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US Military Aid and Recipient State Cooperation

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What can states expect to receive in return for the military aid they provide to other states? Can military aid buy recipient state compliance with donor objectives? In this study, we systematically investigate the effects of US military assistance on recipient state behavior toward the United States. We build on existing literature by creating three explicit theoretical models, employing a new measure of cooperation generated from events data, and controlling for preference similarity, so that our results capture the influence military aid has on recipient state behavior independent of any dyadic predisposition toward cooperation or conflict. We test seven hypotheses using a combination of simultaneous equation, cross-sectional time series, and Heckman selection models. We find that, with limited exceptions, increasing levels of US military aid significantly reduce cooperative foreign policy behavior with the United States. US reaction to recipient state behavior is also counterintuitive; instead of using a carrot-and-stick approach to military aid allocations, our results show that recipient state cooperation is likely to lead to subsequent reductions in US military assistance.

The United States spends more than eleven billion dollars per year on direct military assistance to foreign governments and substate groups (USAID 2009). The American government expresses a wide variety of goals motivating their use of military assistance as a foreign policy tool. Frequently, US administrations have explicitly linked military aid or arms transfers to a quid-pro-quo expectation of compliance from a government (Sislin 1994). More generally, military assistance is expected to augment US national security by increasing recipient state cooperation with US objectives. According to the State Department's 2007 *Report to Congress: Section 1206(f) of the 2006 National Defense Authorization Act:*

> Security cooperation remains a critical foreign policy tool that allows the United States to advance its national security interests worldwide…. Building partner

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> nation security capacity is one of the most important strategic requirements for the United States to promote international security, advance U.S. interests and prevail in the war against terrorism (1).

Importantly, the policies that guide the provision of US military aid have changed significantly in recent years. Shortly after the terrorist attacks on September 11, 2001, the Bush administration sent Congress an antiterrorism bill that would have lifted all restrictions on military aid and arms transfers to foreign governments in cases where such assistance could ''help fight terrorism'' (Federation of American Scientists 2002, 1). The provision specifically called for lifting bans on counterterrorism aid for states with a history of human rights abuses or noncooperation on counterterrorism.[1] The bill was eventually modified to include ''sunset clauses'' and some requirements for Congressional oversight, but it initiated a year of radical changes in the way US military aid was allocated, restricted, and justified. In 2002, Congress amended the International Traffic in Arms Regulations, removing Armenia, Azerbaijan, and Tajikistan from a list of states barred from receiving US arms transfers. The United States has also extended military aid to Pakistan, the Philippines, Turkey, Georgia, Djibouti, Ethiopia, Nigeria, Oman, Yemen, Uzbekistan, and Columbia, among others, in the name of rewarding or encouraging cooperation in the fight against terrorism (*DSCA News Releases*, 2002–2008).

What are the consequences of US military aid in a rapidly changing, unpredictable global security environment? In this study, we systematically investigate the effects of US military assistance on recipient state behavior toward the United States between 1990 and 2004. Our analysis improves upon existing studies in several ways. First, we develop three competing, clearly defined, and falsifiable theoretical models of the relationship between military aid and recipient state behavior. These models—*Arms for Influence*, *Lonely Superpower*, and *Reverse Leverage*—range from a conventional understanding of US military aid as a way to buy cooperation from the recipient state to a more counterintuitive assessment of US aid as a sign of American dependence on the recipient government for the provision of some foreign policy good. Second, our focus on the post-Cold War era allows us to measure recipient state compliance using events data rather than the UN voting records that most studies rely on. Third, we employ multiple statistical methods in order to match our empirical models to the hypotheses we are testing. For example, a number of our hypotheses predict a reciprocal relationship between military aid and cooperation or anticipate selection effects. To address these challenges, we use both a simultaneous equations model with fixed effects and a two-stage Heckman model. Finally, we control for pre-existing preference similarity between the United States and aid recipients in our empirical analyses, so that our results capture the influence military aid has on recipient state behavior independent of any dyadic predisposition toward cooperation or conflict.

Our research is relevant to larger academic debates about the utility and limitations of foreign aid as a policy instrument. We attempt to evaluate the effectiveness of foreign aid, and security assistance more specifically, in terms of its ability to move recipients toward more cooperative foreign policies. We test the conventional ''arms for influence'' explanation of military aid but find that the relationship between US assistance and recipient state behavior is considerably more complicated. In general, we find that military aid does not lead to more

[1] These restrictions were part of The Arms Control Export Act of 1976, which ''prohibits the sale of weapons that would undermine long-term security and stability, weaken democratic movements, support military coups, escalate arms races, exacerbate ongoing conflicts, be used to commit human rights abuses or support human rights abusers, or cause arms buildups in unstable regions.'' The full report can be found at http://fas.org/asmp/resources/govern/109th/AECA0106.pdf. In 2007, another statute providing the President authority to waive restrictions on assistance to Pakistan, P.L. 110-53, was signed. See CRS Report RL33498, *Pakistan-U.S. Relations*.

cooperative behavior on the part of recipient states. With limited exceptions, increasing levels of US aid are linked to a significant reduction in cooperative foreign policy behavior with the United States. US reaction to recipient state behavior is also somewhat counterintuitive; instead of using a carrot-and-stick approach to military aid allocations, our results show that increased recipient state cooperation is likely to lead to subsequent reductions in US military assistance.

The results of our inquiry also have implications for US foreign policy. Policymakers and military advisors invariably justify military assistance to foreign governments on the basis of an expectation that providing military aid to these governments will increase US influence over the recipients' foreign or domestic policies. In the 1980s, despite concerns about Pakistan's efforts to develop nuclear weapons, the Reagan administration began providing direct military assistance to Pakistan and funneling money and weapons to Afghan rebels through Pakistan's Inter-Services Intelligence (ISI) after the Soviet Union invaded Afghanistan. The primary objective was to support Islamic insurgents fighting the USSR and the Soviet-backed government of Afghanistan. And, in one important sense, the US policy was a tremendous success. The Afghan rebels prevailed and the Soviets withdrew from Afghanistan—a result some attribute directly to US assistance and, more specifically, to the highly accurate FIM-92 Stinger Surface-to-Air Missiles (SAMs) the US provided. However, several hundred of the Stinger missiles are unaccounted for, and Osama bin Laden is thought to have procured a number of Stingers and other SAMs with which he could target US military or civilian aircraft (*Jane's Intelligence Review*). Moreover, the Pakistan Army's Inter-Services Intelligence diverted an unknown quantity of US arms and assistance to groups it considered less threatening to Pakistan than the Afghan mujahedeen—including some radically anti-US Islamic factions (Debate in US House, June 22, 2001). After a total ban on military assistance to Pakistan throughout the 1990s, the United States resumed providing billions of dollars of military assistance and arms to Pakistan after the terrorist attacks of September 11, 2001 (Grimmett 2009). And, once again, there are concerns that Pakistan is channeling some of the money to extremist groups on its border with India. Perhaps more seriously, the ISI remains closely linked to the Taliban militants the American military is fighting in Afghanistan (Gopal 2008; Mazzetti and Schmitt 2009; Murphy 2010).

The provision of military aid to foreign governments clearly has attendant risks. Currently, approximately $4.5 billion a year in US military aid goes to about 60 countries around the world to help them buy American weapons. Travis Sharp, a military policy analyst at the Center for Arms Control and Nonproliferation, says that one of his biggest concerns is that the United States could end up in combat against an enemy equipped with American-made weapons if alliances shift.[2] This analysis is an attempt to explore whether the limited cooperation the United States has gained through its extension of military assistance to Pakistan is an anomaly, or part of a pattern of perverse, unintended consequences stemming from US military aid policies.

The rest of this paper is structured in the following way: First, we review the existing literature on military aid and influence in the international system. Next, we develop three competing models to explain the relationship between aid and cooperation. In the third and fourth sections, we describe the data we use and explain the methodology employed in conducting our statistical analysis. The fifth section presents and discusses relevant results. We conclude with a brief summary argument, policy implications, and some directions for further research.

[2] Lipton, Eric. 2008. With White House Push, US Arms Sales Jump. *New York Times*, September 14.

Previous Literature on Arms and Influence

Despite the intuitive connection between foreign aid and international influence, the results of empirical investigations have been inconclusive. Generally, the literature in this area focuses either on the effect of foreign aid on democracy and human rights in the recipient country or on vote compliance in the United Nations. Regan (1995) reports that economic aid does not have a clear impact on the human rights practices of recipient states. There is also mixed evidence as to whether the provision of US foreign aid can induce UN voting compliance. Kegley and Hook (1991) look at attempts by President Reagan and Congress to explicitly link the allocation of US foreign aid to recipient state voting coincidence with the United States in the UN General Assembly. Their study finds no relationship between US aid allocations and recipient state voting behavior. Moreover, even after Congress enacted laws granting the president authority to withhold aid from countries that consistently voted against the United States in the UN, countries that shifted their voting behavior away from the US position were not punished with lower aid allocations, while states that increased their vote compliance received less US aid.

In contrast, Moon (1983) finds that direct military grants from the United States are strong predictors of recipient state vote compliance. Another more recent study of sixty-five developing countries from 1984 to 1993 also reports that US foreign aid is associated with increased vote coincidence rates in the United Nations General Assembly (Wang 1999). Derouen and Heo (2004) find that countries that move closer to US positions in the United Nations tend to receive more economic and/or military aid, but that increases in US aid led to increases in vote compliance in only a handful of countries. Lai and Morey (2006) provide evidence that military and economic aid dependence induces higher levels of UN voting compliance only for nondemocracies. Democratic states that receive foreign aid from the United States are actually more likely to vote against the United States in the United Nations.

A separate body of academic research has focused on the consequences of arms transfers between countries. Arms imports have been linked to increases in human rights abuses in developing countries (Blanton 1999). Arms transfers to developing countries also appear to impede democratization efforts (Blanton 1999). In a 1992 study, Maniruzzaman (1992) finds that higher per capita arms transfers are positively correlated with both the probability of a coup d'état and the length of military rule. There is also evidence that arms transfers from major powers encourage client states to adopt more aggressive foreign policies toward their neighbors (Kinsella 1994; Kinsella and Tillema 1995). While both the United States and U.S.S.R. claimed to use arms transfers to promote regional stability, the result was often political and military destabilization of relations between the recipients (Sanjian 1999, Sanjian 1998). Craft and Smaldone (2002) find that arms transfers have been a strong predictor of states' armed conflict involvement in sub-Saharan Africa (693). Research by Krause (2004) suggests that ''absent status quo acceptance, increased arms transfers from major powers make states more likely to be initiators and targets of militarized disputes'' (367).

Thus, the literature to date is characterized by diverse findings in regard to the connection between military aid and recipient country behavior. Results depend on a number of factors, including the type of aid that is being analyzed (economic aid, military aid, and arms transfers) and the recipient state behavior of interest (UN vote compliance, democratization, foreign policy belligerence, and human rights practices). In addition, much of the research to date is not grounded in an explicit theoretical model that can explain and predict how foreign aid will affect recipient state behavior toward the donor. In this analysis, we aim to resolve some of the contradictions that are present in the extant literature

by building three competing theoretical models and testing them with a broader measure of recipient state behavior based on events data.

Competing Theoretical Models

Richardson (1981) defines compliance as ''one party acceding to the preferences of a second party, thereby acting contrary to what it would have done in the absence of the second party's influence… compliance is a sacrifice, wherein actors abandon their preferences as they conform to another's dissimilar foreign policy wishes'' (102). Similarly, Lai and Morey (2006) distinguish between creating common preferences and leveraging states into voting with the United States in the United Nations (that is vote buying). We take a novel approach, employing a broad measure of recipient state cooperation with the United States as our dependent variable and testing for the effect of US military aid on recipients' foreign policy behavior, while controlling for US–recipient state preference similarity. Although long-term security cooperation between two states may move the states' policy preferences closer over time, our primary interest is in the extent to which military aid can shift states' foreign policy *behavior*, increasing recipient state cooperation with the donor above what would be expected based on shared preferences alone. At the same time, we have expectations about a reciprocal relationship between military aid and recipient state cooperation.

We propose three competing models of the military aid–cooperation relationship:

Model 1: Arms for Influence

According to this model, a powerful state can use military assistance as leverage to compel recipient state cooperation. In this straightforward model, military aid is a source of bargaining power because donors can link benefits to desired behavior by recipients. This theory builds on early work on asymmetrical influence. Keohane and Nye. (1977) argue, for example, that dominant states can influence the foreign policy of dependent states using aid allocations to reward or punish past behavior and to act as an incentive that encourages future compliance. More recently, Palmer, Wohlander, and Clifton Morgan (2002) contend that ''Foreign aid, at the most general level, is a tool of influence—states give it because they believe it encourages recipients to take desired actions''. Similarly, Bueno de Mesquita and Smith (2007) propose a model in which donors give foreign aid to purchase policy support from recipients. States are most likely to give aid to ''countries whose leaders do not inherently support the policies of a prospective donor but are willing to back those policies in exchange for aid sufficient to improve their political and economic welfare'' (254).

If military aid gives the US bargaining power, recipient states that receive larger amounts of aid and those that have a greater need for assistance should be more willing to accommodate their foreign policy to US preferences. While Derouen and Heo (2004) suggest that aid is more often used as an *ex post* reward than as an *ex ante* inducement, we suspect that the relationship is circular; a state's level of cooperation with the United States influences the amount of aid it receives and the amount of aid a state receives influences subsequent levels of cooperation with the United States.

The example of US military aid to Georgia is consistent with the expectations of the *Arms for Influence* model. US military aid to Georgia spiked from an average of $2.76 million per year from 1991–2001 to $92 million in 2002 and then averaged $13.9 million per year between 2003 and 2006 (USAID 2006). Most aid was directed toward the 2002–2003 Georgia Train and Equip Program (GTEP) (Shanker 2002). As part of GTEP, about 2,000 Georgian soldiers were trained by US

military personnel and equipped with American weapons and technology in order to better prepare Georgia to help the United States counter global terrorism (United States Department of Defense 2002). One year after the initiation of the GTEP, Georgia was a dedicated member of the ''coalition of the willing'' that supported the US war in Iraq. In the years after the Rose Revolution of 2003, new President Mikheil Saakashvili sent a total of 2,000 soldiers to support US operations in Iraq, making it the third largest contributor of forces by 2007. Aiding the United States in Iraq was part of a larger pattern of cooperative behavior by Georgia; our events data indicate that Georgia's overall level of cooperation with the United States more than tripled after 2002 (King and Lowe 2003a,b).

Beyond this specific example, we identify several expectations that logically flow from the assumptions of the *Arms for Influence* model:

Hypothesis 1a: *As the total amount of US military aid to a country increases, the level of cooperation the recipient displays toward the United States will increase beyond what would be expected based on shared preferences alone.*

Hypothesis 1b: *Increasing dependence on US military assistance will increase cooperative foreign policy behavior toward the United States.*

Hypothesis 1c: *The US will decrease or eliminate military assistance to states that become less cooperative.*

Model 2: Lonely Superpower

This model suggests that, rather than encouraging compliance, dependence on a powerful state can fuel defiance (Walt 2005). Voeten (2004) maintains that US hegemony in the post-Cold War era has elicited almost universal resistance. Whereas the *Arms for Influence* model predicts that dependence on US military aid will encourage states to be more accommodating, this model anticipates that dependence on US military assistance creates incentives to publicly push back against US influence. Governments that are dependent on American military assistance may feel the need to temper their cooperation with the United States to avoid being seen as pawns of the United States by domestic or international audiences. In order to reassure the public and project strength to other states, leaders in recipient states may act to offset any perception that their foreign policy is dictated by a foreign power.

In their study of how regime type mediates the influence of US foreign aid, Lai and Morey (2006) suggest that perhaps ''aid dependence promotes a need to counter perceived American led dominance'' and encourages a leader ''to adopt a more anti-American stance in the global arena to address criticisms of being a puppet of the US'' (398). In Yemen, for example, leaders have been careful to balance their acceptance of increasing US military aid with efforts to maintain the appearance of autonomy when it comes to formulating and implementing the counterterrorism operations the aid is meant to facilitate. Shortly before the delivery of $150 million of US military aid in 2010 (up from $67 million in 2009), Foreign Minister Abu Bakr al-Qirbi insisted that the aid was being used for ''intelligence and information sharing only'' and that the government was fully capable of dealing with the Al Qaeda threat on its own (Raghavan 2010). Despite a civil war in the north, separatism in the south, and a large number of tribal and religious leaders with strong connections to Al Qaeda, the central government has been strongly criticized for its military reliance on the United States (Raghavan 2010). As a result, leaders like National Security Minister Ali Muhammad al-Anisi have tried to resist US calls to escalate the fight against militants, declaring that ''Yemen is not a refuge for al-Qaida, as some claim'' (Flintoff 2010). Thus, while military aid from the United States to Yemen

is intended to increase cooperation, the domestic backlash in Yemen against US influence may actually hamstring US counterterrorism efforts there.

In general, if the *Lonely Superpower* model represents the real consequences of US military aid, we would expect cooperation with the United States to decline as recipient state dependence on the United States for military assistance increases.

Hypothesis 2a: *Increasing dependence on US military assistance will decrease cooperative foreign policy behavior toward the United States.*

Model 3: Reverse Leverage

In this model, we anticipate a paradoxical effect of military aid in which powerful donor states become dependent on the recipients of their military aid (Mott 2002). The United States gives military aid to gain leverage and influence. But it is in a competitive market for leverage through aid; it must compete with other states to keep its influence over client states. At the same time, we can assume that the United States chooses to invest heavily in training and equipping the military forces of other countries, with all the attendant risks this entails, because it needs something from these states. Materially weak states can exploit the fact that a much stronger donor relies on them to provide some vital good—and the threat of defection to an alternative supplier—to exert influence over the donor.

According to Mott (2002), during the Cold War, US security assistance recipients learned to manipulate the United States ''by putting Moscow and Washington into an aid competition, by diversifying across suppliers, and converting the expected recipient dependence into a perverse sort of supplier dependence'' (8). Although the Cold War competition with Moscow is no longer central to US foreign policy, other states and even nonstate actors have stepped in to replace the Soviet Union as alternative arms suppliers. Stokke (1995) observes that strong states have typically used foreign aid ''as a lever to promote objectives set by the donor, which the recipient government would not have otherwise agreed to'' (12). But Singer (2003) argues that the increasingly privatized military market ''fundamentally alters this patron-client relationship'' (211). Since weaker states can now purchase weapons on the open market, the patron's ability to influence client behavior is greatly diminished.

Generous US military funding runs the risk of creating militarily strong, assertive clients that become more willing to ignore US interests (Mott 2002). Recipient states should be more likely to defy the United States if they believe that the United States will be unable or unwilling to punish them for defection (Walt 2005). US dependence on recipient states for oil, troop basing, over-flight permission, counternarcotic and counterterrorism operations, etc… makes withdrawing aid potentially more costly for the United States than for the aid recipients. It may be easier for aid recipients to find alternative suppliers than it would be for the United States to find an equally valuable place to base its troops.

The epitome of the *Reverse Leverage* model may be the post-September 11, 2001, relationship between the United States and Pakistan. Washington has sent several billion dollars in military aid to Islamabad since late 2001, when it enlisted Pakistan as an ally against Al Qaeda and the Taliban (Rohde, Gall, Schmitt, and Sanger 2007). In its rationale for the sale of 36 F-16 fighter aircraft to Pakistan in 2006, the Bush administration notes:

> Given its geo-strategic location and partnership in the Global War on Terrorism (GWOT), Pakistan is a vital ally of the United States….This proposed sale will contribute to the foreign policy and national security of the United States by helping an ally meet its legitimate defense requirements. The aircraft will also be used for close air support in ongoing operations contributing to GWOT.

Although the military aid provided to Pakistan's government has contributed to its ability to survive a dedicated insurgency by the Taliban and to some success in rooting out militants in the Northwest Provinces, most analysts believe the vast amount of aid has failed to generate the kinds of outcomes it was meant to produce. Most striking has been the lack of progress in establishing control of key Taliban and Al Qaeda strongholds. But there has been a notable lack of cooperation in other key areas as well. Pakistan continues to emphasize military capabilities aimed at India rather than counterinsurgency and has indicated a desire to negotiate with the Taliban. In 2009, the government released A.Q. Khan, the Pakistani nuclear scientist, believed to be behind the proliferation of nuclear weapons technology to US enemies. Pakistan's Inter-Services Intelligence remains closely linked to the Taliban and other terrorist groups, including the group responsible for the 2009 terrorist attack on Mumbai (Bajoria 2009; Mazzetti and Schmitt 2009; Murphy 2010; O'Hanlon 2010; Traub 2010). While it is beyond the scope of this paper to make claims about the specific motivations behind Pakistan's foreign policy, it is certainly plausible that Pakistani leaders are operating on the assumption that the United States is dependent on Pakistan to the extent that it has little choice but to continue to subsidize its government. After a decade in which Pakistan received no U.S. military aid at all, the government received an average of $235 million a year between 2002 and 2004 (USAID 2006). At the end of that period, its overall level of cooperation with the United States had dropped to one-fifth of its 2001 level (King and Lowe 2003a,b).

The *Reverse Leverage* model anticipates that states are more likely to receive US military aid if they have qualities that make them particularly important to perceived US security needs. However, the model also suggests that the more important a recipient state is perceived to be, the less likely that state will be to increase its cooperation with the United States in exchange for higher levels of aid. In fact, if the amount of aid a state receives is itself indicative of its security value to the United States, states should become less cooperative the more aid they receive. Moreover, the United States should be reluctant to decrease military aid to states that are defiant. If client states gain reverse leverage over their patrons, we would not expect to see donor states reducing or eliminating aid in response to uncooperative behavior. Instead, the United States should be unwilling to punish bad behavior, and past levels of aid should be extremely strong predictors of future aid levels (Lewis 1979).

Hypothesis 3a: *States that the US believes are critical to its security interests will be more likely to receive military aid but less likely to increase their cooperation with the United States as the amount of aid they receive increases.*

Hypothesis 3b: *All else equal, states that receive large amounts of military aid from the United States will be less cooperative than states that receive smaller amounts.*

Hypothesis 3c: *The United States will not reduce or eliminate aid when countries become less cooperative.*

Data and Measurement

Our data set includes annual observations of all 184 dyads formed by the United States and a potential aid recipient between 1990 and 2004. Accounting for missing observations for some dyads in some years, there are 2,586 dyad-year observations in what is structured as a panel data set.

Dependent Variable: Cooperation

As a measure of foreign policy behavior, we use events data from the Virtual Research Associates' (VRA) 10 Million International Dyadic Events Dataset (King

and Lowe 2003a,b). Each event in the data set represents a foreign policy action by a source country toward a target and is machine-coded from Reuters News Briefings between 1990 and 2004. The events are categorized according to the Integrated Data for Events Analysis (IDEA) guidelines established by the VRA (Bond, Bond, Oh, and Lewis T. 2003) and then assigned a numerical value according to the Goldstein (1992) Cooperation Scale, which weights the IDEA categories according to how cooperative or conflict-oriented they are. Actions are given scores that range from -10 (*Military Attack*, which represents extreme conflict) to 8.3 (*Extend Military Assistance*, which indicates extreme cooperation).[3] VRA generates monthly cooperation and conflict scores for each directed dyad from the sum of the Goldstein scores.

Our analysis is concerned with behavior directed by a source state toward the United States as a target state. For each dyad formed by the United States and a potential aid recipient, we calculate an aggregate behavior score by subtracting a state's score for conflictual behavior toward the United States in a given month from its score for cooperative behavior toward the United States. The result is a (theoretically) continuous variable (*cooperation*) that captures increasingly cooperative behavior toward the United States as values become more positive and increasingly conflictual behavior toward the United States as values become more negative. Because our explanatory and control variables are recorded at yearly intervals, we use the average of a country's monthly cooperation scores over a calendar year as our dependent variable. The mean of this variable is 1.38, which suggests a general tendency toward low-level cooperative behavior with the United States between 1990 and 2004.

The VRA data set is particularly useful for our analysis because it is able to capture a wide range of behavior toward the United States in a systematic way. From a methodological standpoint, the comprehensiveness of the measure and the likelihood that it contains a significant amount of extraneous ''noise'' mean that our quantitative analyses will be biased toward finding *no* relationship between military aid and a state's behavior. We must therefore be cautious about concluding that a statistically insignificant correlation means that aid has no effect. However, given that we are accounting for such a wide range of behavior by the recipient state, results suggesting that US military aid *is* correlated with significantly higher or lower levels of cooperation would allow us to make a stronger argument about the effect of US military aid on recipient state behavior.

Explanatory Variables

Military Aid

We define military aid as ''total bilateral military assistance loans and grants'' as reported by USAID through its Overseas Loans and Grants (Greenbook). The ''Greenbook'' measure of military assistance includes aid for several programs, including International Military Education and Training, Military Assistance Program Grants, Foreign Military Credit Financing, and Transfers of Excess Defense Articles.[4] The measure excludes military assistance that is given for economic development purposes (which is captured in a separate measure of economic

[3] For a full discussion of the weighting scheme, see Goldstein (1992). While the events data we use to code our dependent variable code the extension of military assistance as a cooperative action, note that our primary independent variable measures military aid provided *by* the United States, while the dependent variable would only capture military aid a state extended to the United States.

[4] For countries that receive the largest amount of US military assistance, the vast majority of aid comes as part of the Foreign Military Financing Program (FMFP). According to the US State Department, the FMFP is designed to ''provide grants for the acquisition of US defense equipment, services, and training.'' In 2006, FMFP funds accounted for over 90 percent of total military aid to Egypt, Israel, Pakistan, Jordan, Colombia, the Philippines, and Poland.

aid) and assistance given for counternarcotics and counterproliferation efforts, as well commercial military sales (USAID).[5] We use the natural log of total US military aid delivered to a country in constant 2002 US dollars in our models. We also create a variable (*milaiddep)* that measures the relative dependence of the recipient country on US military aid. This variable is generated by dividing the amount of military aid by the GDP of the recipient country.[6]

Shared Preferences

We expect that, all other factors being equal, some states have embedded foreign policy interests that are more aligned with those of the United States (Gartzke and Jo 2002). Geographic, cultural, economic or ideological considerations make certain states more likely to have foreign policy preferences that align with US interests. Because our objective is to isolate the independent impact of US military aid on recipient state behavior, we aim to disentangle cooperation with the United States that occurs due to inherent preference similarity from cooperation that results from the provision of US military aid. To capture latent preference similarity, we look at the similarity in alliance portfolios between the United States and the recipient state. The variable (*shared)* takes the form of an *S* Score (Signorino and Ritter 1999) that approaches 1.0 as portfolios are perfectly aligned and falls toward 0 as alliance portfolios become less similar.[7] For example, the US–Libya dyad has an *S* Score of 0.09 in 1990, while the US–Canada dyad has a score of 0.96 during that same year. We use the EUGene program (Bennett and Stam 2000) to generate *S* Scores for all of the dyads in our study.

Security Centrality

As a measure of the extent to which the United States perceives a state as important to its security interests, we create a variable (*allies*) that indicates that a potential aid recipient had a mutual defense pact with the United States (Gibler and Reid Sarkees 2004).

Control Variables

Economic Aid

We control for US economic aid provided to a country. There is no consensus on whether military and economic aid is essentially substitutable. Recipient states may use economic aid to increase military spending (Stein, Ishimatsu, and Stoll 1985; Travis and Zahariadis 1992; Zachariadis et al. 1990). Some forms of security-oriented aid are also classified by USAID as economic in nature and are not considered part of the military assistance package that a country receives from the United States (USAID). In order to account for this empirical ambiguity and USAID classification decisions, we decide to include two kinds of variables measuring economic aid. The first (*econaid*) is again taken from the USAID Greenbook; it indicates the ''total economic assistance, loans, and grants'' given from the United States to recipient states (USAID). As a measure of the relative significance of aid to the recipient country, we create a second variable (*econaiddep*) that is simply the amount of economic aid divided by the GDP of the recipient state.

[5] Full documentation is available through the USAID ''Greenbook'' at the USAID Web site http://qesdb.usaid.gov/gbk/.

[6] We also measured aid dependence by dividing US aid to a country by total OECD aid. This eliminates all OECD countries from the analysis (~400 observations) but does not change the sign or significance of the coefficient on the variable.

[7] Others have measured alliance portfolio similarity using a tau-b measure; for an extensive discussion of the relative merits of the *S* score and tau-b, see Bennett and Rupert (2003). We also estimate models using UN vote congruence as a measure of preference similarity. This variable is never significant.

Democracy

Democratic states may be less likely to see US hegemony and influence attempts as threatening (Goldsmith, Horiuchi, and Inoguchi 2005). On the other hand, democracies may be less susceptible to influence (Lai and Morey 2006) or may even face domestic political pressure to counter what is perceived as increasing levels of US military dominance by engaging in defiant foreign policy behavior (Walt 2005). Bueno de Mesquita and Smith (2007) argue that it will be more costly to buy policy concessions from national leaders that rely on the support of a relatively large proportion of their population. Leaders that depend on large ''winning coalitions'' for their political survival cannot use aid to buy-off their supporters and are less likely to move from policies that are beneficial to their populations to policies preferred by foreign aid donors. To account for the potentially divergent reaction of democracies to US military aid, we create a dichotomous variable that distinguishes between democratic and nondemocratic recipient states.[8] We use the Polity IV data set (Beardsley and Gleditsch 2003).

US Troop Presence

A large, well-established presence of American soldiers on the ground may reduce the need for a separate military assistance program or mitigate the impact of changes in military assistance delivered by the United States to the host country. Conversely, a large troop presence may exacerbate a potential backlash against increases in military aid that are seen as indicative of US attempts to dominate the recipient state (Walt 2005). We thus include a variable that is calculated as the natural log of the number of US troops present in a given year. We get our data from a 2004 report published by the Heritage Foundation.[9]

National Capabilities

It may take more aid to buy policy concessions from states with more resources (Bueno de Mesquita and Smith 2007). Governments of more powerful states may also face less domestic pressure to counter military aid with foreign policy resistance as a way to show resolve against potential US dominance. We measure the capability of the recipient state by taking the natural log of its gross domestic product (GDP) in constant 2000 US dollars. We obtain this measure from the latest version of Gleditsch's Expanded Trade data (Gleditsch 2002).

Methods

In order to explore the relationship between levels of military aid and levels of cooperation with the United States, we estimate the following four equations to test our hypotheses.

$$Cooperation_{\mathrm{it}} = \alpha_i + \beta_1 mil_aid_{\mathrm{it}-1} + \theta Cooperation_{\mathrm{it}-1} + \delta X_{\mathrm{it}-1} + e_{\mathrm{it}} \tag{1}$$

$$Cooperation_{\mathrm{it}} = \alpha_i + \beta_2 milaiddep_{\mathrm{it}-1} + \theta Cooperation_{\mathrm{it}-1} + \delta X_{\mathrm{it}-1} + e_{\mathrm{it}} \tag{2}$$

$$\Delta mil_aid_{\mathrm{it}} = \alpha_i + \theta mil_aid_{\mathrm{it}-1} + \beta_3 \Delta Cooperation_{\mathrm{it}-1} + \delta X_{\mathrm{it}-1} + e_{\mathrm{it}} \tag{3}$$

$$\begin{aligned} Cooperation_{\mathrm{it}} | Allocation = {} & \alpha_{\mathrm{i}} + \beta_4 allies_{\mathrm{it}-1} + \beta_5 mil_aid_{\mathrm{it}-1} \\ & + \beta_6 (mil_aid_{\mathrm{it}} \times allies_{\mathrm{it}-1}) + \theta Cooperation_{\mathrm{it}-1} \\ & + \delta X_{\mathrm{it}-1} + e_{\mathrm{it}} \end{aligned} \tag{4}$$

[8] States with a Polity score greater than eight are classified as ''democratic'' and coded with a ''1''. All other states are coded with a ''0''.

[9] The full report can be accessed in Microsoft Excel format through the Heritage Foundation Web site at: http://www.heritage.org/Research/NationalSecurity/cda06-02.cfm.

TABLE 1. Theoretical Models and Predicted Result

Theoretical model	*Hypotheses*	*Predicted result*
Arms for Influence	H1a: Aid increases cooperation	$\beta_1 > 0$
	H1b: Aid dependence increases cooperation	$\beta_2 > 0$
	H1c: Cooperative behavior will increase aid	$\beta_3 > 0$
Lonely superpower	H2a: Aid dependence decreases cooperation	$\beta_2 < 0$
Reverse leverage	H3a: Aid provides less leverage over allies	$\beta_4 > 0$, $\beta_5 > 0$, $\beta_6 < 0$
	H3b: Aid decreases cooperation	$\beta_1 < 0$
	H3c: Uncooperative behavior will not decrease aid	$\beta_3 = 0$

where the subscripts i and t denote unit (country) and time (year), X is a vector of control variables, and α_i represents the country dummy variables to control for country-specific fixed effects.[10] All independent variables are lagged one year to account for possible simultaneity bias. We also include the lagged dependent variable in all of our models and employ Huber–White robust standard errors to account for potential autocorrelation and heteroscedasticity.[11]

Equation 1 tests hypotheses *H1a* and *H3b*, which make opposing predictions about how the amount of US military aid a state receives will affect its behavior toward the United States. equation 2 models the relationship between recipient state *dependence* on US military aid (defined by aid as a percentage of recipient state GDP) and that state's level of cooperation with the United States (hypotheses *H1b* and *H2a*). Equation 3 tests hypotheses *H1c* and *H3c*, which make contradictory predictions about how the United States responds to changes in a recipient country's behavior. Finally, equation 4 tests hypothesis *H3a* from the *Reverse Leverage* model. Table 1 summarizes our hypotheses and predictions about the signs of the coefficients on the key explanatory variables corresponding to each hypothesis.

The nature of our data and hypotheses presents several estimation challenges. First, both US military aid and recipient state behavior vary across time and from country to country. We address this by pooling cross-section and time-series data and controlling for unobserved country-specific characteristics. Second, the *Arms for Influence* model anticipates a reciprocal relationship between military aid and recipient state behavior: a state's level of cooperation with the United States increases the amount of aid it receives and the amount of aid a state receives increases subsequent levels of cooperation with the United States. To control for this potential endogeneity bias, we estimate our models for equation 1 through equation 3 with two-stage least squares (2SLS).[12] Following Lewbel (1997), we use higher moments of the endogenous variable as instruments. In equations 1 and 2, we also include US GDP per capita as an instrument: a higher GDP translates into a bigger budget and more money available for distribution.

[10] The fixed effects model is a common choice for macroeconomic data (that is large N and small T).

[11] Table A1 in the appendix reports the correlation matrix of exogenous variables. The correlations between our primary explanatory variables and the controls are below 0.5 with two exceptions. The GDP and US troops variables are correlated at 0.63. The correlation between the variable indicating the presence of a defense pact with the US and the alliance portfolio similarity variable is 0.86. However, the S score and alliance variables are never used in the same model. We are therefore reasonably confident that the standard errors we report are generally unbiased.

[12] The statistical consequence of a reciprocal causal process is that the military aid variable would be correlated with the error term of the cooperation equation, so that we would be unable to estimate the effect of assistance without bias. The standard approach to this problem is to utilize instrumental variables or two-stage least squares (2SLS) regression. See Wooldridge, Jeffrey M. 2006, *Introductory Econometrics, 3rd edition*. Mason, OH: Thomson South Western, pp. 525–535 for an accessible explanation of this estimation procedure. For a recent application in the IR literature, see Rudra 2005.

Finally, hypothesis 3a from the *Reverse Leverage* model anticipates a selection effect: States that the United States believes are particularly important for maintaining US security interests should be more likely to receive US military assistance. However, once they receive aid, the level of aid should be less likely to influence the foreign policy behavior of these states than of states the United States is less ''dependent'' on for its security. We employ a Heckman selection model in estimating equation 4. In the selection stage, state characteristics predict whether a state will receive US military aid. The second stage estimates the effect of the amount of military aid received on the behavior of those states that receive aid. We include an interaction term in the second stage as the exclusion restriction, as well as to test for a differential effect of aid on states that have a higher security value to the United States.

Results and Discussion

We present the results of our analyses in tables two through four.[13] Because we structured our investigation around three competing theoretical models, this section presents results as they apply to the separate hypotheses that are relevant to each model. While the *Arms for Influence* model anticipates a positive and reciprocal relationship between levels of military aid and recipient state cooperation with the United States, the second two models highlight potential perversions in the aid-influence connection. The *Lonely Superpower* model predicts that increasing dependence on US military aid will create incentives for leaders to be *less* overtly cooperative with the United States in an effort to counter any perception that their foreign policy is dictated by a foreign power. The *Reverse Leverage* model anticipates that military aid recipients will exploit the fact that the United States relies on them to provide some specific good—and the availability of alternative arms suppliers—to defy the broader interests of the United States with impunity.

Table 2 displays results from estimating equation 1 through equation 3. First, we note that statistical tests corroborate the validity of our instruments. Using Stock and Watson's (2006) rule of thumb, the first-stage F-statistic testing the hypothesis that the coefficients on the instruments are jointly zero should be greater than 10 for a single endogenous regressor. The first-stage F statistics in our models show that the instruments are more than sufficiently correlated with the endogenous variables. In addition, the Hansen J statistics indicate that the first-stage estimation instruments are uncorrelated with the error terms.

In the results from equation 1, we see that, contrary to Hypothesis 1a (*Arms for Influence*), but consistent with Hypothesis 3b (*Reverse Leverage*), there is a significant, negative correlation between levels of US military aid and recipient state cooperation. Economic aid, on the other hand, appears to have no effect on recipient state cooperation. The recipient country's GDP and *S* score are also not correlated with a state's behavior toward the United States. Recipient states that are democratic, and those that have US troops stationed on their soil, appear to be more cooperative with the United States, all else equal.

Table 3 presents results from using equation 1 to simulate the substantive impact of the statistically significant independent variables on recipient state cooperation. States that do not receive any US military aid display an average

[13] Our models are robust to a range of alternative specifications and additional control variables. For example, we estimated all models excluding Israel and Egypt because these countries receive disproportionately large aid packages and have unique relationships with the United States. Since excluding these countries does not affect our findings, we report results using all countries. In addition, including the CIRI index of Physical Integrity Rights as a control for the human rights record of the aid recipient does not change the results in any model and none of the CIRI coefficients are significant. Due to space limitations, alternative specifications are posted in an online appendix at http://.

TABLE 2. Cross-Sectional Time-Series Models of US Military Aid and Recipient State Cooperation with the United States

Lagged Cooperation	*0.398 (0.068)****	*0.437 (0.076)****	
Dependent Variable	*H1a & H3b*	*H1b & H2a*	*H1c & H3c*
Log of Military Aid (β_1)	−3.026 (1.194)**		
Log of Economic Aid	0.263 (0.268)		
Military Aid Dependence (β_2)		−2.410 (2.027)	
Economic Aid Dependence		3.918 (3.133)	
ΔCooperation (β_3)			−9.845 (4.356)**
Lagged military aid			−0.480 (0.156)***
Recipient GDP	−0.317 (0.586)	−1.542 (0.719)**	−11.746 (8.022)
Democratic recipient	2.101 (1.071)**	−0.396 (0.375)	9.761 (7.728)
Log of US troops	0.492 (0.210)**	0.142 (0.190)**	11.204 (3.667)***
S-score (alliance similarity)	−0.517 (2.288)	4.415 (1.890)**	55.670 (37.193)
Observations	2204	2204	2239
Countries	165	165	165
First-stage F statistics	11.53	11.729	22.969
Hansen J statistic (chi-square)	0.2377	0.6816	0.1976

(*Notes:* Robust standard errors in parantheses. *significant at <0.1; **significant at <0.05; ***significant at <0.01.)

TABLE 3. Substantive Effects of Statistically Significant Variables on Aid Recipient States' Level of Cooperation with the United States (Equation 1)

	Min	*Y′*	*Max*	*Y′*	*Mean*	*Y′*	*+ 1 SD*	*Y′*
US military aid (million USD)	0	+1.5	$3,400	−24.7	$20	−10.7	$155	−16.6
US troops (in thousands)	0	−3.84	22.7	+2.23	1.54	−0.23	10.2	+0.7
Democratic recipient	0	−0.9	1	+3				

(*Notes:* Substantive results are on the original scale transformed from the log scale. Y′ = the predicted level of cooperation a potential military aid recipient will display toward the United States when the variable of interest is set to its minimum, maximum, mean, or mean + 1 standard deviation and all other variables are at their mean value.)

level of cooperation with the United States of +1.5 when all other variables are held constant at their means. The model predicts that states that obtain the average amount of US military aid ($20 million) will be less cooperative—scoring an average of −11 on the cooperation-conflict scale. An increase in US military aid to one standard deviation above the mean leads to an additional six-point reduction in the monthly cooperation score of the recipient state. In contrast, an increase in the number of US troops from its mean to one standard deviation above the mean raises recipient state cooperation almost one point. Democratic recipients are on average four points more cooperative than nondemocratic recipients.

Equation 2 is designed to test the effect recipient state dependence on US military aid has on a state's level of cooperation with the United States. Hypothesis 1b (*Arms for Influence*) proposes that greater dependence leads to greater vulnerability and a tendency for states to exhibit higher levels of cooperative behavior. Hypothesis 2a (*Lonely Superpower*) has divergent expectations; dependence creates incentives for leaders to push back against the United States, which manifests in lower levels of cooperation in states with high levels of dependency. Our results lend no support to either hypothesis. Both military and economic aid dependence have statistically insignificant effects on recipient state cooperation. In this equation, only lagged cooperation, recipient state GDP, US troops, and alliance portfolio similarity have significant effects on states' behavior toward the United States. Richer states tend to be less cooperative, while states that have an alliance

portfolio similar to the United States and states with US troops stationed on their soil exhibit significantly more cooperative behavior on average.

The final hypothesis from the *Arms for Influence* model predicts that the United States will punish uncooperative governments by reducing assistance in year *t* in response to lower levels of cooperation in year *t-1*. In contrast, hypothesis 3b from the *Reverse Leverage* model predicts that US aid will not respond to a change in recipient state behavior. Results from estimating equation 3 once again lead us to reject a prediction from the *Arms for Influence* model. Instead of a positive correlation between more cooperative behavior and subsequent military assistance, we find that higher levels of cooperation lead to smaller aid packages in the following year. For every one-point improvement in the average monthly cooperation of the recipient state, US military aid drops by approximately $9.8 million in the following year. We also find that levels of military aid tend to gravitate toward the mean; there is an inverse relationship between the level of military assistance provided during year *t* and the amount of military aid in the following year. While equation 3 provides no support for the third *Arms for Influence* hypothesis, it is consistent with the spirit of the *Reverse Leverage* model (although the effects are worse than we anticipated). The United States does not appear to reduce aid—and in fact appears more likely to *increase* military aid—when a country's behavior becomes less cooperative (and more conflictual). States that improve their cooperation with the United States should expect to receive less military aid rather than a reward for good behavior in the following year.

The final hypothesis we test is Hypothesis 3a of the *Reverse Leverage* model. This hypothesis predicts that the United States will direct more military assistance to states that are seen as important to US security interests. However, these ''high value'' states are expected to be unresponsive to US attempts to influence their behavior through the provision of military aid.

Results from estimating equation 4 with a two-stage selection model are presented in Table 4. They provide some evidence that the United States has less leverage over allies than non-allies. In the allocation stage, countries with which the United States has a defensive alliance are more likely to receive military aid than other states. [14] At the same time, while equations 1 and 2 demonstrated that states that do not receive *any* US military aid are more cooperative on average than states that receive aid, among those states that do receive US aid increasing the amount of military aid appears to have a positive effect on cooperation. However, the amount of US military aid has a smaller effect on the behavior of US allies than nonallies. The cooperation score of a state that is *not allied* with the United States is predicted to increase from 0.37 to 2.57 when the amount of US military aid to the state increases from the 50th to the 75th percentile. The effect of an identical boost in aid to a formal ally of the United States is to increase cooperation from 0.66 to just 1.55. It appears that US military aid is less able to buy better behavior from states with which the United States has formal security ties—perhaps because the United States is not likely to decrease military aid when allies are uncooperative.

Conclusion

In this paper, we attempted a systematic investigation into the relationship between US military aid and the level of foreign policy cooperation exhibited by the states that receive that aid. We aimed to improve on the existing literature by building and testing three explicit theoretical models (*Arms for Influence*,

[14] While a greater percentage of US allies receive US military aid, the total amount of US military aid distributed to nonallies is greater than the amount given to allies and the median level of military aid is only slightly lower for nonallies.

TABLE 4. Heckman Selection Model Estimating the Effects of US Military Aid on Recipient State Cooperation with the United States

	Hypothesis 3a	
	Allocation	*Cooperation*
Allies (β_4)	0.594 (0.221)***	0.29 (0.236)
Log of military aid (β_5)	1.11 (0.308)***	0.426 (0.071)***
Log military aid × allies (β_6)		−0.254 (0.069)***
Lagged cooperation	0.004 (0.031)	0.345 (0.078)***
Democratic recipient	0.038 (0.236)	−0.216 (0.159)
US troops	−0.089 (0.045)**	−0.031 (0.047)
Recipient GDP	−0.107 (0.041)***	0.234 (0.071)***
Log of economic aid	0.189 (0.042)***	0.057 (0.049)
Constant	1.127 (0.356)***	−0.727 (0.404)*
Observations	1656	1027

(*Notes:* All independent variables are lagged one year. Clustered, robust standard errors in parentheses. Wald test of independent equations = 7.69 (Prob > χ^2 = 0.0056).
*significant at <0.1; **significant at <0.05; ***significant at <0.01.)

Lonely Superpower and *Reverse Leverage*), focusing on a new measure of cooperation generated from events data rather than UN voting records, and controlling for preference similarity, so that our results capture the influence military aid has on recipient state behavior independent of any dyadic predisposition toward cooperation or conflict.

We test seven hypotheses associated with three different theoretical models and find mixed results. There is little evidence in favor of the *Arms for Influence* model: there is an inverse relationship between absolute levels of US military aid and recipient state cooperation, and there is no relationship at all between recipient state dependence on US aid and recipient state behavior. Thus, while the *Lonely Superpower* hypothesis was on the right track by predicting an unorthodox relationship between aid and cooperation, it did not perform as well as some of the *Reverse Leverage* hypotheses when it came to explaining exactly what form such unorthodoxy would take.

In several ways, the *Reverse Leverage* model was quite accurate: (i) states receiving military aid from the United States exhibit lower levels of cooperation than states that do not receive military aid, (ii) in the population of all states, higher levels of military aid appear to produce more defiant behavior, and (iii) the United States does not punish defiance with reductions in aid or reward greater cooperation with increases in military aid. Together, these results suggest that US military assistance is allocated for reasons that are largely independent of overall recipient state behavior toward the United States. The *Reverse Leverage* model contends that military aid is delivered to states that the United States depends on for security reasons. Realizing their leverage over Washington, states that receive high amounts of aid are actually more able to engage in uncooperative behavior than are states that the United States does not depend so heavily upon. We attempted to test for the effects of an aid recipient's ''security value'' directly by comparing US allies to nonallies. Consistent with the *Reverse Leverage* model, we find that states with a defensive alliance with the United States are more likely to receive US military aid but less likely to respond to aid by increasing their cooperation with American preferences.

Of course, there are limitations in our data and research design. We focus on a 15-year period (1990–2004) because the events data that play a crucial role in our analysis are only available for these years. However, it would be helpful to examine a longer time span in order to fully account for the long-term

behavioral changes that states might make in response to US military aid. Another limitation has to do with the specific bargain is reached between the United States and the recipient of military aid. Many studies use vote congruence between a state and the United States in the United Nations General Assembly as a measure of compliance. But U.N. votes may not capture the influence of military aid because Washington can deliver assistance in return for cooperation on a matter completely unrelated to the issues that come up for a vote in the UN during a particular year. We attempt to deal with this drawback by looking at a broad measure of cooperation. In fact, we use a dependent variable that ostensibly measures *all* cooperation and conflict with the United States that recipient states engage in during any given year. However, this broad approach suffers from the opposite of the problem associated with UN voting. It is possible that the specific kind of recipient state cooperation that the United States sought to achieve through the delivery of military aid was in fact present, but hidden among the ''noise'' of all the other foreign policy behavior the recipient state engaged in that year.

Despite its limitations, our study offers a novel approach to the foreign aid and influence puzzle. And our results uncover interesting relationships that deserve greater theoretical and empirical attention in future research. Clearly, the relationship between US military aid and recipient state cooperation is far from straightforward. The bulk of our evidence pens a cautionary tale for policymakers; although military assistance may achieve the specific goals for which it was allocated, it appears to generate less cooperative behavior from recipient states overall. US military aid levels may be more indicative of American dependence on recipient states than of US influence over client states. Contrary to the vast majority of the existing literature on foreign aid, our results suggest military aid is neither a carrot nor a stick; US assistance is given to countries that the United States depends on for some foreign policy ''good'' and the United States will continue to provide such aid as long as that ''good'' is valued in Washington. With this knowledge, recipient state behavior is actually likely to be increasingly uncooperative as levels of American dependency (and subsequent aid packages) increase.

Appendix

Table A1: Correlation matrix of exogenous variables

	Military aid	*Economic aid*	*Military dependence*	*Economic dependence*	*GDP*	*Democracy*	*US troops*	*S-score*
Military aid	1							
Economic aid	0.4695	1						
Military dependence	0.0431	0.2384	1					
Economic dependence	0.4133	0.2319	0.2017	1				
GDP	0.1494	−0.0483	−0.1935	−0.1217	1			
Democracy	0.056	−0.0232	−0.0864	−0.2636	0.4629	1		
US troops	0.2611	0.1305	−0.0355	−0.0599	0.6338	0.3109	1	
S-score	0.0154	−0.0618	−0.0574	−0.03	0.2536	0.3385	0.2483	1

References

Bajoria, Jayshree. (2009) Realigning Pakistan's Security Forces. *Backgrounder Report*. New York: Council on Foreign Relations Backgrounder. June 18, 2009.

Beardsley, K., K. Gleditsch (2003) *Polity IVd Dataset*. College Park: Center for International Development and Conflict Management, University of Maryland.

Bennett, D. Scott, and Matthew C. Rupert. (2003) Comparing Measures of Political Similarity. *Journal of Conflict Resolution* 47 (3): 367–393.

Bennett, D. Scott , and Allan Stam. (2000) EUGene: A Conceptual Manual. *International Interactions* 26: 179–204.

Blanton, Shannon L. (1999) Instruments of Security or Tools of Repression? Arms Imports and Human Rights Conditions in Developing Countries. *Journal of Peace Research* 36 (2): 233–244.

Bond, Doug, Joe Bond, Churl Oh, and Charles Lewis T. (2003) Integrated Data for Events Analysis (IDEA): An Event Typology for Automated Events Data Development. *Journal of Peace Research* 40 (6): 733–745.

Bueno de Mesquita, Bruce, and Alastair Smith. (2007) Foreign Aid and Policy Concessions. *Journal of Conflict Resolution* 51 (2): 251–284.

Craft, Cassady, and Joseph P. Smaldone. (2002) The Arms Trade and the Incidence of Political Violence in Sub-saharan Africa, 1967-97. *Journal of Peace Research* 39 (6): 693–710.

Derouen, Karl, and Uk Heo. (2004) Reward, Punishment or Inducement? US Economic and Military Aid, 1946–1996. *Defence & Peace Economics* 15 (5): 453–470.

Federation of American Scientists. *Arms Sales Monitor* 47 (January 2002): 1–3.

Flintoff, Corey. (2010) Can The US Trust Yemen To Fight Al-Qaida? National Public Radio January 5, 2010. Available at http://www.npr.org/templates/story/story.php?-storyId=122250796. (Accessed April 5, 2010).

Gartzke, Erik, and Dong-Joon Jo. (2002) *The Affinity of Nations Index, 1946–1996 [Version 3.0]*. Manuscript, New York: Columbia University. Available at http://dss.ucsd.edu/~egartzke/htmlpages/data.html. (Accessed August 22, 2010).

Gibler, Douglas M., and Meredith Reid Sarkees. (2004) Measuring Alliances: the Correlates of War Formal Interstate Alliance Dataset, 1816–2000. *Journal of Peace Research* 41 (2): 211–222.

Gleditsch, Kristian S. (2002) Expanded Trade and GDP Data. *Journal of Conflict Resolution* 46 (5): 712–724.

Goldsmith, Benjamin E., Yusaku Horiuchi, and Takashi Inoguchi. (2005) American Foreign Policy and Global Opinion: Who Supported the War in Afghanistan? *Journal of Conflict Resolution* 49 (3): 408–429.

Goldstein, Joshua S. (1992) A Conflict-Cooperation Scale for WEIS Events Data. *Journal of Conflict Resolution* 36 (2): 369–385.

Gopal, Anand. (2008) Secret accord sheltered Al Qaeda-linked militants in tribal Pakistan. *Christian Science Monitor*, June 11. Available at http://www.csmonitor.com/World/terrorism-security/2008/0611/p99s01-duts.html.

Grimmett, Richard F. (2009) US arms sales to Pakistan. CRS Report for Congress RS 22757. Available at http://fas.org/sgp/crs/weapons/RS22757.pdf (Accessed August 24 2010).

Kegley, Charles W., and Steven W. Hook. (1991) U.S. Foreign Aid and UN Voting: Did Reagan's Linkage Strategy Buy Deference or Defiance? *International Studies Quarterly* 35 (3): 295–312.

Keohane, Robert O., and Joseph S. Nye. (1977) *Power and Interdependence: World Politics in Transition.* Boston: Little, Brown.

King, Gary, and Will Lowe. (2003a) An Automated Information Extraction Tool for International Conflict Data with Performance as Good as Human Coders: A Rare Events Evaluation Design. *International Organization* 57: 617–642.

King, Gary, and Will Lowe. (2003b) 10 Million International Dyadic Events. Cambridge, MA: Murray Research Archive [Distributor].

Kinsella, David. (1994) Conflict in Context: Arms Transfers and Third World Rivalries during the Cold War. *American Journal of Political Science* 38 (3): 557–581.

Kinsella, David, and Herbert K. Tillema. (1995) Arms and Aggression in the Middle East: Overt Military Interventions, 1948-1991. *The Journal of Conflict Resolution* 39 (2): 306–329.

Krause, Volker. (2004) Hazardous Weapons? Effects of Arms Transfers and Defense Pacts on Militarized Disputes, 1950-1995 *International Interactions* 30 (4): 349–371.

Lai, Brian, and Daniel S. Morey. (2006) Impact of Regime Type on the Influence of U.S. Foreign Aid. *Foreign Policy Analysis* 2 (4): 385–404.

Lewbel, Arthur. (1997) Constructing Instruments for Regressions with Measurement Error when No Additional Data Are Available, with an Application to Patents and R&D. *Econometrica* 65 (6): 1201–1213.

Lewis, William H. (1979) Political Influence: The Diminished Capacity. In *Arms transfers in the modern world*, edited by S. G. Neuman, and R. E. Harkavy. New York: Praeger.

Maniruzzaman, Talukder. (1992) Arms Transfers, Military Coups, and Military Rule in Developing States. *The Journal of Conflict Resolution* 36 (4): 733–755.

Mazzetti, Mark, and Eric Schmitt. (2009) Afghan strikes by Taliban get Pakistan help, U.S. aides say. *New York Times*, March 25: A1.

Moon, Bruce E. (1983) The Foreign Policy of the Dependent State. *International Studies Quarterly* 27: 315–340.

Mott, William H. (2002) *United States Military Assistance: An Empirical Perspective*. Westport: Greenwood Press.

Murphy, Dan. (2010) WikiLeaks shocker? In Kabul, Pakistan support for Taliban is no surprise. *Christian Science Monitor* July 26. Available at http://www.csmonitor.com/World/Asia-South-Central/2010/0726/WikiLeaks-shocker-In-Kabul-Pakistan-support-for-Taliban-is-no-surprise. (Accessed August 10, 2010).

O'Hanlon, Michael E. (2010) Pakistan's War of Choice. *New York Times* March 23: A27.

Palmer, Glenn, Scott B. Wohlander, and T. Clifton Morgan. (2002) Give or Take: Foreign Aid and Foreign Policy Substitutability. *Journal of Peace Research* 39 (1): 5–26.

Raghavan, Sudarsan. (2010) Yemeni Officials, Fearing Backlash, Play Down Partnership with U.S. *Washington Post Foreign Service*, January 5. Available at http://www.washingtonpost.com/wp-dyn/content/article/2010/01/05/AR2010010501383.html?sid=ST2010010501384. (Accessed April 7, 2010).

Regan, Patrick M. (1995) U.S. Economic Aid and Political Repression: An Empirical Evaluation of U.S. Foreign Policy. *Political Research Quarterly* 48: 613–628.

Richardson, N.R. (1981) Economic Dependence and Foreign Policy Compliance: Bringing Measurement Closer to Conception. In *The Political Economy of Foreign Policy Behavior*, edited by C.W. Kegley. Jr, and P.J. McGowan, pp. 87–110. Beverley Hills: Sage.

Rohde, David, Carlotta Gall, Erik Schmitt, and David E. Sanger (2007) U.S. Officials See Waste in Billions Sent to Pakistan. *New York Times* December 24. Available at http://www.nytimes.com/2007/12/24/world/asia/24military.html. (Accessed April 5, 2010).

Rudra, Nita. (2005) Globalization and the Strengthening of Democracy in the Developing World. *American Journal of Political Science* 49 (4): 704–730.

Sanjian, Gregory S. (1998) Cold War Imperatives and Quarrelsome Clients: Modeling U.S. and USSR Arms Transfers to India and Pakistan. *The Journal of Conflict Resolution* 42 (1): 97–127.

Sanjian, Gregory S. (1999) Promoting Stability or Instability? Arms Transfers and Regional Rivalries, 1950–1991. *International Studies Quarterly* 43 (4): 641–670.

Shanker, Thom. (2002) Green Beret Vanguard Arrives In the Former Soviet Georgia. *New York Times*. April 30: A12.

Signorino, C., J Ritter. (1999) Tau-b or Not Tau-b: Measuring the Similarity of Foreign Policy Positions. *International Studies Quarterly* 43: 115–144.

Singer, Peter W. (2003) *Corporate Warriors: The Rise of the Privatized Military Industry, Cornell Studies in Security Affairs*. Ithaca: Cornell University Press.

Sislin, John. (1994) Arms as Influence: The Determinants of Successful Influence. *The Journal of Conflict Resolution* 38 (4): 665–689.

Stein, Mark, Mark Ishimatsu, Richard J. Stoll. (1985) The Fiscal Impact of the U.S. Military Assistance Program, 1967-1976. *Western Political Quarterly* 38: 27–43.

Stock, James H., and Mark W. Watson. (2006) *Introduction to Econometrics*. Upper Saddle River, NJ: Prentice Hall.

Stokke, Olav. (1995) *Aid and Political Conditionality*. Portland: F. Cass.

Traub, James. (2010) Our money in Pakistan. *Foreign Policy*, March 17. Available at http://www.foreignpolicy.com/articles/2010/03/17/our_money_in_pakistan. (Accessed August 8, 2010).

Travis, R., N. Zahariadis. (1992) Aid for Arms: The Impact of Superpower Economic Assistance on Military Spending in Sub-Saharan Africa. *International Interactions* 17: 233–243.

United States Department of Defense. (2002) Georgia ''Train and Equip Program Begins. U.S. Department of Defense Press Release. April 29, 2002. Available at http://www.defense.gov/releases/release.aspx?releaseid=3326. (Accessed August 25, 2010).

USAID. (2006, 2009) U.S. overseas loans and grants and assistance from international organizations: obligations and loan authorizations. Washington, DC. Available at http://qesdb.cdie.org/gbk/concepts.html.

Voeten, Erik. (2004) Resisting the Lonely Superpower: Responses of States in the United Nations to U.S. Dominance. *The Journal of Politics* 66 (3): 729–754.

Walt, Stephen M. (2005) *Taming American Power: The Global Response to U.S. Primacy*. New York: W.W. Norton & Company.

Wang, T.Y. (1999) U.S. Foreign Aid and UN Voting: An Analysis of Important Issues *International Studies Quarterly* 43 (1): 199–210.

Wooldridge, Jeffrey M. (2002) *Econometric Analysis of Cross Section and Panel Data*. Cambridge, MA: MIT Press.

Zahariadis, Nikolaos, Rick Travis, and Paul F. Diehl. (1990) Military Substitution Effects from Foreign Economic Aid: Buying Guns with Foreign Butter? *Social Science Quarterly* 71 (4): 774–785.

Supporting Information

Additional Supporting Information may be found in the online version of this article:

Table S1. Alternative Specifications.

Table S2. Effects of US Military Aid on Recipient State Cooperation with the United States (Equation 1; Hypotheses 1a & 3b).

Table S3. Effects of US Military Aid on Recipient State Cooperation with the United States (Equation 2).

Table S4. Effects of Recipient State Cooperation with the United States on US Military Aid (Equation 3).

Table S5. Heckman Selection Model Estimating the Effects of US Military Aid on Recipient State Cooperation with the United States (Equation 4).

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