

Tactical Diversity in Militant Violence

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ABSTRACT

Militant groups, like all organizations, face crucial decisions about the strategies that they employ. In this article, we assess why some militant organizations successfully diversify into multiple tactics while others limit themselves to just one or a few. This is an important puzzle because militants with increasingly diversified tactics are more likely to stretch counterterrorist defenses, achieve tactical success, and threaten state security. We theorize that government repression and inter-organizational competition put pressure on militants and incentivize groups to diversify their tactical portfolios in order to ensure their survival and continued relevance. The results from empirically analyzing multiple datasets show robust support for our theory. To address the possible endogeneity of repression and diversification we then confirm these findings in a more fully identified specification that employs ethnic fractionalization as an instrument in a multi-process recursive model. Finally, we demonstrate that organizations that diversify under pressure adopt more disruptive tactics such as hijacking and suicide bombing, rather than devolving into less threatening approaches such as isolated shootings and kidnappings. The policy implication is that while countries cannot anticipate the *character* of future tactical innovations, they may be able to anticipate *which groups* will most readily adopt them.

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Mao Zedong (1963, p. 245) advised that militant leaders “should know not only how to employ tactics but how to vary them,” because this would allow irregulars to surprise better equipped state forces, keep them on their heels, and eventually overcome their defenses. Mao is far from alone in this emphasis on tactical diversity: the writings and practices of leaders as disparate as Sun Tzu and Osama bin Laden stress the benefits of variety in the use of force. Non-state actors in particular rely on tactical diversity to reduce the predictability of their actions, thereby spreading state defensive capabilities thin. Tactical diversity is therefore a key component of an effective strategy in asymmetric conflict because it helps to overcome disadvantages in terms of resources and manpower. This echoes counterterrorist and counterinsurgent policymakers who see expansive tactical repertoires as a serious impediment to a successful state response (Paquette 2010, 33).

Prominent cases from the terrorism literature bolster the notion that diversification is disruptive to states and beneficial to militants. The Popular Front for the Liberation of Palestine (PFLP), for example, bedeviled Israeli counterterrorism efforts for decades by consistently expanding their tactical portfolio. By altering their mix of (and approaches to) hijackings, kidnappings, assassinations, and bombings they complicated Israeli counterterrorism efforts, while simultaneously keeping militant rivals and their political audience guessing. Indeed, the “innovative tactical approach employed by the PFLP and its offshoots...[made] international terrorism a permanent and significant factor on the international stage, and whose tactics were copied by Palestinian and other groups for years to come (Schweitzer 2011, 27).”

Among scholars, however, the question of tactical diversity has fallen by the wayside. What work there is (e.g. Moghadam 2013), primarily focuses on the related

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question of innovation, rather than diversification per se. Others focus on particularly disruptive tactics in isolation. Examples include suicide bombing (e.g. Atran 2003; Pedahzur 2005), improvised explosive devices (e.g. Ackerman 2008; Barker 2011), aerial hijacking (e.g. Dugan et al. 2005), kidnapping (e.g. Brandt and Sandler 2009), and WMD terrorism (e.g. Ackerman 2005; Blum et al. 2005). Little attention, however, is given to the extent to which organizations use tactics in combination. In response to this shortcoming, we explore the conditions under which organizations adopt and employ diverse portfolios of tactical capabilities.

Despite the apparent benefits of broad tactical expertise, variation within the level of diversification across groups suggests that it is not universally desirable. Indeed, not all organizations diversify even if they have the resources to do so. For example, the Weather Underground, Euskadi Ta Askatasuna (ETA), and the Red Army Faction all limited the number of tactics that they employed, preferring tried and true methods of violence to the uncertainty of experimentation and diversification. This reticence suggests that, despite the apparent advantages, tactical diversification comes with costs and risks that some groups lack the incentive to incur.

Why then do some organizations employ many tactics while others rely on one or a few? We argue that militant groups diversify when their organizational viability is threatened, overshadowing the costs of expansion and amplifying the need for tactical successes. We focus on the two preeminent threats to organizational survival: from the state and from competitors. In the face of substantial repression from the state, militants rely on tactical expansion to circumvent counterterrorism measures, improve their success rate, and ultimately ensure their continued relevance. Similarly, when faced with rivals –

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and particularly very capable rivals – groups will tactically expand as a means of signaling their own strength and resolve in order to maintain the appeal to local populations thereby ensuring their continued access to resources and recruits.¹

We test these arguments in the context of both the Global Terrorism Database (GTD) and Minorities at Risk Organizational Behavior (MAROB) datasets, finding clear evidence that both state repression and intergroup competition lead to tactical diversification. To address the potential endogeneity between repression and tactical diversification we confirm these findings using a multi process instrumental variable model in which we rely on ethnic fractionalization as an excludable indicator associated with repression but not tactical diversity. Finally, we then consider the consequences of diversification to understand whether organizations escalate into more sophisticated and lethal tactics or devolve into myriad low-tech approaches. The results are consistent with our theory, showing that organizations that diversify tend to escalate upwards into more advanced options like suicide bombings and coordinated attacks, but they also tend to inflict more casualties and strike a greater proportion of “hard” targets. When groups tactically contract, the trend reverses and groups become significantly less likely to use sophisticated methods against hard targets.

The results have significant implications for our understanding of subnational political violence. We find a meaningful relationship between organizational duress (in the form of both state repression and inter-organizational competition) and tactical diversification and, through this mechanism, the escalation of violence. When it comes to

¹ This logic draws explicitly on the outbidding mechanisms described by Bloom (2005) Kydd & Walter (2006), and others.

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competition, our findings provide some support for longstanding arguments about “outbidding” as a factor motivating the adoption of high-profile tactics such as suicide bombing (Kydd and Walter 2006; Bloom 2004; Findley and Young 2012). From a counterterrorist perspective, however, the conclusion is disquieting – cracking down on organizations, if they are able to diversify, can lead to a spiral of bloodshed.

Understanding Diversification

For many organizations the logic of diversification is rather intuitive: as the saying goes, it is unwise to “put all your eggs in one basket.” When operating in an environment of uncertainty and danger, strategically minded actors reduce their exposure to risk by avoiding reliance on a single strategy.² That said, while diversification should be employed preemptively as a hedge against risk and uncertainty, it is more commonly a *post hoc* response to external challenges and setbacks (March and Simon 1958; Romanelli and Tushman 1994). Research shows that firms, for example, expand their strategies in response to external pressures and competition (Lawrence and Lorsch 1967; DiMaggio and Powell 1991; March and Simon 1958; Thompson 1967). As Chakrabarti (2014) notes in the context of firm responses to the recent financial crisis, the more extensively and rapidly that environments change, the more that organizations need to adapt to survive. In such environments, shocks and disruptions become stimuli for diversification and other forms of

² Many readers will rightly think of diversification in terms of financial planning, where the same basic logic holds. (see, for example, Markowitz 1968). It is economic orthodoxy that investment portfolios with diverse combinations of stocks and bonds are more likely to achieve stable, long-term gains than bets on a single industry or company (Goetzmann and Kumar 2008).

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risk taking as firms seek out strategies to mitigate such occurrences in the future

(McNamara and Bromiley 1999; Weitzel and Jonsson 1989).

Of course, militant groups are not firms, but there are theoretically useful parallels. At the most basic level these are both organizations seeking success in competitive environments, and scholars can make inferences particularly by drawing on the basic nature of group behavior. Indeed, a substantial and growing portion of the terrorism literature establishes the commonalities between firms and militant organizations and then draws on them to generate theoretical expectations that find empirical support (e.g. Crenshaw 1987; Shapiro 2013; Abrahms and Potter 2015). If, however, these conceptual analogies are not theoretically useful the proof will be in the results – since hypotheses drawn from those analogies will find support in the data.

Perhaps more analogous to militant groups are state militaries that value diversification for very similar reasons. Interest by militaries in diversification goes back at least to Sun Tzu, who writes “...when I have won a victory I do not repeat my tactics but respond to circumstances in an infinite variety of ways (Sun Tzu 1963, 65).”

Unpredictability places pressure on ones adversaries, increasing confusion and making them more likely to commit mistakes (Levy 1983). Furthermore, diversified military power contributes to victory in war “because the state gains flexibility when it mixes instruments of power in varying combinations: it can thereby choose the best instrument(s) for the particular conditions faced and the level of victory sought (Martel 2011, 288).”

The emphasis on diversification extends to the realm of nuclear security as well. Historically, states have sought to strengthen their nuclear deterrent by deploying weapons in multiple locations and by utilizing an array of delivery vehicles (Freedman 1981, 326).

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This is precisely why the United States developed a nuclear triad (nuclear-armed bombers, nuclear-armed submarines, and land-based nuclear-armed missiles) as a means of ensuring second-strike capability. Notably, this enormous investment occurred in the context of a pronounced rivalry with the Soviet Union (Schwartz 1998).

Nonetheless, not all organizations diversify tactically. A major reason for this is that diversification is neither simple nor cheap. Research on firms, for example, shows that needless diversification can distract from core competencies (Raghuram, Servaes, and Zingales 2000). Militant organizations develop tactical experience over time and diversification can divert resources away from these developed abilities that have a higher probability of operational success. In addition, tactical diversification ultimately requires organizations to take risks, spending resources on an uncertain outcome. Diversification can prove unsuccessful if the new ability is never fully mastered or if the population does not approve. Ultimately, this suggests that militant groups sometimes face incentives to stick to the status quo, utilizing existing tactical options that they have already mastered rather than branching out towards new and uncertain abilities.

Together, these examples underscore the general logic behind diversification: it increases flexibility, unpredictability, and complicates adversary calculations. Yet embracing diversification is risky and it requires resources that can tax an organization while simultaneously distracting from developed capabilities. As a result, organizations generally pursue diversification when the operating environment presents new challenges that tip the ratio of risk and rewards, incentivizing experimentation over complacency. In the next section, we consider how these ideas translate to militant organizations.

Terrorism and the Incentives for Diversification

How do these advantages and costs translate to case of militant groups? Although the process works through multiple mechanisms, tactical diversification ultimately undercuts and challenges defensive counterterrorism, creates new vulnerabilities, and raises the likelihood of attack success (Paquette 2010).

First, diversification expands the number of targets that a state must defend and the ways in which it must defend them. According to Wilkinson (2014, 204) “...the key components of the counter-terrorism strategy must be geared to the type of terrorist threat confronted.” If militant organizations make predictable and limited tactical choices then governments can design their defensive efforts for fewer and more specific modes of attack (Stevenson 2001), but diversification undercuts this sort of specialization. The British government, for instance, was able to focus its operations on remotely detonated explosives and armed assaults because they were relatively unconcerned by the possibility of IRA suicide operations or aerial hijackings (Secretary of State for the Home Department 2011). More varied threats require a complex and costly response and the corresponding rebalancing of resources is a difficult task, requiring coordination and effective communication between different agencies at both local and federal level (Bergen et al. 2010, 31).

Second, if tactical diversity successfully stretches defenses and forces states to prepare for a broader range of possible attacks, it can ultimately introduce new vulnerabilities that militants can then exploit. As Crenshaw notes, “The purpose of innovation in terrorism is to maintain the possibility of surprise because it is critical to success (Crenshaw 1987, 15).” Since all objective measures of strength and power tend to

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favor states, this element of unpredictability is ultimately what allows terrorist attacks to succeed. Moreover, for many states, defensive spending is essentially zero-sum because counterterrorism budgets are at least somewhat fixed, with state decisions centered on how to allocate funds to defend possible targets based on expectations about different types of attack (Faria and Arce M 2005; Golany et al. 2009; Rosendorff and Sandler 2004). As a result, tactical diversification can force states to apportion their defensive resources more broadly. Combined, reapportioning fixed budgets and the uncertainty of new defenses can create avenues for militants to exploit as states simply cannot defend every asset equally well, which ultimately increases the likelihood of successful attacks.

Third, tactical diversification enables militants to overcome or circumvent defensive innovations. Wilkinson and Jenkins (2013, 24) find that “the history of attacks on aviation is the chronicle of a cat-and-mouse game, where the cat is blocking old holes and the mouse always succeeds in finding new ones.” Consider groups that specialized exclusively in either hijacking or remotely detonated bombs, both of which were largely nullified as viable tactics by technological and procedural adaptations by states. Metal detectors brought about a drastic drop in the success rate of aerial hijacking (Im et al. 1987; Dugan et al. 2005), while authorities can now quickly screen for radio transmissions that suggest the presence of a remotely-detonated explosive (Hoffman 1993). Groups with a diverse tactical arsenal can alter their operational profiles to outpace such changes in the defensive environment. This can manifest as a major innovation in response to initiatives like metal detectors, but also as more subtle adjustments to smaller changes in the defensive environment to take advantage of temporary or emerging vulnerabilities. For a terrorist attack to succeed, there needs to be a match between the organization’s tactical

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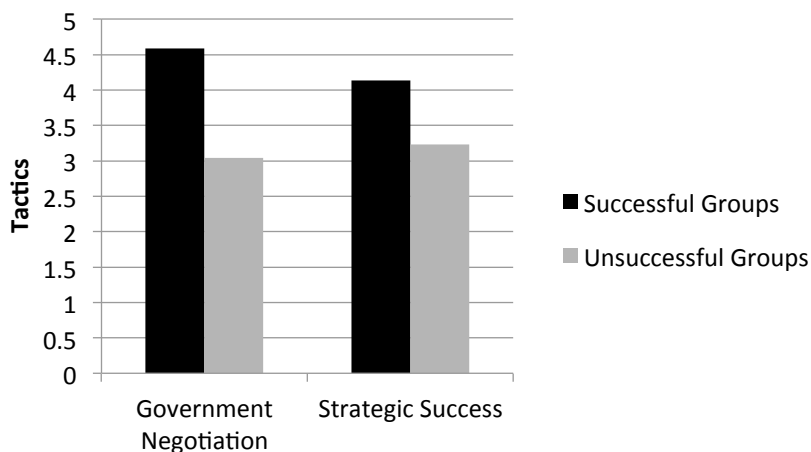
capabilities and the operational requirements of the attack – more tactical capabilities mean that more operations are potentially on the table (Jackson and Frelinger 2009).

The tactical success that arises from diversification contributes to organizations’ core long-term objectives: survival and strategic success. Blomberg et al (2010, 18) find that “the level of violence perpetrated by an organization...suggests that success breeds survival.” Success can also translate into organizational strength by inspiring support among the population (Paul 2009, 113). Given these benefits, it should come as no surprise that diversification is also associated with strategic success since militants with diverse tactical portfolios allow organizations to impose more costs on their adversaries.

There is clear empirical support for the association between diversification and favorable political outcomes. For example, as indicated in Figure 1, among the 181 militant organizations that achieved formal talks with the government (as identified by Cronin (2009)), the average number of tactics employed is 4.6. However, for unsuccessful groups, the average number of tactics is only 3 ($p < 0.001$).³ A similar pattern emerges among groups that did and did not reach their strategic goals, with the latter employing 4.1 tactics compared to 3.2 for their less successful counterparts ($p = .056$). Ultimately, groups wielding a broader tactical arsenal achieve somewhat greater success.

³ If the threshold is raised to successful talks, then the difference is increases slightly to 4.75 and 3 tactics for successful and unsuccessful groups, respectively.

Figure 1: Relationship between Terrorist Success⁴ and Tactical Diversity



Data from Cronin (2009)

The factors that impede diversification in other fields likewise exert an influence on militant groups. Indeed, many organizations with extensive capabilities and resources do not draw on these advantages to diversify their tactical arsenal. This tendency arises from a logical bias toward the status quo. As we have noted, research on organizational behavior finds that groups most commonly diversify tactics and strategies in response to substantial external pressure (DiMaggio and Powell 1983; DiMaggio and Powell 1991). Lacking this pressure, terrorist groups have little motivation to expend resources to institute internal changes, particularly if those changes might expose them to risk (Shapiro 2013; Horowitz 2010b).

The risks associated with diversification can be substantial. A less focused group with an overly broad agenda and resources that are spread thin is less likely to recruit new

⁴ Cronin identifies a number of strategic goals. Government negotiation indicates that a group achieved formal, strategic negotiations with the government, even if they ultimately failed; non-failed government negotiations means that formal, strategic negotiations took place that were not formally abandoned; and finally, some strategic success refers to whether or not any level of a group’s strategic objectives were ultimately met.

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members and maintain the ones that it has, leading to splits within the organization. Jemaah Islamiyya and Tanzim Qaedat al-Jihad, for example, splintered around 2003 over the use of suicide bombing and whether more resources should be devoted to religious and civilian outreach or indiscriminate violent attacks (Surrette 2009; Magouirk et al. 2008). Moving into less tried and true tactics also introduces the risk of failed missions that can cast a positive light on state counterterrorism efforts, making terrorists appear less threatening to the civilians they target and driving down their support among those they seek to win to their political cause.

The central objective of militant organizations, and arguably any organization, is survival (Wilson 1989; Olson 1982; Olsen and March 1989). Adaptation occurs primarily when it bolsters survival and is curtailed when it puts it at risk (DiMaggio and Powell 1983; Levinthal 1991). Thus, militant organizations diversify their tactics when circumstances force them to adapt – a process that has direct parallels in the way that existential threats incentivize tactical innovation in national militaries (Posen 1984, 1993). In contrast, organizations in less precarious positions rely on patterns and routines that have worked in the past; for them, change introduces an element of risk and uncertainty that is not worth the cost.

Although militant groups strive for their political objectives it is rarely at the expense of their organizational viability. Consequently, groups will overcome the barriers to diversification when they face a mix of pressures and incentives that force them to do so. Two sets of incentives appear critical for tipping the calculus away from the status quo and towards tactical expansion: state repression and group competition.

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Repression

The permissiveness of the political environment shapes the incentives of militant group to pursue tactical diversification. The lower the pressure by the state, the lower the threat to the group and the greater the bias toward a status quo that at least ensures survival and ongoing organizational viability. Repression, in contrast, forces organizations to adapt to survive and one way that this manifests is in terms of tactical diversification. This expectation is actually in line with a substantial body of work showing that repressive policies often have unintended consequences; instead of weakening organizations, they can instead embolden them, prompting increased levels of violence as groups seek to retaliate and reestablish their standing (Dugan and Chenoweth 2012; LaFree et al. 2009).

High levels of repression also magnify a militant group’s desire to successfully retaliate against the state. This is especially true when the repression is indiscriminate in nature, which can often anger the local population (driving recruitment), create additional grievances, and legitimize the militant’s use of violence. For instance, with respect to Northern Ireland, LaFree, Dugan, and Korte (2009) find that repressive British interventions lead to an increased risk of Republican attacks, while Peroff and Hewitt (1980) and White (1989) connect higher levels of British troops to increased rioting

Furthermore, militants facing high levels of repression seek out a broader range of tactical options because diversification offers better chances of success. Successful operations become especially important in the context of state crackdown because they signal the group’s continued capacity, resolve, and viability – all of which are necessary to bolster organizational cohesion and maintain external support. For instance, Israeli repression significantly increased popular support for suicide bombings and motivated

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groups to adopt the tactic. According to Abu Husam, a senior leader of the PFLP, “The Popular Front did not believe in [suicide bombings]: this method is still not part of our ideology, this is an immediate reaction to what we were subjected to, and came as a response to being directly targeted by the Israelis (Araj 2008, 293)”⁵ State repression emboldened PFLP militants to strike back against the state and even seek out new tactical options to do so.

Taken together, this implies a clear general relationship between repression and tactical diversification:

H1: *As state repression increases, tactical diversity will increase.*

Competition

Given their illicit nature, the most immediate threat to the survival of militant organizations comes from the state. But over the longer-term, success is only achieved by also outcompeting rival organizations to win the hearts and minds of a target population. When constrained to the same geographic space, groups have to compete for money, civilian support, and recruits. As the number of active organizations increases, groups “...ramp up the violence in order to distinguish themselves from the other organizations” and gain notice and popular support (Bloom 2005, 94). This “outbidding” process leads to the adoption of disrupting and lethal tactics such as suicide bombing, and an overall

⁵ Leaders of the Palestinian Islamic Jihad reiterated this sentiment, writing that “Martyrdom operations for the Islamic Jihad Movement are not a constant policy but came in response to the crimes and massacres committed by Israel against Palestinian civilians and leaders” (Araj 2008). Indeed, in a survey of PIJ and Hamas leaders, nearly 50% cited Israeli repression as the main factor driving their adoption of suicide bombs (Araj 2008).

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escalation of violence (Kydd and Walter 2006; Bloom 2004).⁶ Findley and Young (2012) show empirically that competition leads to increasingly severe violence largely due to diversification into new, more lethal tactics. Successful, spectacular attacks demonstrate to the population that an organization is capable of confronting the state, leading the movement, and consequently, that it is worthy of their support. That said, even failed attacks “can still be a success for the terrorists provided that they are technologically daring enough to garner media and public attention (Hoffman 1998, 254).”

An example of this dynamic can be found in the Israeli-Palestinian conflict. In the late 1980s, the conflict featured a number of groups, including the PLO, Hamas, Popular Front for the Liberation of Palestine (PFLP), and many smaller factions. One way that Hamas, founded after the other major organizations, built support was by radicalizing its doctrine and diversifying their tactics into more lethal approaches, particularly suicide bombing (Pedahzur 2005). This differentiated Hamas from other groups competing for the same resources and followers.

This work on competition and tactical expansion suggests a second hypothesis:

H2: *As competition between organizations increases, tactical diversity will increase.*

Research Design

⁶ Complicating matters, a growing body of literature suggests that outbidding behavior can be contextual rather than universal (Brym and Araj 2014). For example, nationalist and religiously-motivated groups are more likely to engage in outbidding than left-wing groups (Nemeth 2013). We pursue the conditionality on outbidding in the next section with tests that demonstrate that only highly capable organizations inspire outbidding from rivals.

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To test these hypotheses, we conduct a series of empirical tests on the relationship between tactical diversity and repression and inter-organizational competition. We assess the validity of our arguments in two distinct data contexts. We begin with tests on data from the Global Terrorism Database (GTD), which focuses on groups defined as terrorists. We then turn to organizations identified by the Minorities at Risk Organizational Behavior (MAROB) database. MAROB actors are based in the Middle East and North Africa, must be ethnically based, have political goals, and be active for at least 3 consecutive years. MAROB groups need not be violent, and if violent need not meet any definition of terrorism. We run tests on both all organization in the MAROB dataset and also only the subset of militant organizations (we present the latter since they match more closely to the theory) and find substantially similar results.

We test our hypotheses on these two datasets for a few reasons. First, given its regional focus and attention to ethnically based minorities, the mechanism that gives rise to the MAROB data substantially differs from that which gives rise to the GTD observations. Every data set has idiosyncrasies and it is therefore important to establish that a theory holds outside the confines any single empirical context. Second, MAROB includes data that specifically addresses state repression of the *organization* rather than *societal* repression, which allows for a more direct test of our first hypothesis. Finally, MAROB also offers superior measures of organizational capability (a potential alternative explanation) that are unavailable in the GTD data. Third, others have considered MAROB data in the context of strategic diversity and exploring these data allows us to speak to that body of work (Asal et al. 2013). Finally, there is missing data in GTD regarding the

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perpetrator of many attacks, which could bias the results. Testing our theory on the MAROB data ensures that missing data in GTD is not driving our findings.⁷

To capture tactical diversity, we develop a measure that counts a group’s discrete methods in a single year – those that require specialized training, investment, or outside assistance to properly wield.⁸ Since some organizations will not utilize their entire tactical portfolio in a given year – particularly in lower intensity conflicts – we reassess each of our models with a three-year, cumulative moving average of this diversity variable as well as the change in the moving average. The results are consistent and we report these findings in the appendix, where we report descriptive statistics showing variation in tactical diversity for each universe of cases as well.

In the GTD-based models, we operationalize repression (H1) with the Cingranelli-Richards (CIRI) Human Rights Data, which measures the “physical integrity” rights of each country on a scale from 0 (no substantial violations) to 8 (significant human rights violations). The variable incorporates four separate sub-indexes that are each coded from 0 to 2: extrajudicial killings, torture, political imprisonment, and disappearances.⁹ In the appendix, we re-run the models with a second measure of repression (and obtain equivalent

⁷ It is worth noting, however, that the missingness in the GTD data is unlikely to be driving those results. Missingness in the perpetrator variable occurs most frequently when groups (or individuals) do not claim responsibility for an attack. We are expressly interested in more substantial organizations and the outbidding and repression mechanisms that we describe are predicated in part on credit claiming. Thus, given that the GTD is gleaned almost entirely from media reports, it tends to do a relatively better job capturing perpetrator data those attacks most relevant for testing our theory.

⁸ The tactics we identify are: armed assault, arson, assassination, hostage taking (both barricade and kidnapping incidents), facility and infrastructure attacks, coordinated attacks, suicide bombing, non-suicide bombing, airline hijacking, maritime hijacking, and lastly, nuclear, biological, chemical, or radiological (NBCR) attacks.

⁹ The default physical integrity score is coded the opposite of this (0 = no respect for these rights, 8 = full respect) though to ease interpretation we reversed the coding.

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findings). The Political Terror Scale (PTS), codes yearly country reports by both Amnesty International and the U.S. State Department into a 0-5 scale, where 0 reflects countries that follow the rule of law and where torture is “rare or exceptional”, while 5 reflects a government, such as that of North Korea, where all people live under constant threat (Wood and Gibney 2010).¹⁰ For the MAROB-based models, we use the MAROB variable on group-level repression by the government, which runs from 1 to 3, with 1 indicating that the state is not using lethal violence against the organization and 3, that lethal violence is consistently applied.¹¹

To test the competition hypothesis (H2), we count the number of active groups in an organization’s home country in a given year.¹² To assess whether organizations are only driven to diversify by other groups that are themselves diversified, we also run models where we only count organizations that surpass an escalating series of thresholds of tactical diversity: 1 or more, 2 or more, 3 or more, 4 or more, 5 or more, and 6 or more. If our intuition is correct, we should observe a stronger relationship with diversification when competitors are themselves more diversified and more capable.

Fully specifying these models requires accounting for any organization- and country-level features that are potentially confounded with both tactical choice and the

¹⁰ Zero signifies that “Countries [are] under a secure rule of law, people are not imprisoned for their views, and torture is rare or exceptional,” while five means that “Terror has expanded to the whole population. The leaders of these societies place no limits on the means or thoroughness with which they pursue personal or ideological goals.”

¹¹ Some might be concerned that the relationship between repression and diversification could be non-linear. For example, very high and very low levels of repression might both be associated with increased diversification. To assess this and related concerns we squared and cubed the repression term and found no consistent effect. For this reason we report the linear relationship.

¹² During this process we also removed groups that were clearly not terrorist organizations such as “student protestors” and “unknown assailants.”

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repression and competition mechanisms. There are, however, legitimate concerns about both the availability and accuracy of the data needed to accomplish this task completely, particularly for the features of militant groups. We therefore begin with, and rely primarily upon, relatively sparse equations that consist of our key explanatory variables (repression and competition) with country and organization fixed effects, which allow us to account systematically for unobserved unit-level heterogeneity. We then sequentially assess country and organizational covariates relying on the best available data. As demonstrated below, the results are consistent across these specifications.

Among organizational covariates, capacity likely plays a large role in the ability of groups to even consider diversifying into particular tactics. Even the most motivated organizations will fail to diversify if they lack the material capability to do so. While militant capabilities arise from many sources, we focus on two that are directly tied to the question of tactical diffusion: connections to other organizations (in the GTD models) and state support (in the MAROB models).¹³ Asal and Rethemeyer (2008), Horowitz and Potter (2014), and others demonstrate that connections to other organizations facilitate the diffusion of tactics and capability. Prior research shows that foreign support increases organizational capability precisely because it provides both the capital and knowledge needed to develop new tactics (Byman et al. 2001).

We also account for organizational age due to the possibility that younger groups might be more likely to expand their tactical portfolios.¹⁴ Horowitz (2010b), for example,

¹³ Data availability prevents us from assessing both measures in the same model

¹⁴ This is supported by research on the diffusion of suicide terrorism. Along these lines, we believe that younger terrorist groups will face less internal resistance to the idea of trying new tactics, particularly because their members are less experienced and have less

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demonstrates that older terrorist groups are less likely to adopt suicide terrorism since they have more bureaucratic hurdles and veto players that inhibit change and successful collective action.

Finally, we account for various ideologies that motivate organizations: anarchist, religious, leftist, nationalist, and racist. In the online appendix, we show that the results are consistent even when we add a measure for organizational size and when we split the sample into groups that have conducted transnational attacks and those that have not (on the logic that the ability to conduct transnational attacks can serve as a rough proxy for organizational capacity).

At the country level we include the Polity 2 regime score of the home country of a militant group, ranging from -10 (autocratic) to 10 (democratic) (Marshall and Jaggers 2002). Some scholars argue that democracy encourages terrorist behavior, while others believe that democracy reduces terrorism since it promotes nonviolent means of dispute resolution (Eubank and Weinberg 1994; Jackson Wade and Reiter 2007; Dugan and Chenoweth 2012; Schmid 1992).

While our discussion primarily focuses on this sparse model with organization and country, to facilitate comparability and researchers interested in related arguments we also estimate some models with controls that appear consistently in the terrorism literature. That said, the link between several of them (notably, country age, GDP growth, energy consumption, ethnic fractionalization, and infant mortality) and the number of tactics used by groups is theoretically tenuous.

specialization in any one method, and these groups will find it easier to alter their structure in accordance with new capabilities.

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We include country age to address the possibility that the defensive capabilities of younger countries might be relatively weaker than that of older countries. We also control for a country’s total population (logged), its energy consumption per capita, GDP per capita growth, infant mortality rate, and level of ethnic fractionalization. Larger countries might produce a greater and more diverse pool of recruits, which could positively impact the tactical knowledge available to terrorist groups. Energy, GDP, and infant mortality address the potential link between societal wealth and propensity for terrorism. More ethnically fracture societies might witness greater support for terrorism and, ultimately, increased rates of tactical adoption. Lastly, we include a measure of the number of neighboring countries with ongoing civil wars since they might provide a nearby haven for terrorist organizations (Banks 2005). Descriptive statistics for all variables are included in the online appendix.

Results

Table 1 presents results from OLS regressions (the results are consistent for negative binomial models, see appendix). Model 1 is a sparse model featuring the key explanatory variables, along with group and country fixed effects. Model 2 introduces the organizational level controls (instead of group fixed effects), along with country fixed effects. Model 3 is the reverse of Model 2: country controls with group fixed effects. Model 4 contains both sets of controls with year fixed effects. Our key explanatory variables, repression and competition, are lagged by one year in all models (models with a lagged moving average can be found in the appendix).

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Table 1: OLS Models of Tactical Diversity by Year, GTD Data

	(1)	(2)	(3)	(4)
Repression _{t-1}	0.130** (0.057)	0.109* (0.055)	0.141** (0.060)	0.200*** (0.029)
Competition _{t-1}	0.028 (0.017)	0.011 (0.015)	0.015 (0.018)	-0.019 (0.013)
Group Age		0.010 (0.013)		0.024*** (0.006)
Connections		0.087* (0.045)		0.109*** (0.022)
Religious		-0.136 (0.251)		-0.230 (0.191)
Anarchist		0.330 (0.317)		-0.231 (0.571)
Leftist		-0.123 (0.265)		-0.633** (0.246)
Nationalist		-0.098 (0.222)		-0.374*** (0.124)
Racist		0.050 (0.125)		-1.767*** (0.458)
Polity Score			0.048 (0.031)	0.033** (0.015)
Country Age			-0.037 (0.023)	-0.009 (0.013)
Total Population (logged)			-0.134 (0.233)	0.005 (0.046)
GDP growth (annual %)			-0.032 (0.020)	-0.002 (0.016)
Per Capita Energy			-0.023 (0.055)	-0.078*** (0.017)
Infant Mortality			-0.001 (0.013)	-0.002 (0.003)
Political Instability			-0.201 (0.217)	-0.120 (0.214)
Bordering Civil Wars			-0.031 (0.159)	-0.242*** (0.055)
Observations	1254	1209	951	912

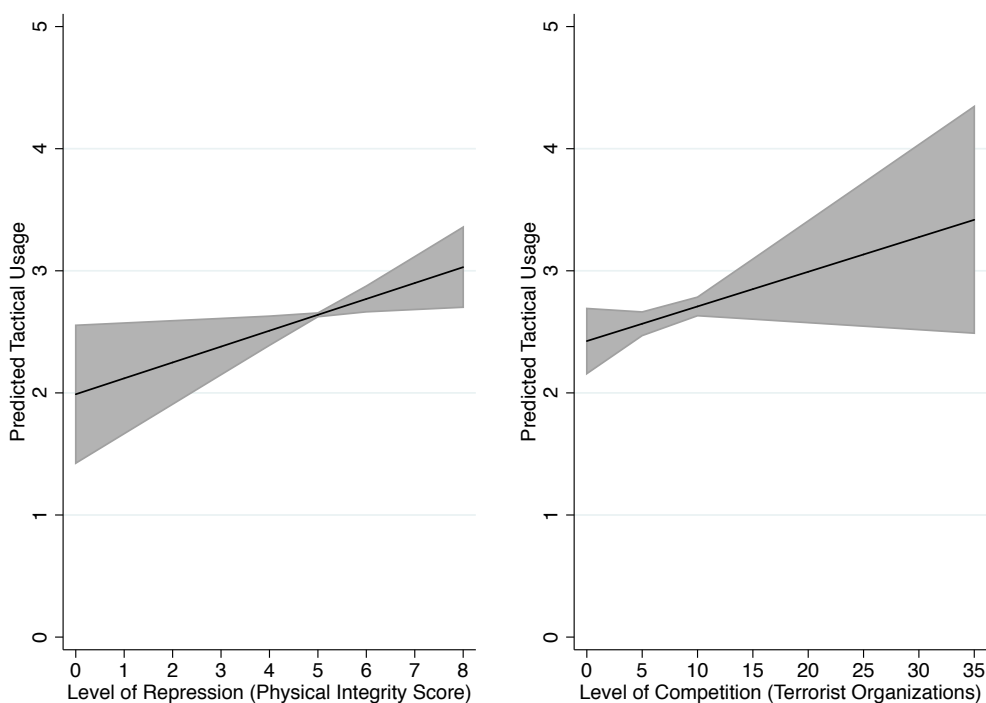
Clustered standard errors in parentheses. Country and organization fixed effects in Model 1; country fixed effects in Model 2; organization fixed effects in Model 3; year fixed effects in Model 4. * p.1, ** p.05, *** p.01

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In line with Hypothesis 1, across all of the specifications, organizations operating in repressive environments employ a more diverse tactical portfolio in the following year. This finding holds across the models.

Figure 2, panel 1 plots the substantive effects of repression on tactical diversification – the difference in tactical usage between groups in the least repressive versus the most repressive environment is approximately one tactic per year.

Figure 2: Repression, Competition and Tactical Diversity, GTD Data



Note: Estimates obtained from Model 1, Table 1.

Table 1 and the second panel of Figure 2 indicate that there is a positive but statistically insignificant (owing to larger confidence intervals at the high end of competition where the data becomes sparse) relationship between the number of active organizations and tactical expansion. This should not, however, lead to an immediate

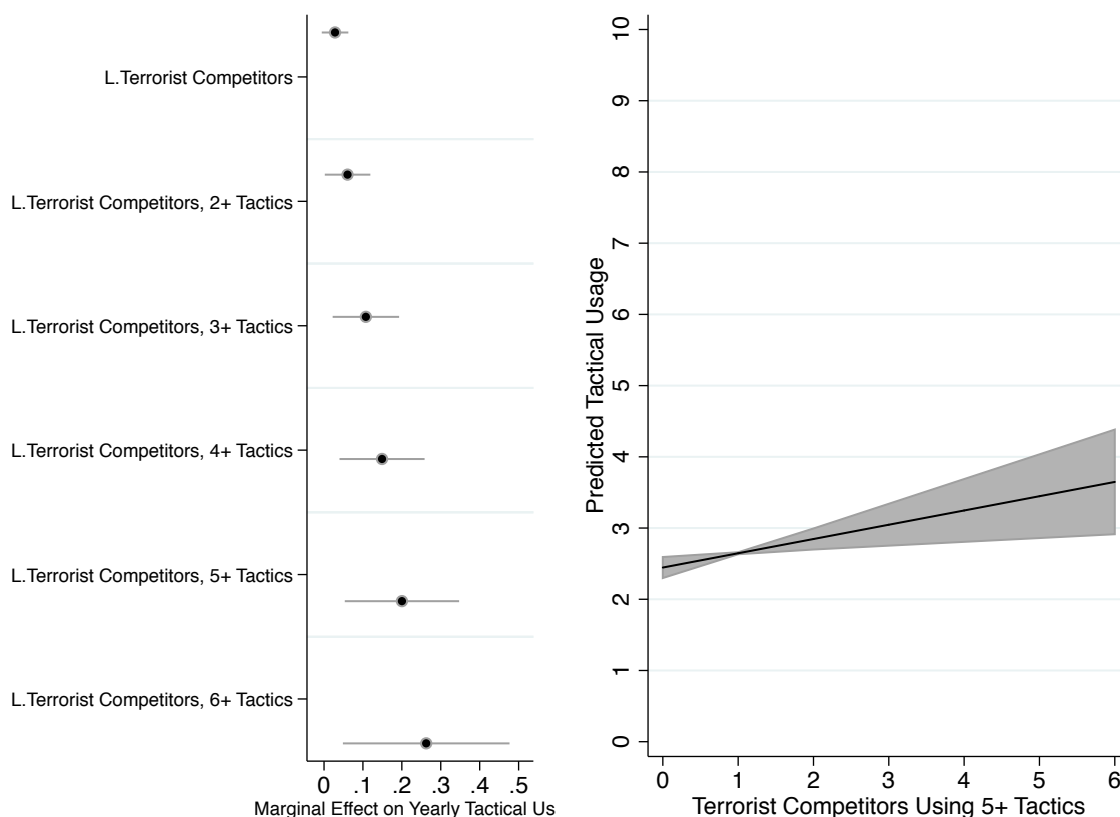
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rejection of H2. As we have noted, it is likely that not all organizations equally inspire their peers to outbid, and mixing those that represent true competition with those that do not introduces noise which increases the confidence interval. To test this possibility and generate a more precise measure, we disaggregate terrorist competitors according to their level of tactical diversity.

Figure 3 below displays the predicted marginal effect of tactical usage from six additional replications of Model 1 in which the measure of competition escalates from all groups active in the home country (identical to Table 1, Model 1), to groups active in the country employing two or more tactics, to those employing three or more tactics, and so on through 6 or more tactics.¹⁵ As was the case in Figure 2, at the lower end of this escalating range the 95% confidence interval for the estimated effect crosses zero, but beginning with the model of competitors employing three or more or more tactics the relationship becomes significant and increasingly large. The second panel of Figure 3 indicates that as the number of competitors utilizing at least 5 tactics increases from zero to 6 (the observed range of the data) the predicted number of tactics employed from about 2.5 to about 3.5.

¹⁵ The corresponding table is available in the appendix.

Figure 3: Tactical Diversification of Competition and Predicted Tactical Usage, GTD



MAROB Tests

To further demonstrate the robustness of these findings and expand the analysis further, we turn to the Minorities at Risk Organizational Behavior (MAROB) dataset. Table 2 presents the results of these models, which closely replicate those that we introduced in Table 1.¹⁶ Model 1 is the sparse model with country, and organization, fixed effects. Model 2 replaces the organization fixed effects with the organization level covariates. Model 3 replaces the country fixed effects with country level covariates. Model 4 contains both the

¹⁶ The different construction of the MAROB data also requires a different accounting of the ideologies that motivate these organizations, and also do not allow us to directly assess the number connections that each organization has.

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country and group covariates with year fixed effects. Model 5 replicates Model 4 but does so for all MAROB groups rather than just militant organizations.

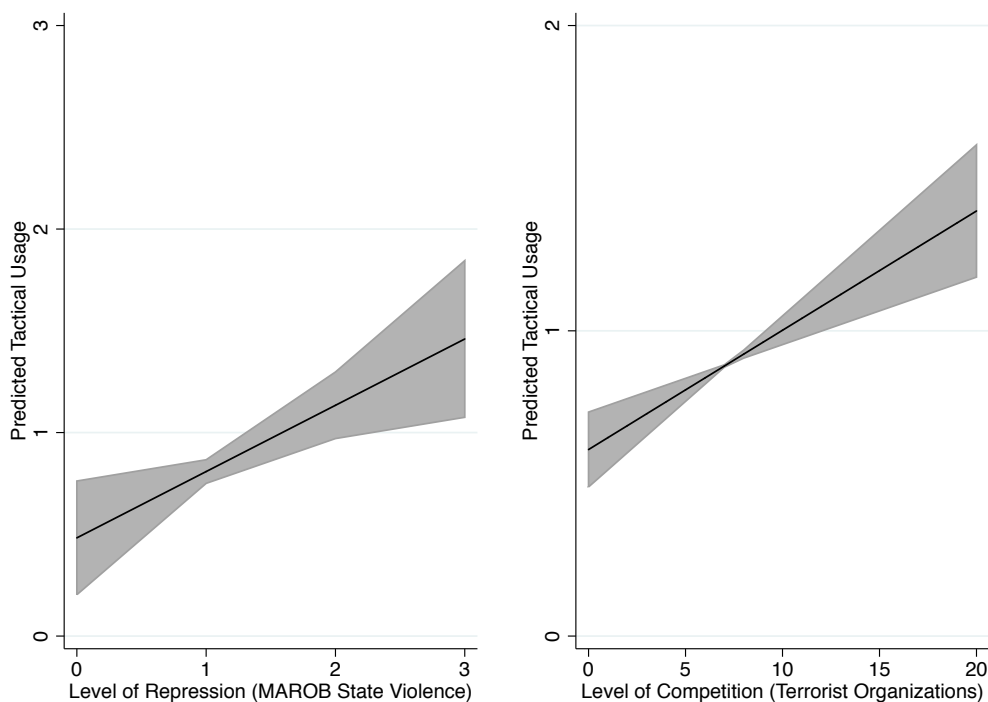
Table 2: Tactical Diversity by Year, MAROB Data

	(1)	(2)	(3)	(4)	(5)
Repression _{t-1}	0.326*** (0.111)	0.525*** (0.145)	0.131 (0.136)	0.764*** (0.171)	0.772*** (0.151)
Competition _{t-1}	0.039*** (0.008)	0.035** (0.012)	0.085*** (0.026)	0.011 (0.020)	0.008 (0.009)
Group Age		-0.000 (0.005)		0.002 (0.005)	0.003 (0.002)
Religious		0.296 (0.381)		0.879*** (0.181)	0.896*** (0.150)
Leftist		-0.209 (0.345)		0.455** (0.211)	0.629*** (0.157)
Nationalist		0.127 (0.350)		-0.091 (0.178)	-0.032 (0.066)
Foreign Support		0.351* (0.164)		0.677*** (0.182)	0.724*** (0.104)
Polity Score			0.078 (0.068)	0.065*** (0.019)	0.043*** (0.010)
Country Age			0.052 (0.062)	-0.028 (0.060)	0.029 (0.018)
Population (logged)			-0.416 (0.646)	0.378** (0.136)	0.242*** (0.044)
GDP growth (annual %)			-0.016** (0.008)	-0.024*** (0.008)	-0.020*** (0.005)
Energy Consumption			0.121 (0.123)	0.048 (0.029)	0.019*** (0.006)
Infant Mortality			0.068** (0.030)	-0.008 (0.010)	-0.005 (0.005)
Political Instability			-0.869*** (0.326)	-0.719** (0.308)	-0.343** (0.157)
Bordering Civil Wars			0.042 (0.105)	-0.013 (0.092)	-0.118** (0.052)
Observations	845	684	292	259	530

Clustered standard errors in parentheses. Organization and country fixed effects in Model 1; country fixed effects in Model 2; organization fixed effects in Models 3; year fixed effects in Model 4.

* p.1, ** p.05, *** p.01

Figure 4: Regression, Competition and Tactical Diversity, MAROB Data



Note: Estimates obtained from Model 1, Table 3

These models consistently show a relationship between repression and diversification. As repression moves from zero to the maximum (three), the expected number of tactics increases by nearly 1.3.¹⁷ This is significant since the repression variable available in the MAROB data provides a different and arguably much better test of our hypotheses than the CIRI or PTS data used in the GTD models because it captures whether or not the state uses direct violence against the specific organization.

As before, we use the number of active terrorist organizations in a group’s home country to proxy for the level of intergroup competition. In contrast to the analysis that we conducted with the GTD data, the measure is immediately significant in most of the models

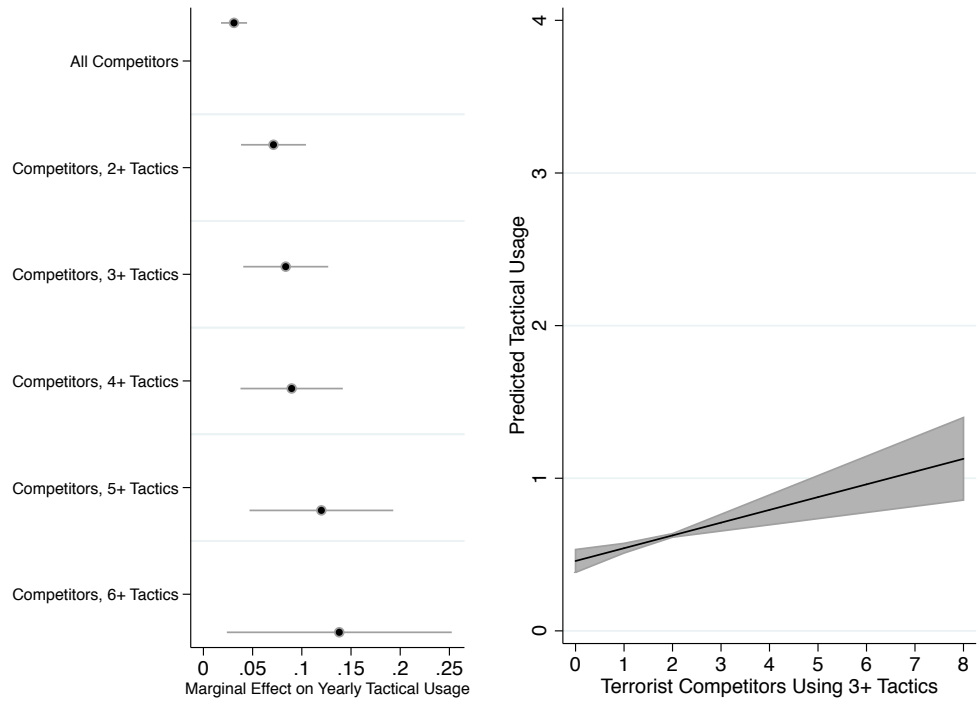
¹⁷ Groups that increased their tactical variation as repression increased include Fatah, the PLO, Hamas, Kurdistan Democratic Party, and the Progressive Socialist Party in Lebanon.

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in Table 2. However, to further assess the possibility that competition is only inspired by the most capable groups we vary our measure of competitors in the same manner described for the GTD models and plot the substantive effects in Figure 5.¹⁸ The findings confirm that competitors that are themselves tactically diverse drive their peers to diversify. Examples of this phenomenon include Fatah, Hamas, Islamic Jihad, and al Aqsa Martyrs Brigade that felt compelled to branch out into suicide bombings since their failure to do so might indicate their relative lack of dedication and resolve. The PLO/PA, in particular, “had concluded that it could ill-afford not to have a suicide capability of its own if it was going to reclaim the political authority it was losing to its increasingly high-profile rivals (Hoffman and McCormick 2004, 271).”

¹⁸ The corresponding regression table is available in the appendix.

Figure 5: Tactical Diversification of Competition and Predicted Tactical Usage, MAROB



The remaining coefficients in Table 2 largely corroborate the findings from the GTD analysis. Foreign support has a positive, statistically significant relationship with tactical diversity in Models 4 and 5, but not Model 2. It is also of note that organizations in more democratic countries generally employ a greater number of tactics, though this relationship was less clear in the GTD analysis.

Addressing Endogeneity

Thus far, we have established a robust correlation between organizational stress (in terms of repression and completion) and tactical diversification. We have also developed a theoretical argument that posits a causal process, with external pressure incentivizing diversification as a means of ensuring continued organization viability and ultimately survival. A critic, however, might argue that rather than emerging from our theoretical

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mechanism, our results could arise instead from an endogenous process in which groups diversify first and then the government represses them in response.

Because we must rely on observational data to establish our argument, we cannot refute this possibility with absolute certainty. In the preceding models we lagged repression and competition variables by a year so that our estimates assess how repression the previous year influences the number of tactics at time t .¹⁹ This, however, is not a definitive solution.

To increase confidence that our empirical findings arise from the causal processes that we have theorized, we replicate our findings in more fully identified models. A substantial proportion of research on repression explores how ethnic diversity contributes to or is associated with escalating levels of state repression (Davenport et al 2011, Lee et al 2004, Walker and Poe 2002). Importantly for our purpose, ethnic fractionalization is also not correlated in a meaningful way with our measure of tactical diversity (-0.047) and we can come up with no plausible theoretical argument linking them. Therefore, we use ethnic fractionalization as an excludable indicator for an instrumental model. To accomplish this, we retest our GTD and MAROB models, but with two first stage equations in which ethnic fractionalization predicts both the level of repression and the extent of organizational competition.²⁰ One complicating factor is that while our model of diversification is linear,

¹⁹ This temporal solution to the problem is not definitive because there could be an element of anticipation in which governments might see signs that organizations are in the process of expanding their capabilities. Alternatively, some third factor (such as increasing militant capabilities) might be contributing to both the diversification and the repression, but perhaps on different timelines.

²⁰ While we are not as concerned about endogeneity with regard to the competition story, there is clear reason to anticipate that ethnic fractionalization would be associated with the

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repression is an ordered indicator. To accommodate this, we employ a recursive multi-process model in which the repression equation is an ordered probit, the competition equation is linear, and the second stage diversification equation is also linear (Roodman 2011).

Table 3 contains the results of these models for both the GTD and MAROB data. In both cases, we create instrumented models based on GTD Model 1 in Table 1 and MAROB Model 1 in Table 2, the basic models with country and group fixed effects. The substance of the results is remarkably similar to those in Tables 1 and 2.²¹

Table 3: Multi-process IV models, GTD and MAROB

GTD		MAROB	
Tactical Diversity		Tactical Diversity	
Repression _{t-1}	0.146** (0.053)	Repression _{t-1}	0.311** (0.101)
Competition _{t-1}	0.032** (0.010)	Competition _{t-1}	0.028*** (0.006)
Repression		Repression	
Ethnic Fractionalization	2.146*** (0.213)	Ethnic Fractionalization	-1.676 (0.988)
Competition		Competition	
Ethnic Fractionalization	8.459*** (1.796)	Ethnic Fractionalization	12.588** * (2.146)
N= 2698		N= 1643	

The models also support the validity of ethnic fractionalization as an instrument.

The instrument passes the best available assessments of strength (Angrist and Pischke

number of organizations operating within a given conflict. Therefore, to fully specify the model, we want the ethnic fractionalization measure to come in through this route as well.

²¹ The results hold for models with organizational and country covariates at the second stage.

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2009) – among other tests, the R^2 is high for both first stage equations and the F test is well over 10. Moreover, because the regression equation is not a linear model (in which case the regression would be exactly identified), we are also able to conduct a basic test of exogeneity by adding the instrument (ethnic fractionalization) to the second stage (Morduch and Roodman 2014). The resulting coefficient is insignificant, which, though not definitive, is reassuring since its significance would be a strong indication that the variable was not excludable. Given the results in Table 3 and the fact that the instrument passes several tests of instrument strength and validity, these assessments provide additional evidence that the main results reflect the underlying impact of repression and competition on tactical diversity, and not the other way around.

While these instrumental variable models should increase confidence in the direction of the relationship between repression and diversification, a fully identified model remains out of reach. We therefore raise two additional points. First, even if tactical diversity could encourage crackdowns by the government (perhaps because of its association with success), these crackdowns are likely to further incentivize tactical diversification. So even if there is some truth to the circularity to the story, it does not undercut the argument. It just suggests an important topic for further research. Second, and more significantly, government repression occurs for a variety of reasons including ideology, history, domestic institutional arrangements, and other factors. The impact of tactical diversification by militant groups likely plays an extremely small role in the overall calculations of governments to repress. The impact is almost certainly smaller than the impact of government repression on how groups view their relationship to the government and need to engage in new tactics to survive.

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Expansion into What?

The results above also raise the question of whether diversification is a signal of weakness – with groups devolving into multiple less dangerous tactics due to pressure – or whether diversification generally strengthens organizations by moving them into more disruptive and lethal approaches. To assess this, we divide our GTD sample into group years in which tactical diversity increases from the prior year and groups years in which it *decreases* (we leave out years in which tactical diversification holds constant). We then calculate the percentage of organizations that branch out into approaches that the literature identifies as sophisticated (i.e. suicide bombing, aerial hijacking, and coordinated attacks), that strike a higher ratio of “hard” targets associated with the government, police, or military, and that kill more civilians. If our theory is correct, we would expect to find that tactical expanders (when compared to contractors) use suicide bombs and other deadly tactics at a higher rate, while also attacking more “hard targets” and killing more civilians in a given year.

Table 4 presents the results.²² Expanders are significantly more likely to employ aerial hijackings, coordinated attacks, and also suicide bombings. In contrast, groups that contract, such as Jemaah Islamiyya and Islamic Jihad Group, tend to drop these complex capabilities. Similarly, the number of both yearly fatalities and attacks against hard targets increase when groups diversify their tactics. When contracting, both of these metrics decrease, indicating that organizations that abandon tactical abilities from one year to the

²² We use t-tests to assess the yearly difference in means between tactical expanders and contractors.

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next simultaneously decline in lethality and the ability attack hard targets. These tests support our intuition that tactical expansion is not a sign of weakness, but rather a sign of organizational *strength*.

Table 4 –Tactical Expanders and Contractors

Metric	N	Tactical Contractors	Tactical Expanders	<i>p</i>
		Mean (SE)	Mean (SE)	
Δ Aerial Hijacking	1344	-.027 (.007)	.017 (.006)	0.000
Δ Coordinated Attack	1344	-.276 (.020)	.281 (.019)	0.000
Δ Suicide Bombing	1344	-.045 (.010)	.053 (.010)	0.000
Δ Yearly Fatalities	1344	-20.691 (3.749)	26.435 (7.788)	0.000
Δ Yearly Hard Targets	1344	-3.824 (.589)	4.432 (.871)	0.000

There is evidence of this dynamic in prominent cases. For example, despite years of Russian repression, Chechen rebels became substantially more lethal and more complex in their operations (Atran 2004). Comparing the conflict in 1998 with that in 2004 – when the physical integrity score of Russian increased from three to seven (out of eight) – Col. Gen. Nikolai Serdtsev, the head of the Russian Army’s Engineering Forces, noted that the conflict had “sharply escalated and the number of casualties among combat and technical personnel has sharply increased. All of this confirms that the terrorists are now more organized in their preparations” (Kramer 2005, 25-26). Far from subduing the militants, Russian repression led to increasingly lethal and complex attacks. As one Russian politician put it, “The more repression and force we use [against the Chechens], the more of these types of extremists we are bound to create...[They are] a new generation of fanatics’ who would seek to carry out ever deadlier and more spectacular attacks (Kramer 2005, 61).”

Conclusion

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Choices about tactical diversification play a fundamental role in shaping the success and failure of political organizations, national militaries, and firms. Militant groups are no different. This paper presents initial evidence that terrorist organizations expand their tactical portfolio in response to pressures both from the state and peer competitors. When state repression increases, our results show that militant groups will broaden their tactical capabilities to inflict greater harm and foil counterterrorist defenses. One implication is that repression of these groups can, in some cases, have negative consequences for the civilian population even if it provides short-term security for government forces.

Similarly, when groups face meaningful competition from other militant organizations they are also likely to adopt more tactics, using this expanded arsenal to prove their relative strength and capability and shore up local support. Interestingly, in this case we find evidence of a more nuanced relationship than most existing research implies: not all groups are equally likely to inspire outbidding behavior. Instead, the effect increases along with the tactical diversity of one’s competitors. This suggests an organizational imperative to compete along the same means, similar to how the adoption of suicide bombing has been linked to other groups mimicking the tactic in turn.

These findings fit within a broader framework of militant group analysis that focuses on organizational incentives and processes as a way of ultimately understanding their behavior. One way to advance research is by continuing to find similarities between militant organizations and other types of societal actors about which we know much more. The nexus between seemingly diverse literatures can open up an array of new insights, and future research should aim to further develop and expand this line of research. In the present, understanding the internal and external organizational processes that incentivize

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diversification can improve how governments respond to one of the largest security challenges in the modern environment.

These findings also have important policy implications. Our results provide some systematic evidence in favor of the “folk wisdom” that more diverse terrorist groups are harder for governments to track – and stop. By extension, it also suggests that cutting off avenues for tactical innovation or particular types of attacks represents a potentially fruitful counterterrorism strategy in some cases. By limiting groups to a smaller set of tactics, governments can make the behavior of militant groups more predictable, aiding overall counterterrorism efforts.

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