

# Can you trust a dictator: A strategic model of authoritarian regimes' signing and compliance with international treaties

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## Abstract

Building on recent studies that focus on institutional variation among authoritarian regimes, this paper asks whether this variation leads to meaningful differences in the tendencies to reach and comply with international agreements. The results suggest that previous evidence regarding the democratic credibility advantage over autocracies may have been driven by a lack of a more refined authoritarian regime typology. Employing such a typology, I find that the institutional constraints that generate credibility and compliance may not be unique to democracies. In fact, the only authoritarian regime that seems to lack such features is *bossism*, a personalist party-based regime. *Bosses* are more likely than *democracies* to enter into international agreements, but are less likely than *democracies* to comply with the agreements they sign. This result is remarkably robust. Results associated with other types of autocracies suggest minor or no differences between autocracies and democracies, relating to reaching and complying with international treaties. Finally, I find evidence of strategic behavior, as all regime types are more likely to sign agreements and less likely to comply when the other negotiating party is a *boss*, compared with a *democracy*.

## Keywords

Authoritarian regimes, compliance, international treaties, selectorate theory, strategic interaction

## Introduction

International agreements over contentious territorial issues are characterized by a rather high rate of compliance. For instance, according to the Issues Correlates of War (ICOW) dataset, states renege on substantive territorial agreements only about 24% of the time (Hensel et al., 2008).<sup>1</sup> The few instances of noncompliance, such as Syria's persistent diversion of the Yarmuk river water in violation of its 1994 agreement with Jordan, or North Korea's rampant renegeing on the 1992 Basic Agreement with South Korea, constitute

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puzzling exceptions. Drawing on recent work that explores domestic institutional variation among authoritarian regimes, this paper develops and tests a two-part explanation of states' compliance with international treaties. I argue that compliance with international agreements is a leader-specific strategic decision that must be modeled as the second stage of a two-stage process, the first stage of which is reaching an agreement. Second, leaders' decisions to comply are constrained/enabled by *both* their own domestic institutional constraints *and* those of the other party to the agreement.

This paper's theoretical argument extends the logic of selectorate theory (Bueno de Mesquita et al., 2003), often used to explain behavioral variation between democracies and autocracies. Selectorate theory links different foreign policy outcomes to the variation in the size of a leader's domestic *winning coalition* or the number of domestic supporters necessary for the leader to stay in office (Bueno de Mesquita et al., 2003). The argument is that leaders stay in power by providing a mix of private and public goods to the members of their winning coalitions. While the interests of small winning coalitions may be satisfied by provision of side-payments or private goods, larger winning coalitions, such as those of democratic leaders, are more likely to represent more diverse societal interests that are best satisfied through the provision of public goods, such as complying with international agreements (Leeds et al., 2009; von Stein, 2005).

The size of a leader's winning coalition, however, does not vary only between democracies and autocracies, but also among different types of autocracies (Lai and Slater, 2006; Weeks, 2008).<sup>2</sup> I build on this insight to argue that authoritarian leaders with larger winning coalitions are more constrained than those with smaller winning coalitions, and this variation translates into different tendencies to reach and comply with international agreements. Namely, authoritarian leaders with smaller winning coalitions are more likely to reach international agreements, but less likely to comply with the agreements that they sign. Authoritarian leaders with larger winning coalitions, on the other hand, operate more similarly to democratic regimes. Moreover, since domestic institutional constraints are observable to international audiences, leaders on both sides of the agreement are able to account for each other's institutional constraints, and incorporate this information into making their own decisions on whether to sign and comply with agreements. I model this strategic dynamic by including both sides' regime characteristics in the theoretical and empirical models.

I capture the degree of institutional constraints on authoritarian leaders by using a regime typology developed by Lai and Slater (2006). The advantage of this typology is that it combines the military–civilian distinction, identified by Geddes (1999) as an important source of variation in authoritarian institutions, with variation in the concentration of power in the hands of the leader (personalist vs oligarchy).<sup>3</sup> This paper uses the power concentration dimension as a measure of the size of a leader's winning coalition, arguing that leaders of the two *personalist regimes*—*bosses* and *strongmen*—face smaller winning coalitions than leaders of the two *oligarchic regimes*—*machines* and *juntas*—as the latter experience the constraints of the power-sharing institutions in which they operate (e.g. politburos, cabinets, juntas).

The empirical results point to some intriguing patterns in the data. While they show no meaningful empirical distinctions among autocracies, they highlight important differences between specific types of autocracies and democracies. Specifically, *personalist regimes* are both significantly more likely to sign and less likely to comply with international agreements than *democratic regimes*. While *oligarchic regimes* are also more likely to sign international

agreements, their compliance rates are not statistically different from those of democracies. Further breaking up regimes into four categories (*bosses*, *strongmen*, *machines* and *juntas*) suggests that the difference between democracies and autocracies is driven primarily by *bosses*, which is the only regime type that is both more likely to sign agreements and less likely to comply, compared with *democracies*, in all model specifications. Side B's institutional variation indicates analogous effects: all regime types exhibit a statistically higher probability of signing and a lower probability of complying when facing a *boss*, in comparison with facing a *democratic* leader. The likelihood of reaching an agreement with *oligarchies*, and specifically *machines*, is also greater than that with *democracies*. The latter result, however, should be treated with caution, as it is not robust to alternative model specifications.

Consistent with other recent studies that focus on institutional variation among authoritarian regimes (Lai and Slater, 2006; Weeks, 2008, 2011), this paper provides empirical evidence that challenges the stereotypical view that commonly attributes democracies with particular foreign policy advantages, such as enhanced credibility (whether in military disputes or international negotiations). Instead, this paper's analyses suggest that previous evidence regarding the democratic credibility advantage may have been driven by a lack of more refined data on authoritarian regimes. Analyses relying on a more nuanced typology, conducted here, reveal that institutional regime differences may be more complex than the democracy/autocracy divide, and that the institutional constraints that generate credibility and compliance can be found on either side of this divide.

The paper proceeds in the following way. The first section provides a brief overview of the literature on authoritarian participation in international treaties. I then discuss several typologies of authoritarian regimes, highlighting the advantages and the fit of Lai and Slater's (2006) approach to my theoretical argument. Next, I lay out the theoretical argument, state several testable hypotheses, describe the research design and test my hypotheses using data on contentious territorial, maritime and river claims obtained from the ICOW project (Hensel et al., 2008). I model the inter-related decisions of reaching and complying with agreements, using a two-stage Heckman probit model, which allows a possible sample selection to be accounted for. I supplement the main analysis with a demonstration of their substantive effects. Finally, I conclude by discussing the results and the broader implications of this research for the study of international relations.

## Regime type and international behavior

There is a general agreement in the literature that, with respect to many types of international behaviors, democracies "tread more lightly" than autocracies. A large body of literature, for example, shows that democratic leaders tend to strategically "select" themselves into the wars that they are likely to win (e.g. Fearon, 1994, 1997; Reiter and Stam, 2002). The literature on international treaty participation finds similar results: Leeds (2003a), for example, shows that democracies are more likely to honor international alliance commitments; von Stein (2005) demonstrates that democracies are less likely to sign, but more likely to comply with international human rights treaties (Dai, 2007; Fearon, 1994, 1997; Leeds, 1999, 2003b; Leeds et al., 2009; Tomz, 2008).

Such behavioral variation among regime types has long attracted scholarly attention, as settlement of international territorial claims and subsequent compliance are generally viewed

as desired by all leaders, all else held constant (Chayes and Chayes, 1993). Outstanding claims create uncertainty and an expectation of possible conflict outbreak (Senese and Vasquez, 2003; Vasquez, 2009). A failure to reach an agreement over the use of a particular territory may also adversely affect the profits of domestic businesses by increasing their transaction costs or limiting their use of particular resources, as in the case of the Russian–Japanese dispute over the Kuril Islands (Simmons, 2005: 829).

Variation in compliance with international agreements is no less puzzling, as breaking international commitments is generally disapproved of by a leader's domestic base and involves reputation costs that impair a leader's ability to negotiate successfully in the future (Sartori, 2005; Weeks, 2008). A leader who lacks international credibility is undesirable for both domestic elites and the international community and faces high risks of electoral punishment (Smith, 1998; Tomz, 2008). Even elites who support a leader's decision to renege *ex ante* may find such a leader undesirable *ex post*, since renegeing may decrease the effectiveness of future negotiations (Weeks, 2008: 42). In addition, renegeing on one's word conveys information about a leader's lack of competence in general, thus decreasing her attractiveness to her supporters (Smith, 1998; Weeks, 2008).

The behavioral variation associated with different regime types is often explained using the logic of audience costs, which attributes differences in leaders' behavior to their likelihood of facing an *ex post* electoral punishment (McGillivray and Smith, 2006, 2008; Partell and Palmer, 1999; Ramsay, 2004; Smith, 1998). Intuitive as they may seem, however, theories derived from the audience costs logic are difficult to test (Schultz, 2001). First, leaders' probabilities of suffering an electoral punishment as a result of a particular policy are usually unobservable and difficult to measure or estimate empirically. Even when there is a way to measure the degree of audience costs, leaders are likely to incorporate these costs into their expected utility calculations. As a result, rather than focusing on audience costs directly, many recent studies have focused on observable incentives created by varying institutional contexts, such as the number of institutional veto players<sup>4</sup> (Mansfield and Milner, 2010) or the availability of a leader-specific punishment (McGillivray and Smith, 2006, 2008).

Acknowledging this renewed focus on observable mechanisms, this study explores the effect of leaders' domestic institutional constraints using the selectorate theory developed by Bueno de Mesquita et al. (2003).<sup>5</sup> I argue that leaders' likelihood of reaching and complying with international agreements depends on the size of their domestic *winning coalition*, defined as "the subgroup [of domestic supporters] who maintain incumbents in office" (Bueno de Mesquita et al., 2003: xi). For the purposes of this paper, a leader's winning coalition is also the set of domestic actors whose support is necessary to make decisions related to international agreements.

Although selectorate theory has traditionally been used to draw predictions regarding the differences in behavior between democracies and autocracies, recent work emphasizes variation in the degree of domestic constraints among authoritarian regimes (Weeks, 2008, 2011). While dictatorships are often stereotyped as one-man rule, in actuality no leader rules entirely by himself (Frantz, 2008: 8). Scholars agree that, while all dictators experience few or no constraints from the general electorate, most autocratic leaders depend on the support of domestic actors no less than their democratic counterparts (Bueno de Mesquita et al., 2003; Weeks, 2008). The difference is that, in authoritarian regimes, the domestic base is much smaller and usually represents fewer societal interests.

## Evolution of authoritarian typologies

One of the primary explanations for the gap in the literature on authoritarian compliance is that, until recently, there did not exist a clear classification of nondemocracies. In identifying regime types, most quantitative studies have relied on Polity scores (Marshall et al., 2007) that simply do not allow for a nuanced differentiation among regime types (see, e.g., Gartzke and Gleditsch, 2004; Lai and Reiter, 2000; Leeds, 1999). In such studies, regime type is operationalized either dichotomously (democracy or nondemocracy) or on a scale (from less to more democratic).

Many scholars argue that such a simplified conceptualization of regime types introduces important limitations (Geddes, 1999; Peceny et al., 2002; Reiter and Tillman, 2002). One such limitation is that authoritarian regimes are treated as a residual category. As a result, regimes that have very little similarity are often coded as the same authoritarian type. For example, according to Polity scores, Kim-Il-sung's Communist North Korea and Park Chung-hee's military dictatorship of South Korea are coded as similar regimes. The two regimes, though, had very little in common beyond their nondemocratic nature. North Korea was a single-party state deriving legitimacy from its leader's strong cult of personality, while South Korea was a personalist dictatorship reliant on the military for support.

Recent attempts at reification of the regime type measure resulted in classifying authoritarian regimes in accordance with the main locus of power, or "despotic power" (Mann, 1988), depending on whether they rely on a civilian or a military institution for policy enforcement. This criterion typically generates categorization of authoritarian regimes into personalist, single-party and military (Brooker, 2000; Geddes, 1999; Peceny et al., 2002; Weeks, 2008). The weakness of this measure, however, is its treatment of the locus of power as the only meaningful difference among authoritarian regimes, ignoring variation in the size of the leader's selectorate (Lai and Slater, 2006; Wright, 2009).

Lai and Slater (2006) build on Geddes' measure by proposing a two-dimensional typology, with the first dimension measuring the size of the selectorate (personalist or oligarchic), and the second dimension assessing the locus of power (military or party-based). As shown in Table 1, the four distinct regime types that are generated by this typology are *strongman*,

**Table 1.** Slater's (2003) institutional typology of authoritarian regimes

		Power concentration (who decides?)	
		Oligarchic	Personalist
Infrastructural power (who executes?)	Party	<i>Machine</i> 1058 (150/214)	<i>Boss</i> 414 (65/99)
	Military	<i>Junta</i> 40 (6/7)	<i>Strongman</i> 264 (27/41)

Cells represent the total number of directed-dyad-settlement-attempt-years from 1816 to 2001 within the estimation sample in each category. Numbers in parentheses represent the number of agreements that were complied with out of the total number of agreements reached within the estimation sample. The dataset also includes 1429 (199/250) observations in the democracy category used as a reference category. The difference in total number of agreements between the numbers reported here and the estimation sample in Table 3 is due to missing data on the variables separating regimes into four subtypes.

Examples from each category: *machine*—China (1976–present), Taiwan (pre-1996), Tunisia, Senegal (pre-2000); *bossism*—North Korea (Kim), China (Mao), Zimbabwe (Mugabe); *junta*—Burma, Algeria, Greece (pre-1974), Argentina (pre-1983); *strongman*—Chile (Pinochet), Pakistan (Zia), Zaire (Mobutu), Panama (Noriega).

*bossism*, *junta* and *machine*. Personalist regimes that depend on military enforcement are *strongman* regimes, while personalist regimes that rest on party support represent *bosses*. Regimes that exercise more collectivized rule are *juntas* if they rely on military power, or *machines* if they derive their political support from a party.

## The argument

As pointed out by Lai and Slater (2006), authoritarian regimes' domestic bases vary in size and, as a result, so does the degree of domestic institutional constraints on their leader's decision-making. In particular, the size of the winning coalition determines the type of societal interests represented by the leader (Bueno de Mesquita et al., 2003). Democratic leaders face the largest winning coalitions with diverse interests and, as a result, have an incentive to provide a larger share of public than private goods. Facing smaller winning coalitions, authoritarian leaders have a greater incentive to focus on provision of predominantly private goods. Variation in the size of domestic base among different types of autocracies, however, also translates into differences in the mix of private and public goods that are provided.

Authoritarian leaders with a relatively small domestic base—personalist dictators—will rely most heavily on the provision of private goods. Such dictators maintain power through reliance on a very narrow subset of their selectorate, who are likely to demand a rather particularistic set of private goods, while giving the dictator discretion over most of the other policy issues. In other words, personalist leaders are effectively not constrained (or almost so) by the need to seek approval on all except for very particular policy issues. For example, despite largely considered a “sell-out” of the Paraguayan national interests, the 1978 Itaipú dam agreement between Paraguay and Brazil was well supported by Stroessner's domestic clan, who stood to derive immense profits from the construction projects (Nickson, 1982; Pun, 2012). As long as they satisfy the narrow interests of their supporters, personalist dictators are relatively free to negotiate, make counter-proposals or accept amendments on the spot, which substantially enhances their ability to reach international agreements.

In contrast, authoritarian leaders with larger domestic bases—oligarchic dictators—face decision-making constraints in more policy areas, as larger domestic bases have more diverse interests. In addition, domestic institutions, such as cabinets, juntas or politburos, common to oligarchic regimes, tend to induce a status-quo bias, making policy change, such as entering into an international agreement, more difficult (Leeds et al., 2009; Martin, 2000; Tsebelis, 1995). Just like in democracies, oligarchic constitutions may contain treaty ratification provisions, which provide the members of the winning coalition with an explicit tool to stall or even altogether unravel the negotiations. In 1930, for example, in accordance with the Meiji Constitution, the Japanese military was given a role in the ratification of the London Naval Treaty (Putnam, 1988: 437). Oligarchic leaders are also less flexible when it comes to accepting amendments and may be unable to make prompt counter-offers, which may delay reaching an agreement or even undermine the negotiations.

To summarize, the size of the domestic winning coalition is inversely related to leader's probability of reaching international agreements. Leaders with small winning coalitions, such as personalist dictators, are more likely to enter into international agreements than leaders with larger winning coalitions, such as democratic leaders. Finally, oligarchic leaders, whose winning coalitions are larger than those of personalist regimes, but smaller than those of democracies, are expected to fall in between of those two in terms of their probabilities of reaching agreements.



**Hypothesis 1.** Leaders with small winning coalitions are more likely to enter into international agreements than leaders with larger winning coalitions.

Personalist dictators also have their hands less tied when it comes to complying with the agreements they sign. As long as they continue to provide the particularistic goods demanded by their narrow support base, they virtually maintain a free reign in the remaining policy areas, and may choose to renege on agreements if their own interests call for it. Consider, for example, the recurring North–South Korea border clashes initiated by Kim Jong Il, in direct violation of the 1992 Basic Agreement regulating the territorial and maritime borders (e.g. BBC, 1999, 2002, 2010).

Oligarchic leaders, on the other hand, cannot afford such capricious behavior, as they are more constrained by the domestic players. Such regimes will be more compliant, as a result of the status-quo bias induced by a larger number of veto players (Choi, 2003; Lipson, 2003). Since agreements unsupported by the domestic base are unlikely to have been reached in the first place, an oligarchic leader may find it difficult to build a support base for breaking agreements. Reneging on territorial agreements creates uncertainty, raises business risks and the cost of foreign capital, and jeopardizes foreign aid, hurting the interests of the winning coalition, who represent the domestic business and military elites (Bulow and Rogoff, 1989a, b; Li, 2009; Tomz, 2007). In addition, the winning coalition is likely to disapprove of international agreements' violations, as they damage the long-term national reputation and reduce the regime's bargaining power in future negotiations (Leeds et al., 2009; Sartori, 2005; Weeks, 2008).

In sum, the size of domestic winning coalition is directly related to a leader's probability of complying with international agreements. Leaders with small winning coalitions, such as personalist dictators, are less likely to comply with international agreements than leaders with large winning coalitions, such as leaders of democracies. As in the case with reaching agreements, oligarchic leaders whose winning coalitions are not as small as those of personalist regimes, yet not as large as those of democracies, will fall in between personalist regimes and democracies in their compliance rates.

**Hypothesis 2.** Leaders with small winning coalitions are less likely to comply with international agreements than leaders with large winning coalitions.

## The role of strategic context

Bargaining and compliance with agreements are both dyadic behaviors. Reaching agreements requires cooperation of both parties. Domestic institutional constraints on either party reduce the overall likelihood of an agreement. Negotiations with less constrained leaders, on the other hand, are more likely to result in agreements. Thus, the probability of reaching agreements is inversely affected by side B's size of domestic winning coalition.

**Hypothesis 3.** All regime types have a higher probability of reaching an agreement when side B leader has a small winning coalition.

Extending the same logic to compliance with agreements, we can expect that side A's compliance will be directly related to that of side B. As established above, leaders with small winning coalitions are less likely to comply with the agreements they sign. Side A, however, is

less likely to comply when it has an expectation that side B is going to renege. As a result, we can expect that states whose agreement partners operate with fewer domestic constraints will themselves exhibit a lower, on average, rate of compliance.

**Hypothesis 4.** All regime types are less likely to comply with agreements when side B leader has a small winning coalition.

## Data and methods

I test my hypotheses using data from the ICOW project. The ICOW project includes data on contentious territorial, maritime and river issues, currently available for the Western Hemisphere, Latin America and the Middle East.<sup>6</sup> The dataset includes observations on which there is evidence that “official representatives of at least one state make explicit statements claiming sovereignty over a piece of territory (land or water) that is claimed or administered by another state” (Hensel et al., 2008: 16). Territorial claims are related to questions of sovereignty over a specific land or island territory, maritime claims concern disagreements over the ownership or usage of a maritime zone and river claims involve the usage and/or navigation rights of a river crossing states boundaries. Territorial claims coded by the ICOW project include data from 1816 to 2001, whereas maritime and river claims are limited to 1900 to 2001 (Hensel, 2001; Hensel et al., 2008).<sup>7</sup>

The ICOW project collects data on all ratified bilateral and multilateral treaties related to management of the issues in a claim.<sup>8</sup> Each observation includes information on whether each party subsequently complied with the agreement, as well as data on the salience of the issue at stake, and what types of negotiations took place (bilateral, or with the involvement of a third party—a state or an international organization).

The unit of analysis in this study is a directed-dyad–settlement-attempt–year in the first estimation stage (making an agreement) and directed-dyad–year for the second stage (compliance).<sup>9</sup> Overall, the ICOW dataset codes a total of 556 dyadic peaceful settlement attempts over 217 territorial claims to 122 distinct territories.<sup>10</sup> Each settlement attempt enters my dataset once for each participant as state A, which means that each dyad involved in a claim enters the data twice (once for each negotiator as side A). This results in 3990 observations for the time period between 1816 and 2001, which is reduced to 3534 observations, owing to the missing data.<sup>11</sup>

In the primary analysis, the hypotheses are tested employing a sample of all states, with democracies as the reference category. To compare the coefficients among different types of authoritarian regimes, I supplement my analysis with a series of Wald  $\chi^2$  post-estimation tests.<sup>12</sup> For the purpose of robustness checks, I ran additional analyses on the subsample excluding democracies (available upon request). The results are robust to this specification.

I use a Heckman two-stage probit model as the primary method of analysis. Possible dependence across cases is captured by clustering of standard errors by country. The Heckman probit employs a two-stage estimation approach that models nonrandom selection processes (Heckman, 1979; Reed, 2000). It first calculates the effect of each covariate on the first-stage outcome (agreement), and then the second outcome (compliance), given that the observation was selected into the second stage (agreement was made).

Heckman probit also estimates the correlation,  $\rho$ , between the two outcomes’ disturbances. In the context of this study, it might be useful to think of  $\rho$  as the leader’s latent tendency to comply with treaties, caused by domestic institutional constraints. A positive



coefficient on  $\rho$  suggests that the unobserved factors that increase the likelihood of signing a treaty also make states more likely to comply. A negative  $\rho$  indicates that the factors that make states more likely to sign a treaty also make them less likely to subsequently comply. It is worth noting, however, that since the estimator treats  $\rho$  as a single average, we cannot directly test hypotheses about regime-specific intent to comply in the confines of this paper.

### Dependent variables

The dependent variable for the first stage—*Agreement*—equals 1 if a settlement attempt results in a substantive agreement (646 out of 3534, or 20%) and 0 otherwise.<sup>13</sup> The dependent variable for the second stage—*Compliance*—equals 1 if the agreement is complied with (576 of 646, or 74%) and 0 if it is not.<sup>14</sup> More specifically, compliance equals 1 if the terms of the agreement, such as transferring a territory, or recognizing the rights of the other state over a maritime area, have been upheld for the time period specified in the agreement. If no time period is specified, *Compliance* is coded as 1 if the terms have been complied with for at least five years.<sup>15</sup> Otherwise, *Compliance* is coded as 0. For example, a USA–Mexico 2001 agreement over the use of the Rio Grande is coded as complied with, since both claimants have abided by it. An example of noncompliance is the 1991 agreement between Belize and Guatemala over the use of territorial waters, reneged on by the Guatemalan government.

### Independent variables

The primary independent variable is a state's *Regime Type*, measured using the rubric constructed by Lai and Slater's (2006).<sup>16</sup> These variables are coded for the time period 1816–2001. Lai and Slater (2006) first code states as either democratic or nondemocratic; in the primary analysis, I code democracies as states with a score of 7 or higher on the *Polity2* variable of the Polity IV dataset (Marshall et al., 2007).<sup>17</sup> The despotic power dimension of Slater's (2003) typology is coded using the *Executive Constraints* variable from the Polity data, while the infrastructural power is measured using the *Regime Type* variable from Banks (2011). Nondemocratic regimes are coded as *Personalist* if they scored 1 or 2 on the *Executive Constraints* score, and as *Oligarchic* (collective) otherwise.<sup>18</sup>

Banks (2011) codes whether a government is controlled by civilian or military institutions. A nondemocracy is coded as a *Party-based* regime if the Banks (2011) data refers to it as a “government controlled by a nonmilitary component of the nation's population”. A regime is coded as *Military* if it is (1) under direct military control or is (2) effectively under military control. To further refine this typology in accordance to Table 1, all states are then coded on whether they are *Democracies*, *Machines* (*Party\*Collective*), *Bossism* (*Party\*Personalist*), *Junta* (*Military\*Collective*) or *Strongman* (*Military\*Personalist*). Side B regime types are coded in the same manner.

Note that the data contains 128 observations of states that changed regime type within 5 years of signing an agreement. As the ICOW dataset truncates the compliance variable at a 5-year period (at a minimum) or longer for the agreements that specify an end date, it is unclear whether these observations' regime types should be coded as pre- or post-regime change types in the compliance equation. Therefore, I present two sets of empirical results with alternative codings of these variables. The post-regime change variables then include an additional regime category of *New Democracy*—regimes that changed to a democratic regime. According to the literature, new democracies behave differently from democracies

with long-established regime institutions (Mansfield and Snyder, 2005; Weeks, 2008), which justifies separating these regimes into their own category.

### *Control variables: selection equation*

Formation of international agreements is largely covered in the bargaining literature on war termination (Gent and Shannon, 2011; Lefler, 2012). These studies model dispute settlement as a strategic phenomenon, whose outcome is determined by the dyadic variables, such as relative capabilities between the disputing parties, private information and the history of the prior relationship. The empirical model includes the following control variables to account for these explanations.

First, I control for the disputants' relative capabilities. *Capabilities Ratio* is constructed using the Composite Index of National Capabilities (*CINC*) scores from the COW project, and equals the ratio of state A's capabilities and the total capabilities of state A and state B ( $Capabilities\ Ratio = Capabilities\ A / (Capabilities\ A + Capabilities\ B)$ ). While most of the literature agrees that the balance of power plays an important part in international negotiations, there is little agreement on the direction of its effect. Some argue that peaceful negotiation is more likely when the disputants are at relative parity (Ferris, 1973; Siverson and Tennefoss, 1984), while others find the opposite effect (Bennett and Stam, 2004; Kim, 1991, 1992; Moul, 1988; Weede, 1976). The effect of *Capabilities Ratio* is likely to be nonlinear, changing as either state A or state B gains preponderance of power and moves away from parity. To capture this effect, I also include the *Squared Capabilities Ratio* term.

I proxy disputants' private information using a measure of shared alliance membership from the Alliance Treaties Obligations and Provisions dataset (Leeds et al., 2002). Shared alliance memberships help alleviate the private information problem about the other party's capabilities and intentions (Leeds, 2003b). Improved information, in turn, is associated with an increased probability of a peaceful settlement (Fearon, 1995). *Alliance* equals 1 if the disputants share an alliance membership and 0 otherwise.

Finally, the literature shows that the likelihood of successful peaceful negotiations decreases once states have started on the militarized path (Hensel, 1999, 2001; Leng, 1983). Moreover, each additional failure at reaching a settlement decreases the likelihood of a future attempt's success (Hensel et al., 2008). To account for previous history of the claim, I include controls for the *Number of Previous Settlement Attempts* and for previous militarized disputes over the claim at stake. The latter variable—*Peace*— is an indicator variable coded as 1 if the disputants have not experienced a militarized dispute over the claim at stake in the past 5 years.

### *Control variables: compliance equation*

The literature explains compliance with international treaties in several ways. Many view compliance as either a function of the agreement's terms or as a result of circumstances beyond state control (Chayes and Chayes, 1993; Leeds et al., 2009). The latter arguments focus on: (1) state error resulting from treaty language ambiguity; (2) lack of state capacity; and (3) exogenous economic or political shocks (Chayes and Chayes, 1993; for an overview of exogenous shocks explanations, see Goertz and Diehl, 1995; Nieman, 2011). Hill (2012) finds empirical support for the second factor, demonstrating that states are more likely to comply with human rights treaties in the presence of strong domestic legal institutions.

Leeds (2003a) provides empirical evidence for the exogenous shocks explanation by showing that the occurrence of noncompliance increases in the aftermath of either a regime change or a change in capabilities.

I account for the exogenous shocks explanation by including indicator variables capturing recent power shifts or regime changes in each state that is a party to the agreement. *Regime Change* for each state is constructed using Polity IV data and equals 1 if a state has undergone a regime change in the previous year. *Regime Change* also helps account for the state capacity explanation. The build-up of state institutional capacity requires political stability, which is unlikely in states that have recently experienced a regime change. *Power Change* for each state is calculated as the percentage change in capabilities since the previous year ( $Power\ Change = (Capabilities_t - Capabilities_{t-1}) / Capabilities_{t-1}$ ).

Another theoretical approach links compliance with international treaties to the features of the issue at stake, the treaty provisions, or the conditions surrounding the signing of the treaty (Hensel et al., 2008; Mitchell and Hensel, 2007). Some argue that compliance is largely driven by the shallowness of the treaty, and that high rates of compliance with international treaties simply result from the fact that most treaties are costless or do not require states to deviate from their pre-treaty behavior (Downs et al., 1996). I account for such explanations in two ways. First, I focus my analysis on substantive treaties—treaties that regulate the division of the issue at stake rather than just regulating its temporary use or making arrangements for future negotiations. Second, I include a control for *Issue Salience*. The measure of *Issue Salience* is based on six indicators (e.g. valuable raw materials, ethnic populations, strategic value) for each type of issue, each contributing one point for each claimant. This results in *Salience* ranging from 0 to 12, with higher values corresponding to greater salience. Previous studies find an inverse relationship between issue salience and compliance (Hensel et al., 2008; Mitchell and Hensel, 2007). Finally, I include a binary indicator of whether an agreement was reached with the help of a *Binding Third Party*, as previous research has found that such agreements tend to have higher compliance rates (Mitchell and Hensel, 2007). Summary statistics for all variables are presented in Table 2.

## Empirical analysis

The main empirical results are presented in Tables 3 and 4. Table 3 displays estimates of the effect of the power concentration dimension (*personalist* and *oligarchic regimes*) in reference to *democratic* regimes, while Table 4 displays the effects of further breaking up the typology into the four sub-types (*bosses*, *strongmen*, *machines* and *juntas*). This allows us to explore the overall effects of power concentration, as well as the isolated effects of each subtype. In each table, models 1 and 3 display the estimations of Heckman probit analyses that account for sample selection, and models 2 and 4 provide robustness checks estimated using an ordinary probit model for each stage. The  $\rho$  coefficients in Heckman models are not statistically significant, which provides evidence against sample selection. This also explains why there are only marginal differences between the two types of estimation results.

The first column of each model presents the tests of the hypotheses related to agreement formation, while the second columns present the results of testing the hypotheses related to compliance. Models 1 and 2 are estimated using the same regime type variables in both agreement and compliance equations, while in models 3 and 4 the regime variables are coded separately at agreement and compliance stages, allowing for the possibility of regime change.

**Table 2.** Descriptive statistics

	Variable	N	Mean	Standard deviation	Minimum	Maximum
Dependent variable	Agree	3534	0.20	0.40	0	1
Independent variable	Democracy	3534	0.41	0.49	0	1
	Personalist	3534	0.20	0.40	0	1
	Oligarchic	3534	0.34	0.47	0	1
	Strongman	3488	0.07	0.26	0	1
	Boss	3488	0.12	0.32	0	1
	Junta	3488	0.01	0.11	0	1
	Machine	3488	0.30	0.46	0	1
	CINC Ratio	3534	0.50	0.32	$2.13 \times 10^{-4}$	1
	CINC Ratio Sq.	3534	0.35	0.33	$4.82 \times 10^{-8}$	1
	Allies	3534	0.40	0.49	0	1
	Peace (5 years)	3534	0.76	0.43	0	1
	Issue Saliency	3534	7.12	2.35	0	12
Settlement Attempt	3534	8.30	9.33	1	52	
Dependent variable	Comply	646	0.74	0.44	0	1
Independent variable	Democracy	646	0.40	0.49	0	1
	Personalist	646	0.21	0.41	0	1
	Oligarchic	646	0.36	0.48	0	1
	Strongman	641	0.06	0.24	0	1
	Boss	641	0.15	0.35	0	1
	Junta	628	0.01	0.10	0	1
	Machine	628	0.33	0.47	0	1
	Binding Third Party	646	0.14	0.35	0	1
	Issue Saliency	646	6.64	2.49	0	12
	Regime Change	646	0.14	0.35	0	1
	Power Change	646	0.93	14.90	-59.94	104.10
	Coding Regime Separately	Democracy	646	0.02	0.24	0
	Personalist	646	0.22	0.41	0	1
	Oligarchic	646	0.36	0.48	0	1
	Strongman	641	0.07	0.25	0	1
	Boss	641	0.14	0.35	0	1
	Junta	628	0.02	0.11	0	1
	Machine	628	0.32	0.47	0	1

Summary statistics are limited to the estimation sample (Table 3 model 2 and Table 4 model 2). The differences in the numbers of observations within the equations are due to the missing data on the four sub-types.

Let us start with evaluating the support for Hypothesis 1 that expects leaders with smaller winning coalitions to have a higher probability of reaching agreements. In Table 3, the coefficients on both *Personalist A* and *Oligarchic A* are positive and statistically significant in all agreement equations, which indicates that both *personalist* and *oligarchic regimes* have a statistically greater probability of reaching international agreements than *democracies*—a result consistent with Hypothesis 1. The results presented in Table 3, however, do not allow for a direct comparison between *personalist* and *oligarchic regimes*, as such a comparison requires a post-estimation Wald test of equivalence of coefficients. The Wald test results, presented in

**Table 3.** The effect of regime type on signing and complying with agreements (regime type coded as different in two equations)

	Regime type coded same in both equations				Regime coded separately in second equation			
	Heckman probit		Probit		Heckman probit		Probit	
	Agree	Comply	Agree	Comply	Agree	Comply	Agree	Comply
Personalist A	0.20** (0.10)	-0.35*** (0.12)	0.19* (0.10)	-0.34*** (0.12)	0.20** (0.10)	-0.34** (0.15)	-0.32** (0.15)	
Oligarchic A	0.18** (0.08)	-0.21 (0.16)	0.17** (0.07)	-0.20 (0.16)	0.18** (0.08)	-0.15 (0.18)	-0.12 (0.17)	
Personalist B	0.18 (0.11)	-0.25 (0.17)	0.18 (0.12)	-0.20 (0.17)	0.18 (0.11)	-0.29 (0.20)	-0.26 (0.21)	
Oligarchic B	0.14* (0.08)	-0.18 (0.16)	0.15** (0.06)	-0.10 (0.16)	0.14* (0.08)	-0.12 (0.17)	-0.07 (0.17)	
New Democracy A						-0.09 (0.49)	0.15 (0.44)	
New Democracy B						-0.45 (0.53)	-0.65 (0.48)	
Issue Saliency	-0.03** (0.01)	-0.05** (0.02)	-0.03** (0.01)	-0.06*** (0.02)	-0.03** (0.01)	-0.06*** (0.02)	-0.06*** (0.02)	
Power Ratio	-0.18 (0.45)		-0.27 (0.37)		-0.18 (0.44)			
Power Ratio Squared	0.20 (0.44)		0.28 (0.36)		0.19 (0.43)			
Allies	0.07 (0.08)		0.09 (0.06)		0.07 (0.08)			
Peace (5 years)	0.71*** (0.05)		0.72*** (0.05)		0.71*** (0.05)			
Settlement Attempt	-0.01*** (0.01)		-0.02*** (0.01)		-0.01*** (0.01)			
Binding Third Party		0.58*** (0.15)		0.61*** (0.15)		0.59*** (0.15)	0.62*** (0.16)	
Regime Change A		0.12 (0.17)		0.12 (0.16)		0.15 (0.17)	0.14 (0.17)	
Regime Change B		0.16		0.07		0.18	0.11	

(continued)

Table 3. Continued

	Regime type coded same in both equations				Regime coded separately in second equation			
	Heckman probit		Probit		Heckman probit		Probit	
	Agree	Comply	Agree	Comply	Agree	Comply	Agree	Comply
Power Change A		(0.22) 0.01 (0.01)		(0.21) 0.01 (0.01)		(0.23) 0.01 (0.01)		(0.22) 0.01 (0.01)
Power Change B		-0.01 (0.01)		0.01 (0.01)		-0.01 (0.01)		0.01 (0.01)
Constant	-1.38*** (0.13)	1.27*** (0.41)	-1.33*** (0.12)	1.17*** (0.15)	-1.38*** (0.13)	1.23*** (0.40)	-1.38*** (0.13)	1.18*** (0.15)
$\rho$	-0.06 (0.34)				-0.03 (0.33)			
Log likelihood	-1934.23		-1642.31	-378.24	-1934.20		-377	
Wald $\chi^2$	42.78***		347.16***	41.55***	40.53***		41.27***	
N (second stage)	3488 (646)		3534	688	3488 (646)		688	

Two-tailed: \*  $p \leq 0.1$ , \*\*  $p \leq 0.05$ , \*\*\*  $p \leq 0.01$ . Democracy is used as the reference category. Note that the "probit: agree" is reported only once, as its results do not depend on how regime is coded in the second stage.



Table 5, demonstrate no statistically significant difference between the probabilities of reaching agreements by *oligarchic* and *personalist regimes*. This suggests that, in terms of their tendencies to sign international treaties, *oligarchies* are more similar to *personalist* regimes than to democracies.

The results presented in Table 4 allow for a more nuanced analysis of the results, as they isolate the effects of each regime sub-type (*boss*, *strongman*, *machine* and *junta*). This analysis reveals that Table 3's results might be driven by only one of the two types of *personalist regimes*—*bossism*. *Boss A*, but not *Strongman A*, is positive and statistically significant in all agreement equations, indicating that *bosses* are statistically more likely to enter international agreements than *democracies*. Exploring the effects of the two *oligarchic* subtypes reveals a similar story. *Machine A* is positive and statistically different from *Democracy A*, while *Junta A* is not statistically significant. This suggests that the coefficient on *Oligarchic Regime A* in Table 3 might be driven by *machines*, although additional analyses show that the result associated with *machines* is not overly robust to changes in model specification.<sup>19</sup> A series of post-estimation Wald tests demonstrate no other statistical differences among authoritarian regimes.

Next, let us shift our attention to exploring the evidence for Hypothesis 2, which posits a direct relationship between the size of a leader's domestic winning coalition and her probability of complying with international treaties. Table 3 reveals that *Personalist A* is negative and statistically significant in all compliance equations, while *Oligarchic A* is insignificant. This provides support for Hypothesis 2, demonstrating that *democracies* exhibit higher compliance rates than *personalist regimes*. The Wald test reveals that *oligarchies* are not statistically distinguishable from either *personalist regimes* or *democracies*. Table 4 further substantiates these findings, as *Boss A* is negative and statistically significant in all compliance models, *Strongman A* is negative and statistically significant in two models, while neither of the oligarchic regimes—*Machine A* or *Junta A*—reaches statistical significance in any of the models. The post-estimation Wald tests reveal no additional differences among the regimes.

Finally, let us evaluate the evidence for Hypotheses 3 and 4, which posit that state A's probabilities of reaching and complying with agreements are affected by the (expected) behavior of the other party to the agreement—side B. Table 3 provides some evidence that states are more likely to form agreements with *oligarchies* than with *democracies*, which is consistent with *Hypothesis 3*. Table 4 reveals some additional support for *Hypothesis 3*: positive and statistically significant coefficients on *Boss B* and *Machine B* indicate that the probabilities of reaching agreements are higher when one is negotiating with either a *boss* or a *machine* than with a *democracy*. *Boss B* is also negative and statistically significant in two of the compliance equations, suggesting that states might be less likely to comply with international agreements with *bosses* than with *democracies*, which is consistent with *Hypothesis 4*. Wald tests reveal no additional differences among the effects of side B regime type.

The substantive significance of the results can be explored in Figures 1 and 2. Figure 1 presents predicted probabilities of reaching an agreement (in gray) and compliance (in black) by regime type.<sup>20</sup> First, it is worthwhile to note that, consistent with previous literature, *democracies* have the lowest rate of reaching agreements, approximately 15%, and the highest compliance rate, roughly 79%. Meanwhile, *personalist regimes*, and especially *bosses*, are characterized by having the highest rates of reaching agreements, around 20 and 22%, respectively. *Personalist regimes* are also characterized by the lowest compliance rate of roughly 68%.

The first differences were simulated by varying side B regime type while holding all other variables at their mean and modal values (King et al., 2000). Whiskers represent 90%

**Table 4.** The effect of regime type on signing and complying with agreements. Combined typology

	Regime coded same in both stages				Regime coded separately in second stage			
	Heckman probit		Probit		Heckman probit		Probit	
	Agree	Comply	Agree	Comply	Agree	Comply	Agree	Comply
Strongman A	0.13 (0.13)	-0.35* (0.19)	0.10 (0.13)	-0.35* (0.19)	0.13 (0.13)	-0.36 (0.26)	0.13 (0.13)	-0.36 (0.26)
Boss A	0.24* (0.14)	-0.44*** (0.14)	0.25* (0.13)	-0.41*** (0.14)	0.24* (0.14)	-0.39*** (0.17)	0.24* (0.14)	-0.37*** (0.16)
Machine A	0.17** (0.08)	-0.25 (0.16)	0.16** (0.07)	-0.25 (0.16)	0.17** (0.08)	-0.19 (0.18)	0.17** (0.08)	-0.17 (0.17)
Junta A	0.11 (0.22)	0.40 (0.64)	0.06 (0.21)	0.37 (0.65)	0.11 (0.22)	0.03 (0.48)	0.11 (0.22)	0.03 (0.48)
New Democracy A								
Strongman B	0.11 (0.16)	-0.20 (0.28)	0.08 (0.16)	-0.15 (0.29)	0.11 (0.16)	-0.35 (0.33)	0.11 (0.16)	-0.31 (0.34)
Boss B	0.22* (0.12)	-0.33* (0.17)	0.24* (0.13)	-0.28 (0.18)	0.22* (0.12)	-0.31* (0.18)	0.22* (0.12)	-0.29 (0.19)
Machine B	0.13* (0.07)	-0.22 (0.16)	0.14** (0.06)	-0.14 (0.17)	0.13* (0.07)	-0.16 (0.17)	0.13* (0.07)	-0.10 (0.17)
Junta B	0.07 (0.22)	0.42 (0.63)	0.05 (0.21)	0.50 (0.62)	0.07 (0.22)	0.05 (0.44)	0.07 (0.22)	0.09 (0.44)
New Democracy B								
Issue Salience	-0.02** (0.01)	-0.06*** (0.02)	-0.03** (0.01)	-0.06*** (0.02)	-0.02** (0.01)	(0.53) (0.02)	-0.02** (0.01)	(0.47) (0.02)
Power Ratio	-0.19 (0.45)		-0.26 (0.37)		-0.17 (0.45)		-0.17 (0.45)	
Power Ratio Squared	0.20 (0.44)		0.27 (0.36)		0.18 (0.44)		0.18 (0.44)	
Allies	0.08 (0.08)		0.11* (0.06)		0.08 (0.08)		0.08 (0.08)	
Peace (5 years)	0.70*** (0.06)		0.71*** (0.06)		0.70*** (0.06)		0.70*** (0.06)	

(continued)

**Table 4. Continued**

	Regime coded same in both stages				Regime coded separately in second stage			
	Heckman probit		Probit		Heckman probit		Probit	
	Agree	Comply	Agree	Comply	Agree	Comply	Agree	Comply
<i>Settlement Attempt</i>	-0.01*** (0.01)		-0.02*** (0.01)		-0.01*** (0.01)			
<i>Binding Third Party</i>		0.61*** (0.15)		0.63*** (0.15)		0.60*** (0.15)		0.63*** (0.16)
<i>Regime Change A</i>		0.12 (0.18)		0.13 (0.17)		0.16 (0.19)		0.15 (0.18)
<i>Regime Change B</i>		0.16 (0.23)		0.07 (0.22)		0.19 (0.23)		0.13 (0.23)
<i>Power Change A</i>		0.01 (0.01)		0.01 (0.01)		0.01 (0.01)		0.01 (0.01)
<i>Power Change B</i>		-0.01 (0.01)		0.01 (0.01)		-0.01 (0.01)		0.01 (0.01)
<i>Constant</i>	-1.39*** (0.14)	1.34*** (0.39)	-1.33*** (0.13)	1.21*** (0.15)	-1.39*** (0.14)	1.24*** (0.45)		1.22*** (0.15)
$\rho$	-0.09 (0.34)				-0.01 (0.36)			
<i>Log likelihood</i>	-1930.37		-1641.58	-375.04	-1931.53			-374.95
<i>Wald <math>\chi^2</math></i>	59.93***		331.02***	54.23***	49.45***			46.27***
<i>N (second stage)</i>	3488 (646)		3534	688	3488 (646)			688

Two-tailed: \*  $p \leq 0.1$ , \*\*  $p \leq 0.05$ , \*\*\*  $p \leq 0.01$ . Democracy is used as the reference category. Note that the "probit: agree" is reported only once, as its results do not depend on how regime is coded in the second stage.

**Table 5.** Model post-estimation. Differences among regime-type coefficients

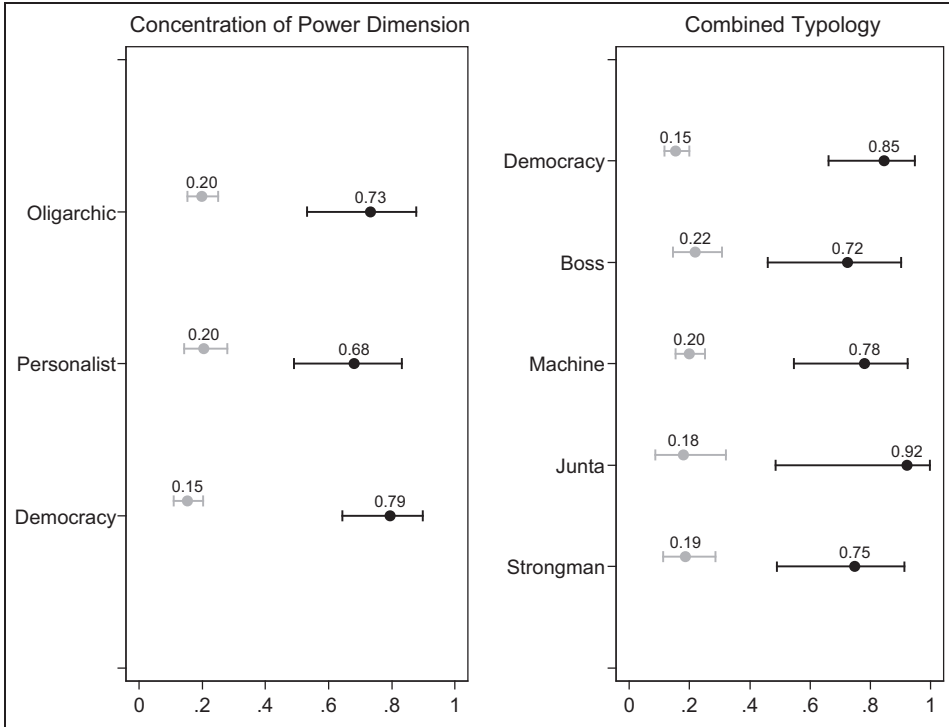
	Oligarchic	Strongman	Boss	Machine
<b>Side A</b>				
Agreement				
Personalist	0.04			
Boss		0.39		
Machine		0.08	0.26	
Junta		0.01	0.30	0.11
Compliance				
Personalist	0.69			
Boss		0.17		
Machine		0.26	0.74	
Junta		1.36	1.82*	1.05
<b>Side B</b>				
Agreement				
Personalist	0.13			
Boss		0.64		
Machine		0.02	0.53	
Junta		0.04	0.46	0.09
Compliance				
Personalist	0.26			
Boss		0.23		
Machine		0.01	0.54	
Junta		1.02	1.51	1.06

One-tailed: \* $p \leq 0.1$ . Cells show Wald's  $\chi^2$  (1 d.f.) based on model 1 of Table 3 (power concentration), and model 1 of Table 4 (combined typology).

Confidence Intervals. Light gray indicates first differences in the probability of reaching an agreement, resulting from changing side B regime type from a democracy to a boss. Black indicates the analogous changes in the probabilities of compliance given an agreement had been reached.

In order to evaluate the substantive significance of the results related to the strategic interaction between the agreement parties, Figure 2 displays the first differences in the predicted probabilities of reaching and complying with agreements by regime type, induced by varying side B's regime type from a *democracy* to a *boss*.<sup>21</sup> We see that replacing side B *democracy* with a *boss* results in a dramatic increase in the likelihood of an agreement—around 6–7 percentage points—as well as an approximately 7–12 percentage point decrease in the likelihood of side A's compliance.

Finally, the control variables that are statistically significant act in the expected direction. *Peace* is positive, supporting the expectation that militarization decreases the probability of a peaceful settlement (Hensel, 1999, 2001; Leng, 1983). *The Number of Previous Settlement Attempts* is negative, which supports the previous findings that the likelihood of a peaceful settlement decreases with each additional settlement failure (Hensel, 1999, 2001). *Issue Salience* is negative and statistically significant in both equations, which implies that states are less likely to reach or comply with agreements on salient issues (Hensel et al., 2008; Mitchell and Hensel, 2007). *Binding Third Party Agreement* is positive, indicating that states are more likely to comply with binding agreements reached with the help of a third party (Mitchell and Hensel, 2007).



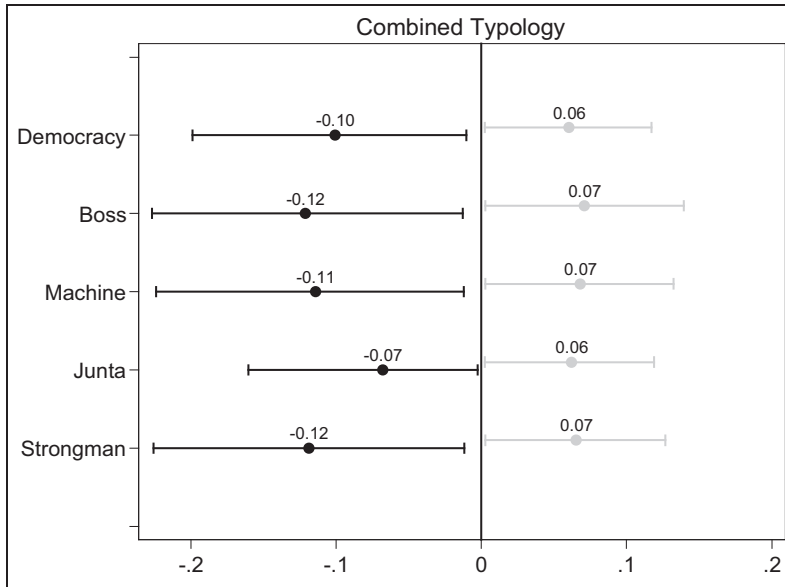
**Figure 1.** Predicted probabilities of reaching and complying with international agreements, by regime type, assuming side B is a democracy.

Note: The predicted probabilities were simulated, holding all other variables at their mean and modal values (King et al., 2000). Whiskers represent 95% confidence intervals. Gray indicates predicted probabilities of reaching an agreement, while black indicates predicted probabilities of compliance given an agreement had been reached.

### Conclusion

This paper extends the research on nondemocracies by moving them from a mere reference category into the spotlight of analysis. I explain variation in authoritarian regimes’ tendencies to reach and comply with international agreements using selectorate theory. I test my predictions by operationalizing the size of the winning coalition through Lai and Slater’s (2006) authoritarian typology, which highlights the variation in the authoritarian leaders’ concentration of power. I find that *personalist regimes*, and *bosses* in particular, are more likely to reach agreements than *democracies*, and both *bosses* and *strongmen* are less likely than *democracies* to comply with agreements.

The broader implication is that, in line with other recent studies, I show that the study of international relations can gain insights by employing a more nuanced typology of authoritarian regimes (Lai and Slater, 2006; Savun and Cook, 2011; Weeks, 2008). The results challenge the existing stereotype regarding the democratic credibility advantage over autocracies. By employing a more nuanced typology of authoritarian regimes, I find that the institutional constraints that generate credibility and compliance may not be unique to democratic regimes. In fact, the only authoritarian regime that is clearly distinguishable from *democracy* is *bossism*, a personalist party-based regime with a narrow winning coalition. In contrast, the



**Figure 2.** First differences for  $P(\text{Agreement})$  and  $P(\text{Compliance} | \text{Agreement})$  by side A regime type, varying side B regime type.

behavior of other autocratic types exhibits few consistent differences from that of democracies.

Finally, this paper produces important policy implications. It demonstrates, for example, that reaching a satisfactory agreement may not ensure future compliance. In fact, the regime types that are the easiest to persuade in international negotiations may also turn out to be the biggest noncompliers. Since an agreement's success ultimately depends on compliance, policy-makers might need to recognize that personalist regimes may require additional incentives to comply with the agreements they sign. Another interesting policy implication is that there is some variation among authoritarian regimes' reliability as international agreement partners. Specifically, oligarchic regimes are statistically indistinguishable from democracies in terms of their rates of compliance with international treaties. This suggests that oligarchic leaders may be capable of forming meaningful international agreements and might be beneficial as the targets of international cooperation.

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## Notes

1. Similar results are found in the literature on compliance with alliance treaties (Leeds, 2003a).
2. Note that the terms “authoritarian”, “autocratic”, and “nondemocracies” are used interchangeably.
3. Note that, in this paper, *personalist regimes* are defined as regimes with relatively low constraints on the chief executive and measured using the *Executive Constraints* variable of the Polity IV dataset (Marshall et al., 2007). The literature, however, offers some alternative definitions. Wright (2009), for example, shows that, according to Geddes’s (1999) typology, personalist regimes do not necessarily have smaller winning coalitions than nonpersonalist regimes. I provide a more detailed discussion on the differences between Geddes’s typology and the typology used here in the section “Evolution of authoritarian typologies”.
4. Veto players refer to domestic political actors whose approval is necessary to enact a particular policy (Tsebelis, 1995).
5. The selectorate refers to all the citizens that can take part in leader’s selection (Bueno de Mesquita et al., 2003).
6. As a result of these spatial limitations, the data is characterized by selection of an independent variable. As shown by King et al. (1994: 137), however, such selection does not pose serious problems for empirical analyses.
7. The advantage of using data on issue-based agreements (the ICOW data) rather than military alliances (e.g. Alliance Treaties Obligations and Provisions) is in the substantially larger number of cases as well as in the broader range of issues.
8. Most of the settlement attempts are bilateral, with only 498 settlement attempts (12%) involving three or more actors.
9. The use of directed dyads ensures that each dyad enters the data twice, as A–B and B–A. This allows for testing the hypotheses developed here without making additional assumptions regarding the signing and compliance tendencies of challengers vs targets.
10. ICOW differentiates between three types of agreements: substantive, functional and procedural. Substantive agreements include settlement of ownership of part or all of the disputed area. Functional agreements involve formulating rules on management of the issue in question (e.g. establishment of demilitarized zones, guarantees of free commerce or navigation through the territory). Finally, procedural agreements relate to establishing future procedures to settle the claim (e.g. negotiations on submitting the claim to the World Court or some other body; Hensel, 2005: 2). Since substantive agreement is the only agreement type that places serious requirements on the parties, I limit my analysis to substantive agreements.
11. If a dyad has multiple settlement attempts per year, all of these enter into the dataset as separate observations. The results, however, are robust to alternative specifications of keeping only one observation per year.
12. Note that Wald  $\chi^2$  post-estimation tests are statistically equivalent to changing the reference category.
13. Note that the *Agreement* variable is coded as 0 if (a) negotiations resulted in no agreement or (b) negotiations resulted in a nonsubstantive agreement (e.g. states agree to hold more negotiations in the future). Additional empirical analyses show that the results are robust to excluding inconclusive rounds of negotiations from the sample (results available upon request).
14. The ICOW codebook (pp. 38–39) points out that the measure of state-level compliance is not always precise. Namely, in many cases, noncompliance by one state leads to noncompliance on the part of the other. Any bias, however, would be towards the null hypotheses, since violations by noncompliant types of regimes will trigger violation on the part of the more compliant ones.

15. The five year threshold is the coding rule adopted by the creators of the ICOW dataset. This should not be problematic for this paper's analysis, as the five year threshold is used only for non-permanent agreements that specify no expiration date, such as a procedural agreement to hold negotiations with no specific written timeline. For all other agreements, and in particular, the substantive agreements analyzed here, compliance is coded as "1" if the agreement has not been violated as of the date of coding (Mitchell and Hensel, 2007: 729).
16. An alternative way to measure the primary independent variable is to use  $W$ —the measure of the size of the winning coalition (Bueno de Mesquita et al., 2003).  $W$  is operationalized as a 0–4 index which adds a point (1) if a regime is coded as military by the Banks (2011) dataset, (2) if a regime is  $\geq 2$  on XRCOMP variable of the Democracy score from the Polity dataset, (3) if XROPEN is  $> 2$ , or (4) if PARCOMP is equal to 5 (Bueno de Mesquita et al., 2003: Ch. 2). By treating the military nature of regimes as a component of an additive index, this measure makes a theoretical assumption that "[m]ilitary regimes ... have particularly small coalitions" (Bueno de Mesquita et al., 2003: 134), which has been called into question by recent work, showing that leaders of military regimes may be, in fact, politically constrained (Weeks, 2008). The analysis, however, is robust to this choice of measure (results available upon request).
17. The analysis is robust to changing this threshold (see Supplementary Tables B and C, available from: [www.olgachyzh.com](http://www.olgachyzh.com)).
18. According to the Polity IV codebook (p. 24), the *Executive Constraints* variable captures whether the chief executive is constrained by "accountability groups," such as legislatures in democracies, "the ruling party in a one-party state", "councils of nobles or powerful advisors in monarchies" and "the military in coup-prone polities". I view members of these "accountability groups" as the members of the winning coalition, because members of these groups constitute the political elites whose support is necessary for the executive to stay in power. Scores of 1 or 2 on this variable, therefore, indicate that the executive is not answerable to such "accountability groups", which I interpret to mean that the executives with low scores have a small or no winning coalition. Conversely, high scores indicate that the executive is beholden to a larger winning coalition.
19. Such a distinctive behavior of the two party-based, in contrast to the military, regimes hints at a possible theoretical puzzle for future research. Additional empirical analyses of just the military-party distinction reveal some differences in the probabilities of reaching and complying with international agreements between party- and military-based regimes (see Supplementary Table A). A possible explanation for this variation may be that military leaders are more constrained than party-based dictators, owing to the greater threat of an irregular removal common to military regimes (Goemans, 2008).
20. Figures are generated using Monte Carlo simulations that employ the coefficient and standard errors estimates from the relevant model (Table 3 model 1 to calculate the effects of oligarchies and personalist regimes, and Table 4 model 1 for the effects of the combined typology), and calculate the predicted probabilities of each of the outcomes of interest by varying the regime type variables, while fixing side B regime type as a democracy and holding all the control variables at their mean or modal values (King et al., 2000).
21. Figures are generated using the same procedure as the predicted probabilities described above, except that, in order to obtain first differences, I subtract the predicted probabilities of each outcome given side B is a *personalist regime* (or *boss* for the combined typology results) from the predicted probabilities of each outcome given side B is a *democracy*.

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