Being There

U.S. Force Posture, Offshore Balancing and Alliance Reliability[*]

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February 16, 2017

Abstract

Choices about force posture impose tradeoffs between freedom of action and deterrence success. Even a superpower cannot be everywhere at once. Where states project power conveys information about their priorities, even as it also impacts perceptions about the local balance of power. Durable deployments on an ally's territory create "presence," signaling the credibility of security commitments. Being nearby—a key feature of the strategy of "offshore balancing"—enables intervention in a crisis, but also heightens uncertainty about a defender's intentions. Using data since World War II, we show that extended general deterrence failures *increase* for U.S. allies with the proportion of U.S. capabilities positioned near, but not on, an ally's territory, while the proportion of U.S. capabilities physically located on an ally's territory enhances general deterrence success. Being there (presence) contributes to stability, while being near (offshore balancing) may increase influence, or lower costs, but it also exacerbates deterrence failure.

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1 Introduction

What role does the location of military power play in enhancing or undermining extended deterrence? The announcement of a U.S. "pivot" to Asia generated considerable anxiety among America's European allies, despite ongoing alliance commitments. At the same time, there is a vigorous debate in academic and policy circles about where in Asia and elsewhere U.S. forces ought to go (c.f., Brooks, et al. 2013; Layne 1997, 2002, 2012; Montgomery 2014; Mearsheimer and Walt 2016).[1] Discussions of force posture and related issues of power projection even became a fixture of the 2016 national election cycle in the United States, with successful presidential candidate Donald Trump arguing that America should do less abroad, while U.S. allies are tasked with doing more.

At least part of the basis for controversy in force posture decisions is a lack of information; it is simply not clear what deployments accomplish and where they might prove unnecessary or even counterproductive. There is a perception among policy makers and military experts that "being there"—the military term is "presence"—makes a difference, even in the context of robust alliance ties. Yet systematic theory and evidence is lacking. A forward posture could (further) warn adversaries and reassure allies, reinforcing the deterrent effect of alliance treaties. Presence could also facilitate more rapid and decisive intervention in crises or conflicts. Foreign deployments may also have downsides, however. They are expensive and unpopular, both at home and abroad. Deployments could also prove provocative, destabilizing rather than stabilizing international affairs.

The study of alliances and extended deterrence has paid relatively little attention to questions of force posture either within or beyond the basic alliance triad (defender, protégé, challenger). Alliance networks represent both opportunities and liabilities in deciding where to deploy troops. Defenders seldom send forces sufficient to actually protect a partner. Direct defense on an ongoing basis is cost prohibitive, particularly with numerous allies. Deterrence by contrast is cheap and scales well in alliance networks. By the same token, presence seems redundant if an alliance treaty is sufficient by itself to commit or credibly signal resolve (Fearon 1997). Previous research suggests that the critical contribution of force posture may be in telegraphing the defender's intentions

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[1]To date, the pivot is more aspirational than actual. But concerns are genuine, reflecting the seriousness with which these issues are treated in national capitals. For further discussion, see Manyin, et al. (2012) and Ross (2012).

(Gartzke and Kagotani 2016). Defenders that position substantial proportions of their military capabilities in a given ally's territory are more likely to generate successful extended deterrence. Conversely, for a defender capable of protecting a partner and projecting power, the quantity of forces deployed and their overall cost may be less critical, since size by itself may not convey priority.

Every ally obviously cannot equally be the defender's favorite. As in any other network, an alliance contains actors (nodes) of higher or lower social status. Protégés must appear more or less vulnerable to pressure from outsiders, if only in relative terms. The defender's force posture signals its priorities, not necessarily about whether an ally will be protected, but about which allies matter most, or least, at a given point in time. The choice of force posture therefore determines winners and losers within and across alliance structures, something very nearly matching a standard definition of politics. Changes in the positioning of forces within an alliance network reflect the defender's evolving priorities. Viewed in this light, the U.S. pivot may have helped to embolden Russia, which has since re-emerged as a major source of tension, and concern, for its neighbors.

Perhaps being near an ally is the next best thing to being there? "Offshore balancing" is designed to maximize the flexibility of forces and increase the options available to a defender, including the ability to intervene quickly and decisively if needed. Maintaining an offshore balance could be more efficient in strictly military terms—allowing the defender to protect a greater number of allies with proportionally fewer capabilities—since forces can be tasked wherever needed. However, the ability to act is not the same as the imperative to do so; force postures that provide a defender with greater discretion also create additional uncertainty about what a defender will actually do. Contrasting expectations among defender, protégé and possible challengers may then precipitate additional crisis and general deterrence failure. Deploying capabilities near, but not on, an ally's soil may thus yield a surprising counter-intuitive effect, heightening rather than reducing instability.

Forward force postures are costly. All things considered, defenders should presumably prefer to protect the homeland, lower costs and recycle defense dollars through local businesses and tax payers. A forward posture also offers benefits, including better and more immediate access to distant locations (Morrow 1991). However, neither of these incentives accounts for a changing emphasis among allies over time, which arguably hinges on the deterrence logic outlined above.

Here, we model the effects of force posture, presence and offshore balancing on extended general deterrence success using annual data on U.S. deployments to allies in the post-World War II period. After reviewing relevant literatures, we detail a theory of extended deterrence in which defenders balance finite capabilities with the complementary perils of allied entrapment and abandonment. We then assess the effects of U.S. force posture (how much of U.S. capabilities are deployed abroad) and presence (what proportion of U.S. forces are deployed to different allies), considering whether and how the size and location of deployments influence extended deterrence success. We further estimate the effect of U.S. military capabilities located "offshore," weighting the "spill-in" effect of proximate deployments by geographical distance from each U.S. protégé. Our findings substantiate our basic argument; a proportionally large presence in a U.S. ally enhances deterrence success, while the effect of offshore balancing is the opposite, increasing general deterrence failure. Finally, we discuss implications of these findings for U.S. national security policy and international stability.

2 Literature: Alliances, Extended Deterrence and Deployments

Our review of the literature is of necessity brief, given the number and diversity of relevant works. We organize discussion into three sections, each dealing with a topic that converges on our subject.

2.1 Alliance Theory

Research offers a number of reasons for alliance formation. Structural realist theory emphasizes the role of alliances in "bandwagoning" or "balancing," aggregating power either with or against a hegemonic state (Waltz 1979).[2] The accumulation of power is thus the proximate goal of alliances.

Morrow (1991) challenges the notion of alliances as capability aggregators, pointing out that the bulk of alliances pair weak states with strong states or weak states together. Since weak states offer very little to increase the capability of other nations, some other factor must be at work in promoting modal alliance behavior. Following and extending Altfeld (1984), Morrow argues that alliances can contract complementary goods, increasing security for weaker partners, while providing powerful states with enhanced autonomy in the form of access to foreign territory and facilities in remote

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[2]For various criticisms of the realist structural framework, see Schweller (2004) and Vasquez (1997).

locations. While complementary to our own perspective, Morrow's (1991) argument provides no direct rationale for states to limit foreign deployments, implies that the protection afforded by presence is incidental and fails to predict an effect for proximity in terms of offshore balancing.

Fearon (1997) offers yet another justification for alliance formation having to do with signaling. Alliances can generate commitment by "tying hands," linking future reputations to current promises through formal agreements.[3] Tying hands commitments constitute "cheap talk" signaling since the reputational or other costs associated with alliance reliability are incurred only in the event that an ally abandons its security partner. Tying hands is also cheaper than other methods of signaling, such as "sinking costs," in which an actor demonstrates the credibility of certain promises by imposing costly "separating" burdens on itself. The emphasis on cheap talk as a mechanism for alliance reliability presents its own dilemma, however, as allies often experience costly, and putatively unnecessary, burdens. Costly alliance behavior may be more valuable than previously believed.

In the past two decades, alliance research has become far more precise empirically (Leeds 2003; Leeds, et al. 2009). Yet, it is far from clear from existing explanations how alliances and military presence interact. Indeed, the tying hands reasoning of Fearon (1997) in particular suggests that a forward force posture is largely redundant in strategic terms. To the degree that alliances credibly commit a defender to intervene in a crisis or conflict, ongoing deployments should not be necessary.

Reconciling empirical reality with logical constructs may best be accomplished through better understanding of how deployments affect perceptions of resolve. Sunk costs may prove much more informative than tying hands given budget constraints and by noting where costs actually accrue.

2.2 Logics of Extended Deterrence

Deterrence involves efforts by a possible target of attack to raise the costs or risks of aggression (Morgan 1977). Extended deterrence consists of situations in which the deterring state is a third party to a potential conflict (Freedman 2004). The study of extended deterrence is also appealing for inferential reasons; it is easier to observe deterrence success between third parties (Huth 1988c).

Deterrence is a psychological process (Jervis, et al. 1989). Convincing an adversary to refrain

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[3]Morrow (2000) emphasizes the added reputational benefit of formalizing alignments with alliance treaties. Morrow's argument basically mirrors our own position regarding the increased informational impact of a forward presence.

from acting aggressively based on what might come to pass requires someone to paint a convincing mental picture of what the future could entail. Mistakes are bound to happen. However, examples of errors are not evidence of systemic bias (Huth and Russett 1990; Lebow and Stein 1989; Achen and Snidal 1989). Nor is it clear how misperception plays out in the context of extended deterrence, where actors must presumably make cognitive errors while failing to notice similar errors in others. Psychological challenges to extended deterrence theory thus seem to demand a second explanation for why protégés ever accept mere assurances, rather than insisting on "boots on the ground."

Empirical studies of extended deterrence echo the call for localizing troops (Huth and Russett 1984a; Huth 1988a). Systematic research finds no relationship between overall defender capabilities and extended deterrence success (Huth and Russett 1984b). The salience of the local balance paradoxically highlights the role of perception. Given that defenders typically deploy forces locally that are insufficient for defense, the deterrent effect of presence would appear to hinge on expectations of additional wartime deployments. A defender that positions too few capabilities abroad may be viewed as unlikely to intervene quickly or effectively. In this sense, a forward force posture is really evidence of the *absence* of excessive optimism about the deterrent effect of alliance ties alone.

A critical determinant of deterrence failure thus concerns beliefs about deterrent claims (Powell 1990; Kilgour and Zagare 1991; Zagare and Kilgour 1993). Manipulating these beliefs involves raising one's commitment or credibility. Actions designed primarily to demonstrate the defender's willingness or ability to defend signal credibility. "Sunk costs" reduce uncertainty, but do little to change the defender's subsequent payoffs (Fearon 1997). It has proven difficult to identify situations where costs can be isolated and not carry over to impact future behavior. For example, mobilization not only demonstrates resolve, but can also cause a defender to prefer conflict (Slantchev 2005).

2.3 Determinants of Deployments

The study of military deployments is less systematic or extensively developed theoretically than the literatures on alliances and extended deterrence. Questions of force posture and presence receive little attention from academics, despite the fact that where one puts one's forces involves high costs, complex human dynamics and extensive national risk. One exception is Rovner and

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Talmadge (2014), who point out that a forward U.S. force posture in the Middle East does not appear to have been critical for the public good of stable access to energy for consuming nations.

The near absence of serious analytical work on the question of where states put their military capabilities and what effects force posture and presence have on war and peace is surprising, especially in light of ongoing policy debates. There is little reason to believe that we already know how deployments operate on alliances and deterrence. Nor is it likely that ignorance in this instance is benign; if Washington is of two minds about where to put its forces, then how can better answers to these questions be unimportant? Debates about presence are at their core controversies about how to achieve deterrence and what actions risk instability, issues that clearly matter in world affairs.

3 Theory: Presence, Offshore Balancing & Optimal Force Posture

Different conceptions of extended deterrence imply quite different things about the utility of a defender's force posture and the impact of military presence. Gartzke and Kagotani (2016) lay out the basic dilemma in the context of U.S. protection of a large number of allies. Classical conceptions emphasize the complementarity of deterrence and defense, noting that a good defense improves the quality of deterrence and implying that large local deployments should be associated with peace (Huth 1988a, 1988b). However, this appears untenable in practical terms. Powerful defenders generate economies of scale in providing security by "leveraging" their capabilities, committing to defend more allies than is actually possible at any given time (Gartzke and Markowitz 2015).

More recent perspectives have taken a contrasting approach to extended deterrence, arguing in effect that alliances and deployments are substitutes. "Scraps of paper" and the institutions they designate are much cheaper than infantry brigades. States can form binding commitments ("tying hands"), allowing defenders to avoid an expensive forward force posture in generating deterrence (Fearon 1997). To the degree that alliances are credible, deployments become unnecessary.

Prominent theories of extended deterrence thus offer contrasting predictions about the impact of presence, each of which appear incomplete, in light of U.S. force postures and deployment patterns. Allies often host moderate, long-standing, foreign military contingents. These deployments are redundant or inadequate, depending on one's chosen theory of extended deterrence. In contrast to

alliance signaling, deployments are costly ex ante, and thus can prove highly informative. Force posture decisions can also signal on an ongoing basis, since deployment patterns vary from year to year. Schelling (1966) describes the tripwire, in which a small force commits a defender to providing more substantial capabilities in a crisis or time of war. However, there is again an important conceptual and empirical distinction between the classical emphasis on tripwires as commitment (forcing subsequent action) and tripwires that generate credibility (costly acts that signal intent). Gartzke and Kagotani (2016) find that U.S. presence functions significantly and effectively through credibility, rather than commitment. It is the relative importance the defender places on the protégé that matters most for deterrence, not the forcing function of compelling the defender to intervene.

Alliance dynamics across multiple security relationships may or may not function in the same way as substitutes or complements to the basic dynamic of increased credibility through presence. While proportionately costly deployments may prove informative, other mechanisms may turn out to be equally, if not more effective, particularly when considering substitution or re-deployment from one ally to another. Deployments near a given U.S. protégé (offshore balancing) simplify defense. Placing forces in the general area may be at least as effective militarily. It may thus be natural to conclude that a forward but offshore force posture signals credibility, much like presence.[4] Certainly, this is in the spirit of leveraging capabilities, a mainstay of larger alliance structures. A defender with many allies cannot hope to be, or even be perceived to be, everywhere at once.

Defenders and their partners may well imagine that proximity is a convex set, that being close is close to "being there." This appears to be the expectation of Japan and the United States, for example, in re-positioning U.S. Marines from Okinawa to Guam. However, there are reasons to be pessimistic about the deterrent effect of an offshore force posture. Flexibility is fundamentally incompatible with deterrence; a posture that requires the defender to reposition forces in a crisis invites speculation about whether the defender will intervene or not. A defender that is able, indeed expected, to be in many places still cannot concentrate in multiple places at once. In contrast, force postures that limit defender discretion encourage compatible beliefs about the likely evolution of a

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[4]An analogy can be made between force posture decisions and defensive strategies in basketball, where presence is akin to a "man to man" defensive posture and offshore balancing is similar to a "zone" defense.

contest.[5] Spending resources in one place as opposed to another suggests a hierarchy of salience, one that is difficult to mistake or misinterpret. Offshore balancing is thus much like Schelling's forcing function in reverse. The absence of presence invites doubts about whether other forms of commitment, such as the alliance itself, will prove sufficient to compel the defender to do its duty.

Being offshore *may* mean that a defender will take its obligations seriously and intervene in the event of a crisis. Approximate presence certainly helps the defender to intervene more quickly, if it chooses to intervene, while at the same time allowing the defender to intervene in more places is appealing from a policy perspective. However, an offshore approximation of presence by no means guarantees intervention. Nor does spending operating funds elsewhere imply that a given ally is a priority. The balance of power or threat in a crisis depends on the mix of forces that are available and that are committed by interested parties. In contrast, beliefs about the balance in the event of conflict—the critical dynamic for deterrence—depend on perceptions of the defender's willingness to intervene. Actions ex ante that make the defender's intentions less ambiguous, such as presence, reduce uncertainty about the local balance, thereby reducing incentives for a challenger to probe or provoke. Again, the critical issue is not whether the defender will intervene, but whether other actors disagree about the likelihood of this eventuality. Thus, even with something like the pivot, which is designed to increase the defender's offshore forces, and may be interpreted by both friends and foes as altering the local balance, the risk is that adversaries are more likely to see the world differently, with the protégé factoring in the defender's offshore capabilities into its expectations, while the challenger interprets the lack of presence as a sign of equivocation, and an opportunity.

This dynamic can most clearly be seen in terms of the standard alliance tradeoffs of abandonment and entrapment, what Christensen and Snyder (1990) refer to as "buck-passing" and "chain-ganging." Politicians like options, but options are antithetical to deterrence because they increase the likelihood that a defender will fail to intervene, or at least that a challenger will differ in its expectations about the likelihood of intervention. Abandonment is a problem in alignments. Alliances institutionalize alignments, either by signaling intentions (credibility or "sinking costs")

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[5]This is an increasing problem as military technologies emphasize mobility as a critical component of war planning. Features that allow countries to maintain a competitive edge in future military operations probably also make it harder to maintain a credible conventional deterrent. Offshoring and mobility lead to questions about intent.

or by altering them, telegraphing the fact that the defender is compelled to intervene (commitment or "tying hands"). States can also potentially commit or signal credibility through presence, although this is complex and arguably becoming more difficult with the inherent mobility of modern military capabilities. Military presence (a tripwire) that forces the defender to intervene is also prone to exploitation by allies (entrapment), since a protégé can take a tougher stance with adversaries, confident that it is protected by the defender. This phenomenon of chain-ganging thus poses a risk for the defender, but may not be observed in terms of deterrence success or failure, since the deterrent effect of the shift in the local balance of power attributable to the defender can be converted by the protégé into influence (e.g., better conditions or concessions from adversaries).

A defender should be concerned about entrapment to the degree that the defender's objectives or interests differ from those of the protégé. At some point, preferences differ so much that the defender is unwilling to form or sustain an alignment, let alone an alliance. A middle step is for states to ally, but to leave the extent of the commitment in doubt. The defender can rein in chain-ganging by limiting its commitment ("un-tying hands"), but broader credibility may be affected if the defender abandons an ally (Gibler 2008; Crescenzi, et al. 2012; Mattes 2012). However, the dangers posed by public perceptions of abandonment may be acceptable, given the defender's perceived risk of entrapment. Deployments "dial-in" the effect of alliance ties in at least two ways, increasing the precision of the defender's security policy. First, presence ("being there") is a costly signal of the value placed on an ally by the defender. Financing force postures is expensive; putting money in the ground at one location says something different from doing it elsewhere. Second, force postures evolve, allowing the defender to alter the details of security relationships on an ongoing basis in a manner more flexible and discrete than nominal alliance ties, and in a way that can be used to rein in the protégé. A defender with excessive exposure to a protégé prone to chain-ganging can dial down presence or even change its force posture to punish the ally and limit risk. However, as recent evidence suggests, doing so can cause challengers to question the reliability of the alliance.

Offshoring military capabilities is both a mechanism for increasing flexibility for the defender and a signal that the defender's emphasis in managing risk is closer to abandonment than entrapment. Abandonment is a problem for the protégé and an opportunity for a challenger. Offshore balancing

at the expense of some presence on the soil of an ally is an important delimitation, indicating that the defender is less (not more) likely to protect a given security partner. Challengers facing adversaries that are not directly protected by a defender must have greater doubts about what actions the defender will take. The defender may or may not intervene, increasing the challenger's uncertainty about the balance of power or threat in the event of a crisis or a contest, weakening deterrence and fueling instability. Again, while the defender can reduce uncertainty either by firmly signaling through an onshore presence or by removing forces from the region, either option also comes with consequences that are magnified by the relationship of interests between the parties.

Presence should augment alliance credibility, increasing deterrence success. Because deployments are elective and updated regularly, they are less subject to entrapment than the alliance itself. An onshore presence also indicates a lower likelihood of abandonment, increasing the deterrent effect of the alliance. Presence is informative because it achieves two critical functions. First, at least part of deployment costs are sunk, unrecoverable and vested in a given place and time. Personnel costs in particular cannot be re-used. Pay and support for U.S. forces in Poland, for example, cannot be recovered and used elsewhere. Nor is the fact that soldiers or airmen are paid in a given year relevant in the future. Continued service requires new personnel expenditures, unlike other expenses on infrastructure or capital goods. Presence thus localizes the effects of personnel spending in time and place, while future decisions are not dictated by previous expenditures.

A second component of presence that is important for signaling credibility, but which is often overlooked is the need for a baseline. The magnitude of a cost is in the eye of the beholder. It is difficult to determine how "costly" a costly signal might be without having something for reference. Budgets are a useful way to parameterize the size of a cost in politics because spending on some item or issue always poses an opportunity cost in terms of what else *cannot* be purchased. Government budgets are by their nature a product and record of controversy. Every expenditure that is present exists only because it forced out some other candidate for funding that was deemed less important. Thus, the overall costs of maintaining a forward force posture, as well as the details of presence in every ally where deployments are large in proportion to alternative postures is much more informative than spending in an absolute sense, where budget constraints or alternative candidates

for funding are not directly addressed. Combined, these two factors lead to the following hypothesis:

Hypothesis 1 (Presence) *Extended general deterrence <u>success</u> should be significantly predicted by the proportion of spending on U.S. military personnel deployed to (in) a given U.S. ally.*

If evidence of credibility is increased by proportionately expensive deployments targeted at particular U.S. allies (presence), then the opposite should be true for deployments that avoid a given ally's territory (offshoring). Spending a large portion of the U.S. defense budget on a force posture that places military personnel near but not on the soil of an ally limits entrapment but only by increasing the risk of abandonment. More importantly, proximity without presence creates additional ambiguity about intentions, suggesting interest in a region but not specifying the particular foci of this interest. Potential challengers can credibly doubt how willing the defender might be to intervene on behalf of a specific ally in a crisis if the defender is unwilling to commit to an onshore presence in peacetime.[6] In particular, offshore deployments require some additional trigger to move forces from offshore to onshore, while deploying these forces onshore signals the likely inevitability of their engagement in a conflict. A proportionately small forward presence in a given ally implies the possibility that the relationship is a lower priority for the defender. This may cause a challenger to act aggressively or, more conservatively, to adopt a more provocative posture in order to assess the local balance of power or threat through diplomatic challenges or probing attacks that allow the challenger to determine alliance tightness. These low-level conflicts, while not necessarily destined to generate abandonment or war, are themselves destabilizing extended general deterrence failures. Since our concern here is in the formative origins of instability, as well as the likely follow-on role crises have in generating additional conflict, we use the insight that the ambiguity of offshoring forces invites misperception or error to derive our second hypothesis:

Hypothesis 2 (Offshore) *Extended general deterrence <u>failure</u> should be significantly predicted by the proportion of spending on U.S. military personnel deployed near, but not on, an ally's territory.*

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[6]The onset of the Korean War is perhaps the most famous example, where U.S. reluctance to demonstrate an interest in South Korea contributed to the North Korean decision to invade, backed up by China and the USSR.

4   Research Design

We begin the empirical portion of the paper, and process of testing the two hypotheses, by reviewing our research design. We seek to examine the respective effects of presence and offshore balancing on extended general deterrence failure. Our approach makes it possible to assess how the evolving status of U.S. military deployments to or near U.S. allies affects a potential challenger's decision to initiate a militarized interstate dispute (MID) against a given U.S. ally.

The dependent variable is the deterrence failure rate of U.S. protégé i in year t. The variable is calculated by dividing the number of deterrence failure outcomes by the number of rival countries. We focus on the target rather than the challenger, which is different from the standard approach. To explain deterrence, scholars usually address the challenger's behavior against the target. However, this standard directed-dyadic approach can pose a significant inferential problem. Suppose that the target confronts two challengers. The challengers independently choose whether or not to initiate a militarized dispute, while they observe the same information about U.S. military deployments associated with the target. In annual observations of the cases for the target, the dependent variable has variance, but the independent variables do not vary. Changes in U.S. military deployments cannot then explain deterrence outcomes. Thus, we reduce the challenger's independent actions against the target to a single index by transforming a Bernoulli setting into a binomial one. We calculate the target's annual deterrence failure rate as 0 if neither of the protégé's rivals challenges the ally after observing changes in U.S. overseas deployments from the previous year. If one rival challenges, then the failure rate is 50%. The failure rate is 100% if both rivals challenge the protégé.

We detail deterrence outcomes for each of the protégé's rivals to construct the deterrence failure rate. Deterrence outcomes are defined by the hostility level in the MID version 3.0 dataset. The hostility level increases from 0 ("no hostility"), 1 (" no militarized action"), 2 (" militarized action"), 3 ("threat to use force"), 3 ("display of force"), 4 ("use of force"), to 5 ("War"). General deterrence failure means the initiation of a MID.[7] Deterrence fails if the challenger's hostility level is equal to or greater than 2. Otherwise, we assume that deterrence has succeeded, as is conventional in the

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[7]We distinguish general deterrence outcomes from the subset of immediate deterrence crises, where general deterrence has already failed. The proximate objective of durable deployments is preventing general deterrence failures.

literature (Quackenbush 2011, p. 53). To avoid exaggerating the number of deterrence successes, we only consider rival dyads. Deterrence successes are observationally equivalent to no hostility. The existence of a rivalry distinguishes the former from the latter. Rivalry periods indicate the existence of political tensions between adversaries and the potential for deterrence failure. Selecting on rivalry dyads is again common practice (Huth, Bennett and Gelpi 1992; Huth and Russett 1993). The first and last dyadic disputes determine the beginning and the end of a rivalry, respectively. We do not count disputes as deterrence failures if we observe a dispute without recurrence for ten years. We use the behavioral rivalry data to specify rivalry periods (Klein, Goertz and Diehl 2006).[8]

We construct two key independent variables to operationalize presence and offshore balancing. Our measure of localized deployments, labeled *Presence*, is associated with U.S. troops stationed in a given U.S. ally i. The details of deployments offer more fine-grained information and allow us to more precisely characterize the mechanism believed to be responsible for signaling credibility. In order to capture the effect of proximate but not localized deployments, we construct a measure labeled *Offshore Balancing*, that represents the distance weighted sum of U.S. overseas troops in other locations. Weighting U.S. overseas troops by proximity to a given ally reflects practical security concerns. Military forces in neighboring territories are available to project power to a given ally i, provided that policy makers choose to commit them. As troops stationed with other U.S. allies are farther away from a given alliance partner i, they are less able to intervene in a timely manner. Thus, we use the inverse of the distance between an ally i and the location of U.S. overseas troops to capture the loss of salience (discount) for forces by proximity.[9] Data that contain annual statistics on the number of active duty military personnel deployed abroad to each country and major overseas bases since 1950 is provided by the U.S. Department of Defense (DoD).[10]

As discussed in the theory section, the proportion of U.S. forces devoted to a given ally is believed to convey the strongest and most reliable signal of U.S. resolve. Each year in Congress, legislators debate U.S. overseas deployments, with considerable pressure being exerted by some

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[8]Alternatives are proposed by Hensel (2001) and Thompson and Dreyer (2011).

[9]We use the distance between the capitals of two American allies. When troop data are available for specific bases, we also use the distance between a U.S. ally's capital and a given overseas U.S. base. The latitude and longitude of each location was obtained from Google Maps. We calculated geodetic distances using Stata command "geodist."

[10]The data are available at: siadapp.dmdc.osd.mil/personnel/MILITRY/miltop.htm. See also Kane (2006).

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members to reduce spending in this area. Policy makers can pursue U.S. deployments abroad only at the expense of other important issues. These "guns-versus-butter" trade-offs make overseas deployments more expensive in subjective terms (opportunity costs). The pressure exerted by competing objectives and limited resources suggests that the signal of credibility from deployments becomes even more meaningful when U.S. legislators maintain the proportion of forces abroad in difficult economic times (Gartzke and Kagotani 2016). To best capture these guns-and-butter trade-offs, we thus begin by transforming the size of troops into the size of spending on military personnel. The U.S. DoD publishes data on total annual spending for military personnel. Spending for military personnel is roughly proportional to the number of troops stationed overseas, although military personnel salaries vary by rank. We calculate U.S. military personnel spending devoted to a given ally i and the distance weighted sum of spending for all other American allies.[11]

We need to measure credibility as a proportion in order to properly capture its unique effects. *Presence* involves the relative emphasis placed on one ally as opposed to others, all in the context of the guns-versus-butter tradeoff discussed above. To highlight shifting priorities, we compare the annual growth rate in U.S. military personnel spending with that of the overall federal budget.[12] We focus on personnel expenses in particular because these costs are ongoing and non-durable, best reflecting the idea of a sunk cost. Spending on most other aspects of national security involves the purchase or maintenance of goods which have some future value. Capital goods depreciate over time, making it difficult to tie spending in a given year to behaviors of interest. We calculate the difference between the former and the latter. When spending on personnel for a given ally i increases 2% and overall spending growth for U.S military personnel increases 6%, then *Presence* equals -4, reflecting U.S. hesitation with respect to this ally. When the former and the latter are -2% and -6%, then the value of *Presence* is 4 and reflects robust U.S. resolve. We measure the credibility of the U.S. relationship with each ally i using *Presence*. We also measure the diffuse credibility for each U.S. ally as the distance weighted sum for ally i using *Offshore Balancing*.

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[11]We refer readers to the *National Defense Budget Estimates for FY 2012* and used Table 6-1: Department of Defense TOA by Title in pp.75-80 (at http://comptroller.defense.gov/defbudget/fy2012/FY12_Green_Book.pdf).

[12]For the federal budget data, we referred to Table 6.1: Composition of Outlays 1940-2017 in the White House *Historical Tables* (http://www.whitehouse.gov/omb/budget/Historicals/). We also calculated the GDP deflator using Historical GDP estimates by the U.S. Department of Commerce Bureau of Economic Analysis. See Current-dollar and "real" GDP (http://www.bea.gov/national/xls/gdplev.xls).

In addition to the key independent variables, we include the other variables that could influence deterrence outcomes. To address structural effects of the relationship between a U.S. ally i and its adversaries, we address the local balance of power, domestic political institutions, and economic interdependence. To consider domestic political factors for U.S. foreign policy making, we also add the partisan identity of the U.S. president and the timing of the U.S. presidential election year.

To control for the balance of power between an American ally i and its rivals, we calculate the ratio of the target's capabilities to the sum of the challengers' and the target's capabilities in percentage points. We use the Correlates of War (COW) Composite Index of National Capability (CINC) score to measure *Target's Capability Ratio* (Singer 1987; Correlates of War Project 2005). A local balance favoring the target might lead the challenger to become pessimistic about likely conflict outcomes. This variable is expected to correlate negatively with deterrence failure.[13]

Democracies appear significantly less likely to fight each other. Electorates prefer to settle disputes peacefully (Doyle 1997; Tomz and Weeks 2013). The periodic turnover of governments also discourages leaders from resorting to force (Russett and Oneal 2001). On the other hand, studies of democratic diversion contend that popularly elected leaders may be more likely to initiate a militarized dispute to generate a short surge of political support in the shadow of an election (Leeds and Davis 1997). We use the polity score, measured on a 21 point scale ranging from -10 (hereditary monarchy) to 10 (consolidated democracy), to characterize the domestic political institutions of the challenger and target. *Challenger's Democracy Score* is the challenger's score if the target confronts an adversary, and the minimum score among the challengers if the target faces multiple adversaries.[14] *Target's Democracy Score* is the target's score. These variables could alternatively positively or negatively correlate with extended deterrence failure.

Intra-alliance trade between the target and the defender may enhance alliance ties that discourage the challenger from initiating a militarized dispute (Huth and Russett 1984a). *Trade Volume* is the sum of bilateral exports and imports between an ally i and the U.S. in millions of current year U.S. dollars (Gleditsch 2002). The variable is expected to significantly reduce deterrence failure.

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[13]All sorts of things have been hypothesized about the effects of power relations on conflict (Bueno de Mesquita and Lalman 1988). We simply wish here to control for the possible confounding effects of omitting capabilities.

[14]We follow the weak-link approach to characterize the challengers' political institution.

U.S. foreign policy could depend on the partisan identity of the incumbent U.S. president. Democrats are often characterized as "doves," while Republicans are thought to be "hawks" (Berinsky 2009; Fordham 2007). Such a reputation could influence the challenger's political calculations in deciding on dispute initiation. Adversaries might be more likely to target U.S. allies during the terms of Democratic incumbents because Democrats are expected to respond less forcefully to foreign challenges. We code a dummy variable equal to 1 for U.S. Democratic presidents, and 0 otherwise. This variable is expected to correlate positively with extended general deterrence failure.

U.S. presidents are said to pay more attention to domestic issues during electoral campaigns. U.S. presidential elections could invite more security challenges for American allies. The variable *U.S. Election Year* equals 1 in years in which a U.S. presidential election is held, and 0 otherwise.

Lastly, the likelihood of dispute initiation changes over time (Beck, et al. 1998). Peace is path dependent, tending to consolidate after longer periods without disputes. Hostilities arise at least in part from repeated previous disputes that trigger a heightened risk of subsequent conflict. The likelihood of dispute initiation at any given period thus depends on history. One can use cubic splines to address time dependence. However, Carter and Signolino (2010) suggest a cubic polynomial approximation of peace years as a more convenient and efficient solution. We include the peace year variables, *Peace Years*, *Peace Years*^{2} and *Peace Years*^{3}, in all statistical models.

5   Results

We use a random-effects logit model to examine the effect of U.S. force posture on a potential challenger's decision to initiate a militarized dispute. The unit of analysis is an American ally i in year t. Our model is as follows: $\text{Logit}[\text{Pr}(y_{it} = 1 | x_{1it}, \ldots, x_{kit}, v_i)] = \beta_0 + \beta_1 x_{1it} + \ldots + \beta_k x_{kit} + v_i$. v_i represents the country-specific random intercept is independent and identically distributed with $N(0, \sigma_v)$. As shown below, the country-specific random effects have a very small variance in the variance of the error components.[15] We choose the random-effects model as a more reasonable approach in assessing the effects of *Presence* and *Offshore Balancing* (see the appendix for a detailed discussion). Foreign policy making may differ across countries over time, generating autocorrelation

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[15]ρ ranges from 0.047 to 0.059 for Models 1-6.

across observations in the time series of an American ally. Such a correlation between observations tends to underestimate the size of standard errors. We correct the size of standard errors using 45 clusters of American allies, which secures the asymptotic property for the estimated results.[16] Also, deterrence failure encourages the United States to send more troops to protect an ally. However, we did not find evidence of this form of endogeneity (Please see the appendix). We thus present the results without excessive concern about reverse causality.

Our main results appear in Table 1. In general, our findings provide extremely robust support for our two hypotheses. Despite including various controls and components of our key measures, the *Presence* and *Offshore Balancing* variables are each statistically significant in the expected direction. Additional details of the analysis are discussed further below.

Model 1 examines the credibility of U.S. presence and offshore deployments with a minimum number of controls. *Presence* has a negative and statistically significant effect on the deterrence failure rate. If *Presence* increases by 100 points, the odds of deterrence failure are 0.914 times smaller ($\exp(-0.093) \approx 0.914$). *Offshore Balancing* has a positive and statistically significant effect on the deterrence failure rate. If *Offshore Balancing* rises by 100 points, the odds of deterrence failure are 3.062 times greater ($\exp(-0.093) \approx 3.062$). This implies that U.S. military forces stationed in the alliance partner deter a challenger's initiation of conflict, while U.S. military deployments offshore, in the neighboring allies, invite a significant increase in challenges to the status quo against the alliance partner. Further, the local balance of power *Target's Capability Ratio*) has no statistical effect on the deterrence failure rate.

Figures 1 and 2 plot the predicted deterrence failure rate from Model 1, while fixing other variables at their means. The connected line represents the predicted deterrence failure rate, while each vertical bar indicates the 95 percent confidence interval for the estimate. When *Presence* increases from -100 to 1200, the deterrence failure rate decreases from 0.25 to 0.09. When *Offshore Balancing* increases from -65 to 175, the probability of deterrence failure increases from 0.13 to 0.65. A one-unit change in *Offshore Balancing* has a greater impact on the probability of deterrence

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[16]The year-specific correlation (the correlation among observations in the same year) might cause a similar estimation bias. To correct the country-specific and the year-specific correlation simultaneously, we estimated the models using the two-way clustered standard errors. Results were similar to our main findings, as detailed in the appendix.

Table 1: Logit Model of Deterrence Failure: only American Allies' Rivalry Periods, 1950-2001

	Model 1 (S.E.)	Model 2 (S.E.)	Model 3 (S.E.)	Model 4 (S.E.)	Model 5 (S.E.)	Model 6 (S.E.)
Presence in a percentage point $\times 100$	-0.090**	-0.096**	-0.087**	-0.085**	-0.091**	-0.089**
	(0.045)	(0.044)	(0.044)	(0.042)	(0.045)	(0.042)
Offshore Balancing in a percentage point $\times 100$	1.119***	1.149***	1.118***	1.046***	1.144***	1.065***
	(0.336)	(0.331)	(0.337)	(0.344)	(0.369)	(0.370)
Target's Capability Ratio in a percent point $\times 10$	-0.061	$-0.102*$**	-0.064	-0.067*	-0.061	-0.113***
	(0.038)	(0.036)	(0.040)	(0.037)	(0.037)	(0.036)
Challenger's Polity Score		0.011				0.015
		(0.015)				(0.015)
Target's Polity Score		0.018				0.013
		(0.015)				(0.015)
Trade Volume in 1 billion dollars			0.003			0.002
			(0.002)			(0.002)
U.S. Democrat President				0.291**		0.267**
				(0.119)		(0.127)
U.S. Presidential Election					0.052	-0.008
					(0.207)	(0.213)
Peace Years	-0.207***	-0.191**	-0.217***	-0.202***	-0.206***	-0.194***
	(0.073)	(0.077)	(0.072)	(0.071)	(0.072)	(0.074)
Peace Years^2	0.010	0.009	0.011	0.009	0.010	0.009
	(0.008)	(0.008)	(0.007)	(0.007)	(0.007)	(0.008)
Peace Years^3	< -0.001	< -0.001	< -0.001	< -0.001	< -0.001	< -0.001
	(< 0.001)	(< 0.001)	(< 0.001)	(< 0.001)	(< 0.0001)	(< 0.001)
Constant Term	-0.505***	-0.386**	-0.504***	-0.633***	-0.517***	-0.465***
	(0.181)	(0.166)	(0.182)	(0.182)	(0.192)	(0.169)
σ_v	0.454***	0.424***	0.422***	0.455***	0.454***	0.401***
	(0.108)	(0.120)	(0.113)	(0.109)	(0.107)	(0.124)
ρ	0.059***	0.052***	0.051***	0.059***	0.059***	0.047***
	(0.026)	(0.028)	(0.026)	(0.027)	(0.026)	(0.027)
Log Pseudolikelihood	-603.32	-577.19	-593.96	-601.34	-603.27	-567.16
Wald Chi-squared	63.14	86.45	69.04	70.68	64.77	104.35
Number of Observations	1,130	1,065	1,117	1,130	1,130	1,054
Number of Allies	45	42	45	45	45	42

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

failure than that in *Presence.* For a one percentage increase in U.S. forces engaged in offshore balancing, the U.S. must devote 12.43% of its forces to presence to remain equally effective in deterrence ($1.119/0.090 \approx 12.43$). Offshore balancing as a strategy is not only harmful for general extended deterrence but it more than proportionately degrades the effect of presence. In terms of deterrence, the United States and its allies must either accept greater deterrence failure or devote an additional increment of available military personnel to deployments abroad. Put most simply, there is no free lunch; relocating a proportion of U.S. troops to the territory of an American ally enhances extended general deterrence for that ally, while inviting foreign challenges against

other U.S. allies in a region. Since these effects are more than proportional—the marginal increase in deterrence failure indicated by the *Offshore Balancing* coefficient is larger than the decrease associated with *Presence*—a grand strategy of remote intervention, such as that practiced in most versions of offshore balancing, is on balance destabilizing, heightening challenges to the status quo.
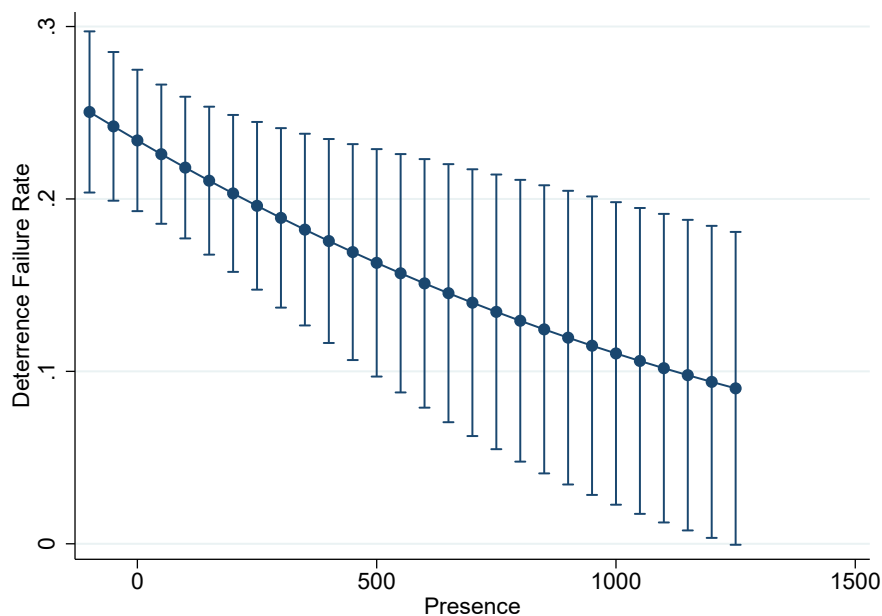

Figure 1: Effect of Presence Credibility

Models 2-6 present the results with additional control variables to address various factors confounding our basic findings. The results are robust to adding the variables *Challenger's Polity Score*, *Target's Polity Score*, *Trade Volume*, *U.S. Democrat President*, and *U.S. Presidential Election*.

As anticipated, an effective signal of resolve, one that appears to deter foreign challenges, is delivered through U.S. budgetary decisions. At the same time, proportionately large offshore capabilities, proximate but not located on the territory of a given ally, have the opposite effect, increasing rather than decreasing deterrence failure. A signal of resolve must be combined with specificity about geographic focus. Discretion is incompatible with deterrence.

Trade Volume has no correlation with the deterrence failure rate. *U.S. Democrat President* is positively correlated with the deterrence failure rate. Democratic presidents are more likely to invite challenges to the status quo against the alliance partner than Republicans. The odds of a
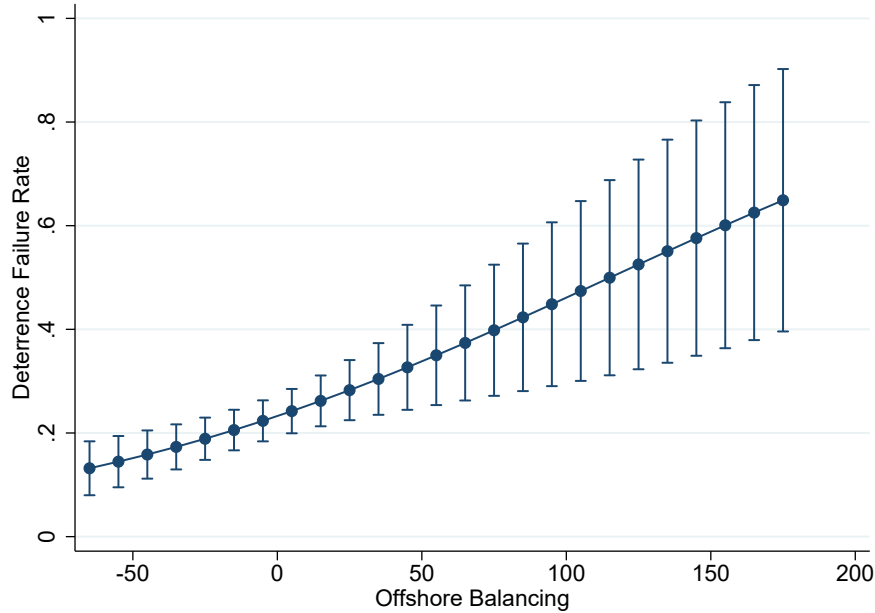
Figure 2: Effect of Offshore Balancing Credibility

challenge to a U.S. ally are 1.34 and 1.31 times larger in Models 4 and 6 when the president is a Democrat ($\exp(0.291) \approx 1.34$ and $\exp(0.267) \approx 1.31$ in Models 4 and 6, respectively). Finally, *U.S. Presidential Election* has no statistically significant effect on the deterrence failure rate.

We can derive three main implications from these results. First, annual changes in patterns of U.S. presence allow potential challengers to evolve in their beliefs about U.S. resolve. Alliances may matter, but because the institutions themselves are largely unchanging, it is difficult for participants, observers or researchers to update their beliefs. Second, the guns-versus-butter tradeoff detailed by comparisons with the Federal budget is a highly informative baseline for inferring and signaling U.S. resolve. Knowing how much something matters is best achieved in the context of other, competing, objectives. Third, stationing more troops on the territory of a specific ally (presence) leads to deterrence success by mitigating the risk of abandonment, while in contrast deployments to neighboring U.S. allies (offshoring) can produce increased risk of deterrence failure by introducing uncertainty about alliance priorities and by alleviating the risk of entrapment. These effects are also of different proportions. Moving troops from one ally to another hurts deterrence for the ally losing U.S. forces more than it helps the ally receiving additional U.S. troops.

6 Conclusion

Issues of force posture and presence are exceedingly important. Recent international crises appear superficially to be closely related to changes in U.S. decisions about where to position its military power. Yet this area remains one where insights are driven largely by anecdote and practical experience, rather than careful analysis. This study provides some of the first systematic evidence about the effects of the physical positioning of military capabilities on extended deterrence outcomes. Presence can be shown to matter, especially in the context of guns-and-butter tradeoffs. When the United States demonstrates that an ally is a priority by stationing relatively large contingents of troops in the country, the probability of general deterrence failure tends to decline.

The same cannot be said for deployments "near by." There are a number of advantages to offshore balancing. The approach maximizes discretion for policy makers, allowing the president or other U.S. officials to respond to evolving events as appropriate. It may also minimize the cost of providing security, to the degree that highly mobile forces can substitute for a larger number of military personnel and equipment fixed in a particular place. However, a forward force posture that is pursued "on the cheap" by relying on mobile military capabilities positioned offshore appears to be particularly problematic in terms of deterrence. Mobility and discretion telegraph ambiguity to an adversary. Offshoring forces leaves open questions about where they will be deployed, when and why. As we demonstrate, military capabilities positioned near but not on an ally's territory significantly increase the probability of deterrence failure. This phenomenon is most likely the result of the adverse signal that offshoring implies. The defender does not care enough to send the very best, or the most expensive. Instead, the hope to provide protection on the cheap, leveraging limited capabilities or interest for more extensive commitments or greater influence, rather than focusing on increased credibility about its most important alliance relationships.

Given the ambiguity of offshore balancing, the motives for this strategy depend on other effects, such as extending finite or declining influence more broadly than is possible otherwise or minimizing the cost of sustaining a given alliance structure. The search for "more bang for the buck" is a reasonable objective, but it is also one that promises blowback, particularly in an area where perceptions dictate behavior. The perception from potential challengers that a defender may be

conflicted in its objectives, reluctant in its interests or constrained by resources may be sufficient to precipitate deterrence failures. The benefits of influence on the cheap come at a high price tag in terms of increased instability, one that itself must be factored into the trade-offs for policy making.

Note also that proportions make a critical contribution both in pacifying (presence) and exacerbating (offshore) international affairs. Interestingly, this finding says a great deal about the durability of existing alliance structures. One of the chief arguments for offshore balancing has to do with cost; presence is expensive. A growing perspective among students of international security claims that a forward force posture is prohibitive and may even be brittle for a defender in relative decline. To the contrary, our results indicate that the greatest damage in the short to medium term for the United States and its allies may come from practicing a forward force posture offshore. While we cannot speak directly to the question of how forward U.S. forces should be deployed, the work here suggests how forward forces can best be positioned. Relative decline does not seem critical for extended deterrence, at least not yet. It is the proportional emphasis on America's chief allies that is most telling and which most effectively signals resolve. As long as presence is practiced proportionately, extended general deterrence may continue to function effectively.

The fate of nations is too important to be left to loose conjecture and plausible anecdote. The lack of rigor in the study of force posture has lead to many misconceptions, only a few of which have been touched on here. We are early yet in the process of making better sense of presence and other, related processes. Force posture has yet to be measured directly. Instead we have inferred posture by the proximity of offshore forces to each ally in the U.S. alliance network. More work needs to be done. Still, these findings serve perhaps to inform, not unlike the role of presence itself.

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Appendix

Summary Statistics and Correlation Matrix

The following tables are summary statistics and a correlation matrix for the variables used in the study.

Table 2: Summary Statistics

Variable	Mean	Std. Dev.	Min.	Max.	N
Deterrence Failure Rate	0.17	0.32	0	1	1130
Presence	155.79	4233.38	-104.39	141738.81	1130
Offshore Balancing	-3.07	16.86	-65.93	175.05	1130
Target's Capability Ratio	31.22	27.25	0.03	99.25	1130
Challenger's Polity Score	-3.46	6.55	-10	10	1120
Target's Polity Score	4.11	6.9	-10	10	1075
Trade Volume	8851.75	28850.7	2.11	403807	1117
U.S. Democrat President	0.46	0.5	0	1	1130
U.S. Presidential Election	0.26	0.44	0	1	1130

Table 3: Correlation Matrix

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Deterrence Failure Rate	1.00								
Presence	-0.02	1.00							
Offshore Balancing	0.06	-0.01	1.00						
Target's Capability Ratio	0.02	0.00	0.01	1.00					
Challenger's Polity Score	0.08	0.04	0.00	0.22	1.00				
Target's Polity Score	0.05	0.02	0.01	0.05	-0.07	1.00			
Trade Volume	0.03	-0.01	-0.01	0.06	-0.12	0.22	1.00		
U.S. Democrat President	0.07	0.03	0.08	0.08	0.03	0.07	0.11	1.00	
U.S. Presidential Election	0.01	-0.02	-0.19	0.03	0.04	0.01	0.03	0.01	1.00

Fixed-effects versus Random-effects Models

We used the random-effects logit model to examine the effects of *Presence* and *Offshore Balancing*. To show the validity of our model, we begin by running the logit model with the ally *i*'s dummy variables to estimate the country-specific fixed-effects. Three allies has no variance in deterrence outcomes and their fifty one observations were dropped from the analysis. As shown in Table 4, *Presence* has negative correlation with the deterrence failure rate but its significance disappears. The effect of *Offshore Balancing* remains the same as our findings. However, except for four allies, the country-specific dummy variables have no statistically significant effect. Thus, the results were distorted by including unnecessary fixed-effects. Further, the distribution of the country-specific fixed effects looks almost like a normal distribution (Figure 3). Thus, the random-effects logit model is more reasonable for examining the credibility of U.S. overseas deployments.
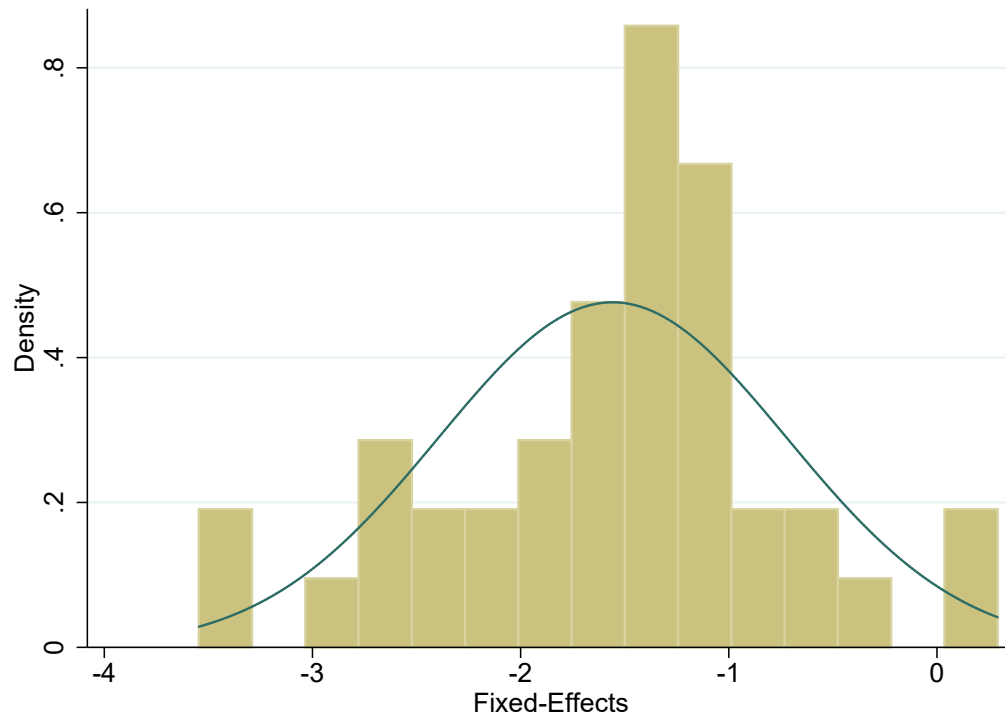

Figure 3: Distribution of Country-Specific Fixed-effects

Table 4: The Logit Model with Fixed-effects: American Allies, 1950-2001

	Model 1	(S.E.)
Presence in a percentage point ×100	−0.07	(0.08)
Offshore Balancing in a percentage point ×100	1.28***	(0.45)
Target's Capability Ratio in a percent point ×10	−0.06	(0.05)
Peace Years	−0.15**	(0.06)
Peace Years2	0.01*	(0.01)
Peace Years3	< −0.01	(< 0.00)
Constant	0.94	(1.25)
Ally i's Country Code	**Fixed-Effects**	**(S.E.)**
41	−1.55	(1.48)
52	0.29	(1.70)
80	−2.62	(1.64)
90	−1.08	(1.35)
91	−1.76	(1.29)
92	−2.21	(1.38)
93	−2.09	(1.29)
94	−1.53	(1.30)
100	−1.24	(1.33)
101	−2.98**	(1.44)
110	−1.74	(1.51)
115	−3.41**	(1.62)
130	−1.51	(1.30)
135	−1.63	(1.33)
155	−1.21	(1.29)
160	−1.37	(1.29)
200	−0.78	(1.27)
210	−1.48	(1.32)
211	−1.49	(1.47)
220	−1.87	(1.31)
230	−1.87	(1.40)
235	−2.76*	(1.44)
255	−2.36	(1.64)
260	−1.31	(1.32)
290	0.23	(1.74)
310	−1.20	(1.70)
316	−0.53	(1.88)
325	−1.12	(1.34)
350	−0.99	(1.27)
385	−2.68**	(1.35)
390	−1.30	(1.74)
395	−3.55**	(1.63)
630	−1.21	(1.33)
640	−1.26	(1.27)
666	−0.92	(1.38)
713	−1.45	(1.32)
732	−0.69	(1.27)
740	−0.41	(1.27)
770	−1.40	(1.28)
800	−1.36	(1.32)
840	−2.49*	(1.34)
Log Pseudolikelihood	−561.58	
Pseudo R^2	0.11	
Wald Chi-squared	140.78	
Number of Observations	1,079	
Number of Allies	42	

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

Results for the Logit Model with Two-way Clustering

U.S. deployment patterns might be affected by both autocorrelation and temporal shocks. We address both the country-specific and the year-specific correlation among observations. We estimated the logit models with two-way clustered standard errors. The results in Table 5 are similar to our findings. Note that *Target's Capability Ratio* and *Trade Volume* may have negative and positive correlation with the deterrence failure rate. However, their substantive impacts are so tiny that we can ignore them. Our findings are robust over temporal correlation.

Table 5: The Logit Model with Two-way Clustering: American Allies, 1950-2001

	Model 8 (S.E.)	Model 9 (S.E.)	Model 10 (S.E.)	Model 11 (S.E.)	Model 12 (S.E.)	Model 13 (S.E.)
Presence in 100 percentage points	−0.104**	−0.111**	−0.097**	−0.098**	−0.105**	−0.099**
	(0.049)	(0.049)	(0.047)	(0.046)	(0.046)	(0.043)
Offshore Balancing in 100 percentage points	1.068***	1.116***	1.075***	1.003***	1.092***	1.045***
	(0.346)	(0.341)	(0.346)	(0.330)	(0.415)	(0.357)
Target's Capability Ratio in 10 percent points	−0.077	−0.105**	−0.081	−0.083	−0.078	−0.118**
	(0.055)	(0.052)	(0.056)	(0.052)	(0.054)	(0.050)
Challenger's Polity Score		0.001				0.007
		(0.019)				(0.018)
Target's Polity Score		0.018				0.013
		(0.017)				(0.016)
Trade Volume in 1 billion dollars			0.005**			0.004*
			(0.003)			(0.002)
U.S. Democrat President				0.280		0.256
				(0.218)		(0.183)
U.S. Presidential Election					0.052	−0.008
					(0.431)	(0.373)
Peace Years	−0.253***	−0.224**	−0.255***	−0.248***	−0.252***	−0.223**
	(0.081)	(0.087)	(0.081)	(0.081)	(0.083)	(0.090)
Peace Years^2	0.011	0.009	0.012	0.011	0.011	0.009
	(0.007)	(0.008)	(0.007)	(0.007)	(0.007)	(0.008)
Peace Years^3	< −0.001	< −0.001	< −0.001	< −0.001	< −0.001	< −0.001
	(< 0.001)	(< 0.001)	(< 0.001)	(< 0.001)	(< 0.001)	(< 0.001)
Constant	−0.267	−0.265	−0.312	−0.389	−0.280	−0.353
	(0.201)	(0.168)	(0.195)	(0.233)	(0.259)	(0.233)
Log Pseudolikelihood	−609.00	−581.51	−597.61	−607.06	−608.95	−570.24
Pseudo R-squared	0.06	0.06	0.06	0.06	0.06	0.07
Wald Chi-squared	59.64	58.16	66.83	66.39	60.48	69.02
Number of Observations	1,130	1,065	1,117	1,130	1,130	1,054
Number of Allies	45	42	45	45	45	42
Number of Years	52	52	51	52	52	51

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

Reverse Causation

Deterrence failure might drive the U.S. to send more troops to protect the alliance partner. To examine the possibility of this reverse causation, we regress *Presence* on *Deterrence Failure Rate*, *Target's Capability Ratio*, *Trade Volume*, *U.S. Democrat President*, and *U.S. Presidential Election*.[17] We used the lagged variables except for *U.S. Democrat President* and *U.S. Presidential Election*. We estimated the random-effects regression model with the country-specific and usual errors v_i and e_{it}.[18] Table 6 shows that the deterrence failure in the previous year has no correlation with *Presence* in the current year. Thus, our findings are robust over the reverse causation.

Table 6: The Random-effects Model of Presence: American Allies, 1950-2001

	Model 14 (S.E.)
Deterrence Failure Rate$_{t-1}$	−3.916
	(4.491)
Target's Capability Ratio$_{t-1}$	0.071
	(0.808)
Trade Volume$_{t-1}$	−0.025
	(0.062)
U.S. Democrat President$_t$	3.805
	(2.649)
U.S. Presidential Election$_t$	−1.739
	(2.913)
Constant	2.936
	(4.904)
Within R^2	0.004
Between R^2	0.013
Overall R^2	0.002
Wald Chi-squared	3.20
Number of Observations	1,069
Number of Allies	45

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

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[17]The dependent variable is *Presence* in a percentage point $\times 100$.

[18]We chose the random-effects regression model against the fixed-effects model because the Hausman test did not reject the null hypothesis.