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Cross-Milieu Terrorist Collaboration: Using Game Theory to Assess the Risk of a Novel Threat

Gary A. Ackerman,[1,*] Jun Zhuang,[2] and Sitara Weerasuriya[3]

This article uses a game-theoretic approach to analyze the risk of cross-milieu terrorist collaboration—the possibility that, despite marked ideological differences, extremist groups from very different milieus might align to a degree where operational collaboration against Western societies becomes possible. Based upon theoretical insights drawn from a variety of literatures, a bargaining model is constructed that reflects the various benefits and costs for terrorists' collaboration across ideological milieus. Analyzed in both sequential and simultaneous decision-making contexts and through numerical simulations, the model confirms several theoretical arguments. The most important of these is that although likely to be quite rare, successful collaboration across terrorist milieus is indeed feasible in certain circumstances. The model also highlights several structural elements that might play a larger role than previously recognized in the collaboration decision, including that the prospect of nonmaterial gains (amplification of terror and reputational boost) plays at least as important a role in the decision to collaborate as potential increased capabilities does. Numerical simulation further suggests that prospects for successful collaboration over most scenarios (including operational) increase when a large, effective Islamist terrorist organization initiates collaboration with a smaller right-wing group, as compared with the other scenarios considered. Although the small number of historical cases precludes robust statistical validation, the simulation results are supported by existing empirical evidence of collaboration between Islamists and right- or left-wing extremists. The game-theoretic approach, therefore, provides guidance regarding the circumstances under which such an unholy alliance of violent actors is likely to succeed.

KEY WORDS: Collaboration; disparate ideology; game theory; terrorist

1. INTRODUCTION

Several terrorist events and plots in recent decades, most notably the September 11 attacks, have surprised security officials with novel tactics or unexpected improvisations. This has resulted in a movement among intelligence and law enforcement agencies to "think outside the box" and consider alternative incarnations of the terrorist threat. Yet, it is often difficult to elucidate the dynamics of novel forms of terrorist activity and hence evaluate their risk with any degree of precision, especially when the historical evidence for such activity is spare or nonexistent. We present here the use of a game-theoretic approach to analyze one such potentially novel threat—that of cross-milieu terrorist collaboration. This threat entails the possibility that, despite marked ideological differences, extremist

[1]National Consortium for the Study of Terrorism and Responses to Terrorism, University of Maryland, College Park, MD, USA.
[2]Department of Industrial and Systems Engineering, University at Buffalo, Amherst, NY, USA.
[3]Department of Epidemiology and Biostatistics, George Washington University, Washington, DC, USA.
*Address correspondence to Gary Ackerman, Unconventional Weapons and Technology Division, National Consortium for the Study of Terrorism and Responses to Terrorism, University of Maryland, College Park, MD 20742, USA; tel: +301-405-6600; gackerman@start.umd.edu.

groups from very different milieus (such as transnational Islamist terrorist networks and American right-wing extremists) might align to a degree where operational collaboration against Western societies becomes possible.

This question is relevant because if such a nexus between extremists was to materialize in an operational sense, Western security agencies could be faced with a new type of terrorist threat. The primary assertion in this regard is that failing to incorporate the possibility of such cross-milieu collaboration into either strategic or tactical threat assessments could underestimate the true level of threat and thus create a false sense of security. A simple example suffices to illustrate the vulnerabilities that might then arise: a hypothetical domestic far-right terrorist cell (A) seeks to launch a major attack against a U.S. government target (on the scale of the 1995 Oklahoma City bombing), yet lacks both the operational and technical skills to build and deploy explosives of the required size. At the same time, a foreign jihadist group (B), equally bent on causing harm to the United States, possesses the requisite planning and technical tradecraft, but lacks the ability to infiltrate its operatives into the United States or operate undetected in an unfamiliar environment. Analyzed separately as discrete threats (most probably by different silos of intelligence analysts), each group would be found to lack the capability to successfully carry out its attack goals. However, if A and B were to make contact and decide to collaborate operationally, B could provide the explosives and training to A, whose local knowledge of the target environment and ability to move around relatively unobtrusively within the homeland would then enable A to access the target and successfully carry out its intended attack. Moreover, the subsequent revelation that A and B worked together might end up amplifying the amount of fear and alarm resulting from the attack. In other words, although each threat when viewed on its own might be judged to be below the threshold of danger, their complementary sets of operational capabilities mean that their combined efforts could constitute a very real threat to the homeland.

Yet, extremist ideologies tend to be exclusionary; indeed, part of the function of an ideology is to bolster the concept of the in-group and identify culprits for any woes that might befall it. In the case of extremists of any stripe, this often results in a self-conception that paradoxically embraces both a sense of superiority and victimhood, neither of which is conducive to smooth collaboration with outsiders to the group, not to mention nonbelievers. This is in addition to the practical difficulties of increased exposure and lack of trust, among others, that present themselves to any clandestine group seeking to network with other clandestine actors. It is little wonder, then, that for superficially dissimilar ideologies, such as the political far left and far right, there are myriad obstacles to collaboration. Yet, history is replete with examples of strange bedfellows brought together when their shared enmity toward a common foe suppresses the friction between them.[1–3]

Unlike several alarmist commentators who have written about such "unholy alliances,"[4,5] it is prudent to approach the risk systematically, through the development of a theoretical model of cross-milieu extremist collaboration that can be subsequently tested against extant empirical evidence. A larger study, of which this article formed a part,[6] conducted a survey of several academic literatures in order to both establish the theoretical feasibility of collaboration between ideologically dissimilar partners and to seek out potential characteristics of such collaboration. A review of existing work on terrorist alliances, both with other terrorist groups and with transnational criminal networks, was followed by analyses of related topics in the domains of sociology, political science, and business theory. Although the literature suggests that ideological differences might present several substantial obstacles to cooperation, there are no strong theoretical arguments precluding cross-milieu extremist collaboration. The theoretical survey also identified several key factors that are likely to be salient in any attempt to forge an alliance across ideological boundaries. These factors, consisting of sets of benefits, costs, and decision mediators, are summarized in Table I and can serve as the nucleus of a model of collaboration across extremist milieus.

2. USING GAME THEORY TO EXPLORE CROSS-MILIEU TERRORIST COLLABORATION

Game theory is a useful tool by which to rigorously analyze situations characterized by strategic interactions between two or more actors, where the investigator seeks to explore the salience of intervening and contributing factors, as well as the structure of the interaction. As such, we have chosen it as the most suitable method by which to synthesize and build upon the theoretical insights detailed in Table I. After all, any state of collaboration between

Table I. Summary of Costs, Benefits, and Decision Factors Associated with Cross-Milieu Extremist Collaboration

Potential Benefits of Collaboration

- *Leveraging existing capabilities*:[7–10] Cooperative pooling of (mostly complementary) existing capabilities, which exceeds either party's current overall capability level. These capabilities could relate to operations (e.g., the expertise to design improved weapons or enhanced access to targets), resources (e.g., finances and equipment), or logistics (such as communications channels or safe houses), or any other tangible or intangible asset possessed by one group and desired by the other. The capabilities could be desired for any combination of offensive, defensive, or maintenance functions of the organizations.

- *Acquiring new capabilities*: Joint development of new capabilities that neither organization is able to develop on its own.

- *Learning*: Opportunities for learning from the partner (whether this is in terms of particular skills, organizational processes, or developing contacts within the partner's network).[11]

- *Cost reduction*: Lowering the costs associated with maintaining a sustainable organization and producing desired outputs. A simple example would be two terrorist groups sharing a training camp or bomb-making facility in order to reduce overall costs and free up resources for other activities.

- *No competitive concern (in the case of cross-milieu collaboration)*: For groups espousing different ideologies,[12] there is likely to be little to no concern that the collaboration will assist a direct competitor since, at least in the intermediate time frame, the groups are most likely recruiting from and acting on behalf of different constituencies. (This is in essence a negative cost that would most likely apply if the two groups shared an ideology.)

- *Associative benefits*: If a group perceives its own support to be waning, it might view an alliance with a popular or successful terrorist group as one means of bolstering its own standing among members and potential supporters.[13]

Potential Costs

- *Opposition from within*:[14] Internal organizational costs (such as dissension or even future leadership challenges) from elements within the organization who oppose the alliance, particularly those who decry the alternate ideology of the alliance partner.

- *Transaction costs:* Increased costs (often referred to as "friction") incurred as a result of the resources and time that are devoted to managing a relationship with a partner coming from a very different background and with a different set of ultimate goals.[15,16]

- *Ideological contamination*:[17–19] Risk of one's own beliefs and value system being sullied by the ideologically impure.

- *Risk of losing "proprietary" information*: The partner group might emulate tools, techniques, or contacts that the group wants to keep for its own exclusive use (the converse of the learning benefit above).

- *Increased security risk*:[20] By expanding the number of people who have knowledge about the organization and its operations, the group might be more vulnerable to error or betrayal to security forces. This might be mitigated by using the minimum necessary points of contact, and sharing only information required for joint operations, but it cannot be eliminated completely.

- *Additional enemies*:[21] Potential creation of new enemies or increased resources being devoted by existing enemies to countering the group. For example, a regional group allying itself with al-Qa'ida (such as the GSPC) will draw far more attention from the world's counterterrorism forces than previously.

Decision Criteria

- *Trust/reliability*: The more a terrorist group expects that its partner will fulfill its commitments owing to the collaboration, the more likely it will be to seek an alliance with that partner.[22] Trust can be expressed as a subjective probability that the terms of the collaboration will be honored.[23,24]

- *Level of shared perception of threat*: It has been asserted that the higher the level of threat perceived by both parties, the more likely they are to engage in collaboration.[25,26]

- *Free riding*: The potential for free riding by one partner might complicate alliance formation. This would entail one partner in an alliance providing a greater share of inputs into the joint enterprise than its share of the outputs of the alliance.[27]

disparate terrorist groups will be the product of at least a tacit process of bargaining.[21] Game theory has generally proven itself to be a popular method among alliance theorists from various disciplines, and the models thus created have arguably done much to advance the understanding of alliances.[12,14,28,29] At the same time, game theory has been used to study terrorist behavior[31] and the strategic interactions between government actors and terrorist groups;[32–34] however, to the best of our knowledge, there has been only one previous attempt to model terrorist alliances using game theory.[30] Yet, this study merely focused on commitment issues and instrumental benefits in different environmental contexts, while not providing much additional guidance for our core concern of cross-milieu collaboration.

Two caveats are worthwhile before moving to construct the model. First, any models are necessarily an abstraction from reality and cannot capture every nuance of human decision making. Nonetheless, they can elucidate dynamics, structure, and the effects of both of these factors on decision making in a rigorous fashion.[35] As Morrow has observed: "Game theory cannot tell us whether certain theories are accurate descriptions of the world, but it can tell us what behavior we should expect as a consequence of those theories."[36] Second, we are not making the stronger assertion that all cases of collaboration between different groups of terrorists will be governed primarily by strategic considerations. In many cases, alternative, harder-to-model considerations—such as shared kinship, cultural ties, or emotional valences—may trump strategic calculations, for example, when terrorist organizations representing the same ethnonationalist cause cooperate based on a sense of communal obligation. We are only asserting that, with the assumption of disparate belief systems prevailing between the two groups, the decision to embark upon cross-milieu collaboration will be dominated by a subjective calculation of costs and benefits.

2.1 Basic Assumptions and Structure

The model we consider has two players, A and B, each representing decision-significant groupings of terrorist actors. We define terrorist actors to be subnational entities who utilize violence, where the majority of their violent actions are primarily intended to exert a broader psychological impact on one or more audiences beyond the immediate victims of the violence. By *decision-significant grouping* we mean a collection of terrorist actors acting together, ostensibly motivated by the same broad goals and with a single decision point responsible for determining the significant actions of the grouping. This definition is intentionally broad in order to sufficiently account for the wide array of terrorist organizational structures, which range from large, hierarchical, paramilitary-type organizations, to dispersed cellular networks and small coteries of isolated amateurs. It is also agnostic as to whether the terrorist has a single dominant leader responsible for all decision making, or whether decision making is shared between several individuals. A or B could even represent a single terrorist cell within a larger affinity network, presuming that the cell leader(s) has the authority to make decisions at the tactical or operational level that include potential collaboration with outsiders.

The model makes the following broad assumptions about A and B at the beginning of the game:

(1) A and B possess substantially different basic worldviews, which means that any interaction between them occurs across ideological milieus.
(2) A and B have had no direct prior collaboration.
(3) A and B are at least notionally aware of the potential benefits and costs to themselves of their own actions.

The game we will examine will be a single-stage game, as opposed to the repeated variety. Iterated games can be useful for investigating a number of dynamics, including the sustainability of long-term relationships and reputational effects on future interactions. However, our focus here is not on the duration or stability of the relationship. Indeed, we fully anticipate that most cross-milieu collaborations, should they occur, will *be ad hoc* and ephemeral. Therefore, we do not expect that most terrorist groups will invest much effort in consideration of the effect of their current decisions regarding a particular outside group on indeterminate future interactions with the same group. Moreover, owing to the *prima facie* difficulties involved in collaborating across milieus, we assume that these collaborations will not be sufficiently common so as to allow for a large impact on decision making of concerns about one's reputation. This is in contradistinction to the case with interstate alliances, where reputation is an extremely salient factor in deciding whether or not, and with whom, to establish an alliance. Since neither of these dynamics is of primary concern here, we believe it

suffices to play a single round of the game, at least for the purposes of an initial foray into the phenomenon.

The game will also focus on the specific dynamics of entering into collaboration across different milieus, rather than merely comparing cross-milieu collaborations with within-milieu collaborations (or other capacity-building mechanisms that an actor might use). It will accomplish this by using as a reference point (status quo) the situation where A or B have optimized their current resource usage, in other words, without adding tangible or intangible resources or decreasing costs, they cannot improve their current operational efficiency. This status quo is normalized to include both collaborations within the terrorists' own milieu and internal development efforts.

The structure of the game is as follows. A discovers some information about B, which leads A to believe that it could potentially derive a benefit from collaborating with B that it cannot achieve either on its own or through an alliance within its own milieu. The source of this information is irrelevant to the game. In the case where A and B are fairly prominent terrorist organizations like al-Qa'ida or FARC, it could be that A infers from B's behavior, say, that B must possess a robust, transnational logistical network that A does not. Or, in the case of smaller groupings, for example, at the level of a terrorist cell, a member of A could be incarcerated in the same facility as a member of B and he learns that B has insider access to a particular target area. In either case, A makes the choice whether, on the one hand, to approach B and propose a certain form of collaboration between the two groups—presumably explicitly offering some benefit to B in return—or, on the other hand, to continue with the *status quo ante*. The communication between the parties would usually be undertaken covertly, perhaps through one or more middlemen, owing to the operational security concerns of both parties, although it is conceivable that the offer is made in a public forum (such as posting on an affiliated website or blog where A is reasonably sure that the offer will reach B). In any event, the mode of communication is not reflected in the model. Once B receives A's offer, perhaps after internal deliberations, she either accepts or rejects it. It is possible that a negotiation of some form might occur, with B proposing a counteroffer and A either accepting or rejecting it. Since we are primarily concerned at this stage with whether the end result is a functional collaboration and not the exact nature of the final terms of the collaboration, without loss of generality, we can specify the first step in the game as the final offer by one party in the negotiation and call that player, the proposer, A. B then either accepts or rejects A's final offer. If B rejects A's offer then B remains at its status quo utility level, while A might have incurred some transaction costs in formulating and communicating the offer to B.

If B agrees to A's offer, both parties then decide whether or not to perform according to the parameters of the collaboration agreement. This choice always exists because there is no external power monopolizer to enforce an agreement between groups of clandestine nonstate actors. We define a *successful collaboration* as one where an agreement is reached and both parties choose to perform on the basis of the agreement. Moreover, in solving the game, we will focus on the strategies that lead to the outcome we are primarily interested in, i.e., a successful collaboration of some type where both parties perform. We will explore other possibilities, as necessary, but will not devote much space to exploring in detail the various conditions, say, under which parties reach agreement but do not perform.

We will initially assume that A, having been the first to propose, has to demonstrate performance first before B must perform. If A chooses to follow through on its agreement with B, then B has to decide whether to uphold its side of the bargain, with the resulting payoffs for each party. This simple game is depicted in extensive form as Fig. 1 with utilities in terms of the cost and benefit components. In the second version of the game, we relax the strict ordering of performance and investigate what is arguably the more likely situation, where A and B make decisions to perform simultaneously, or at least without knowledge of what the other player has decided. The simultaneous performance game is shown in extensive form in Fig. 2. For both versions of the game, we impose the further condition of perfect information so that each player is aware of the other player's utilities at every stage of the game. While this does impose a degree of artificiality on the game, it allows for a basic exploration of the game structure and can be relaxed in future research efforts. Moreover, in certain cases (such as that of al-Qa'ida), a tremendous amount of information is available on a terrorist actor's ideology, leadership, and prior behavior, which could result in the other player estimating the actor's utility functions with a relatively high degree of accuracy.

In exploring the game, it will be advantageous to further specify the payoffs for each party. The

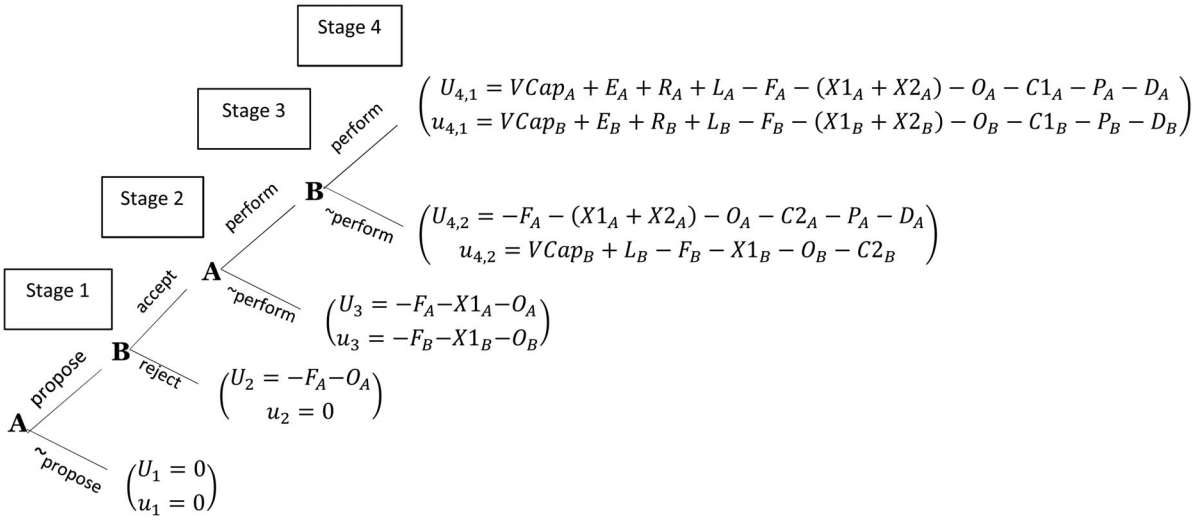

Fig. 1. Basic collaboration bargaining game.

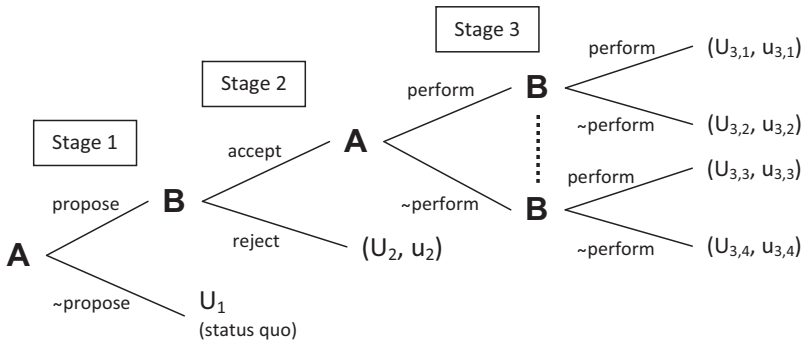

Fig. 2. Simultaneous performance collaboration game (extensive form).

respective costs and benefits to A and B are based on Table I. They are listed below with the neutral subscript *i*. **0** represents the utility of the normalized status quo position for both A and B.

2.1.1. Benefits

The overall payoff to *i*, as depicted in Fig. 1, consists of several components. $\mathbf{VCap_i}$ denotes the value, to player *i*, of the capabilities-related benefits of successful collaboration. $\mathbf{E_i}$ is the value to *i* of exerting a greater psychological or intimidatory effect on its primary enemy as a result of collaborating with another grouping *j*, which reflects the all-important "terror" aspect of terrorism and is only gained if both players perform on the collaboration. $\mathbf{R_i}$ is the value to *i* of being associated with *j*, a reputational benefit wherein *i* perceives that its own reputation (vis-à-vis its supporters, potential supporters, or perceived constituencies) will be bolstered by an association with *j*. $\mathbf{L_i}$ is the value to *i* of the organizational learning benefits of collaborating with *j*.

2.1.2. Costs

$\mathbf{X_i}$ denotes the value to *i* of the increased security risks it must face resulting from collaboration with *j*. X_i is separated into $\mathbf{X_{1i}}$, which are those additional risks that come into play upon agreement, and $\mathbf{X_{2i}}$, which are those risks that arise only upon actual collaboration (performance by both players). $\mathbf{O_i}$ (oppositional cost) is the value to *i* of opposition from within its own organization as well as potential loss of support from its base as a result of collaborating with *j*, stemming from differences in ideology. $\mathbf{O_i}$ is assumed to emerge when agreement is reached between the two players. $\mathbf{C_i}$, a "contagion" effect, represents *i*'s value of the risk to its ideological purity owing to contact with elements of *j*. $\mathbf{C_i}$ is divided into two types: $\mathbf{C_{1i}}$, the more "extreme" form of $\mathbf{C_i}$, which

arises when the two players both perform on their agreement, and $\mathbf{C_{2i}}$, which occurs if only one party performs and is the lesser degree of ideological contamination that can be expected due to less contact. $\mathbf{P_i}$, "proprietary concern," represents *i*'s value of the risk of *j* acquiring information (including knowledge and skills) from *i* that *i* does not want to share. $\mathbf{F_i}$ is the value to *i* of the transaction costs (friction) of initiating and maintaining interaction with *j*. $\mathbf{D_i}$ denotes *i*'s value of the financial and resource cost to *i* of actually performing on the agreement.

2.2. Investigating Game 1: Sequential Decision Making

Based on the costs and benefits described above, the sequential game uses the following payoffs, as reflected in the utility labels in Fig. 1:

Stage 1:	$U_1 = 0$
	$u_1 = 0$
Stage 2:	$U_2 = -F_A - O_A$
	$u_2 = 0$
Stage 3:	$U_3 = -F_A - X_{1A} - O_A$
	$u_3 = -F_B - X_{1B} - O_B$
Stage 4:	$U_{4,1} = VCap_A + E_A + R_A + L_A - F_A - (X_{1A} + X_{2A}) - O_A - C_{1A} - P_A - D_A$
	$u_{4,1} = VCap_B + E_B + R_B + L_B - F_B - (X_{1B} + X_{2B}) - O_B - C_{1B} - P_B - D_B$
	$U_{4,2} = -F_A - (X_{1A} + X_{2A}) - O_A - C_{2A} - P_A - D_A$
	$u_{4,2} = VCap_B + L_B - F_B - X_{1B} - O_B - C_{2B}$

Most of the above equations flow directly from the definitions of the variables and the basic game structure, but some notes are warranted. First, at stage 2, we assume that by reaching out across ideological milieus to make a proposal to B, A incurs both transaction costs and opposition from within its own milieu.[4] Once the agreement is reached (stage 3), the risks increase somewhat, even if neither party has performed, because if counterterrorism forces learn of the agreement, they are likely to devote greater efforts to neutralizing both parties. Furthermore, the costs of internal opposition must still be taken into account at this stage because, even if *i* does not ultimately follow through on the agreement, opponents of the decisionmakers within *i* would probably assert that this was wholly due to their own opposition. This would in turn result in *i*'s decisionmakers incurring the internal cost regardless. The first utilities for both parties performing at stage 4 stem trivially from the definitions of costs and benefits. If A performs but B does not, then A incurs all of the costs (albeit lower ideological contamination) but reaps none of the benefits. In this case, B receives the direct (capability) benefits as well as any organizational learning (since A has performed already), but does not reap the additional reputational benefits and psychological impact that only manifest upon dual performance. B still incurs some of the costs, namely, transaction costs, the increased risk and internal opposition from having agreed in the first place, and potentially some (lower) level of ideological contagion as a result of all its prior interactions with A (stemming from the negotiations and A's performance).

We solve a subgame perfect Nash equilibrium for the game specified in Fig. 1 using backward induction. First, we assume, as will generically be true, that there are no "tied" payoffs at distinct terminal nodes. At stage 4, B is the decisionmaker and will select "perform" only if $u_{4,1} \geq u_{4,2}$, i.e., if

$$VCap_B + E_B + R_B + L_B - F_B - (X_{1B} + X_{2B}) - O_B - C_{1B} - P_B - D_B \geq VCap_B + L_B - F_B - X_{1B} - O_B - C_{2B}$$

or

$$E_B + R_B \geq X_{2B} + P_B + D_B + (C_{1B} - C_{2B}),$$

with B's payoff being $u_{4,1}$ in this case. A's payoff if B performs is $U_{4,1}$ and therefore A will perform in stage 3 if and only if $U_{4,1} \geq U_3$, i.e., if

$$VCap_A + E_A + R_A + L_A - F_A - (X_{1A} + X_{2A}) - O_A - C_{1A} - P_A - D_A \geq -F_A - X_{1A} - O_A$$

$$\text{i.e., if : } VCap_A + E_A + R_A + L_A - X_{2A} - C_{1A} - P_A - D_A \geq 0$$

$$\text{i.e., if : } VCap_A + E_A + R_A + L_A \geq X_{2A} + C_{1A} + P_A + D_A.$$

Since we are primarily interested in performance, we will assume that this inequality holds and that A will choose to perform at stage 3. Then, A's and B's payoffs are $U_{4,1}$ and $u_{4,1}$, respectively.

[4] Even in the case where A makes a "secret" overture to B known only perhaps to the leader of A and his closest confidants, this cost would be taken into account since the decisionmaker(s) must suspect that it is unlikely, particularly as negotiations begin with B in earnest, that other members of the organization would remain in the dark for long.

In this case, B will play *accept* at stage 2 if and only if $u_{4,1} \geq u_2 = 0$, i.e., if:

$$VCap_B + E_B + R_B + L_B - F_B - (X_{1B} + X_{2B}) - O_B - C_{1B} - P_B - D_B \geq 0,$$

in which case, A's and B's payoffs are $U_{4,1}$ and $u_{4,1}$, respectively, as defined above.

If we assume that the inequality holds, and B accepts at stage 2, then at stage 1, A will propose if $U_{4,1} \geq U_1 = 0$, with the same payoff ($U_{4,1}$) as in stages 2 and 3 (there is no need to specify the payoff of B at this stage).

Following this line of reasoning, we see that both players choose to perform if the following four conditions hold:

(1) $VCap_A + E_A + R_A + L_A - F_A - (X_{1A} + X_{2A}) - O_A - C_{1A} - P_A - D_A > 0$.
(2) $VCap_B + E_B + R_B + L_B - F_B - (X_{1B} + X_{2B}) - O_B - C_{1B} - P_B - D_B > 0$.
(3) $VCap_A + E_A + R_A + L_A - X_{2A} - C_{1A} - P_A - D_A \geq 0$.
(4) $E_B + R_B > X2_B + P_B + D_B + (C1_B - C2_B)$.

Since the third inequality above follows from the first,[5] in order for a successful collaboration to occur, we need only show that the following expressions are positive, i.e.:

(1) $VCap_A + E_A + R_A + L_A - F_A - (X_{1A} + X_{2A}) - O_A - C_{1A} - P_A - D_A \geq 0$.
(2) $VCap_B + E_B + R_B + L_B - F_B - (X_{1B} + X_{2B}) - O_B - C_{1B} - P_B - D_B \geq 0$.
(3) $E_B + R_B - X_{2B} - P_B - D_B - (C_{1B} - C_{2B}) \geq 0$.

This amounts to saying that both parties perform when their total benefits exceed their costs and the value of the reputational and psychological effects of collaboration for B outweigh the value she places on the resource cost and the additional risks to her security, ideological purity, and proprietary knowledge.

2.2.1. Numerical Illustration: Sequential Decision Making

The implications of the model can be better understood by engaging in a practical illustration of the above results. For this illustration (as well as the others that follow), we consider examples of different types of collaboration between Islamist and right- or left-wing actors, as described in the scenarios below.

(1) Rhetorical: A agrees to laud the professionalism of B on its website and provides a link to B's website; B in turn endorses the (intermediate) aims of A on its website and provides a reciprocal hyperlink.
(2) Logistical: A provides a safe house for B's members; B provides training for A's members.
(3) Logistical: A provides a secure communications network; B provides money.
(4) Operational: A supplies access to target through an insider; B provides specialized weapons and personnel for the attack.
(5) Operational (joint operation): A and B each provide personnel for a difficult, large-scale attack.

We will examine each of the above scenarios under two cases for the identities of A and B:

Case 1: A is a right-wing organization of medium size and sophistication (such as the Covenant, Sword and the Arm of the Lord); B is al-Qa'ida.

Case 2: A is an Islamist cell consisting of a small number of radicalized youth in the West (such as the 2005 British subway bombers); B is a well-established Marxist group (such as FARC).

Obviously, there are many other examples of collaboration and possible combinations of actors who could potentially collaborate, but the above examples represent somewhat substantial variation in terms of both actor and the broad category of collaboration. For the purposes of this illustration, we utilize a straightforward four-point scale to represent the relative magnitude of each variable, namely, *none*, *small*, *medium*, and *large*.

Table AII provides estimated values for each of the relevant variables and each example of collaboration in Case 1 above. It is clear that the values for a particular cell or organization will vary according to a multitude of organizational and environmental factors. Furthermore, the utility values for decision makers within even the same group are likely to change over time. In a practical context, such as the intelligence community, one would expect the table for a particular prospective dyad to be populated by the best available data and expertise, including current intelligence and specific subject matter expertise

[5] Specifically, if player A wants to propose, player A clearly wants to perform (the only difference in payoffs being the sunk cost of having proposed in the first place), given that doing so is the only way to get B to perform.

on the actors involved. The expertise of analysts regarding the utility values of the actors of concern can be elicited and aggregated using a variety of techniques.[37–40] Nonetheless, the values (or ranges of values where there was considerable uncertainty) supplied here are based on the authors' expertise in the subject matter, with sample justifications and reasoning described (with appropriate citations) in the Appendix;[6] the values are those the authors believe are most likely to prevail and will suffice for purposes of illustration.

It is now possible to examine these values in terms of the three inequalities derived from the model. There are a variety of methods by which one might attempt to practically assess the inequalities, ranging from trying to model the utilities as functions of the variables based on the revealed preference of the actors,[41] to adopting a fuzzy logic mechanism for combining variables.[42] For convenience, we will assume here that the variable values are independent and of equal weight, thus allowing us to represent them by numerical values in simple algebraic form. By assigning the numbers 0, 1, 2, and 3 to the values *none*, *small*, *medium*, and *large*, respectively, and adding and subtracting across variables, we can obtain at least a notional understanding of the likelihood of the inequalities being satisfied for each collaboration scenario.[7]

Table AIII displays the results of the numerical calculations. To take into account those cells that depict a range of values, the table shows the calculations for each inequality of: (1) its lower bound (minimizing benefits and maximizing costs[8]), (2) its upper bound (maximizing benefits and minimizing costs), and (3) the average values of its cells. A qualitative assessment of these results is also provided for each inequality in terms of the likelihood of the inequality being fulfilled. Last, a preliminary estimation of the likelihood of successful collaboration is provided, based on the likelihood of all three conditions being fulfilled. Tables AIV and AV show similar results for Case 2.

As expected and evident from the tables, both costs and benefits can vary widely, both across actors and scenarios, although for many of the variables the variation across scenarios is nonmonotonic. In general, and as expected, actual operational collaboration in an attack (scenario 5) seems to both provide the largest benefits and incur the greatest costs. In both cases, however, collaboration in the majority of scenarios proves to be an unlikely outcome based on the decisions of the parties. The one exception is mutual rhetorical support, which seems to provide substantial propaganda benefits (in terms of both E_i and R_i) while incurring minimal costs. Talk, in other words, is literally cheap. Nonetheless, even this form of collaboration is less likely than not. More substantial forms of collaboration generally see costs rising faster than benefits and are at best quite unlikely. Interestingly enough, in Case 1, there is a nontrivial possibility that an agreement could be reached to engage in both operational collaboration scenarios, but the collaboration fails at stage 3, since B has incentives not to perform.[9] In Case 2, although A might have some incentive for engaging in all collaboration scenarios, B only has an incentive to collaborate rhetorically.

Since the parties are playing a sequential game, it might still be instructive to reverse the roles of the actors, essentially allowing the party that previously played second to now play first. The only inequality that is affected is (3), since the first two inequalities are symmetric, and the results of examining this for both cases, together with revised estimates for collaboration, are listed in Tables AVI and AVII. Here, the results are more interesting, in that, for Case 1 (Table AVI), when al-Qa'ida plays first (i.e., makes the initial offer and performs before the right-wing group), the right-wing organization is much more likely to perform on any agreements than previously. This increases the likelihood that operational collaboration (whether provision of access/materiel or an actual

[6] A similar set of justifications could be (but was not) constructed for Case 2, since the purpose here is illustrative, rather than prescriptive. It suffices to note that such justifications would take into account the doctrinal and operational features of large left-wing groups and of smaller jihadist cells. Obviously, if this schema were to be operationalized in an intelligence context, significant effort should be put into estimating the value placed by a particular organization on the various components of utility, although that is beyond the scope of this article.

[7] In the absence of any reason to assume otherwise, we assume that at least 95% of the probability of the inequality being positive is uniformly distributed between the upper and lower bound provided.

[8] For easily discernible reasons, the calculations for the values of X2 and C1 – C2 were somewhat more complex, requiring an array of calculations to obtain the global maximum and minimum values for these variables under each scenario.

[9] While not wanting to accord too much fidelity to a simple numerical illustration, it is noteworthy that the operational collaboration scenario (scenario 4) involving assistance with an attack (though not joint participation) comes fairly close to being a viable collaboration.

joint attack) might occur, making this type of collaboration still less likely than not, but certainly feasible. The prospects for collaboration in Case 2 (Table AVII) do not change when the Marxist (more prominent) group goes first, because it still has little incentive to enter into an agreement with an Islamist cell.

2.3. Investigating Game 2: Simultaneous Performance

We now turn to a somewhat more complex version of the game in which the two parties still must reach an agreement on collaboration, but when time comes for them to act on this agreement, they are unaware of whether the other party will or will not perform. While there are a variety of circumstances in which such a situation might occur, it is straightforward to think of this in terms of both parties having to perform simultaneously, although the game is still conducted under perfect information. The new game is shown in Fig. 2.

Similarly to Game 1, we can specify payoffs for the utility labels above, as follows:

Stage 1:	$U_1 = 0$
Stage 2:	$U_2 = -F_A - O_A$
	$u_2 = 0$
Stage 3:	$U_{3,1} = VCap_A + E_A + R_A + L_A - F_A - (X_{1A} + X_{2A}) - O_A - C_{1A} - P_A - D_A$
	$u_{3,1} = VCap_B + E_B + R_B + L_B - F_B - (X_{1B} + X_{2B}) - O_B - C_{1B} - P_B - D_B$
	$U_{3,2} = -F_A - (X_{1A} + X_{2A}) - O_A - C_{2A} - P_A - D_A$
	$u_{3,2} = VCap_B + L_B - F_B - X_{1B} - O_B - C_{2B}$
	$U_{3,3} = VCap_A + L_A - F_A - X_{1A} - O_A - C_{2A}$
	$u_{3,3} = -F_B - (X_{1B} + X_{2B}) - O_B - C_{2B} - P_B - D_B$
	$U_{3,4} = -F_A - X_{1A} - O_A$
	$u_{3,4} = -F_B - X_{1B} - O_B$

Most of the above utilities are logically derived from the model structure and variable definitions in the same manner as the previous game, including the new payoffs that occur when one party performs and the other does not.

Solving this game involves searching for equilibriums. In this model, we are looking in particular for subgame perfect Nash equilibriums, which are in essence strategy profiles with the property that in no subgame can any player increase her payoff by choosing a different strategy, given the other player's strategies. The game has three subgames: the whole game, the game in which the players engage after player A chooses to propose, and the game in which the players engage after player B chooses accept. We solve for subgame perfect Nash equilibriums by first solving a simultaneous-move game in stage 3, and then using backward induction for decisions in stages 1 and 2. Proposition 1 below summarizes the result (proofs are omitted for spacing reasons but are available upon request).

Proposition 1. *There are three forms of subgame perfect Nash equilibrium for the simultaneous game specified in Fig. 2: (a) ((propose, perform), (accept, perform)), ((~propose, ~perform), (reject, ~perform)) when the following four conditions are satisfied:*

(1) $U_{3,1} > U_{3,3}$.
(2) $U_{3,1} \geq U_1$.
(3) $u_{3,1} \geq u_2$.
(4) $u_{3,1} > u_{3,2}$.

(b) ((~propose, ~perform), (reject, ~perform)) when ($U_{3,1} < U_{3,3}$ *and* $u_{3,1} < u_{3,2}$) *or* ($U_{3,1} > U_{3,3}$ *and* $u_{3,1} < u_{3,2}$), *or* ($U_{3,1} < U_{3,3}$ *and* $u_{3,1} > u_{3,2}$); *and (c) ((~propose, perform), (reject, perform)), ((~propose, ~perform), (reject, ~perform)) when* ($U_{3,1} > U_{3,3}$ *and* $u_{3,1} > u_{3,2}$, *and* $u_2 > u_{3,1}$), *or* ($U_{3,1} > U_{3,3}$ and $u_{3,1} > u_{3,2}$, and $u_2 \leq u_{3,1}$ and $U_1 > U_{3,1}$).

Remarks: Among the three possible subgame perfect Nash equilibriums, Case (a) is the only nontrivial one (where A actually proposes and B wants to accept; i.e., Case (a) in Proposition 1 occurs where inequalities (1)–(4) hold. These conditions in fact enable an equilibrium in which not only do both players reach an agreement, but they both choose to perform as well. On the other hand, we note that (propose, ~perform), (accept, ~perform) is never a possible equilibrium, due to sequential rationality.

2.3.1. Numerical Illustration: Simultaneous Performance

Following the above discussion, the four conditions for a pure strategy subgame perfect Nash equilibrium in which both parties perform can be written in terms of the utility components as follows:

(1a) $E_A + R_A - X_{2A} - P_A - D_A - (C_{1A} - C_{2A}) \geq 0$.
(2a) $VCap_A + E_A + R_A + L_A - F_A - (X_{1A} + X_{2A}) - O_A - C_{1A} - P_A - D_A \geq 0$.
(3a) $VCap_B + E_B + R_B + L_B - F_B - (X_{1B} + X_{2B}) - O_B - C_{1B} - P_B - D_B \geq 0$.
(4a) $E_B + R_B - X_{2B} - P_B - D_B - (C_{1B} - C_{2B}) \geq 0$.

Note that these are almost the identical conditions to the case in the sequential version of the game, with the additional inequality criterion applied to player A ((1a) above). This simplifies the calculation of the pure strategy equilibrium situation, and the results when applied to the same set of actor cases and scenarios investigated above are summarized in Table AVIII.[10] Interestingly, the addition of an extra condition does not substantively change the results for three of the four cases, where the prospects for all types of collaboration remain roughly the same. However, in the case where the right-wing group plays first in a game with al-Qa'ida, under the second logistical scenario and both operational scenarios, collaboration becomes much less likely than when the sequential game is played.

3. DISCUSSION AND VALIDATION

Despite the inherent limitations of reducing a complex set of interactions to a straightforward bargaining model, the models described above formally confirm many of the hypotheses suggested by the broader theoretical literature on collaboration and provide several additional insights. First of all, much of the decision whether to enter into a collaborative agreement with terrorists representing another ideology hinges on whether the overall benefits exceed the overall costs, as predicted by several theorists and rational choice more generally. Perhaps more interesting is the additional criterion that the value of the psychological and reputational benefits exceeds the subjective estimation of the security risks that come into play from actually collaborating, some element of the risk of ideological contamination, the risk of losing proprietary information, and the actual material costs of collaborating. In essence, the gains in capability and learning from collaborating, together with the security risks from entering into an agreement, internal opposition, and the costs of interacting play less of a role in the decision to collaborate, provided that the overall benefits exceed the costs for each party. Besides the necessity for this third criterion to apply in the case of both parties rather than just for the second player, there is no substantive difference whether the game is played sequentially or whether there is uncertainty about whether the other party has performed (equivalent to simultaneous performance). This suggests that the prospect of nonmaterial gains (amplification of terror and reputational boost) plays at least as important a role in the decision to collaborate as potential increases in capabilities do. Similarly, under this type of strategic game, expectations of internal opposition and transaction costs are comparatively less likely, *ceteris paribus*, to have as much influence on the ultimate decision as the other potential costs.

It is also interesting to discuss the difference between simultaneous and sequential games, by focusing on the equilibrium solution where cooperation happens. From B's point of view, the two games are the same since B sees that A cooperates in the sequential game while B knows that A cooperates in the simultaneous game due to the Nash equilibrium concept. However, from A's point of view, the two games may not be the same; e.g., a deviation to "not perform" in the sequential game will be observed by B, who would respond accordingly. It is therefore easier to get A to cooperate (perform) in the sequential game than to induce B to perform.

Numerical illustration of the model using realistic parameters over a range of actors and collaboration scenarios confirms that cross-milieu collaboration should be a rare occurrence, but is nonetheless feasible under certain circumstances. Unsurprisingly, it emerged that "talk is cheap," i.e., that mutual rhetorical support is by far the most likely type of collaboration. However, prospects for successful collaboration over most scenarios (including operational) increase when a large, effective Islamist terrorist organization initiates collaboration with a smaller right-wing group, as compared with the case when the right-wing group is the initiator. Perhaps surprisingly, the results are similar across most cases and scenarios in the simultaneous game.

When it comes to empirical validation of these findings, it is difficult to test the model itself directly in the absence of specific information on the preferences and utilities of particular actors, information that is rarely available from open sources. Nonetheless, certain of the implications of the model equilibriums and some of the predictions arising from numerical simulation of the model are more easily examined. Yet, even in this case, the collection of relevant data is complicated by several factors. First, many entities in extremist milieus, especially those engaging in violence, might be

[10]Note that we still need to consider the alternative versions of Cases 1 and 2 above because even though A and B now perform simultaneously, one of the parties still has to make the initial proposal and which party does this may be consequential.

expected to have an interest in keeping their acts of collaboration, especially with those of a different ideological stripe, a secret, which could undercount such collaborations in a database based only on unclassified sources. Second, by the very nature of the interaction, rhetorical support taking place in readily available public forums is in general more likely to be observed than more clandestine activities like the provision of weapons, thus tending to undercount the more logistic and operational types of collaboration. These special circumstances are in addition to the perennial limitations of open-source research, which tends to bias more recent (and thus electronically available) information and information from those parts of the world that receive the most robust media attention. It is little wonder, then, that the majority of scholarship on this topic has relied on qualitative case studies, which, while useful for confirming the feasibility and possible dynamics of cross-milieu cooperation described above, are less useful when it comes to testing model predictions.

Appreciating the above-mentioned limitations, one of the authors and colleagues was nevertheless able to assemble a data set of collaboration activity involving Islamists and either right-wing or left-wing extremists. Drawing entirely on open sources, researchers conducted exhaustive searches for cases of both collaboration and outreach (i.e., where one party attempted to reach out collaboratively to the other but there is no evidence of reciprocation). This allowed for an investigation of what might have led to the success or failure of collaborative efforts in this context. In addition, given the extremely small number of recorded collaborations between violent extremist organizations, the data collection also included collaborative activities of nominally nonviolent extremists. Aside from the obvious lack of expectation of joint attack operations by the latter types of actors, they were felt to be reasonable representations of cross-milieu behavior, especially given the often close ties between purportedly nonviolent extremists and their violence-embracing kin.

Only those variables and findings that are relevant to testing the model are described here. Researchers coded each case for each party involved (with variables for ideological milieu and type of actor) as well as any interaction activity (with variables for who initiated the collaboration, when and where this took place) and the outcome of the interaction. The last-named grouping of variables is particularly important for our purposes, as it records the result of the collaboration efforts as follows: (1) outreach by one group, meaning one-sided with no known indication of reciprocal action; (2) attempted cooperation by both groups that was not successful; and (3) successful two-sided cooperation. Also, in this category is the nature of collaboration, which includes similar types of activity (from rhetorical support to joint operations) discussed above, with the addition of the category of "Joint Political Mobilization," since the data set included the activities of nonviolent as well as violent extremist actors.[11] Overall, the data capture 61 distinct cases of proposed or attempted collaboration between extremists (involving either far right and Islamist, or far left and Islamist actors).

With respect to the results, Table AIX provides a basic summary of the data for ideological milieu and type of entity, Table AX presents a cross-tabulation of the type of initiating organization and the outcome, and Fig. 3 depicts the collaboration activities engaged in.

First, available data confirm the model's conclusions that cross-milieu collaboration is a rare phenomenon, but is nonetheless feasible. Only 20 (33%) of the recorded cases in our data set actually resulted in some form of observed collaboration. As noted previously, unsuccessful attempts are almost certainly underrepresented in this sample. We can look to other data sets to get a sense of how scarce cross-milieu collaboration is compared with extremist activity as a whole. We draw initially on the big allied and dangerous database (BAAD),[43] which contains organizational information on 395 terrorist organizations active between 1998 and 2005. During this period, the BAAD data set records a total of 107 active organizations that could be described as far left, 14 far right, and 108 Islamist terrorist organizations, and our own data set on cross-milieu extremist collaboration records 15 total left-wing Islamist collaboration efforts and 25 total right-wing Islamist collaboration efforts. Taking all possible Islamist far left and Islamist far right collaborative dyads, one therefore finds that actual cases of collaboration in our data set constitute only a tiny fraction (0.13% for Islamist far left and 1.65% for Islamist far right). Even this is an upper bound, since in our data set many of the actual interactions were not reciprocated by the second party and, even where

[11] Owing to limitations on space, only the variables relevant to the current discussion are described here. A full specification of variables, definition, and criteria, together with additional details of the data collection and coding procedures is available elsewhere.[6]

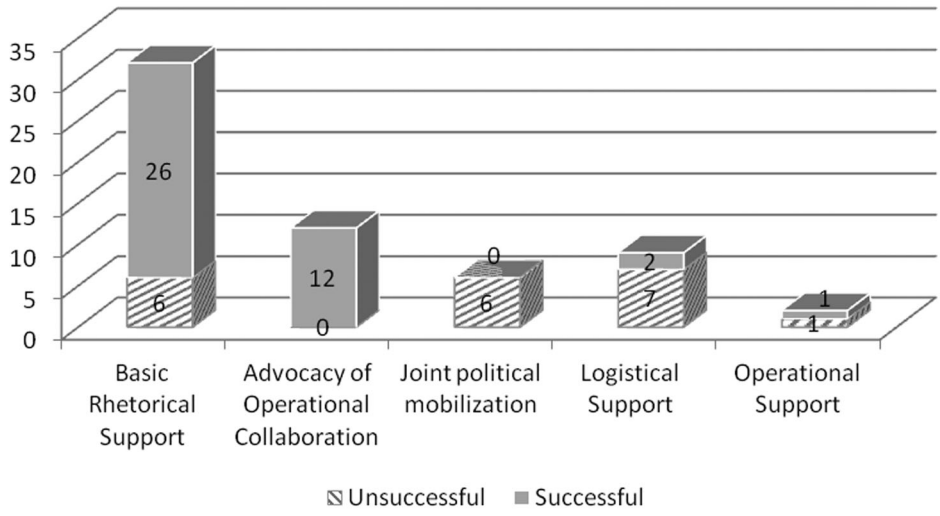

Fig. 3. Frequency of collaboration by type.

collaboration occurred, many of the actors involved did not fall under the category of active terrorists, or even violent extremists.

Second, when considering the type of collaboration, Fig. 3 shows that, as predicted by the model (and conventional wisdom), rhetorical support (basic rhetorical support plus advocacy of operational support), which can provide benefits with minimal costs, is the most common form of collaboration attempted (44 cases). Public statements offering rhetorical support or urging collaboration are among the lower risk options for reaching out across milieus, although there are potential reputation and audience costs. They serve as a way of signaling to prospective partners an interest in cooperation, especially when few direct ties exist. As noted earlier though, these statements may be overreported in this sample because of their overt nature, which can be readily observed and reported in open-source forums. Those forms of collaboration of most immediate concern to security agencies (logistic and operational) are relatively rare, even in the attempt, with a total of 11 cases (18%), while actual operational collaboration in attack activities appears to be the least common (2 cases overall, representing a paltry 3.3% of all cases). Interestingly, in cases where collaboration efforts were successful, the most common form was logistic support, with 35% of cases, while only one successful case of operational collaboration was recorded. The paucity of operational collaboration is further confirmed by examining the Global Terrorism Database from 1970 through 2009,[57] which includes 81,799 terrorist attacks, of which only 21 (0.03%) involved a group with an Islamic-based ideology teaming up with either a left-wing or right-wing group (i.e., operational collaboration, since this data set only includes actual attacks). Of these, only a single case (the attack by Hizballah in Argentina involving right-wing Argentinean elements) involved actors of different ethnicities or actors collaborating across national borders. The remaining cases primarily involved different Palestinian factions collaborating against Israel or joint operations by the Marxist New People's Army and the Islamist Moro Islamic Liberation Front in the Philippines.

Third, from Table AX, we see that far-right extremists are the most likely to initiate collaboration attempts, but Islamists appear to enjoy the greatest rate of success. Left-wing initiators in the Western world have had no success historically. Of the relatively large number of far-right attempts to collaborate with Islamists (28), only four were successful, thus providing partial support for the prediction of multiple attempts at collaboration from the right wing, but a relatively low proportion of overall successes (just over 14%). When the large, well-resourced Islamist group played first in the simulation and approached far-right extremists, collaboration—including of the operational kind—became more likely than in the reciprocal case when the right-wingers initiated the interaction. The data reveal that in five of eight cases where Islamists

initiated an interaction with right-wing extremists, an act of cooperation occurred. Of these five cases, one involved rhetorical support, three involved logistical support, and one involved operational support.

Thus, although the small number of cases and data collection complications limit the generalizability of these results and they are therefore only suggestive, initial indications are that several of the preliminary results obtained by even descriptive analysis of the historical record lend credence to the model by concurring with certain of its predictions. In addition, the empirical data do not contradict any of the model factors or reveal any additional factors beyond those contained in the model. All of this suggests that the model, which was constructed based on the theoretical literature, is plausible as a description of the dynamics of cross-milieu collaboration. Further refinement and analysis of the model thus holds the prospect of revealing new insights about the phenomenon and is a task for future research.

4. CONCLUSION

Given a rare and somewhat nebulous potential threat, this article has shown how a relatively straightforward game theory model of bargaining can explore the dynamics of the threat, including how various theoretical factors might act and interact to influence the actors' decisions. By considering both sequential and simultaneous performance in the game, the resolution of the model equilibriums revealed a number of structural elements of the terrorist decision to collaborate across ideological milieus. Recognizing that obtaining open-source information on many of the preference variables in the model for real-world extremist groups would prove difficult, if not impossible, the following step involved substituting plausible values for these variables in numerical simulations under various scenarios of collaboration involving different types of partners. The results of these simulations provided testable hypotheses that are at least provisionally supported by the available evidence.

From a risk assessment perspective, the model presented here suggests that cross-milieu terrorist collaboration, while likely to be rare, carries a non-negligible probability of occurrence. So, despite the considerable hype that has accompanied the topic in popular discourse, a degree of genuine threat exists from this quarter. This suggests that, while the risk—at least at this stage—probably does not require the devotion of substantial government resources or dedicated programs to counter it, it cannot be ignored either. In this regard, the game-theoretic approach, when married with a simulation of actual groups, provides guidance on which actors are most likely to initiate a collaboration and under what circumstances such an unholy alliance of violent actors is likely to succeed.

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APPENDIX A: NUMERICAL ILLUSTRATION TABLES

Table AII. Case 1: A = Right-Wing Organization of Medium Size and Sophistication; B = al-Qa'ida[a]

Type of Collaboration	**Rhetorical**		**Logistical 1**		**Logistical 2**		**Operational 1**		**Operational 2**	
Party	A	B	A	B	A	B	A	B	A	B
Contribution of Party	Lauds B / link to website	Endorses A / link to website	Safe house	Training	Secure comms	Money	Access to target	Specialized weapons / personnel	Personnel	Personnel
Benefits										
$VCap_i$	None	None	Small-Medium	Medium	Medium	Small-Medium	Large	Medium-Large	Large	Medium-Large
E_i	Medium	Medium	Medium	Small	Small	None	Large	Large	Large	Large
R_i	Medium-Large	None	Medium-Large	None-Small	Medium	None	Large	Small	Large	None
L_i	None	None	Medium-Large	Small-Medium	Small	Small-Medium	Large	Medium-Large	Large	Medium-Large
Costs										
X_{1i}	Small	None	Medium	None	Medium	None	Medium-Large	None-Small	Medium-Large	None
$X_{1i}+X_{2i}$	Medium-Large	None	Medium-Large	Medium	Medium	Small-Medium	Large	Medium-Large	Large	Medium-Large
X_{2i}	Small-Medium	None	None-Small	Medium	None	Small-Medium	None-Small	Medium	None-Small	Medium-Large
O_i[b]	None-Medium	None-Medium	Small-Large	Small-Large	None-Large	None-Large	Small-Large	Small-Large	Small-Large	Small-Large
C_{1i}	Small-Medium	Small-Medium	Medium-Large	Medium-Large	Small	Small	Medium	Medium	Medium-Large	Medium-Large
C_{2i}	None-Medium	None-Medium	Medium-Large	Medium-Large	None-Small	None-Small	Small-Medium	Small-Medium	None	None
$C_{1i} - C_{2i}$	None-Small	None-Small	None	None	None-Small	None-Small	None-Small	None-Small	Medium-Large	Medium-Large
P_i	None	None	Small	Medium	Small-Large	None-Small	None-Large	Small-Large	None-Medium	Small-Large
F_i	None	None	Small-Medium	Small	Small-Medium	Small	Medium	Small	Medium	Small
D_i	None	None	None	Small-Medium	Small	Small-Medium	None-Small	Medium	Medium-Large	Small-Medium

[a]See the Appendix B for an illustrative justification of several of the variable estimates in this table (E_i, R_i, L_i, and O_i). The remainder of the variables can be similarly justified, but constraints on space preclude a comprehensive exposition. Nonetheless, all estimates reflect the authors' extensive knowledge of the organizational attributes of the groups and milieus presented.

[b]The opposition variable will range widely according to the particular ideology, dynamics, and structure of the group. Therefore, the bounds of this variable will tend to be relatively wide under numerical estimation.

Table AIII. Case 1 Calculations

Type of Collaboration		Rhetorical	Logistical 1	Logistical 2	Operational 1	Operational 1
Party		A	A	A	A	A
Contribution of party		Lauds B/link to website	Safe house	Secure comms	Access to target	Attack personnel
Inequality (1)	Upper bound	5 – 3 = 2	10 – 7 = 3	6 – 6 = 0	12 – 8 = 4	12 – 10 = 2
	Lower bound	4 – 7 = –3	7 – 12 = –5	6 – 12 = –6	12 – 14 = –2	12 – 16 = –4
	Average	4.5 – 5 = –.5	8.5 – 9.5 = –1	6 – 9 = –3	12 – 11 = 1	12 – 13 = –1
Qualitative estimation		Possible, but a little more unlikely than likely	Possible, but fairly unlikely on average	Quite unlikely	Fairly likely	Possible, but a little more unlikely than likely
Party		B	B	B	B	B
Contribution of party		Endorses A/link to website	Training	Money	Specialized weapons/personnel	Attack personnel
Inequality (2)	Upper bound	2 – 1 = 1	6 – 9 = –3	4 – 4 = 0	10 – 9 = 1	9 – 8 = 1
	Lower bound	2 – 4 = –2	4 – 13 = –9	2 – 10 = –8	8 – 14 = –6	7 – 15 = –8
	Average	2 – 2.5 = –0.5	5 – 11 = –6	3 – 7 = –4	9 – 11.5 = –2.5	8 – 11.5 = –3.5
Qualitative estimation		Possible, but a little more unlikely than likely	Very unlikely (even if all the costs are at the lower end of the scale, still don't equal benefits on algebraic illustration)	Quite unlikely (only if all the costs are at min and benefits at max, does one get equal)	Less likely than not, but possible	Less likely than not, but possible
Party		B	B	B	B	B
Contribution of party		Endorses A/link to website	Training	Money	Specialized weapons/personnel	Attack personnel
Inequality (3)	Upper bound	2 – 0 = 2	2 – 5 = –3	0 – 2 = –2	4 – 4 = 0	3 – 6 = –3
	Lower bound	2 – 2 = 0	1 –7 = –6	0 – 6 = –6	4 – 9 = –5	3 – 11 = –8
	Average	2 – 1 = 1	1.5 – 6 = –4.5	0 – 4 = –4	4 – 6.5 = –2.5	3 – 8.5 = –5.5
Qualitative estimation		Very likely	Very unlikely	Very unlikely	Unlikely	Very unlikely
Estimated likelihood of successful collaboration [(1), (2) and (3) hold]		Possible, but a little more unlikely than likely	Very unlikely	Very unlikely	Unlikely (but close)	Very unlikely

Table AIV. Case 2: A = Islamist Cell Consisting of a Small Number of Radicalized Youth in the West (Such as the 2005 British Subway Bombers); B = Well-Established Marxist Group (Such as FARC)[a]

Type of Collaboration	Rhetorical		Logistical 1		Logistical 2		Operational 1		Operational 2	
Party (utility)	A	B	A	B	A	B	A	B	A	B
Contribution of Party	Lauds B / link to website	Endorses A / link to website	Safe house	Training	Secure comms	Money	Access to target	Specialized weapons / personnel	Personnel	Personnel
$\mathbf{VCap_i}$	None-Small	Small	Medium-Large	Small	Medium-Large	Small-Medium	Large	Medium-Large	Large	Small
$\mathbf{E_i}$	Medium	Small-Medium	Medium-Large	Small	Medium	Small-Medium	Medium-Large	Medium	Large	Medium
$\mathbf{R_i}$	Small-Medium	Small-Medium	Small-Medium	None-Small	Medium	None-Small	Medium	None	Medium-Large	None
$\mathbf{L_i}$	None	None	Large	Small-Medium	Small	Medium	Large	Medium	Large	Small-Medium
$\mathbf{X_{1i}}$	Small	None	Small-Medium	Small-Medium	Small-Medium	Small-Medium	Medium-Large	Medium-Large	Large	Large
$\mathbf{X_{1i}+X_{2i}}$	Medium	None-Small	Medium-Large	Medium	Medium-Large	Large	Large	Large	Large	Large
$\mathbf{X_{2i}}$	Small	None-Small	Small	None-Small	Small	Small-Medium	None-Small	None-Small	None	None
$\mathbf{O_i}$[b]	Small-Medium	Small-Medium	Small-Large	Small-Large	None-Medium	Small-Large	Small-Large	Small-Large	Small-Large	Small-Large
$\mathbf{C1_i}$	Small-Medium	None	Medium-Large	None-Small	Small	None	Small-Large	None-Small	Medium-Large	Small-Medium
$\mathbf{C2_i}$	None-Medium	None	Small-Medium	None-Small	None-Small	None	Small-Large	None-Small	None	None
$\mathbf{C_{1i} - C_{2i}}$	None-Small	None	Small	None	None-Small	None	None	None	Medium-Large	Small-Medium
$\mathbf{P_i}$	None	None	Small-Large	None-Medium	Small-Large	Small-Medium	Small-Large	Small-Large	Small-Large	Small-Large
$\mathbf{F_i}$	None-Medium	None-Small	Small-Large	Small	Medium	Small-Medium	Medium	Small-Medium	Medium	Small-Medium
$\mathbf{D_i}$	None	None	Small	Small-Medium	Small-Medium	Small-Large	Small-Medium	Medium-Large	Medium-Large	Small-medium

[a]See the Appendix B for justification for the estimates in this table.
[b]The opposition variable will range widely according to the particular ideology, dynamics, and structure of the group. Therefore, the bounds of this variable are wide.

Table AV. Case 2 Calculations

Type of Collaboration		Rhetorical	Logistical 1	Logistical 2	Operational 1	Operational 1
Party		A	A	A	A	A
Contribution of party		Lauds B/link to website	Safe house	Secure comms	Access to target	Attack personnel
Inequality (1)	Upper bound	5 – 4 = 1	11 – 8 = 3	8 – 7 = 1	11 – 9 = 2	12 – 11 = 1
	Lower bound	3 – 8 = –5	8 – 16 = –8	7 – 13 = –6	10 – 16 = –6	11 – 17 = –6
	Average	4 – 6 = –2	9.5 – 12 = –2.5	7.5 – 10 = –2.5	10.5 – 12.5 = –2	11.5 – 14 = –2.5
Qualitative estimation		Less likely than not, but possible	Little bit more unlikely than likely; close to 50/50	Less likely than not, but possible	Less likely than not, but possible	Less likely than not but possible
Party		B	B	B	B	B
Contribution of party		Endorses A/link to website	Training	Money	Specialized weapons/personnel	Attack personnel
Inequality (2)	Upper bound	5 – 1 = 4	5 – 5 = 0	7 – 7 = 0	7 – 8 = –1	5 – 8 = –3
	Lower bound	3 – 4 = –1	3 – 11 = –8	4 – 13 = –9	6 – 15 = –9	4 – 15 = –11
	Average	4 – 2.5 = 1.5	4 – 8 = –4	5.5 – 10 = –4.5	6.5 – 11.5 = –5	4.5 – 11.5 = –7
Qualitative estimation		Little more likely than not	Quite unlikely	Quite unlikely	Very unlikely	Very unlikely
Party		B	B	B	B	B
Contribution of party		Endorses A/link to website	Training	Money	Specialized weapons/personnel	Attack personnel
Inequality (3)	Upper bound	4 – 0 = 4	2 – 1 = 1	3 – 3 = 0	2 – 3 = –1	2 – 3 = –1
	Lower bound	2 – 1 = 1	1 – 6 = –5	1 – 7 = –6	2 – 8 = –6	2 – 7 = –5
	Average	3 – 0.5 = 2.5	1.5 – 3.5 = –2	2 – 5 = –3	2 – 5.5 = –3.5	2 – 5 = –3
Qualitative estimation		Very likely	Possible but more unlikely than likely	Quite unlikely	Quite unlikely	Quite unlikely
Estimated likelihood of successful collaboration [(1), (2) and (3) hold]		Little less likely than not, but possible.	Quite unlikely	Quite unlikely	Very unlikely	Very unlikely

Table AVI. Case 1 (Reversed Ordering): A = al-Qa'ida; B = Right-Wing Organization of Medium Size and Sophistication

Type of Collaboration		Rhetorical	Logistical 1	Logistical 2	Operational 1	Operational 1
Party		B	B	B	B	B
Contribution of party		Lauds A/link to website	Safe house	Secure comms	Access to target	Attack personnel
Inequality (1): qualitative estimation (from Table AIII)		Possible, but a little more unlikely than likely	Possible, but fairly unlikely on average	Quite unlikely	Fairly likely	Possible, but a little more unlikely than likely
Party		A	A	A	A	A
Contribution of party		Endorses B/link to website	Training	Money	Specialized weapons/personnel	Attack personnel
Inequality (2): qualitative estimation (from Table AIII)		Possible, but a little more unlikely than likely	Very unlikely (even if all the costs at the lower end of the scale, still don't equal benefits on algebraic sum)	Quite unlikely (only if all the costs at min and benefits at max, does one get equal)	Less likely than not, but possible	Less likely than not, but possible
Party		B	B	B	B	B
Contribution of party		Lauds A/link to website	Safe house	Secure comms	Access to target	Attack personnel
Inequality (3)	Upper bound	5 – 1 = 4	5 – 1 = 4	3 – 2 = 1	6 – 0 = 6	6 – 4 = 2
	Lower bound	4 – 4 = 0	4 – 3 = 1	3 – 5 = –2	6 – 6 = 0	6 – 9 = –3
	Average	4.5 – 2.5 = 2	4.5 – 2 = 2.5	3 – 3.5 = –0.5	6 – 3 = 3	6 – 6.5 = –0.5
Qualitative estimation		Very likely	Very likely	Possible but less likely than not	Very likely	Possible but less likely than not
Estimated likelihood of successful collaboration [(1), (2) and (3) hold]		Possible, but a little more unlikely than likely	Very unlikely	Quite unlikely	Possible, a little less likely than not	Possible, a little less likely than not

Table AVII. Case 2 (Reversed Ordering): A = Well-Established Marxist Group (Such as FARC); B = Islamist Cell Consisting of a Small Number of Radicalized Youth in the West (Such as the 2005 British Subway Bombers)

Type of Collaboration		Rhetorical	Logistical 1	Logistical 2	Operational 1	Operational 1
Party		B	B	B	B	B
Contribution of party		Lauds A/link to website	Safe house	Secure comms	Access to target	Attack personnel
Inequality (1): qualitative estimation (from Table AV)		Less likely than not, but possible	Little bit more unlikely than likely; close to 50/50	Less likely than not, but possible	Less likely than not, but possible	Less likely than not but possible
Party		A	A	A	A	A
Contribution of party		Endorses B/link to website	Training	Money	Specialized weapons/personnel	Attack personnel
Inequality (2): qualitative estimation (from Table AV)		Little more likely than not	Quite unlikely	Quite unlikely	Very unlikely	Very unlikely
Party		B	B	B	B	B
Contribution of party		Lauds A/link to website	Safe house	Secure comms	Access to target	Attack personnel
Inequality (3)	Upper bound	4 – 1 = 3	5 – 2 = 3	4 – 2 = 2	5 – 2 = 3	6 – 5 = 1
	Lower bound	3 – 3 = 0	3 – 8 = –5	4 – 8 = –4	4 – 8 = –4	5 – 9 = –4
	Average	3.5 – 2 = 1.5	4 – 5 = –1	4 – 5 = –1	4.5 – 5 = –0.5	5.5 – 7 = –1.5
Qualitative estimation		Very likely	Possible but less likely than not	Possible but less likely than not	Possible but less likely than not	Possible but less likely than not
Estimated likelihood of successful collaboration [(1), (2) and (3) hold]		Little less likely than not, but certainly possible	Quite unlikely	Quite unlikely	Very unlikely	Very unlikely

Table AVIII. Results of Calculation of Additional Criterion to Assess Simultaneous Game—All Cases

Case 1a						
Party		A	A	A	A	A
Contribution of party		Lauds B/link to website	Safe house	Secure comms	Access to target	Attack personnel
Inequality (4)	Upper bound	5 – 1 = 4	5 – 1 = 4	3 – 2 = 1	6 – 0 = 6	6 – 4 = 2
	Lower bound	4 – 4 = 0	4 – 3 = 1	3 – 5 = –2	6 – 6 = 0	6 – 9 = –3
	Average	4.5 – 2.5 = 2	4.5 – 2 = 2.5	3 – 3.5 = –0.5	6 – 3 = 3	6 – 6.5 = –0.5
Qualitative estimation		Very likely	Very likely	Possible, but a little more unlikely than likely	Very likely	Possible, but a little more unlikely than likely
Estimated likelihood of successful collaboration [(1), (2), (3), and (4) hold]		Possible, but a little more unlikely than likely	Very unlikely	Very unlikely	Unlikely (but close)	Very unlikely
Case 2a						
Party		A	A	A	A	A
Contribution of party		Lauds B/link to website	Safe house	Secure comms	Access to target	Attack personnel
Inequality (4)	Upper bound	4 – 1 = 3	5 – 2 = 3	4 – 2 = 2	5 – 2 = 3	6 – 5 = 1
	Lower bound	3 – 3 = 0	3 – 8 = –5	4 – 8 = –4	4 – 8 = –4	5 – 9 = –4
	Average	3.5 – 2 = 1.5	4 – 5 = –1	4 – 5 = –1	4.5 – 5 = –0.5	5.5 – 7 = –1.5
Qualitative estimation		Very likely	Possible but more unlikely than likely	Possible but more unlikely than likely	Possible but more unlikely than likely	Possible but more unlikely than likely
Estimated likelihood of successful collaboration [(1), (2), (3), and (4) hold]		Little less likely than not, but possible	Quite unlikely	Quite unlikely	Very unlikely	Very unlikely

(*Continued*)

Table AVIII (Continued)

Case 1a						
Party		A	A	A	A	A
Case 1b						
Party		A	A	A	A	A
Contribution of party		Endorses B/link to website	Training	Money	Specialized weapons/personnel	Attack personnel
Inequality (4)	Upper bound	2 – 0 = 2	2 – 5 = –3	0 – 2 = –2	4 – 4 = 0	3 – 6 = –3
	Lower bound	2 – 2 = 0	1 –7 = –6	0 – 6 = –6	4 – 9 = –5	3 – 11 = –8
	Average	2 – 1 = 1	1.5 – 6 = –4.5	0 – 4 = –4	4 – 6.5 = –2.5	3 – 8.5 = –5.5
Qualitative estimation		Very likely	Very unlikely	Very unlikely	Quite unlikely	Very unlikely
Estimated likelihood of successful collaboration [(1), (2), (3), and (4) hold]		Possible, but a little more unlikely than likely	Very unlikely	Very unlikely	Quite unlikely (but close)	Very unlikely
Case 2b						
Party		A	A	A	A	A
Contribution of party		Endorses B/link to website	Training	Money	Specialized weapons/personnel	Attack personnel
Inequality (4)	Upper bound	4 – 0 = 4	2 – 1 = 1	3 – 3 = 0	2 – 3 = –1	2 – 3 = –1
	Lower bound	2 – 1 = 1	1 – 6 = –5	1 – 7 = –6	2 – 8 = –6	2 – 7 = –5
	Average	3 – 0.5 = 2.5	1.5 – 3.5 = –2	2 – 5 = –3	2 – 5.5 = –3.5	2 – 5 = –3
Qualitative estimation		Very likely	Possible but more unlikely than likely	Quite unlikely	Quite unlikely	Quite unlikely
Estimated likelihood of successful collaboration [(1), (2), (3), and (4) hold]		Little less likely than not, but certainly possible	Quite unlikely	Quite unlikely	Very unlikely	Very unlikely

Table AIX. Ideological Milieu and Type of Entity

Variable	Value	Proportion
All cases; n = *61 (successful collaboration;* n = *20)*	Islamist	50% (40%)
	Far right	36% (35%)
	Far left	16% (25%)
Type of entity; n = *61 (successful collaboration;* n = *20)*	Radical academic organization	14% (23%)
	Nonviolent extremist group	41% (63%)
	Violent extremist group	42% (25%)
	Unknown	3% (0%)

Table AX. Initiator Ideology and Collaboration Outcome

		Outcome of Collaboration			
		Outreach (One-Sided)	Attempted Collaboration (Unsuccessful)	Act of Collaboration (Two-Sided)	Total
Initiator ideology	Right wing	24	0	4	28 (46%)
	Left wing	8	0	0	8 (13%)
	Islamist	6	2	7	15 (25%)
	N/A (nine cases of mutual initiation; one case of third-party convener)	0	1	9	10 (16%)
Total		38 (62%)	3 (5%)	20 (33%)	61 (100%)

Cramer's V = 0.517 and significant to < 0.001.

APPENDIX B: SAMPLE JUSTIFICATIONS FOR NUMERICAL ESTIMATES

Ei: Psychological or Intimidatory Effect

Rhetorical

1. Al-Qa'ida lauding a right-wing organization on its website and providing a link to said right-wing organization's website would likely be valued fairly highly by the right-wing organization. Al-Qa'ida is considered the "most feared and hated terrorist organization,"[44] so an association with al-Qa'ida would increase the right-wing organization's intimidatory effect. The right-wing organization would likely perceive a medium benefit from the extra psychological effect (of being associated with al-Qa'ida) on the right-wing group's enemies.
2. A right-wing group lauding al-Qa'ida on its website and providing a link to al-Qa'ida's website would have some psychological effect on al-Qa'ida's enemies in the West. A potential association with a right-wing organization will increase the fear that al-Qa'ida will have easier access to the West, specifically the United States. Easier access, due to the cooperation with an American group, would mean an increased likelihood of attacks in the United States. While providing a link on a website is not sufficient evidence of an actual collaboration, the mere association is enough to raise fears of an increased al-Qa'ida presence in the United States, which would be somewhat highly valued by al-Qa'ida leaders.

Logistical 1

3. Al-Qa'ida training camps, which graduate thousands of additional volunteers, provide a way to test commitment by way of hardship and sacrifice.[45] Once the right-wing organization's enemies learn that al-Qa'ida was training right-wing organizations, fears of more dedicated, hardline, and capable right-wing

extremists will increase—which would be highly valued by the right-wing organization.

4. The psychological effect of a right-wing organization providing al-Qa'ida with a safe house would likely have a small value placed on it by al-Qa'ida. It is likely that the fact that the right-wing organization is providing al-Qa'ida with a safe house will not be common knowledge and thus not known to al-Qa'ida's enemies. Within al-Qa'ida, it will have psychological effect since al-Qa'ida members will feel it has easier access to the United States. Al-Qa'ida's leaders would perceive a small benefit from the extra psychological effect (of being provided a safe house by a right-wing group) on al-Qa'ida's enemies.

Logistical 2

5. The psychological effect of Al-Qa'ida providing a right-wing organization with money would likely be valued as fairly small by the right-wing organization. At one point, al-Qa'ida had a considerable amount of funds; in 2003, al-Qa'ida–related funds in more than 129 countries amounted to approximately $130 million.[46] However, this is no longer true as many of its assets have been frozen.[47] Providing a right-wing organization with money (which, given al-Qa'ida's current financial situation, would not need to be a large amount) would not necessarily signal to the right-wing group's enemies that al-Qa'ida is involved in the right-wing organization's activities—it can simply be seen as a means to increase the chaos in the United States and thus increase the vulnerability of the United States.
6. A right-wing organization providing secure communications to al-Qa'ida would not provide al-Qa'ida with a greater psychological effect. The United States has been monitoring many al-Qa'ida lines of secure communication,[48] so there is a potential need for different types of secure communication lines. However, if a right-wing organization were to provide al-Qa'ida with this, it is unlikely that this fact would be advertised for others to know. Thus, al-Qa'ida's leadership would not perceive a benefit since there would not be a psychological effect (of being provided secure communications by a right-wing group) on al-Qa'ida's enemies.

Operational 1

7. Al-Qa'ida providing a right-wing organization with specialized weapons and personnel for an attack would likely be regarded by the right-wing organization as boosting its psychological effects considerably. Al-Qa'ida is known for its "deep interest in CBRN weapons"[49] and other sophisticated weapons—thus providing a right-wing organization with specialized weapons and personnel with the technical expertise to operate said weapons would create a much greater intimidatory effect once this became known to the authorities.
8. A right-wing organization providing al-Qa'ida with access to a target through an insider would likely be regarded by al-Qa'ida as having a large and valuable additional psychological effect, once it became known. This is because having easier access to a target in the West would increase al-Qa'ida's ability to successfully complete an attack. The psychological effects of such a collaboration on the targeted government and public are likely to be much greater (and thus hold large value for al-Qa'ida), since trepidation of future similar attacks will increase.

Operational 2

9. Al-Qa'ida providing a right-wing organization with personnel for a difficult, large-scale attack would provide a right-wing organization with substantial additional intimidatory effects and would thus be highly valued by the right-wing organization. This is because fears of an increased spate of attacks in the United States would increase following such an attack. First, al-Qa'ida personnel have a reputation for greater competency and professionalism than most right-wing extremists. If al-Qa'ida were to provide a right-wing organization with personnel, this would increase the likelihood (or the fear of the likelihood) of an attack being carried out to completion. Furthermore, al-Qa'ida is known to use suicide bombers whereas, as of right now, right-wing organizations are not known for utilizing suicide bombers. Al-Qa'ida providing a right-wing organization with personnel would increase fears of suicide attacks within the United States. Past al-Qa'ida recruitment videos suggest that

"suicide attacks will continue to be a primary instrument in al-Qa'ida's war against—and perhaps in—the United States."[50] The Covenant, Sword, and Arm of the Lord, a medium-sized right-wing organization typical of the organization being simulated, did not have as many readily available members as al-Qa'ida does. The total number of members indicted for terrorism in the late 1980s was 22[51]—this gives a rough approximation of the possible size of a current medium-sized group.

10. A right-wing organization providing al-Qa'ida with personnel for a difficult, large-scale attack would provide al-Qa'ida with a large additional intimidatory factor and the organization would thus likely place a very high value on this aspect. The personnel the right-wing organization would be providing to al-Qa'ida would have a greater knowledge of the United States, and be far more capable of blending in to Western society than most al-Qa'ida operatives, thus increasing fears among al-Qa'ida's enemies of higher attack success from similar attacks.

Ri: Reputational Benefit

Rhetorical

1. Al-Qa'ida lauding a right-wing organization on its website and providing a link to said right-wing organization's website would provide the right-wing organization with a substantial reputational benefit and thus likely be valued quite highly by the group. Al-Qa'ida "is considered the top terrorist threat to the United States,"[52] so an association with al-Qa'ida would bolster the reputation of said right-wing organization in a band-wagoning dynamic. The right-wing group's leaders would perceive a medium to large benefit from the extra reputational effect of being associated with al-Qa'ida's notoriety.
2. A right-wing group lauding al-Qa'ida on its website and providing a link to al-Qa'ida's website would not really provide al-Qa'ida with any reputational benefit. First of all, al-Qa'ida has a far greater reputation for success and competence than almost any right-wing group, so being lauded by the right-wing group does nothing for al-Qa'ida's reputation among anti-Western extremists in general. Furthermore, it is unlikely that other right-wing organizations will readily embrace al-Qa'ida since "for decades, American extremists have lumped Arabs in with dark-skinned 'mud people,'"[53] while most erstwhile jihadists who might support al-Qa'ida view right-wingers as merely other examples of the *kuffar*, or unbelievers.

Logistical 1

3. Al-Qa'ida providing training to a right-wing organization would provide the right-wing organization with a medium to large reputational benefit. Al-Qa'ida is considered the "most feared and hated terrorist organization,"[44] so an association with al-Qa'ida would be expected to increase the right-wing organization's reputation as a serious and capable terrorist organization. If al-Qa'ida were to train right-wing organizations, fears of more dedicated, hardline, and capable right-wing extremists will increase. The increase in reputation through tangible collaboration with a leading terrorist organization would likely be highly valued by the right-wing group leaders.
4. A right-wing organization providing al-Qa'ida with a safe house would provide al-Qa'ida with little to no reputational benefit. Al-Qa'ida may be concerned that the need to rely on a right-wing group may make it (al-Qa'ida) look "weak" and incapable of carrying out an attack on its own. Al-Qa'ida's leaders would thus perceive no reputational value in such activities.

Logistical 2

5. Al-Qa'ida providing a right-wing organization with money would provide the right-wing organization with a moderate reputational benefit, making it likely that the group would place a medium value on this benefit. Providing a right-wing organization with money (which, given al-Qa'ida's current financial situation, would not probably constitute a large amount) would not necessarily signal that al-Qa'ida is directly involved in the right-wing organization's activities, but does signal the support of the most feared transnational terrorist organization: being funded by al-Qa'ida would associate the right-wing group with

al-Qa'ida's notoriety. The right-wing group's leaders would perceive a medium benefit from the extra reputational effect of being provided money by al-Qa'ida among its supporters.

6. A right-wing organization providing secure communications to al-Qa'ida would not provide al-Qa'ida with a reputational benefit. The United States has been monitoring many al-Qa'ida lines of secure communication,[48] so there is a potential need for different types of secure communication lines. However, if a right-wing organization were to provide al-Qa'ida with this, it is unlikely that this fact would be advertised for others to know. Similar reasoning follows as for the other logistical collaboration scenario above.

Operational 1

7. Al-Qa'ida providing a right-wing organization with specialized weapons and personnel for an attack would provide the right-wing organization with a large boost in its reputation and notoriety—based on the fact that such a prominent terrorist organization was acting as the right-wing group's operational patron—and would thus likely be valued highly by the group.
8. A right-wing organization providing al-Qa'ida with access to a target through an insider would likely be perceived by al-Qa'ida as providing only a small reputational benefit. As noted above, al-Qa'ida's leadership may be concerned that the need to rely on a right-wing group may make it (al-Qa'ida) look "weak." At the same time, the fact that it had succeeded in teaming up with domestic terrorists might give it some reputational benefit if it could "spin" the collaboration to its supporters as merely adroitly exploiting a tactical opportunity to gain access to its targets.

Operational 2

9. Similar to the Operational 1 scenario above, if al-Qa'ida provided a right-wing organization with personnel for a difficult, large-scale attack, the right-wing group's leaders would likely perceive a large benefit from the extra reputational effect of being associated with al-Qa'ida's notoriety.
10. A right-wing organization providing al-Qa'ida with personnel for a difficult, large-scale attack would not provide al-Qa'ida with any reputational benefit. Al-Qa'ida's leadership may be concerned that the need to rely on a right-wing group may make it (al-Qa'ida) look "weak." Al-Qa'ida's leaders would therefore be unlikely to perceive any benefit to its standing among supporters, sympathizers, or other constituencies from being provided personnel by a right-wing group.

Li: Organizational Learning Benefit

Rhetorical

1. Al-Qa'ida lauding a right-wing organization on its website and providing a link to said right-wing organization's website would not provide the right-wing organization with an organizational learning benefit, since it does not entail any real engagement where learning could occur.
2. A right-wing group lauding al-Qa'ida on its website and providing a link to al-Qa'ida's website would not provide al-Qa'ida with an organizational learning benefit. Al-Qa'ida has several websites that appear to contain elements of cyberplanning (e.g., alneda.com, which "contained encrypted information to direct al-Qa'ida members to more secure sites").[48] Therefore, in addition to not providing a real platform for knowledge exchange, al-Qa'ida seems to be more technologically advanced—thus there is no organizational learning benefit for al-Qa'ida in this scenario.

Logistical 1

3. Al-Qa'ida providing training to a right-wing organization would provide the right-wing organization with a substantial opportunity for organizational learning from a more operationally sophisticated actor. If al-Qa'ida were to train right-wing organizations, it is possible that trained right-wing members would become more dedicated, hardline, and capable. It is thus likely that the right-wing group leaders would place a medium to large value on this activity.
4. A right-wing organization providing al-Qa'ida with a safe house would provide al-Qa'ida with

limited opportunities for organizational learning. Safe houses are usually used for temporary sojourns while planning attacks or hiding from counterterrorism agencies. This limited duration engagement between only a handful of al-Qa'ida operatives with a handful of right-wing group members who manage the safe house is not likely to result in much knowledge exchange. Moreover, since al-Qa'ida is the more operationally sophisticated group, the most it is likely to learn is about right-wing networks and local knowledge that the right-wing group might possess more of. For these reasons, al-Qa'ida leaders are likely to place only small to medium value on the learning benefit that could accrue in this scenario.

Logistical 2

5. Al-Qa'ida providing a right-wing organization with money would provide the right-wing organization with a small organizational learning benefit, since the provision of money at most involves knowledge about al-Qa'ida's financial networks and money transfer capabilities.
6. A right-wing organization providing secure communications to al-Qa'ida would provide al-Qa'ida with a small to medium organizational learning benefit. The United States has been monitoring many al-Qa'ida lines of secure communication,[48] so there is a potential need for different types of secure communication lines. Al-Qa'ida could perhaps acquire some knowledge from the right-wing group about alternative networks and types of secure communication. Its leaders will therefore perceive some, albeit not large, value from this learning opportunity.

Operational 1

7. Al-Qa'ida providing a right-wing organization with specialized weapons and personnel for an attack would provide the right-wing organization with substantial learning opportunities and thus would likely be perceived as having a large value by its leaders. Al-Qa'ida is known for its "deep interest in CBRN weapons"[49] and other sophisticated tactics such as improvised explosive devices and providing these to the right-wing group would likely increase the latter's technical expertise, at least in terms of operating said weapons.
8. A right-wing organization providing al-Qa'ida with access to a target through an insider would provide al-Qa'ida with quite a large organizational learning benefit, although not as large as the provision of weapons and personnel. Al-Qa'ida would gain new knowledge about the target and, potentially, the ability to insert its own insiders/infiltrators into targets in future. Moreover, since al-Qa'ida is the more sophisticated and operationally experienced party, it would perceive that the right-wing group has less to offer it in terms of organizational learning than vice versa. Al-Qa'ida would thus likely place a medium to large value on the learning benefit in this scenario, depending on how the access to the target is provided by the right-wing organization.

Operational 2

9. Joint attacks usually involve extended periods of collaboration during the planning, training, and operational phases of the attack, which provide many opportunities for learning about various elements of the partner organization, from its logistical networks to its planning and training doctrine. For similar reasons as the previous operational scenario, this type of collaboration would provide a right-wing organization with a large organizational learning benefit, which would result in high value being placed on this in its leaders' decision making.
10. While joint attacks provide many opportunities for cross-organizational learning (especially about the target area and operating in the United States in general—see above), since al-Qa'ida is the more sophisticated and operationally experienced party, it would perceive that the right-wing group has less to offer it in term of organizational learning than vice versa.

Oi: Oppositional Costs

Rhetorical

1. Lauding al-Qa'ida on its website and providing a link to jihadist webpages would create an oppositional cost range of none to medium for the right-wing organization.

Some right-wing leaders such as August Kreis, the former director of the Aryan Nations, have shown a "progressive" attitude and expressed interest multiple times in working with "nonwhite" groups such as Arabs to work against a common enemy: the "Zionists."[54–56] However, other right-wing organizations and their members have "for decades … lumped Arabs in with dark-skinned 'mud people.'"[53] Therefore, depending on the makeup of the right-wing group, how racist the membership is, and the milieu in which they operate, the cost from internal opposition might be negligible to fairly high. However, since the collaboration in this case entails only rhetorical support, the internal opposition is likely to be bounded—and since the leaders know this, they may only place a zero to medium value on the oppositional cost, depending on how secure they believe their position in the group to be and consequently how much they are concerned about internal opposition.

2. Al-Qa'ida endorsing a right-wing group on its website and providing associated links could potentially create an oppositional cost for al-Qa'ida. On the one hand, most of al-Qa'ida leadership and membership fundamentally view right-wing Americans as infidels (nonbelievers) whom they number among their enemies. Such individuals would oppose any association with a U.S. right-wing organization. On the other hand, elements of al-Qa'ida's leadership have shown themselves at times to be fairly pragmatic and if the endorsement could be spun as merely a tactical ploy (*taqiyya*), opposition might be muted. Furthermore, al-Qa'ida would not have to put in much effort so there may be minimal opposing voices. Depending on the degree of likely opposition, as well as how secure al-Qa'ida leaders feel in their position, will determine the degree to which they perceive the value of the opposition, from none to medium.

Logistical 1

3. Similar to the reasoning for the rhetorical collaboration, the range over which the provision of a safe house would be valued is fairly large; however, the more tangible nature of collaboration under this scenario mean that the value placed on the oppositional cost is likely to be greater throughout.
4. Similar reasoning to the above. Providing training would entail interaction between the faithful and the infidels, which is likely to engender stronger opposition and thus be valued more highly, but still variable over a range, depending on the factors described above in the case of rhetorical collaboration.

Logistical 2

5. Providing al-Qa'ida with secure communications and accepting its money could result in a range of oppositional costs. On the one hand, this could be viewed by the right-wing group members in simple transactional terms, as a service rendered for payment and depending on the leadership orientation could be viewed as a marginal cost. On the other hand, among the more racist and xenophobic members of the right-wing group, this scenario could be seen to be "selling out" to the lower races and especially if the leadership views their position as tenuous, they might value the oppositional cost quite highly. This results in the widest possible range for this variable.
6. A similar, albeit reciprocal, calculus is likely to prevail among al-Qa'ida leaders, who would similarly have a large range over which they might value this type of collaboration.

Operational 1 & 2

7. The calculus of the right-wing group leaders regarding the oppositional cost under an operational scenario is similar to that under the logistical scenarios (with a similar range), although the nature of operational collaboration means that there will likely be at least some internal opposition and that the leaders will value this opposition with at least some concern.
8. A reciprocal argument can be made for al-Qa'ida as for the right-wing group.

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