionalization measure understates the extent of variation in treaty depth. Second, Benson and Clinton (2016) find that foreign policy agreement, major power involvement and treaty scope are all positively correlated with depth, while checking the

validity of a latent measure of how costly alliance obligations are in general. Benson and Clinton's latent measure of depth includes secrecy and issue linkages, so it captures a broader concept than deep military cooperation.

Therefore, we still do not understand why states add treaty depth to their alliances and might prefer it to other sources of alliance credibility. To explain this, I compare treaty depth to other sources of alliance treaty credibility. This theoretical and empirical approach departs from previous scholarship, which examines different sources of alliance credibility in isolation and or treats them as equivalent. Both treaty depth and unconditional military support increase alliance credibility, but they have different costs. Mattes (2012*b*) treats military institutionalization and conditionality as independent and equivalent sources of reliability in her argument and research design. Though Benson and Clinton (2016) treat the scope of military obligations and depth as related concepts, they do not offer an argument to explain when states might prefer one to the other.

The paper proceeds as follows. In the next section, I lay out the argument and hypothesis. Then I describe the data and research design. The final sections discuss the results and implications.

2 Argument

In this argument, I first establish a definition of treaty depth. After that, I offer a general explanation of why states form deep alliances. Based on the general framework, I then detail why democracies often increase treaty depth, but are less likely to offer unconditional military support.

Alliance depth is the extent of defense cooperation formalized in the treaty. Deep alliances require additional military policy coordination and cooperation. While shallow alliances stipulate more arms-length ties between members, deep treaties lead to closer cooperation through intermediate commitments that fall between treaty formation and military intervention. Defense cooperation in a deep alliance takes many forms. Allies can promise an integrated military command, military aid, a common defense policy, basing rights, international organizations, specific

capability contributions or companion military agreements.

Treaty depth helps states address problems of opportunism in commitments of military support, especially abandonment and entrapment. Alliances are self-enforcing contracts or institutions (Leeds et al., 2002; Morrow, 2000). Given external threats in an anarchic international system, states form alliances to aggregate military capability and secure their foreign policy interests (Altfield, 1984; Smith, 1995; Snyder, 1997; Fordham and Poast, 2014). Potential alliance members can design a wide range of treaties (Leeds, Long and Mitchell, 2000; Leeds et al., 2002; Benson, 2012; Benson and Clinton, 2016). Treaty design shapes the costs and benefits of treaty participation and addresses potential opportunistic behavior. Beyond the benefit of potential military support, alliances also clarify international alignments (Snyder, 1990) and support economic ties (Gowa, 1995; Li, 2003; Long, 2003; Fordham, 2010; Wolford and Kim, 2017). The costs of alliances include lost foreign policy autonomy (Altfield, 1984; Morrow, 2000; Johnson, 2015), and the potential consequences of opportunistic behavior. Opportunism in alliances includes abandonment, or the failure of alliance members to honor their commitments (Leeds, 2003; Berkemeier and Fuhrmann, 2018), entrapment in unwanted conflicts (Snyder, 1984), and free-riding (Morrow, 2000).

To form an alliance, potential members must have sufficient overlap in foreign policy interests (Morrow, 1991; Smith, 1995; Fordham and Poast, 2014), especially their proposed war plans (Poast, 2019). By making a formal alliance treaty, members attempt to increase the credibility of military interventions (Morrow, 2000). Alliance members and other states can then use the costs of the alliance commitment to assess treaty reliability. While alliance formation alone adds some credibility, treaty depth or promises of unconditional military support further increase alliance credibility. Depth and unconditional military support are both costly commitments that alliance members and other states can observe.

Greater alliance credibility can increase the risk of entrapment in unwanted conflicts, however. Whether an alliance imposes conditions on military support clearly shows this tradeoff. Conditional alliances limit promises of intervention to particular regions, conflicts, or instances of non-

provocation (Leeds, Long and Mitchell, 2000). When alliance members fear entrapment in unwanted conflicts because their allies have divergent interests, they constrain military support to specific circumstances (Kim, 2011; Benson, 2012).[2] Conversely, offering unconditional military support indicates high shared foreign policy interests and less fear of entrapment. Attaching no conditions to a promised intervention means alliance members hazard the reputational (Gibler, 2008; Crescenzi et al., 2012) and audience (Fearon, 1997) costs of treaty violation from many potential conflicts. Accepting these potential costs implies that fighting with allies in many circumstances is acceptable. Therefore unconditional alliances are a key source of credibility, because they are a costly signal of substantial foreign policy agreement.

When states form alliances with unconditional promises of military support, they have few entrapment concerns, but alliance members face a time-inconsistency problem (Leeds and Savun, 2007). Although conditions on military support are fixed, foreign policy interests change. Alliance members may start with substantial foreign policy agreement, only for their interests to diverge. If interests change and the alliance is invoked, states must bear either entrapment or the audience costs of treaty violation. Inasmuch as audience costs are less costly than fighting, states will often choose to violate the treaty and bear the audience costs. But states with high audience costs will be more sensitive to entrapment, because alliance violation is more costly. Therefore, states with high audience costs will be less likely to offer unconditional military support (Chiba, Johnson and Leeds, 2015).

Unconditional military support is not the only source of alliance credibility, however. Treaty depth offers a way for states with audience cost concerns to reassure allies with less risk of entrapment. Depth shapes the perceived reliability of an alliance by providing opportunities for states to fulfill treaty obligations in peacetime (Morrow, 1994). When states implement deep obligations, it provides a sunk cost signal of commitment. Observing that alliance members adhere to peacetime promises suggests that they will also honor promises of military support. Implementing deep treaty

[2]Such deliberate design of alliances means clear instances of entrapment are rare (Kim, 2011; Beckley, 2015).

provisions can also enhance joint war-fighting.

How does depth limit the risk of entrapment? First, failure to implement deep alliance provisions provides an observable signal of foreign policy divergence short of war. Furthermore, policy coordination in a deep alliance gives states more control over allied actions and policies. Bases, joint organization and policy coordination all give states influence to check entrapment. Coordinating policies and plans over time allows states to ensure that their joint war plans still line up, and that neither member faces a prohibitive risk of abandonment or entrapment.

Close cooperation through treaty depth addresses the reliability and entrapment dilemma, but it is not without costs. Deep alliances reduce foreign policy autonomy more than other alliances. Lost foreign policy autonomy is the other major cost of alliance participation, besides opportunism. Cooperating and coordinating policy with allies reduces the ability of states to make unilateral decisions. There are also practical hurdles to unwinding foreign bases, international institutions and integrated military commands. In summary, depth adds credibility with less risk of entrapment, but entails substantial foreign entanglement.

Though depth and unconditional military support both increase alliance credibility, they do so in different ways. Conditions on military support do not change without a treaty renegotiation, and the costs of fighting are hypothetical unless the alliance is invoked. Highly conditional alliances are less costly in expectation, which reduces their credibility but guards against entrapment. Conversely, the sunk costs of depth can be observed without invoking promises of military support and address time-inconsistency problems. Depth and cooperation with allies increases credibility with less risk of entrapment, but leads to greater foreign entanglement.

Whether states are more concerned with entrapment and audience costs or foreign entanglement therefore shapes how they reassure their alliances. When states fear entrapment and do not want to face the audience costs of treaty violation, they will form deep alliances with conditional promises of military support.[3] Therefore, states with high audience costs for violating promises of

[3]Prospective alliance members could also make an arms-length alliance commitment with neither depth nor un-

military support and relatively low concern with foreign entanglement in the leader's key foreign policy audiences will use treaty depth to increase the credibility of their alliances. Based on this general argument, I expect that democracies will often use treaty depth to increase the credibility of their alliances. Domestic political regime type shapes leaders' foreign policy audiences and the balance of these concerns. Due to high audience costs of military support and low public concern with foreign entanglement short of military intervention, I expect that alliances with democratic members will be more likely to have limited military support and high depth.

2.1 Democratic Alliance Membership and Treaty Design

Democracies use treaty depth to reassure partners because it increases the perceived reliability of their alliances while shielding them from domestic audience costs. Violating international promises can have audience costs for democratic leaders. Democratic leaders fear that if they violate international commitments, public disapproval will lead to their removal from office. Audience costs do not apply to all international commitments, however. Two characteristics of audience costs in democracies encourage them to use treaty depth in alliance commitments. First, audience costs increase as crises escalate (Tomz, 2007). Second, the public in democracies lacks substantial foreign policy information, so they are less concerned about foreign entanglements short of war. Treaty depth has limited salience in domestic politics. While a potential military intervention is costly and highly public, peacetime alliance cooperation is not. Democratic voters are unlikely to have much information or strong preferences about defense cooperation with allies. Although foreign policy elites may dispute changes in commitment to a deep alliance, such dissent is unlikely to translate into meaningful public opposition and electoral concerns.

Unlike in domestic politics, differences in treaty depth and the implementation of alliance promises are salient in international politics. Allied states and potential adversaries can gather useful

conditional military support, or use treaty depth to address time-inconsistency problems with unconditional military support.

information from treaty depth. By including peacetime costs in a deep treaty, alliance members signal alliance reliability. Implementing costly promises of military aid, bases, or policy coordination indicates commitment. This increases allied confidence that democracies will honor their treaty obligations. Therefore, democracies can use treaty depth to signal international commitment with less exposure to domestic audience costs.

The way democracies use treaty depth in alliances is analogous to their reliance on non-tariff barriers in trade policy. Kono (2006) argues that because non-tariff barriers are more complex, voters lack sufficient information about their impact on consumer prices. Tariffs, on the other hand, translate directly into prices in ways that are easy to understand. The complexity of non-tariff barriers makes them less vulnerable to electoral attack, so democracies engage in "optimal obfuscation" and substitute non-tariff barriers for tariffs. In the same way, unconditional promises of military support and treaty depth both affect international relations, but the former is salient for voters and the latter is not. Unconditional military support is straightforward and could be consequential for voters— treaty depth is not. Therefore, democratic leaders can use treaty depth to manage international relations, without as many domestic political consequences.

What specific characteristics of democracies increase audience costs? Open political competition for leadership, contested elections and legal constraints on executive action are three possible sources of audience costs. Open recruitment of leaders through elections increases the chance a leader is removed from office. Open political competition allows opposition groups to hold leaders to account for foreign policy shortcomings. For leaders to fear replacement, there must be a group with some chance of organizing and throwing them out of office. Democratic leaders also face legal constraints on their foreign policy actions, and violating these restraints could generate audience costs. I examine the relative weight of these three mechanisms in the empirical analysis.

This argument uses the limited domestic audience costs and reassurance benefits of treaty depth to explain why democracies often form deep alliances. How does this translate to autocracies? Some autocratic leaders, especially in single-party states, also face high audience costs for backing

down in military conflicts due to scrutiny from domestic elites (Weeks, 2014). Domestic elites in single party states are a different audience than the public in democracies, however. Party elites are highly informed about foreign policy, unlike the public in democracies, so they can also impose costs on leaders that violate promises of treaty depth. In general, no autocratic audience has the combination of limited foreign policy information and high audience costs of military intervention as democracies. Single-party and military regime leaders face a highly informed domestic elite, and personalist leaders have few meaningful foreign policy audiences. Therefore, assuming that all autocracies are roughly the same, relative to democracies is sufficient for this paper. Examining heterogeneity among autocracies in alliance treaty design is an interesting subject for future research, however.

Of course, democracies may not get everything they want in alliance negotiations. Following (Mattes, 2012*b*), I expect that more capable states have greater influence on alliance negotiations, because their partners lose out on more foreign policy benefits if they are out of the alliance. The most capable states are also often the alliance "leader," which gives their preferences and concerns substantial weight. Therefore, to understand how democracy shapes alliance treaty design, I conceptualize democratic influence in terms of the political regime type of the most capable alliance member.

Due to the limited audience costs of treaty depth, democracies will often design deep alliance treaties to increase the credibility of their alliance commitments. As the democracy of the most capable alliance member at the time of treaty formation increases, treaty depth should increase.

> TREATY DEPTH HYPOTHESIS: AS THE AVERAGE DEMOCRACY OF THE MOST CAPABLE ALLIANCE MEMBER AT THE TIME OF FORMATION INCREASES, ALLIANCE TREATY DEPTH WILL INCREASE.

I also expect that democratic alliance membership will reduce the probability of unconditional military support, because backing out of a promised military intervention generates substantial

audience costs. Analyzing unconditional military support allows an explicit comparison between treaty depth and another source of credibility. The second claim is based on existing arguments and findings. Mattes (2012*b*) and Chiba, Johnson and Leeds (2015) both show that democracies are more likely to design conditional alliances. They attribute this finding to higher audience costs of violating international commitments in democracies. Because democratic leaders face substantial audience costs from violating their international commitments, leaders design more limited commitments that are easier to fulfill. On the other hand, autocracies may be more willing to promise unconditional military support, because they have lower audience costs. Based on this logic, increasing the democracy of the most capable member when the alliance formed should reduce the probability of unconditional military support.

> UNCONDITIONAL MILITARY SUPPORT HYPOTHESIS: AS THE AVERAGE DEMOCRACY OF THE MOST CAPABLE ALLIANCE MEMBER AT THE TIME OF FORMATION INCREASES, THE PROBABILITY THAT THE ALLIANCE OFFERS UNCONDITIONAL MILITARY SUPPORT WILL DECREASE.

Depth and conditional obligations in democratic alliances are complementary, as depth substitutes for unconditional military support as a source of credibility. Limiting alliance commitments through conditional military support reduces audience costs because it is easier for democratic leaders to backtrack on military support. Leaders can claim that the conditions for intervention were not met, or that new information obviates the alliance commitment (Levendusky and Horowitz, 2012). Because allied states understand these limits, conditional alliances will increase reliability concerns. This may undermine the credibility of the alliance, as unreliable pacts invite challengers (Smith, 1995). But even if conditional military support reduces the credibility of democratic alliances, treaty depth strengthens the alliance. Thus, depth is an important source of reassurance for the allies of democracies, who might otherwise have reliability concerns from conditional military support.

The finding that democracies prefer conditional alliances in previous research is often used to claim that democracies make limited alliance commitments. But if democracies frequently add depth to their alliance treaties, democratic alliances are limited on one dimension and deep on others. Furthermore, deep alliances may produce closer security ties than unconditional military support.

Many democratic alliances combine conditional military support and high treaty depth. Consider a 1960 defense pact between the United States and Japan (ATOPID 3375). This alliance updated a 1951 defense treaty and included conditional obligations of military support. Promises of intervention are conditional on whether the fighting is taking place in East Asia. Moreover, the signatories promised action "to meet the common danger" if a member is attacked, which is not an explicit promise of military support. These kinds of limited promises are common in US alliances. The United States and Japan simultaneously formed a Security Consultative committee and permitted US troop bases in Japan, which are both sources of treaty depth.

There is an important caveat to this argument— I am interested in institutional design, not implementation. Alliance treaty depth is not always implemented fully, as treaty aspirations are not fully realized, or work poorly. To give one example, several deep Arab alliances never realized their full intention due to internal political divisions. If states are to use treaty depth to increase treaty credibility, they must implement some of their alliance promises, however.

I expect that more democratic alliance membership will increase treaty depth, but reduce the likelihood of unconditional military support. This occurs because democracies prefer to use treaty depth to reassure their partners. In the next section, I describe how I test this claim about the association between democratic alliance leadership and the two sources of alliance credibility.

3 Research Design

I expect that democracy among alliance members will increase treaty depth and decrease the probability of unconditional military support. Furthermore, the processes behind conditions on military support and treaty depth may be related, as both are sources of credibility. I examine these claims with a series of statistical models and an illustrative case study of NATO. I start by describing the key variables in the analysis. Then I provide more detail on the estimation strategy.

To examine my predictions that democracies tend to produce conditional alliances with substantial depth, I employ data from the Alliance Treaty Obligations and Provisions Dataset (Leeds et al., 2002). The sample includes 289 alliances with either offensive or defensive obligations, which is the set of treaties with military support.[4] I measured treaty depth using a semiparametric mixed factor analysis of eight ATOP variables (Murray et al., 2013).[5] The depth measure is a weighted combination of ATOP's defense policy coordination, military aid, integrated military command, formal organization, companion military agreement, specific contribution, and bases variables. Each of these individual indicators increases alliance treaty depth, but defense policy coordination and an integrated command have the largest positive association, as shown in the top panel of Figure 1.

Based on these factor loadings, the measurement model predicts the likely value of treaty depth. The distribution of depth is summarized by the bottom panel of Figure 1. There is substantial variation in alliance treaty depth. Around half of all formal alliance treaties have an least some depth, and there is wide variation in how much depth is present. I measure treaty depth using the posterior mean of the latent depth posterior for each alliance. This summarizes the central tendency of latent treaty depth, and results are robust to accounting for uncertainty in the latent measure.

The other outcome variable is a dummy indicator of unconditional military support. Using

[4]Results are robust to adjusting for non-random selection into alliances. See the appendix for details.

[5]**https://github.com/joshuaalley/arms-allies/blob/master/manuscript/arms-allies-paper.pdf** contains more details on the measure.

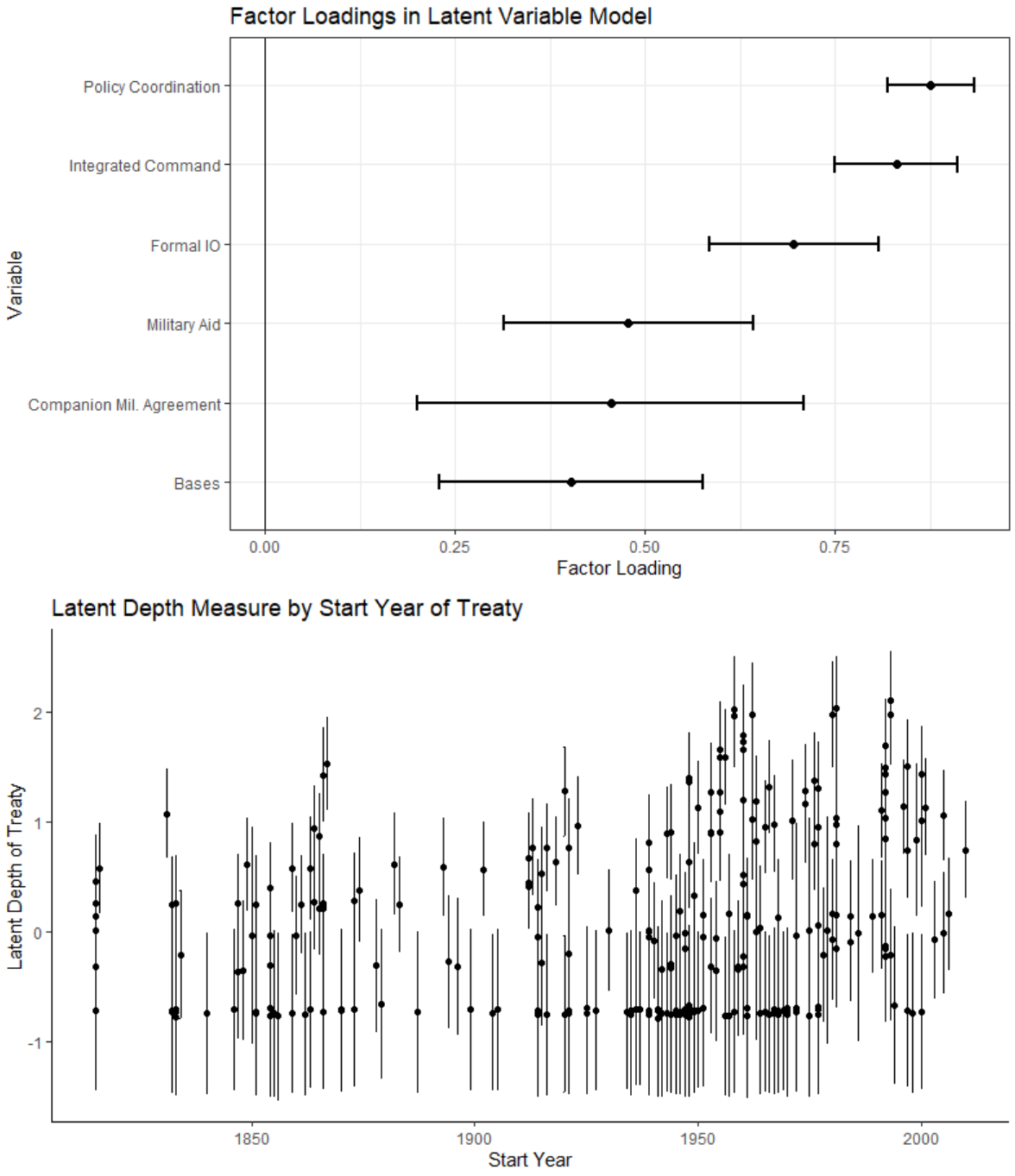

Figure 1: Factor Loadings and posterior distributions of latent alliance treaty depth measure.

ATOP's information on whether defensive or offensive promises are conditional on specific locations, adversaries, or non-provocation, I set this variable equal to one if the treaty placed no conditions on military support. 123 of 289 alliances in the data offer unconditional military support.

The key independent variable is the democracy score of the most capable alliance members when the treaty formed. I use the POLITY measure of political institutions to measure democracy, and code the alliance leader as the state with the largest CINC score (Singer, 1988). This measure captures the sensitivity of the leading state in the alliance to audience costs and entrapment. It also emphasizes the influence of the most capable alliance member.[6]

A common alternative measure of allied democracy is a dummy variable which is equal to one if both alliance members have a polity score greater than 5.[7] I prefer the leading alliance member democracy score to this dummy for two reasons. First, it translates better to multilateral alliances. Moreover, though alliance leader democracy and joint democracy are correlated, joint democracy is a slightly different concept. I expect that domestic regimes affect alliances between democracies and non-democracies, even if such alliances are unusual (Leeds, 1999).

After estimating the association between overall POLITY scores and alliance treaty design, I break the democracy measure into three components to identify the effects of differnt institutional features of democracy. The POLITY measure combines executive recruitment, political competition and executive restraints. To examine each separately, I created three dummy variables, one for each concept. The dummies are equal to one if POLITY codes the most capable state as having competitive elections for leadership, open political competition and executive parity/subordination, respectively. After presenting the aggregate democracy results, I show inferences from a model with these three dummies as the key independent variables.

[6]I find similar results with a model that uses the proportion of democracies as the key independent variable, which I report in the appendix. The proportion of democracies captures the prevalence of democracies, and it has a strong positive correlation with the democracy of the most capable member.

[7]Only 25 of the 285 alliances in my data clear this joint democracy threshold.

3.1 Estimation Strategy

I use several statistical models to examine how political regimes affect treaty depth. I start with separate models of treaty depth and unconditional military support. But because common unobserved factors may affect depth and conditionality, I also specify a statistical model with two equations and correlated errors as a robustness check. Without modeling the correlation between depth and unconditional military support, independent models may produce biased estimates. This approach is analogous to a bivariate probit model, but it is not fully recursive, because I do not use depth or unconditional military support as endogenous predictors of the other factor.[8]

To predict unconditional military support, I fit a binomial model with probit link function. The alliance leader democracy measure is the key independent variable, and I control for a range of other factors that are likely correlates of unconditional military support and allied democracy. Key controls include dummy indicators of asymmetric alliances between non-major and major powers and symmetric alliances between major powers (Mattes, 2012*b*)[9] as well as the average threat among alliance members at the time of treaty formation (Leeds and Savun, 2007). I also control for foreign policy similarity (Benson, 2012) using the minimum value of Cohen's κ in the alliance (Häge, 2011). I draw on the ATOP data (Leeds et al., 2002), to adjust for for asymmetric treaty obligations, the number of alliance members, whether any alliance members were at war and the year of treaty formation. To capture the role of issue linkages in facilitating alliance agreements (Poast, 2012, 2013), I include a dummy indicator of whether the alliance made any economic commitments. Last, I include a count of foreign policy concessions in the treaty, because concessions can facilitate alliance negotiations (Johnson, 2015).

The model of treaty depth controls for the same set of variables as the model of unconditional support. Modeling depth is more complicated because the latent measure is skewed. To facilitate model fitting, I transformed latent depth to range between zero and one and modeled it with a beta

[8] A fully recursive model requires instruments for identification.

[9] This leaves symmetric alliances between major powers as the base category

distribution.[10] The flexibility of the beta distribution helps predict mean latent depth.[11]

First, I fit the depth and unconditional support models separately. Then, as a robustness check, I use a generalized joint regression model (GJRM) (Braumoeller et al., 2018) to fit the models of unconditional support and treaty depth simultaneously. GJRM uses copulas to model correlations in the error terms of multiple equation models, which makes it more flexible than parametric models and facilitates causal inference. Adjusting for unobserved correlations between depth and unconditional military support ensures accurate inferences about democracy and other covariates. Copulas are distributions over functions, and relax potentially problematic assumptions about the shape of the correlation in the error terms. I fit models with all copulas, and selected the best-fitting model using AIC, conditional on that estimator having converged.[12] The T copula provides the best model fit.[13]

In general, the research design gradually increases in complexity. I start with descriptive statistics. Then I fit separate models of treaty depth and unconditional military support, followed by a joint model. Finally, I use a joint model to estimate how elections, open political competition and executive constraints affect alliance treaty design. The next section summarizes the results.

4 Results

My findings are partially consistent with the claim that increasing democracy in an alliance leads to treaties with conditional support and greater depth. I find consistent evidence that de-

[10] I make similar inferences with a robust regression estimator- see the appendix for details. I also considered log-logistic, Dagum and inverse Gaussian distributions for the outcome, but AIC and residuals showed that the beta model fit best.

[11] The beta distribution also facilitates fitting models that account for uncertainty in the latent measure, which I include in the appendix.

[12] GJRM is estimated with maximum likelihood, and diagnostics for the gradient as well as the information matrix suggest that the models converged.

[13] In the GJRM estimator, I use a third equation to model heterogeneity in the error term correlations, which I expect depends on the start year of the alliance. In particular, I suspect that correlations in unobservable factors between treaty depth and unconditional promises of military spending vary over time. Using the start year of the treaty to predict error correlations captures common unobserved shocks from the international context. For example, Kuo (2019) shows how European politics encouraged the proliferation of secret alliances before World War I.

mocracy in the alliance leader increases treaty depth, but weaker evidence about democracy and conditional alliances. These results with the full meaure of democracy reflect divergent effects of different democratic institutions. When I disaggregate democracy into elections, open political competition and executive constraints, I find that competitive elections increase depth and decrease the probability of unconditional military support. I fund that executive constraints increase the probability of unconditional military support and offset the effect of elections, however.

Descriptively, unconditional alliance leaders have lower polity scores. The average alliance leader polity score among alliances with unconditional military support is -2.55. The average leader polity score in alliances with conditional obligations is -.24.[14] There is also a modest positive correlation between the alliance leader's democracy at the time of formation and treaty depth.

Figure 2 shows how the average of democracy of the most capable member when the alliance formed differs across conditions on military support and treaty depth. In Figure 2, each quadrant corresponds to a particular combination of treaty depth and conditionality. To divide the latent depth measure, I classified deep alliances as treaties with a latent depth score above the median value. On average, the leading members of conditional alliances with high depth have higher polity scores. Conversely, unconditional alliances with little depth have the lowest average polity scores.

These descriptive results do not adjust for potential confounding factors, however. I now describe results from statistical models of depth and unconditional military support, starting with separate models. Table 1 shows results from a beta model of treaty depth and a binomial model of unconditional military support with a probit link function. The results are partially consistent with the hypotheses. First, I find a positive association between the democracy of the most capable alliance member and treaty depth. For unconditional military support, the parameter estimate is negative, but the 95% confidence interval for alliance leader democracy includes zero and positive values.

Results based on the coefficient estimates alone may mislead however, so I assess the substan-

[14]Based on a t-test, the difference between these values is statistically significant.

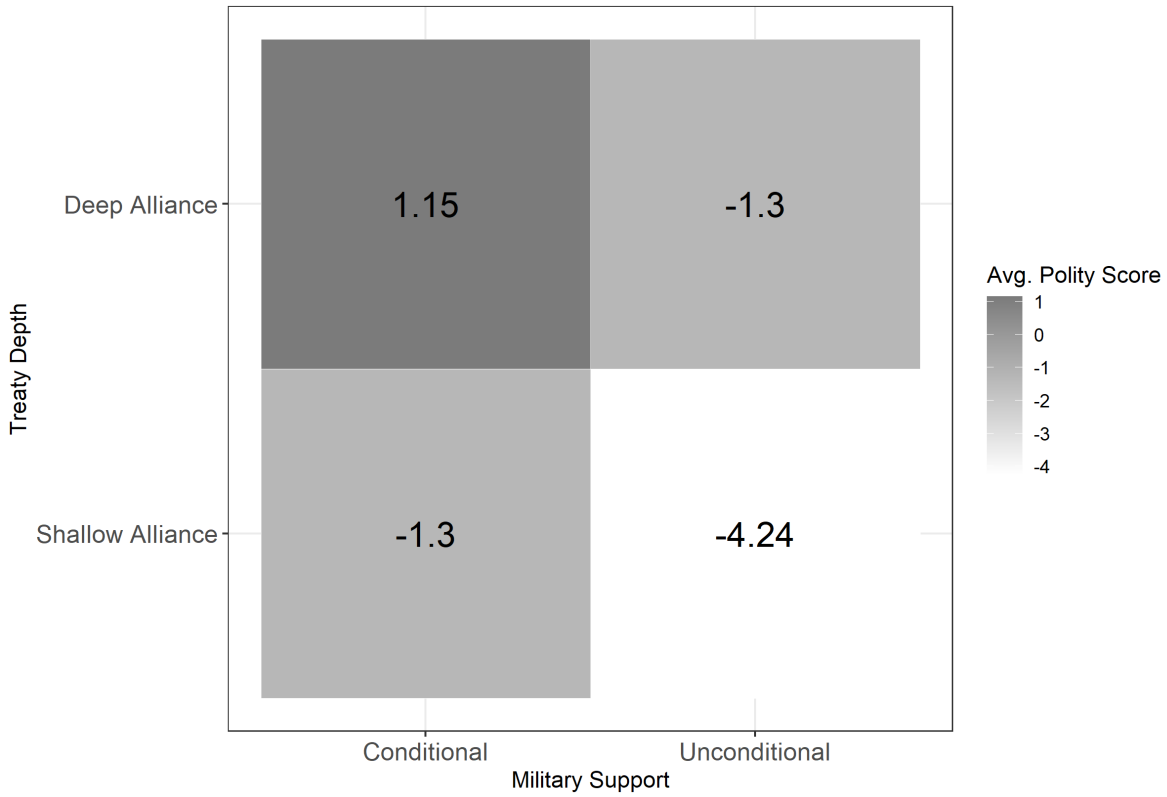

Figure 2: Average of the most capable alliance member's polity score when the alliance formed in four groups of alliance from 1816 to 2016. Divisions between alliances based on unconditional military support and treaty depth. Darker quadrants mark a higher average democracy score for that group of alliances, and the text in each box gives the precise value.

Table 1: Independent Models of Alliance Treaty Depth and Unconditional Military Support in ATOP Offensive and Defensive Alliances from 1816 to 2007.

	Dependent variable:	
	Latent Depth (rescaled)	Unconditional Military Support
	beta	*probit*
	(1)	(2)
Most Capable Member POLITY	0.023	−0.018
	(0.002, 0.043)	(−0.047, 0.011)
Foreign Policy Concessions	−0.057	0.021
	(−0.209, 0.096)	(−0.197, 0.239)
Number of Members	0.016	−0.030
	(−0.011, 0.043)	(−0.077, 0.018)
Wartime Alliance	−0.309	−0.954
	(−0.658, 0.040)	(−1.570, −0.338)
Asymmetric Obligations	0.189	0.035
	(−0.155, 0.532)	(−0.467, 0.537)
Asymmetric Capability	0.347	0.651
	(−0.120, 0.814)	(−0.218, 1.520)
Non-Major Only	0.275	1.146
	(−0.228, 0.779)	(0.266, 2.027)
Average Threat	1.248	1.630
	(0.376, 2.120)	(0.295, 2.965)
Foreign Policy Disagreement	0.197	0.394
	(−0.258, 0.653)	(−0.306, 1.094)
Start Year	0.004	0.015
	(0.0004, 0.007)	(0.010, 0.021)
Constant	−8.929	−31.655
	(−15.679, −2.179)	(−43.220, −20.091)
Observations	277	277
Log Likelihood	54.349	−132.467

Note: 95% Confidence Intervals in Parentheses.

tive impact of allied democracy in Figure 3. This figure plots the estimated marginal effect of the alliance leader's POLITY score on both outcomes. The left-hand plot of Figure 3 shows the association between the average democracy of alliance members and the predicted probability of unconditional military support. This relationship is weaker than expected. These results contradict previous findings that democratic alliance membership leads to conditional obligations (Mattes, 2012*b*; Chiba, Johnson and Leeds, 2015).

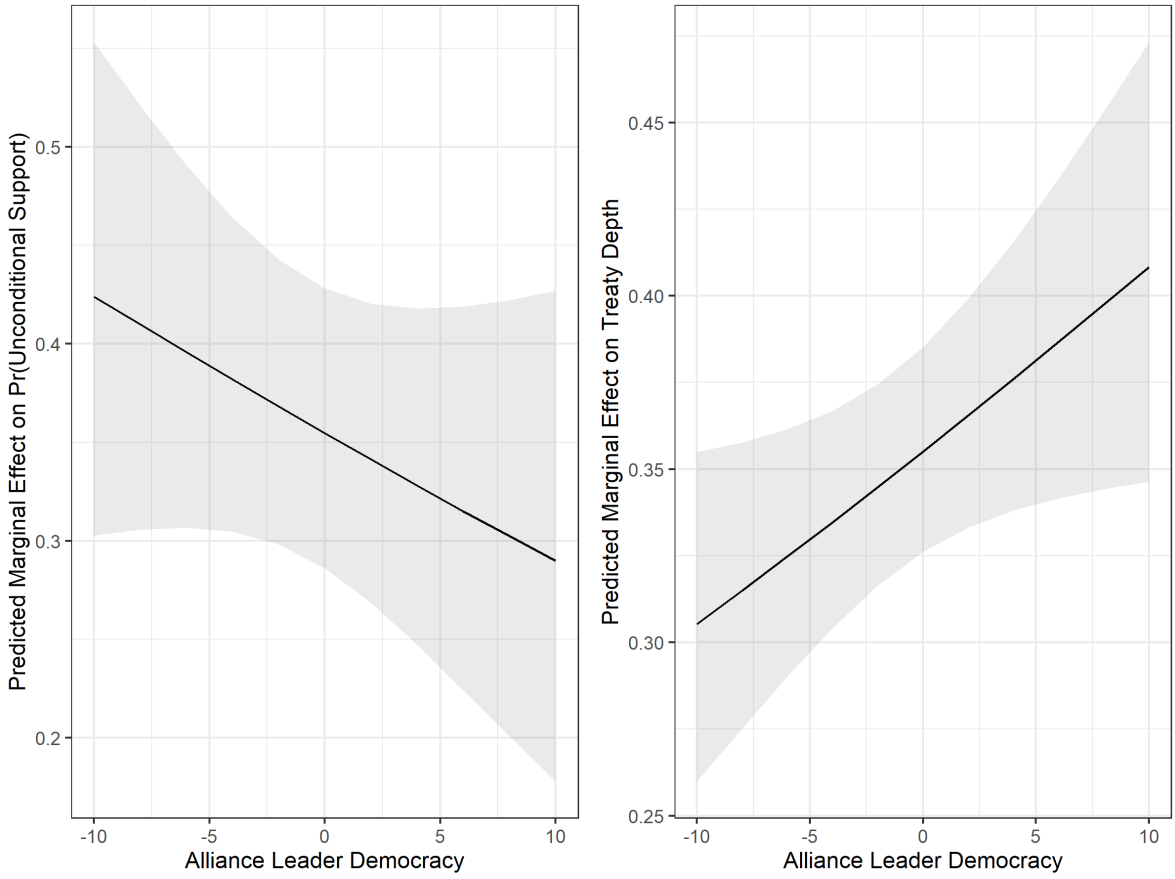

Figure 3: Predicted probabilities of unconditional military support and predicted change in treaty depth across the range of average alliance democracy. The line marks predicted values, and the shaded areas encapsulate the standard errors. The rug plot on the x-axis marks observed values of allied democracy. Predictions based on the smoothed terms from a joint generalized regression model.

The right-hand plot in Figure 3 shows a positive relationship between average democracy at the time of alliance formation and treaty depth. Substantial democracy in an alliance is associated with

greater treaty depth. The predicted value of rescaled treaty depth in an alliance with a fully democratic leader is roughly .1 greater than an alliance with a fully autocratic leader, in expectation. This substantively large relationship matches the treaty depth hypothesis.

Although the results from separate models are informative, they do not account for unobserved correlations between depth and conditions on military support, which could affect inferences. I now report the results of the joint analysis of depth and unconditional military support in Table 2. This table contains results from both equations of the GJRM model, and marks smoothed terms with the letter s.

As in Table 1, I find a positive relationship between the democracy of the leading alliance member and treaty depth, but a weak negative relationship between democratic influence and treaty depth. The control variables in this model are also interesting and somewhat different from the estimates in the separate models. Asymmetric capability in an alliance and symmetric alliances between non-major powers are more likely to include unconditional military support than symmetric major power alliances. I also find that the number of members and wartime alliances reduce the probability of unconditional military support. Asymmetric capability and the number of alliance members both increase depth. Last, threat and the year of alliance formation increase unconditional military support and treaty depth.

I make similar inferences about democracy and treaty design with a joint model in Figure 3 and the single-equation models in Table 1. Inferences about the control variables vary somewhat across the two models, however. I find that the polity score of the most capable alliance member is positively correlated with treaty depth, and has a slight negative association with unconditional military support. The different institutional characteristics of democracies help explain the unexpected unconditional military support finding.

	Uncond. Mil. Support		Latent Depth	
	Estimate	Std. Error	Estimate	Std. Error
Most Capable POLITY	-0.0173979	0.0158094	0.0262429	0.0097732
Economic Issue Linkage	0.2232389	0.2006227	-0.0060972	0.1458203
FP Concessions	-0.1468542	0.1214414	-0.0339923	0.0845875
Number of Members	-0.0994788	0.0264666	0.0179032	0.0129499
Wartime Alliances	-0.6274650	0.3157751	-0.0744869	0.1787959
Asymmetric Obligations	-0.0181268	0.2622665	0.1686232	0.1632100
Asymmetric Capability	0.9586816	0.3864164	0.3436770	0.2192153
Non-Major Only	1.7040882	0.3975041	0.0828621	0.2310327
FP Disagreement	0.1253382	0.3352438	0.3284441	0.2204690
s(Mean Threat)	7.3253441	43.4564525	1.0000004	16.8780421
s(Start Year)	4.7057429	49.8605879	3.3275472	39.7155651
(Intercept)	-1.0980618	0.4635789	-1.0810691	0.2485382

Table 2: Results from joint generalized regression model of treaty depth and unconditional military support. All smoothed terms report the effective degrees of freedom and the chi-squared term. The unconditional military support model is a binomial GLM with a probit link function. The treaty depth model is a beta regression. I model the error correlation between the two processes with a T copula.

4.1 Elections, Political Competition and Executive Constraints

Having analyzed cumulative democracy scores, I now turn to a model that distinguishes between the different parts of the POLITY index. The key independent variables in this model are dummy indicators of competitive elections, open political competition, and executive constraint through parity or subordination to other actors. All three of these factors may contribute to audience costs by exposing leaders to adverse reactions to foreign policy actions. I use a GJRM model to assess this relationship.[15]

The three components of democracy have different consequences for alliance treaty design.[16] First, the presence of competitive elections decreases the probability of unconditional military support and increases treaty depth. This matches the audience costs mechanism— if leaders can be removed from office by competitive elections, they increase treaty depth but avoid the potential

[15] A T copula has the best model fit and AIC.

[16] These inferences hold the other components of democracy constant.

	Uncond. Mil. Support		Latent Depth	
	Estimate	Std. Error	Estimate	Std. Error
Competitive Elections	-1.3862036	0.5969913	1.0334447	0.3441959
Political Competition	0.1267747	0.4456283	-0.3968825	0.2894709
Executive Constraints	0.7810824	0.2758115	-0.3806161	0.2006471
Economic Issue Linkage	0.0786646	0.1830420	0.1099506	0.1466334
FP Concessions	-0.1284395	0.1256934	-0.1052689	0.0817796
Number of Members	-0.1004983	0.0271633	0.0268154	0.0139085
Wartime Alliances	-0.7495699	0.2448796	0.0599420	0.1700357
Asymmetric Obligations	-0.0230173	0.2251492	0.1766837	0.1620580
Asymmetric Capability	1.0281801	0.5255088	0.4985258	0.2426731
Non-Major Only	1.6291469	0.5180102	0.1175974	0.2551236
FP Disagreement	0.1726706	0.2975962	0.3405041	0.2124881
s(Mean Threat)	7.5870610	44.8092434	1.0000005	25.8169433
s(Start Year)	5.9742148	50.0279652	8.3362695	57.7689902
(Intercept)	-0.8925660	0.6081549	-1.3310577	0.2833844

Table 3: Results from joint generalized regression model of treaty depth and unconditional military support. All smoothed terms report the effective degrees of freedom and the chi-squared term. The unconditional military support model is a binomial GLM with a probit link function. The treaty depth model is a beta regression. I model the error correlation between the two processes with a T copula.

audience costs of unconditional military support. Second, the political competition coefficient for treaty depth is negative, albeit with substantial uncertainty. This implies that scrutiny of the executive from open political competition may restrain deep alliance commitments. Political competition has no association with the probability of unconditional military support, however.

Last, executive constraints has the opposite effect of electoral competition on both credibility sources, which is interesting and unexpected. First, I find that executive constraints reduce treaty depth. Constraints might reduce treaty depth by exposing the executive to scrutiny from other political elites who have ample information about foreign policy. Treaty depth may then be constrained by political elites that want to avoid foreign entanglements. I also find that presence of domestic institutions with executive parity or subordination, increases the probability of unconditional military support. A possible explanation for the positive relationship between constraints and unconditional support is that democratic leaders may attempt to ensure successors with different

foreign policy preferences remain committed to the alliance Mattes (2012*a*). Leadership turnover in democracies threatens international cooperation, because new leaders may have different supporters and preferences (Lobell, 2004; Narizny, 2007; Leeds, Mattes and Vogel, 2009). By making an unconditional promise of military support, leaders generate higher audience costs for successor governments to break the alliance. This holds because military support promises can become a salient issue in domestic politics.

Taken together, the results from dividing democracy into three core concepts in Table 3 help explain the results from the aggregate democracy measure. The large positive effect of competitive elections drives positive association between democracy and treaty depth, as it overwhelms the smaller negative effect of executive constraints. Competitive elections decrease the probability of unconditional military support, but executive constraints make unconditional support an attractive way to precommit future leaders to the alliance. Because these competing effects cancel each other out, there is a weak association between the democracy of the alliance leader and the probability of unconditional military support.

These statistical results give mixed evidence for the argument. Democracies do offer deeper treaties, but democratic institutions have competing effects on the probability of unconditional military support. To further examine my claim that democracies often use treaty depth to reassure, but are less prone to offer unconditional support, I now offer a brief case study of how US preferences shaped the institutional design of NATO.

4.2 NATO Treaty Design

I focus the case study on NATO treaty design for two reasons. First, the case study provides information that applies to multiple alliances, as other US treaties share some similarities with NATO. Most US alliances have conditional promises of military support and understanding why is important. Second, NATO is also the most important alliance in international politics, so understanding how it was designed is worthwhile.

After the end of World War II, the US sought a way to protect Europe from the USSR. Despite acute security concerns, fear of entrapment in unwanted conflicts led to limits on military support. First, as Poast (2019) details, NATO members disagreed over how to define the North Atlantic area, which was a key condition on military support. The US and other states argued about whether France's Algerian colony and Italy should be protected by the alliance. Second, active military support from NATO members depends on domestic political processes.[17] Isolationists in the US Senate feared that an alliance would force America to intervene automatically if partners were attacked, bypassing the power of Congress to declare war and engaging the US in unwanted conflicts (Acheson, 1969, pg. 280-1). Therefore Article V of the NATO treaty states that if one member is attacked the others "will assist the Party or Parties so attacked by taking forthwith, individually and in concert with the other Parties, *such action as it deems necessary* (emphasis mine)." Military support was and is not guaranteed. Secretary of State Dean Acheson stated as much in a March 1949 press release defending NATO to the US public, where he said that Article V "does not mean that the United States would automatically be at war if one of the nations covered by the Pact is subject to armed attack" (Acheson, 1949). This claim and the emphases of the press release shows that promises of military support were highly salient to the US public.

Military support from Article V was insufficient to assuage European fears that if the Soviets invaded, the United States would not fight. To increase the credibility of NATO, the United States took other measures. A 1951 presentation by Dean Acheson to Dwight Eisenhower argued European allies "fear the inconstancy of United States purpose in Europe. ... These European fears and apprehensions can only be overcome if we move forward with determination and if we make the necessary full and active contribution in terms of both military forces and economic aid" (Acheson, 1951, pg. 3).

The first part of reassurance was the creation of the Atlantic Council, which is an international organization and the only source of depth in the NATO treaty itself. The United States used

[17]Benson (2012) calls this kind of commitment a "probablistic" obligation.

participation in this organization and other efforts to coordinate collective defense and increase the perceived reliability of the alliance. By investing in the Atlantic Council and related joint military planning, the US addressed European fears of abandonment. For example, US officials thought that the British Foreign Minister viewed US provision of a supreme commander in Europe as "a stimulus to European action" in NATO (Acheson, 1950).

Many Senators also opposed military aid to Europe (Acheson, 1969, pg 285), which limited efforts to add further treaty depth. These legislative constraints on the executive branch reduced the formal depth of NATO from what many ambassadors had advocated (Acheson, 1969, pg 277). Bilateral agreements on troop deployments then became another instrument of reassurance. In 1950 the Germans formally requested clarification on whether an attack on US forces in Germany would be treated as an armed attack on the US- which the US said it would (Acheson, 1969, pg. 395). Even after agreeing to deploy troops, US policymakers hoped Europeans would soon provide more for their own defense, while acknowledging the US "should not dictate what they shall do" (Johnson, 1950, pg. 2). These bilateral arrangements and basing rights are not covered in the NATO treaty, but they added substantial depth.[18]

NATO negotiations reveal the tendency of democracies to use treaty depth to reassure their allies, rather than unconditional military support. Fear of foreign entanglement led the United States to offer conditional military support, but did not inhibit deep military cooperation, which helped reassure European allies. Limits on the promises of military support were an important public justification for the NATO treaty, while the Atlantic Council was less discussed. Still, the power of treaty ratification in the Senate limited formal NATO depth to the Atlantic Council. The Atlantic Council and bureaucratic machinery of the NATO treaty are the basis for substantial defense cooperation. Altogether though Article V is limited, the US used treaty depth to increase the credibility of NATO.

[18]This is a potential limitation of the statistical models.

5 Discussion and Conclusion

The findings from the statistical models and case study of NATO generate mixed evidence for the hypotheses. I find regular evidence that democracies often form deep alliances, which may be driven by selecting leaders through open elections. There is inconsistent support for claims that allied democracy decreases the probability of unconditional military support, however, because competitive elections and executive constraints have contradictory effects. Elections encourage conditional obligations, but executive constraints may encourage locking successors into the alliance with unconditional support.

The results are somewhat consistent with my overarching claim states form deep alliances to increase the credibility of their alliance commitments while managing the risk of entrapment and audience costs. Because democracies are concerned with audience costs and treaty depth has little salience with voters, they often use treaty depth to increase the credibility of their alliances. Electoral politics are largely responsible for this relationship, and they also push democracies away from unconditional military support.

Some of these conclusions about democracy and alliance treaty design rely on joint models of depth and unconditional military support.[19] Inferences about the correlates of treaty depth besides democracy are sensitive to unobserved correlations between treaty depth. Previous research on the causes of alliance treaty design (Benson, 2012; Mattes, 2012*b*; Chiba, Johnson and Leeds, 2015) assumed different sources of alliance treaty reliability were independent. This approach can be informative, but it is incomplete.

My argument and evidence has two limitations. For one, I only examine variation in formal treaty design. This omits the implementation of alliance promises, which may be deeper or shallower than the treaty language alone implies. As the NATO case study shows, formal treaty depth

[19] Again, I do not use treaty depth and unconditional military support to predict the other outcome. A fully recursive model that includes depth and unconditional military support as predictors requires valid instruments for identification. Given well-known problems with weak instruments (Kraay, 2012) or violations of the exclusion restriction (Bartels, 1991), and a lack of instruments for treaty depth, a fully recursive model could produce biased results.

reflects practical depth, but it may miss some differences between alliances. Changes in realized alliance depth are a useful subject for future inquiry, but will require new data collection. Also, the small sample size of observed alliances adds uncertainty to inferences.

Despite its limitations, this paper has four main implications for scholarship. First, one reason treaty depth matters is that it affects military spending by alliance participants. The findings in this paper imply that states do not use treaty depth to manipulate allied military spending, but rather to increase the credibility of the alliance. Therefore, treaty depth is non-randomly selected based on observable alliance characteristics like domestic institutions, but selection on unobservable preferences over allied military spending is less likely.

Second, studies of how alliance participation affects international politics must account for alliance design and membership. Alliance member characteristics and treaty design are correlated, and both affect the consequences of treaty participation. Estimating the impact of member characteristics alone, or treaty design alone, risks omitted variable bias.

The third implication is that democracies do not make limited alliance commitments. Even if democracies impose conditions on military support, deep alliances add substantial foreign entanglement. The most limited alliances possible would have conditional obligations and no depth. Last, some of the lessons from this work may add to the extensive literature on the design on international institutions (Downs and Rocke, 1995; Martin and Simmons, 1998; Koremenos, Lipson and Snidal, 2001; Koremenos, 2005; Thompson, 2010). Democracies may undertake international commitments in ways that limit public scrutiny in other institutions.

The findings also raise at least two questions for future research. First, they address debates about whether democracies make more credible commitments than other states. The effect of democracy on credibility can be divided into conditions on military support, treaty depth, and the direct effect of institutions and domestic politics. These may have competing or conditional effects, which could explain mixed findings about the credibility of democratic commitments (Schultz, 1999; Leeds, 1999; Thyne, 2012; Downes and Sechser, 2012). Future research should combine

the components of democracy and democratic alliances to asses the net effect of democracy on credible commitment in international relations.

Scholars should also consider how alliance treaty design varies among different types of autocracies. As I noted in the argument, some autocratic states have high audience costs for backing down in military interventions. Differences in the salience of audience costs, which actors impose audience costs on leaders and what information those actors have about foreign policy (Weeks, 2008) may help explain alliance treaty design. For example, personalist leaders with few public or elite constraints on their foreign policy ambitions may be able to form alliances with depth and unconditional military support.

In conclusion, states use deep alliances to reassure their partners while limiting the risk of entrapment. The high audience costs of military intervention in democracies mean that they are especially likely to use treaty depth. Domestic political institutions shape how states build the credibility of their alliances.

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