

A Principal-Agent Theory and Network Analysis of High-End Cooperation Among Militant Groups

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Abstract

This study develops a principal–agent theory of why and how armed groups engage in high-end cooperation involving training, intelligence, and logistical support. While such cooperation enhances operational capacity, it also redistributes power and generates downstream political risks. Principals mitigate these risks by selecting agents who are skill-wise complementary but politically non-substitutable, while agents accept high-end support when doing so does not risk becoming politically overshadowed by a dominant actor. Using original temporal network data on 53 groups in Northeast India (1981–2021) and Temporal Exponential Random Graph Models (TERGMs), I show that high-end cooperation is more likely in asymmetric dyads characterized by organizational capacity differentials, complementary attack portfolios, and distinct civilian constituencies. The findings recast militant alliances as products of competitive threat perception and carry broader implications for multiparty conflicts and the delegation of violence in civil wars.

Keywords: multiparty conflicts, militant cooperation, alliance formation, principal-agent theory, social network analysis

9,000 words

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Introduction

The fragmentation of militant movements and cooperation among them are central to the dynamics of multiparty conflicts (Seymour, Bakke and Cunningham 2016). Inter-group cooperation improves organizational survival and military effectiveness (Phillips 2014; Horowitz and Potter 2014). For example, the Taliban's rapid takeover of Afghanistan after the U.S. withdrawal was facilitated by the alliances Taliban forged with former rivals (Giustozzi 2021).

Most research on militant alliances has asked *why* groups cooperate, with a common answer being the desire to aggregate military capacity (Christia 2012; Phillips 2014). Recent work has turned to *with whom* groups cooperate, reflecting the complexity of conflict systems with dozens of actors (Gade et al. 2019; Bapat and Bond 2012; Asal et al. 2016; Bacon 2018; Popovic 2018). Yet a key question remains underexplored. *How* do groups cooperate: what form do alliances take, and what strategic logics shape their design? (Steinwand and Metternich 2022; Blair et al. 2022; Balcells, Chen and Pischedda 2022). While scholars increasingly note that cooperation varies in depth and form (Christia 2012; Balcells, Chen and Pischedda 2022; Blair et al. 2022), the strategic logic behind deeper, operationally consequential alliances remains poorly understood.

Armed self-determination disputes offer an important yet underexamined setting. Much of the existing theorizing on alliance formation has been developed for contexts in which insurgent groups contest control of the central government, such as Christia's (2012) application of a minimum-winning-coalition framework to the Afghan Mujahideen, or models in which members of a winning coalition inevitably compete until a single actor captures the prize (Tan and Wang 2010). Conflicts over self-determination present a different political environment: although contests for national power are absent, these struggles are nonetheless marked by chronic fragmentation and rivalry (Cunningham 2014). Yet armed self-determination conflicts also exhibit extensive cooperation among groups operating in proximity.

Consider the alliances of the United Liberation Front of Asom (ULFA), a major rebel group pursuing self-determination in Northeast India. ULFA formed a high-end partnership with the Kamtapur Liberation Organisation (KLO), offering training in explosives and weaponry in exchange for sanctuary during Bhutan's crackdown on ULFA bases (Banerjee 1999, 2002). This high-end cooperation entailed the transfer of knowledge and infrastructure. In contrast, ULFA's long-standing cooperation with the All-Tripura Tiger Force (ATTF) involved only weapons sales (Kalita 2011). Under what conditions do militant groups engaged in self-determination conflicts engage in high-end cooperation with one another?

I define *high-end cooperation* as the transfer of sensitive operational know-how, such as training, intelligence, and logistical assistance, from a militant group that possesses specialized capabilities to one that does not. These partnerships differ from symbolic cooperation (e.g., rhetorical endorsements or pledges of allegiance) and from transactional cooperation (e.g., arms or funds). These alliances deserve closer attention because they require sharing sensitive assets, which are unevenly distributed across groups operating

in the same conflict ecosystem, with autonomous partners, making these ties far costlier and riskier than symbolic or transactional ones.

To explain such cooperation, I develop a principal–agent framework. High-end cooperation entails one group (the principal), which possesses the operational know-how, tactical expertise, and logistical networks required to provide high-end support, empowering another (the agent), which lacks such resources, to act on its behalf. By providing sensitive operational know-how, such as military training, intelligence, and logistical assistance, the principal seeks to pursue objectives it cannot achieve directly, such as expanding tactical diversity, projecting influence into a contested area, or accessing remote battle zones by delegating to an agent.

Yet delegation also exposes both actors to risks. For principals, the primary vulnerabilities are: first, the military/strategic risk that agents may repurpose these assets in ways that diverge from the principal’s aims (e.g., classic agency slack); and second, the *political risk* that empowered agents may siphon civilian support and emerge as political rivals within the broader militant field. For agents, the risks mirror these concerns: the military/strategic risk that such that cooperation will further augment the operational advantages of the already dominant group within the conflict ecosystem; and the *political risk* that entering a principal–agent relationship will reinforce the agent’s politically subordinate position within the conflict ecosystem.

To mitigate these risks, principals strategically select agents, and agents strategically decide whether to accept high-end support. First, principals favor tactically complementary groups (e.g., those with distinct attack portfolios) because such partnerships maximize the gains from delegation. Second, they avoid ideologically proximate or politically substitutable allies (e.g., those who compete for the same civilian constituencies) as a buffer against downstream political rivalry. Agents partner with principals despite military/strategic and political risks because the benefits of receiving high-end support often outweigh these concerns. In fragmented conflict ecosystems where weaker or less capable groups face threats from both the state and rival factions, high-end support can enhance agents’ survival prospects and bolster political credibility. High-end cooperation thus reflects asymmetric alliance-building, wherein principals expand their capabilities and influence while preserving military and political dominance, and agents acquire military and political assets they cannot generate alone.

To evaluate the theory’s observable implications, I employ Temporal Exponential Random Graph Models (TERGMs) on an original, time-series, directional network dataset covering 53 ethnonationalist militant groups active in Northeast India from 1981 to 2021. Existing datasets often exclude weaker groups, conflate different forms of cooperation, and lack information on directionality. My dataset addresses these limitations by coding eight discrete types of cooperation and specifying directionality for each dyadic tie. Northeast India offers rich variation in cooperation types, groups’ military capacity, and civilian constituencies, making it an ideal setting to test the observable implications of the theory. TERGMs allow me to estimate the effects of exogenous covariates while accounting for network dependencies.

The results support the theory’s expectations. First, high-end cooperation is signifi-

cantly more likely between groups with dissimilar attack portfolios, consistent with the logic of tactical complementarity. Second, the analysis also finds evidence supporting the proposed mechanism related to political threat perception: high-end cooperation is less likely between groups that appeal to the same civilian constituency. Placebo tests on arms-for-cash transactions and rhetorical endorsements reveal different patterns, reinforcing the claim that high-end cooperation follows a distinct strategic logic.

The argument advanced here is most applicable to domestically rooted militant alliances featuring self-determination groups, where the principal operates autonomously and both actors share the same conflict environment. Three scope conditions follow. First, in center-seeking insurgencies, alliance-formation may differ. Second, the theory assumes no overriding external principal: if the principal is itself subordinate to a state sponsor, it may lack the freedom to choose its agents. Third, it assumes local embeddedness wherein both parties are native to the conflict zone. In transnational alliance networks, such as al-Qaeda's relationships with ideologically proximate groups in foreign theaters, cooperation likely follows a franchising logic. There, the principal's broader geographic reach may reduce its vulnerability to political competition from local agents.

This study contributes to the literature by shifting the focus from *why* groups cooperate to *how* they do so. By identifying high-end cooperation as a distinct form, the paper offers a more nuanced view of militant alliances. The theory also reconceptualizes delegation risk in militant principal-agent relations as one containing political rivalry, and recasts militant alliances as products of competitive threat perception. Empirically, the findings help reconcile contradictory results in the literature: while some studies link shared constituencies to cooperation (Bacon 2018; Gade et al. 2019; Balcells, Chen and Pischedda 2022; Blair et al. 2022), others associate them with infighting (Pischedda 2018; Phillips 2019; Pischedda 2020). This study shows that shared constituencies discourage high-end cooperation, even as they may facilitate other forms of cooperation.

High-End vs. Low-End Cooperation

In one of the earliest discussions of *how* groups cooperate, Moghadam (2015) distinguishes between high-end and low-end forms. He envisions cooperation as a continuum of depth. At the high end are a) mergers and b) what he calls "strategic alliances"—relationships marked by extensive collaboration in training, intelligence-sharing, personnel, or operational know-how. In contrast, low-end cooperation includes tactical arrangements that are narrower in scope, or transactional ties such as arms sales or rhetorical endorsements, which involve limited exchanges¹.

While informed by Moghadam's framework, I depart from it in two ways. First, I exclude mergers. Once groups merge, they form a new entity and no longer engage in *inter*-group cooperation in the conventional sense. Second, although recent work has begun to theorize and document mergers (Topal 2025), we know far less about high-end

¹These forms are not mutually exclusive. A single alliance may feature both low- and high-end elements, and cooperation may evolve over time from symbolic gestures to deeper collaboration.

cooperation between autonomous groups, or what Moghadam calls “strategic alliances.” These are enduring, operationally consequential partnerships that do not involve organizational fusion. This study addresses that gap. For the remainder of the manuscript, I use the term high-end cooperation to refer to these non-merger alliances in which one actor transfers sensitive operational capabilities and know-how to another. Because these forms of know-how are not evenly distributed across armed organizations in a conflict ecosystem, such cooperation is typically directional: one group provides capabilities that another lacks.

Beyond Moghadam’s distinctions, I argue that high-end cooperation is fundamentally distinct from transactional or rhetorical ties because it imposes significantly greater costs. Like states, militant groups operate in anarchic environments that lack central enforcement mechanisms. Although foreign state sponsors may attempt to oversee the interactions of their militant proxies (Popovic 2018), they rarely exert full control (Salehyan, Gleditsch and Cunningham 2011). As a result, militant groups must initiate, negotiate, and sustain cooperation under conditions of uncertainty, which heightens the cooperation costs of alliance formation (Bapat and Bond 2012; Christia 2012; Zeigler 2016; Bacon 2017).

Importantly, not all cooperation entails equal costs. Rhetorical endorsements or one-off material exchanges (e.g., arms or funds) require minimal oversight. High-end cooperation, by contrast, creates deeper vulnerabilities. Chief among these are *redistributive consequences for operational capacity*. The internal distribution of operational capabilities within militant alliances shapes both the incentives for cooperation and the risks associated with sustaining it over time. Groups lacking such capabilities may seek out more capable partners to enhance their operational infrastructure, gain access to resources, or elevate their standing in a competitive militant landscape (Asal and Rethemeyer 2008; Horowitz and Potter 2014; Blair et al. 2022). But prospective partners must also consider the costs of transferring resources, negotiating the terms of cooperation, and managing the long-term implications of shifting the distribution of capabilities within the alliance (Balcells, Chen and Pischedda 2022). High-end cooperation, thus, exposes groups to the risk of unintentionally shifting the dyadic balance of capabilities in ways that weaken their own position.

A Principal-Agent Theory of High-End Cooperation in Armed Self-Determination Conflicts

If high-end cooperation can shift the distribution of operational capabilities within the alliance, why would groups fighting self-determination conflicts enter into cooperative arrangements that risk augmenting the capabilities of another group operating in the same conflict ecosystem? I argue that high-end cooperation in this context reflects a principal-agent relationship, in which one group (the principal), possessing specialized operational capabilities, transfers those skills to another (the agent) to carry out tasks the principal cannot perform directly due to geographic constraints, tactical limits, or strategic risk (Horowitz 2010a). The alliance constitutes a form of delegation, “the process by

which the principal offers a *conditional grant of authority* to an agent to act on their behalf” (Byman and Kreps 2010, p. 3). The principal invests in the agent’s capacity, expecting that the agent will pursue objectives aligned with its own.

Why Delegate?

Delegation serves as a cost-saving device in war (Salehyan 2011). Militant principals often lack the time, or task-specific expertise to carry out every operational objective, prompting them to assign responsibilities to agents better suited for particular tasks. A principal may delegate because another group holds a tactical niche. After all, “without some gains from specialization, there is little reason to delegate anything to anybody” (Hawkins et al. 2006, p. 13). For instance, a group adept at conventional warfare might delegate IED bombings or targeted assassinations to a smaller group with greater expertise or agility in these tactics. Delegation thus follows a logic of comparative advantage (Byman and Kreps 2010), enabling principals to expand their tactical repertoire by leveraging the specialized strengths of others.

In self-determination conflicts that are almost by definition geographically confined to where an ethnic or identity group resides, comparative advantage also stems from differences in geographic embeddedness. For instance, a locally rooted agent may have better access, intelligence networks, or legitimacy in a particular area (Salehyan 2011). In these cases, delegation becomes a way to project influence into inaccessible or hostile spaces by relying on a better-locally embedded partner with stronger reach in that locality. Thus, delegation can also serve as a mechanism of spatial extension, allowing principals to operate across a broader geographic canvas without overstressing their own organization.

Finally, delegation may yield benefits beyond comparative advantage, namely, reputational insulation and plausible deniability. Some tactics like civilian-targeted violence or suicide bombings, offer strategic returns but carry reputational costs (Abrahms and Conrad 2017). Principals may avoid undertaking such acts directly and instead delegate them to less reputationally sensitive agents (Byman and Kreps 2010). This would help the principal avoid public backlash (Abrahms and Conrad 2017) and punitive state responses (Onder 2023).

Why Accept Delegation?

Agents enter high-end cooperative relationships because receiving training, intelligence, or logistical support from a more capable principal can generate military, organizational, and political gains they cannot obtain on their own. Partnering with a militarily more capable organization provides access to tactical expertise, operational infrastructure, and intelligence networks that substantially enhance the agent’s capacity to survive and operate.

First, in multiparty conflict ecosystems, weaker groups face threats from both the state and rival factions. A tightly knit alliance with a principal can serve as a deterrent against attacks from competing groups or state reprisals, enabling the agent to function with

greater security and operational freedom (Morrow 1991). Moreover, through high-end support, agents can gain access to capabilities, such as explosives training, that would otherwise remain out of reach.

Second, high-end cooperation can elevate the agent's political standing. Access to specialized training and enhanced operational capacity can translate into more effective or more visible violent operations, which in turn can increase the agent's credibility within the broader insurgent field. Such gains may improve recruitment prospects, strengthen claims to represent their community, and enhance their bargaining position vis-à-vis other armed actors or civilian constituencies (Krause and Singer 2001). Accepting delegation, thus, can help agents consolidate both military relevance and political legitimacy within a crowded self-determination conflict ecosystem.

The Perils of Delegation

Despite its strategic advantages, delegation in high-end militant cooperation exposes both principals and agents to serious risks. For principals, the classic concern is *agency slack*—the classic principal-agent problem—where the agent shirks duties, or pursues actions contrary to the principal's goals. In extreme cases, the agent may even turn its newly gained resources against the principal itself (Salehyan 2011, p. 502). For agents, the danger takes the opposite form: entering a high-end cooperative relationship with a militarily dominant principal can further consolidate the principal's superiority within the conflict ecosystem, reinforcing rather than alleviating the agent's subordinate position.

These risks are acute in militant alliances for three reasons. First, unlike state alliances, which can be formalized through contracts, militant partnerships are rarely codified due to their clandestine nature (Mattes 2012; Byman and Kreps 2010). This heightens informational asymmetries (Shapiro and Siegel 2007) and lowers the barriers to shirking. Second, because high-end cooperation preserves the agent's independent command structure, monitoring and enforcement mechanisms are absent (Byman and Kreps 2010). This lack of oversight increases the likelihood that the agent will use its new capabilities to pursue its own goals rather than those of the principal.

Third, and most consequential, high-end cooperation redistributes capabilities within the alliance, generating strategic vulnerabilities for both actors. For principals, enhancing the agent's capabilities amplifies the danger that a newly empowered partner may become a future adversary. While similar concerns exist in state-militant proxy relations (Salehyan 2011), the problem is arguably more pronounced in militant-to-militant ties, where principals do not possess the monitoring and enforcement tools to restrain agents.

For agents, the same absence of monitoring and formal safeguards means they cannot constrain how the principal leverages the cooperation. Accepting high-end support gives the principal discretion over how much capability to transfer, when to transfer it, and how to use the resulting relationship. Without formal safeguards, agents have little ability to prevent a capability-wise dominant principal from using the cooperation to further expand its own agenda in ways that deepen the agent's subordination within the conflict ecosystem. Thus, capability redistribution in either direction constitutes a

military/strategic risk both actors must weigh when entering high-end cooperative arrangements.

Beyond this military/strategic risk, high-end cooperation introduces an often overlooked peril: *political competition*. This is largely absent from canonical principal-agent frameworks, for instance, those focused on state delegation to non-state actors, where differences in international status (sovereign actor vs. unrecognized, or proscribed non-state actor) reduce the risk of direct political rivalry. In militant alliances, however, transferring operational capability can also transfer political capital. Empowering an agent can reshape political hierarchies within the broader conflict ecosystem, altering how civilians, as potential providers of support to militants, evaluate the relative standing of each group.

For principals, the danger lies in elevating the agent's political profile in the eyes of civilians. Armed groups can attract greater civilian support by demonstrating superior violence capacity (Kydd and Walter 2006; Conrad and Greene 2015; Belgioioso 2018). Training, intelligence, and logistical support, and the consequent boost in violent capacity can enhance the agent's perceived competence, making it a credible alternative to the principal in the eyes of potential civilian supporters. This threat is consequential in self-determination conflicts when the agent is identity-wise substitutable with the principal, that is, when both groups appeal to overlapping constituencies or draw from the same support base (Pischedda 2018; Phillips 2019; Pischedda 2020). In such cases, the agent's political gains may come at the principal's expense, potentially siphoning the principal's supporters, volunteers, and recruits. The principal may be cultivating a political rival.

For agents, the political risk takes the opposite form. Entering a high-end alliance with a dominant principal may reinforce the principal's political preeminence within the conflict ecosystem. If civilians view the principal as the true source of operational capacity, cooperation can lock the agent into a subordinate role, narrowing its independent political appeal and limiting its ability to develop an autonomous support base. In this sense, the same cooperation that risks elevating the agent above the principal also carries the risk—for the agent—of entrenching a political hierarchy that favors the principal.

Partner Selection in High-End Cooperation

In canonical principal-agent theories, the standard response to agency slack is to design enforcement mechanisms that constrain agent behavior. As discussed above, such solutions are largely unworkable in militant alliances. Instead, I argue that militant principals and agents engaging in high-end cooperation rely on anticipatory strategies in selecting their partners. Principals strategically choose whom to empower in ways that maximize potential gains while mitigating the perils of delegation by hedging against downstream rivalry, and agents strategically accept such arrangements when the transferred capabilities enhance their own survival prospects and political standing.

In what follows, I first introduce a plausible empirical assumption check to validate the logic underlying this principal-agent framework. I then outline two testable hy-

potheses about partner selection, reflecting strategic calculations related to tactical complementarity and political differentiation, each serving to maximize the principal's and the agent's gains while insulating both actors from the *political* risks of delegation.

A core implication of this principal–agent framework is that high-end cooperation presupposes an organizational capability differential that underpins the logic of delegation: the principal must possess operational skills, infrastructure, or specialized know-how that the agent lacks. It also clarifies why symmetric cooperation is especially perilous when sensitive knowledge, intelligence, or operational infrastructure is exchanged. If two groups are evenly matched in their capabilities, transferring high-end capabilities risks destabilizing the balance of power within the dyad, potentially leaving the original principal disadvantaged should the alliance collapse in the future (Morrow 1991; Mattes 2012). High-end cooperation, thus, should empirically manifest as cooperation between more capable organizations and less capable ones. To validate this assumption of the theory, I verify whether cooperating dyads exhibit the expected organizational capacity differential.

Organizational Capacity Differential Proposition: High-end cooperation occurs among dyads with a greater organizational capacity differential.

One key way to maximize the gains from high-end cooperation is through *tactical complementarity*: selecting partners whose capabilities differ from, but complement, one another. This follows directly from the comparative-advantage logic discussed earlier; that is, groups benefit when they combine distinct operational strengths rather than duplicate existing ones (Byman and Kreps 2010). Research on inter-organizational alliances shows that partnerships emerge when actors pool dissimilar yet mutually beneficial assets, such as technological innovation, or market access in inter-firm alliances (Soda and Furlotti 2017), or distinct military assets and geostrategic positioning in state security alliances (Murdoch and Sandler 1984).

This logic should apply to militant alliances. Armed organizations vary in their violent tactical repertoires and develop expertise at certain tasks (Horowitz 2010b, p. 39): some excel in conventional warfare, others in guerrilla tactics or urban terrorism. Tactical complementarity suggests that, for example, a rural guerrilla group that lacks urban access might benefit from cooperating with a clandestine urban cell skilled in suicide bombings. Delegation, then, becomes a tool for expanding tactical diversity through cooperative outsourcing. For principals, partnering with agents whose attack portfolios diverge from their own expands their tactical repertoire without having to develop those skills in-house. For agents, accepting high-end support from a tactically distinct principal provides access to violent skills they are unlikely to develop independently. Hence,

Complementarity Hypothesis: The greater the dissimilarity in the attack profiles of two militant groups, the more likely they are to engage in high-end cooperation.

Beyond maximizing the tactical diversification gains from high-end cooperation, both

principals and agents must also manage the *political* risks of delegation by hedging against downstream rivalry. High-end cooperation can enhance an agent's operational capacity and, by extension, its political stature within the broader militant landscape. These gains extend beyond the battlefield: when a principal empowers an agent, this may also raise the agent's profile among civilian audiences, increasing its appeal as a potential political rival. This risk is particularly acute when both groups appeal to the same ethnic, religious, or ideological constituency. When one's ally can function as a "substitute" for one's organization (i.e., when fighters could plausibly join the ally after abandoning their current group (Hauenstein 2023)), it can undermine the principal's political position by co-opting its social support base (Pischedda 2020).

Recent scholarship argues that the cooperation-inducing effects of ideational alignment are offset by competitive dynamics among organizations with compatible political aspirations (Balcells, Chen and Pischedda 2022). Groups with compatible aspirations can more easily co-opt each other's support bases (Pischedda 2020). Cooperating with a potential competitor that can prey on one's social support base can threaten one's prospects for political success (Onder 2025). For principals, providing high-end support to an organization that draws on the same constituency heightens the danger of empowering a political competitor. Consequently, principals should prefer partners that appeal to distinct constituencies, thereby leveraging the benefits of cooperation without eroding their own political standing. Agents should likewise be more willing to accept high-end support from principals with whom they do not share a constituency, since, compared to accepting support from a principal that shares their constituency, doing so reduces the risk of becoming politically overshadowed. When constituencies differ, both parties can reap the benefits of cooperation without directly threatening one another's political base.

Political Differentiation Hypothesis: High-end cooperation is less likely among militant groups that appeal to the same civilian constituency than among those that appeal to distinct constituencies.

Scope Conditions

This explanation of high-end cooperation applies most directly to militant alliances formed in conflict ecosystems featuring self-determination groups, where the principal retains autonomy over alliance decisions and both actors operate within the same broader conflict system. Three scope conditions follow. First, in conflict ecosystems where militant organizations vie for control of the central state, the incentives and risks surrounding alliance formation can differ. As Christia (2012) demonstrates, for instance, ethnic or ideological affinities played little decisive role in shaping coalition dynamics among Afghan mujahideen factions.

Second, the theory assumes the absence of an overriding principal in a "dual-delegation" arrangement (Karlén and Rauta 2023). When a militant group is subordinate to an external state sponsor, it may be pressured to form alliances based on the patron's preferences rather than its own strategic calculus.

Finally, the theory assumes that principal and agent are embedded in a shared domestic conflict, where principals and agents vie for resources, audiences, and symbolic leadership in overlapping geographic spaces, and therefore downstream political competition constrains alliance formation. Delegation in transnational militant networks, such as al-Qaeda's or the Islamic State's relationships with ideologically proximate groups in foreign theaters, likely reflects a logic of franchising (Mendelsohn 2015), where the transnational principal faces less risk of political competition from local agents.

Research Design

I employ Temporal Exponential Random Graph Models (TERGMs) on an original, disaggregated, time-series network dataset of 53 ethnonationalist militant groups active in Northeast India from 1981 through 2021. This dataset was constructed to address key limitations in existing publicly available data. Most existing datasets tend to overlook smaller, weaker, and less lethal actors². These groups may not produce high-casualty events but can still shape conflict dynamics through cooperation or rivalry with larger organizations.³

Existing datasets also frequently over-aggregate the forms of cooperation. My dataset addresses this by coding eight discrete forms of cooperation. While some recent efforts, such as the Militant Group Alliances and Rivalries (MGAR) dataset (Blair et al. 2022), distinguish between categories such as financial, material, training, and operational support, it is not directional, and hence not suitable for testing implications derived from a principal-agent theory. In contrast, my dataset is directional; for each dyadic tie, I identify the sender and receiver.

Northeast India offers a fertile empirical setting for this analysis. Its long history of militant activity, ethnic fragmentation, rugged terrain, and porous international borders has given rise to a dense web of inter-group relations. The region is home to dozens of insurgent groups pursuing self-determination claims and regularly interacting with one another, providing natural variation in the depth of cooperation. Combined with rich variation in group capabilities and constituencies, the region creates ideal conditions for evaluating the observable implications of my theory.

Data Collection

I consider all armed non-state actors, including those typically categorized as rebels, insurgents, or terrorists. By adopting an inclusive approach, the dataset offers a more comprehensive view of inter-group militant relations than studies that restrict attention to

²For instance, Asal and Rethemeyer (2008) and Asal, Ackerman, and Rethemeyer (2012) rely on the Terrorism Knowledge Base, which shows that 72.1 percent of terrorism incidents are attributed to unidentified actors. This leads to the systematic exclusion of non-claiming but operational groups.

³Omitting such actors poses both theoretical and methodological concerns. Theoretically, smaller groups may influence the strategic behavior of dominant groups because they serve as agents. Methodologically, incomplete networks bias measures of connectivity and centrality (Krebs 2002; Gill and Freeman 2013).

either rebel groups (Bapat and Bond 2012; Christia 2012) or terrorist organizations (Asal and Rethemeyer 2008).

To mitigate actor-selection bias, the dataset encompasses 53 groups, at least half of which have not been covered in previous network data collection efforts. These organizations were engaged in conflicts over independence, autonomy, or broader self-determination claims across the seven Northeastern states of India. The initial list of actors was drawn from the 26 Northeast Indian groups identified in the UCDP/PRIO Armed Conflict Dataset (ACD), version 21.1. Coders then gathered data on the basic characteristics of these groups from secondary sources. As these sources were reviewed, additional groups mentioned in relation to the UCDP/PRIO actors were recorded. Cross-referencing and triangulation were used to verify the existence of previously unlisted groups. The final inclusion criteria required that groups (a) operated in Northeast India between 1981 and 2021; (b) publicly identified themselves with a group name; and (c) used armed force in pursuit of a political goal⁴. Appendix 2 includes the group list.

The dataset captures temporal variation in militant networks across four decades, allowing me to track actor entry and exit, the evolution of ties, and time-variant predictors of cooperation (Dorff, Gallop and Minhas 2020). It identifies eight distinct forms of cooperation: (1) joint operations, (2) training support, (3) provision of arms and funds, (4) intelligence-sharing and logistical support, (5) joint planning or leadership meetings, (6) joint public statements, (7) participation in umbrella organizations, and (8) rhetorical support⁵. The codebook in Appendix 1 details the coding rules.

Because the theoretical framework centers on strategic delegation, it is essential to distinguish between senders and receivers of support. Accordingly, for each recorded instance of cooperation in the dataset, I identified which group initiated the support and which group received it. This design allows for empirical evaluation of the principal-agent dynamics theorized in this study. The resulting dataset includes 24,944 directed dyad-years.

Empirical Strategy

I analyze a directed temporal network of high-end cooperation among 53 militant groups. This network is constructed for every year between 1981 and 2021, and captures annual ties in which one group provides another with training, intelligence, or logistical support⁶. A directed tie is recorded in a given year if Group A provided such support to

⁴I follow UCDP/PRIO's definition of armed non-state actors as "any non-governmental group of people having announced a name for their group and using armed force to influence the outcome of the stated incompatibility" (Pettersson 2022), but I also include actors who meet these criteria regardless of whether they surpassed the 25 battle-related deaths threshold.

⁵Joint public statements refer to coordinated communications that are formally co-signed by two or more militant organizations. These statements explicitly list the names of all participating groups as signatories. In contrast, rhetorical support refers to one-sided public statements in which one group unilaterally endorses, praises, or expresses ideological solidarity with another without joint authorship.

⁶Logistical support in the construction of this measure of high-end cooperation refers to the shared use of operational infrastructure, such as transit routes, safe camps, or the movement of militants across borders,

Group B, with directionality identifying the principal (sender) and the agent (receiver). In total, 40 of the 53 groups (75%) engaged in at least one instance of high-end cooperation over the forty-year period.

Figure 1 illustrates the temporal evolution of the high-end cooperation network. Early on, the network is sparsely connected, with only a handful of dyads engaging in cooperation. From the early 2000s onward, the network densifies, reflecting an expansion in the number of groups participating in cooperation. A core-periphery structure emerges, in which a subset of groups serve as central hubs providing training, intelligence, and logistical assistance to multiple partners.

To illustrate the distinct network structure that emerges under high-end cooperation, Figure 2 shows the temporally aggregated visualizations of three networks: high-end cooperation (training, intelligence, and logistical support), transactional cooperation (arms-for-cash exchanges), and rhetorical support. The high-end cooperation network is relatively denser and more centralized. While the transactional cooperation network also exhibits some centralization, it is less densely connected and involves greater interaction among peripheral actors. The rhetorical support network is more diffuse still, with at least two separate hubs and no dominant central actors.

Conventional techniques rely on the assumption that dyad-year observations are independent, for instance, that Group A's decision to support Group B has no bearing on its relationship with Group C. This assumption is problematic in alliance networks, where decisions are often shaped by broader relational structures (Cranmer, Desmarais and Kirkland 2012). To address this, I employ Temporal Exponential Random Graph Models (TERGMs), which extend the ERGM framework to handle longitudinal network data (Leifeld, Cranmer and Desmarais 2018).

Compared to alternative approaches such as Latent Space Models, which capture dependence through latent positions in an abstract space, TERGMs define network statistics globally and explicitly represent structural dependencies like popularity and transitivity (Block, Stadtfeld and Snijders 2019). Stochastic Actor-Oriented Models (SAOMs), on the other hand, simulate the sequential decision-making of individual actors. The theory developed in this study, by contrast, is explicitly relational (e.g., dyadic characteristics such as complementarity and constituency overlap). TERGMs are better suited for testing hypotheses grounded in a dyadic tie-oriented model of alliance formation than actor-centered approaches (Block, Stadtfeld and Snijders 2019).

Key Predictors

Three key dyadic predictors are organizational capacity differential, attack portfolio dissimilarity (Complementarity Hypothesis), and shared constituency (Political Differentiation Hypothesis).

Organizational capacity differential operationalizes the assumption check derived from the principal-agent logic advanced earlier. Following George (2018), I use the logistical

rather than one-off material exchanges.

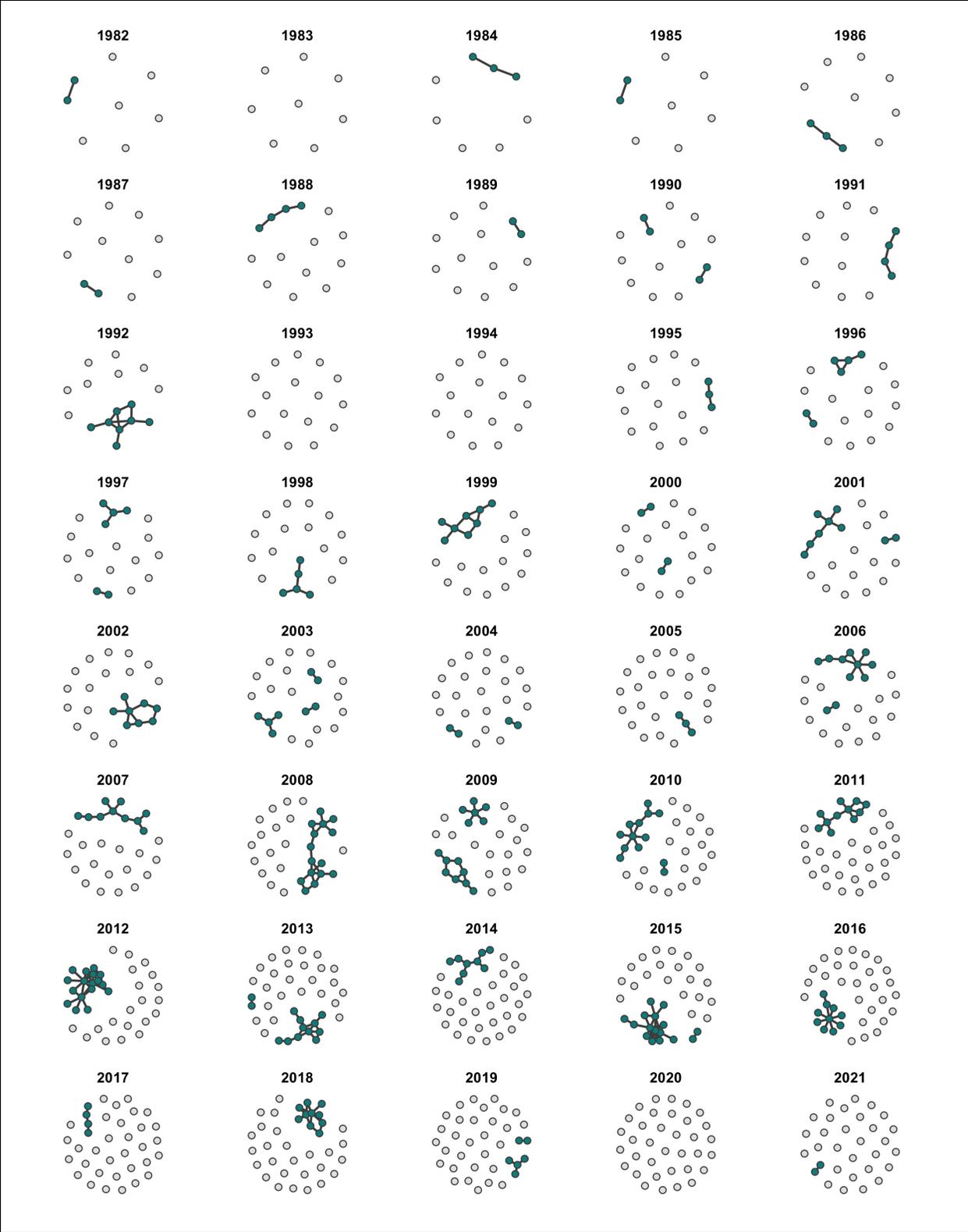


Figure 1. Evolution of the High-End Cooperation Network

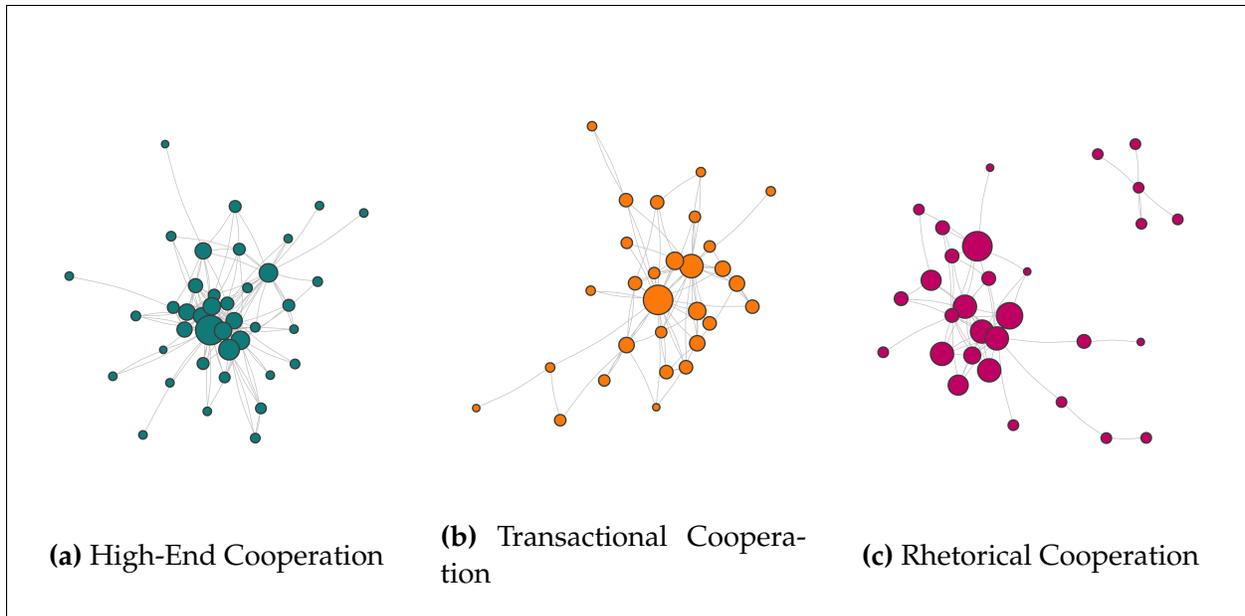


Figure 2. A Network Comparison of Different Forms of Cooperation

complexity of attacks as a proxy for organizational capacity. Specifically, I code assassinations, bombings, hijackings, and hostage-takings as logistically complex⁷. Using the GTD’s attacktype variables, I compute the weighted proportion of a group’s logistically complex attacks in each year. This generates a continuous, time-varying indicator of capacity ranging from 0 to 1. *Organizational capacity differential* is measured as the absolute difference between two groups’ scores in a dyad. Higher values indicate greater capability differentials.

Attack portfolio dissimilarity operationalizes the logic of the Complementarity Hypothesis. To capture variation in groups’ tactical repertoires, I draw on the Global Terrorism Database (GTD)’s attacktype variables. For each group-year, I calculate the proportion of attacks falling into each of the GTD’s eight predefined categories: armed assault, assassination, bombing/explosion, facility/infrastructure attack, hijacking, hostage-taking (barricade), hostage-taking (kidnapping), and unarmed assault. I then use maximum-likelihood factor analysis to reduce these proportions to a unidimensional portfolio score per group-year. *Attack portfolio dissimilarity*, measures the absolute difference between two groups’ scores in a dyad. Higher values indicate greater tactical dissimilarity, and thus greater complementarity.

Shared constituency captures the political risks highlighted in the Political Differentiation Hypothesis. Drawing on secondary sources, I identify the ethnic, tribal, or religious community each group claims to represent, using the definition of constituency as “the broad social group on whose behalf [militants] claim to fight” (Balcells, Chen and Pischedda 2022). *Shared constituency* is a dichotomous variable coded 1 if both groups in a dyad claim to fight on behalf of the same ethnic/tribal or religious group, and 0 other-

⁷Appendix 7 reports robustness checks with a more conservative measure of capacity, with similar results.

wise.

To account for endogenous features of the network, I incorporate two structural dependency terms in all TERGM specifications⁸. First, *sender popularity* is modeled using the *ostar* statistic⁹, which captures the tendency for well-connected actors to attract additional ties. This reflects reputational dynamics in militant alliance formation, where groups with visible histories of cooperation may be more attractive partners (Cranmer, Desmarais and Kirkland 2012; Bacon 2017, 2018). Second, *transitivity* is modeled using the *gwesp* term (geometrically weighted edgewise shared partners), with a decay parameter of 1¹⁰. This term captures the likelihood of triadic closure (i.e., that groups with common allies are more likely to cooperate directly) reflecting alliance patterns shaped by shared enemies or trusted third-party brokers (Asal et al. 2016; Bacon 2017).

Accounting for Confounding

I include a set of control variables at both the group and dyad levels. At the group-level, I include a time-varying measure of groups' *capacity*, constructed identically to the specification used for computing organizational capacity differential. Second, I include a binary indicator for whether a group is a *splinter group*, derived from my original data collection. Splinter factions (e.g., groups that emerged through organizational rupture from preexisting militant actors) may be seen as less credible alliance partners due to their history of defection.

At the dyadic level, I control for whether both groups in the dyad share a common foreign state sponsor. Common patrons can help mitigate alliance breakdowns by serving as external guarantors (Popovic 2018; Bapat and Bond 2012). This binary variable, derived from my original data collection, is coded 1 if both organizations received material backing from the same state sponsor, and 0 otherwise.

I include two controls for non-delegatory cooperation within the dyad: transactional and rhetorical cooperation, both derived from my original data collection. *Transactional cooperation* is a binary variable coded 1 if the dyad engaged in arms-for-cash exchanges during a given year. *Rhetorical cooperation* is a binary variable coded 1 if one group publicly praised, or declared loyalty to the other in the same year. These controls account for the possibility that other forms of cooperation are correlated with high-end cooperation, either as precursors or complementary activities.

Results

Table 1 reports results from TERGMs, each modeling the likelihood of a directed high-end cooperation tie between a pair of militant organizations in a given year. Model 1

⁸The appendices report robustness checks using a wider array of network metrics.

⁹I use the *ostar*(2) term as a simple nonparametric way of capturing star distributions in directed networks.

¹⁰I use *gwesp* rather than simpler alternatives such as *triangle* or *tripercents* to avoid model degeneracy.

presents a naïve specification. Model 2 adds structural network terms. Model 3 introduces a set of control variables capturing group-level traits and dyadic features. Finally, Model 4 adds controls for other forms of cooperation (e.g., transactional and rhetorical). Across all four specifications, the three key dyadic predictors, *organizational capacity differential*, *attack portfolio dissimilarity*, and *shared constituency*, are statistically significant at conventional levels and in the expected directions.

To begin with, the results support the theoretical expectation embedded in the Organizational Capacity Differential Proposition. The coefficient for *organizational capacity differential* is positive and significant across all models. High-end cooperation is more likely in dyads characterized by greater disparities in organizational capacity. This is consistent with a principal-agent framework: high-end cooperation rests on a capability differential logic that makes delegation meaningful, and empirically, ties do indeed form between more capable groups and less capable partners, which confirms an important assumption underlying my theory.

The results further support the two hypotheses of the study. First, the hypothesis that principals are more likely to pursue high-end cooperation with agents who possess distinct tactical specializations (Complementarity Hypothesis) is supported. The coefficient for *attack portfolio dissimilarity* is positive and statistically significant across all four model specifications. As the difference between groups' tactical repertoires increases, so does the probability of high-end cooperation. This finding is consistent with the argument that principals and agents both benefit when they combine distinct violent skillsets, allowing each actor to expand its operational capabilities without developing new tactics internally.

Empirical patterns of cooperation are also consistent with the Political Differentiation Hypothesis. Across specifications, the coefficient for *shared constituency* is negative and statistically significant. Groups that claim to represent the same ethnic or religious civilian base are less likely to engage in high-end cooperation. This aligns with the idea that both principals and agents seek to avoid political arrangements that heighten political substitutability, increase downstream rivalry, or risk political overshadowing.

To illustrate the substantive implications of the three predictors, Figure 3 plots the predicted probabilities for high-end cooperation ties across dyad-years, derived from the second TERGM in Table 1. Panel A plots density plots of the distribution of predicted probabilities across different values of key predictors. Across the top two plots, a clear rightward shift in the density curves for high values (orange) relative to low values (blue) is visible. This suggests that dyads with high attack portfolio dissimilarity and high organizational capacity differential (orange densities) are associated with greater predicted probabilities of high-end cooperation than dyads with low dissimilarity or symmetry (blue densities). The bottom plot shows the reverse pattern: dyads that do not share a constituency (orange) are more likely to high-end cooperate than those that do (blue), supporting the Political Differentiation Hypothesis.

Table 1. TERGMs of High-End Cooperation among Militant Groups in Northeast India, 1981-2021

	Naive	Network Dependency	Controls	Additional Controls
Organizational capacity differential	0.43 [0.20; 0.68]*	0.40 [0.19; 0.65]*	0.40 [0.19; 0.64]*	0.42 [0.21; 0.73]*
Attack portfolio dissimilarity	0.25 [0.16; 0.34]*	0.22 [0.10; 0.31]*	0.22 [0.10; 0.31]*	0.20 [0.08; 0.29]*
Shared constituency	-0.59 [-0.89; -0.36]*	-0.49 [-0.85; -0.28]*	-0.49 [-0.86; -0.28]*	-0.48 [-0.94; -0.23]*
Capacity (sender)	-0.17 [-0.51; 0.08]	-0.19 [-0.46; -0.00]*	-0.20 [-0.48; -0.01]*	-0.24 [-0.57; -0.04]*
Capacity (receiver)	-0.23 [-0.52; -0.03]*	-0.28 [-0.55; -0.09]*	-0.29 [-0.56; -0.09]*	-0.29 [-0.61; -0.08]*
Transitivity		0.57 [0.46; 1.01]*	0.57 [0.46; 1.01]*	0.56 [0.45; 1.06]*
Node popularity (sender)		0.33 [0.29; 0.43]*	0.33 [0.28; 0.43]*	0.33 [0.28; 0.43]*
Joint foreign supporter			1.01 [-12.47; 1.92]	0.26 [-12.87; 1.20]
Splinter group			0.14 [-0.07; 0.32]	0.12 [-0.06; 0.31]
Transactional Cooperation				3.58 [3.00; 4.47]*
Rhetorical Support				0.50 [-13.02; 1.59]
Edges	-4.39 [-4.82; -3.98]*	-4.87 [-5.19; -4.57]*	-5.00 [-5.39; -4.63]*	-5.11 [-5.49; -4.76]*
Num. obs.	24944	24944	24944	24944

Note: Bootstrapped pseudolikelihood estimates, as described in Desmarais and Cranmer (2012), reported. Temporal bootstrapping is used to correct the standard errors. Standard errors are based on 1,000 network-year bootstrap iterations. Asterisks indicate that the coefficient is statistically significant at or beyond the traditional 0.05 level.

Panel B adopts the interpretive strategy proposed by Leifeld, Cranmer, and Desmarais (2018) for analyzing TERGM predictions at the micro-level. For each dyad-year in the sample, I compute predicted probabilities of high-end cooperation, stratify dyads by unique values of the three key predictors and calculate the median predicted probability and associated confidence intervals within each stratum. The results are consistent: dyads with high attack portfolio dissimilarity and high organizational capacity differential are substantially more likely to engage in high-end cooperation, with predicted probabilities that are nearly double those of their low-dissimilarity or low-asymmetry counterparts. Dyads that share a civilian constituency are considerably less likely to form ties, consistent with the political rivalry logic.

Additional Analyses

I conduct several additional analyses. First, I assess the endogenous goodness-of-fit (GOF) of the TERGMs. I simulate 100 networks at each time step and evaluate how well these simulated networks reproduce key structural properties of the observed network, such as degree distributions. The GOF assessments, visualized in Appendix 4, suggest that the models fit the observed data well.

Second, I consider additional group-level covariates that may shape both a principal's and an agent's willingness to enter into high-end cooperative arrangements: a count of surrender events by each group to the government side, and binary indicators for whether a group operates in a region with an international border and espouse a leftist or religious ideology. All variables are derived from my original data collection. As shown in Appendix 5, the main findings hold.

Third, to rule out the possibility that the main results reflect broader alliance formation tendencies rather than patterns specific to high-end cooperation, I conduct placebo tests using alternative network outcomes. I re-estimate TERGMs on networks of transactional cooperation (arms-for-cash exchanges) and rhetorical cooperation. As shown in Appendix 6, these placebo models return null results: none of the key predictors are in the same direction or statistically significant in the rhetorical cooperation network, and only attack portfolio dissimilarity is significant in the transactional network. Moreover, the direction of some coefficients, such as organizational capacity differential, also reverses in the transactional cooperation models.

Finally, I conduct a battery of robustness checks using a wide array of network metrics. As reported in Appendices 7 through 11, the main results are robust.

Discussion and Conclusion

This study developed a theory of high-end cooperation rooted in principal-agent delegation to reorient existing understandings of militant alliances by showing how fragmentation in the militant field shapes not only *why* and *with whom* groups cooperate, but also *how*.

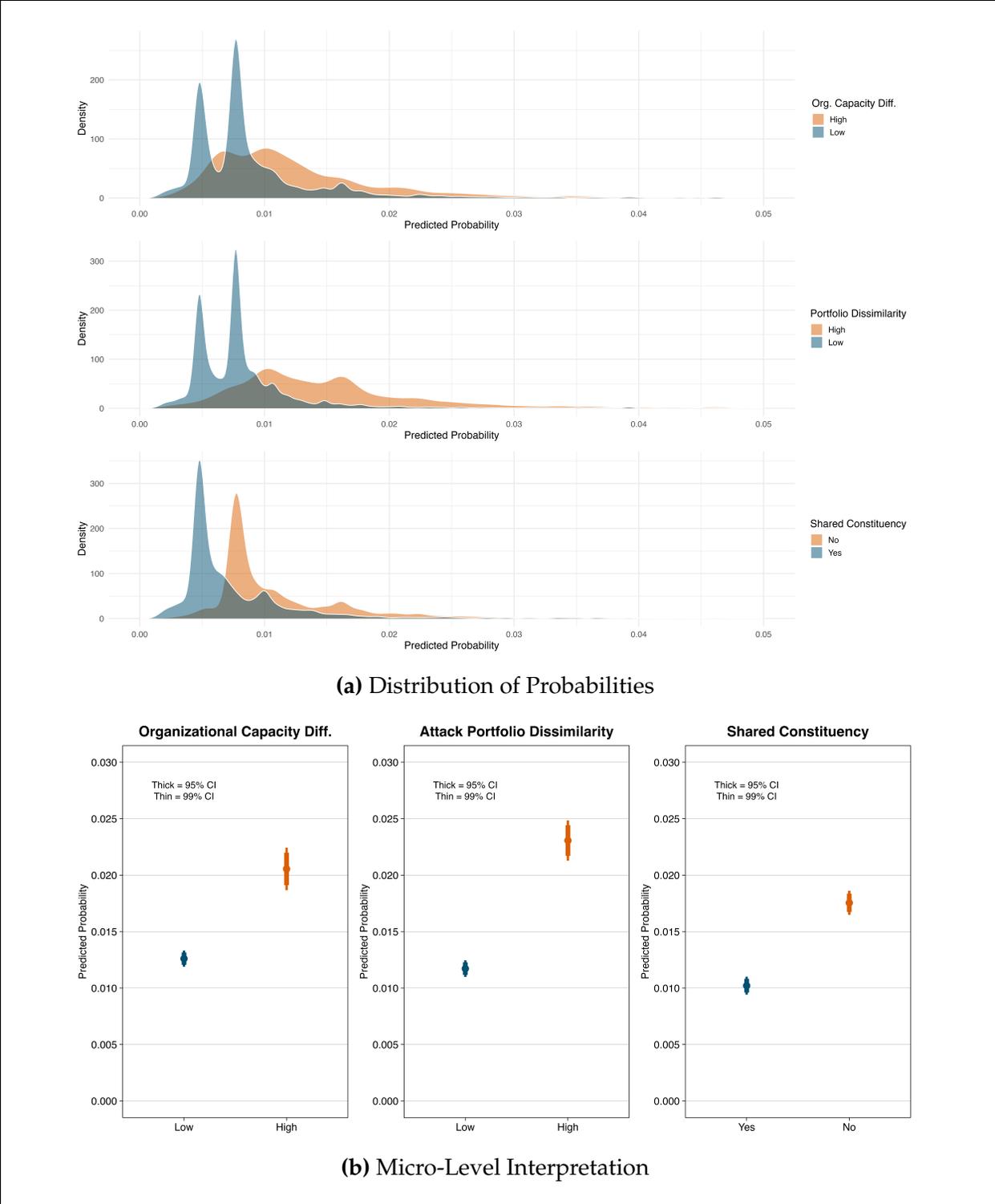


Figure 3. Predicted Probabilities of High-End Cooperation
 Note: For the continuous variables (e.g., attack portfolio dissimilarity and organizational capacity differential) dyads are classified as “high” if they fall above the third quartile of the distribution and “low” otherwise.

The empirical results strongly support the theory's core expectations. The empirical assumption that underpins the principal-agent logic is supported: ties overwhelmingly form between more capable and less capable actors. As for the hypotheses I advance, dyads characterized by high attack portfolio dissimilarity are significantly more likely to engage in high-end cooperation (i.e., complementarity). Finally, cooperation is less likely between groups that appeal to the same civilian constituency, consistent with the expectation that political substitutability heightens downstream rivalry. Moreover, placebo tests relying on transactional and rhetorical cooperation suggest these calculations are specific to high-end cooperation.

These findings suggest that high-stakes cooperation among armed groups is the outcome of strategic design. Principals construct alliances in a way that minimizes threats to their dominant position, and agents accept high-end support when doing so does not risk political overshadowing by a dominant partner. This has several broader implications for the study of civil war. First, it challenges the assumption that cooperation among armed groups requires ideological alignment, demonstrating instead that tactical complementarity and political non-substitutability are the key drivers of high-end cooperation. Second, while much of the literature treats civilian support as a function of a group's behavior in isolation, my theory implicates that armed actor legitimacy is also relational: it is being challenged and renegotiated as groups cooperate, delegate, and compete. This opens new directions for thinking about rebel political legitimacy as a positional achievement. Third, this study suggests that shifts in the distribution of capabilities, even absent ideological splits, can destabilize conflict systems, offering a novel account of actor fragmentation in civil wars rooted in shifting power dynamics rather than preference divergence. Finally, it pushes the literature on delegation in civil wars beyond the conventional state-proxy dyad, calling for more attention to the inter-rebel forms of principal-agent delegation.

There are, nonetheless, caveats to be mentioned. First, like most work on armed groups, the analysis relies on secondary reporting, which may underreport less central actors. Second, although TERGMs address network dependencies, the analysis remains observational and cannot fully eliminate the possibility of omitted variable bias or endogeneity. Finally, the geographic and organizational scope of the analysis focusing on ethnonationalist actors in Northeast India may limit the generalizability of the results to conflict systems dominated by Islamist militant groups, such as those in Pakistan, Afghanistan, Syria, or Nigeria, where well-resourced transnational actors seem to exert outsized influence over alliance networks.

Despite these limitations, the study offers both empirical and substantive contributions. Empirically, it introduces a new, directionally coded, longitudinal dataset that captures different forms of cooperation. Methodologically, it applies TERGMs to model network dependencies, something rarely done in the literature on armed group alliances. Substantively, it reframes how scholars understand militant cooperation: as a problem of delegation and risk management. Future research can build on these insights by examining how external interventions, militant leadership changes, or state repression reshape the delegation calculus over time.

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