

# Over Pressure: Grassroots-Driven Transformation of (Militant) Organizations

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When do recruitment windfalls strengthen organizations while threatening their leader's perception of success? This paper introduces a theory of grassroots-driven organizational change that is broadly applicable when leaders balance short-term survival with long-term mission focus. Using militant groups as a reference, I argue that upward-driving internal pressures caused by incomplete socialization can transform the priorities and operational focus of resource-constrained organizations. I illustrate the theory via historical examples of 20<sup>th</sup> and 21<sup>st</sup> century violent movements and outline downstream implications of such a transformation via an extended case study of al-Qaeda in the Arabian Peninsula (AQAP) that combines qualitative, computational, and text-as-data techniques to generate insight into an information-poor setting. Changes in AQAP's activity patterns and self-presentation, as revealed the qualitative and quantitative analysis, are consistent with the expectation that the rapid introduction of personnel fundamentally transformed the character of the insurgency.

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## Introduction

*We in the PLF [Palestinian Liberation Front]... felt as if we were caught, as the old Arabic saying goes, between a hammer and an anvil: the hammer was the conventional [Chairman's] policy and the anvil the newly born struggle of the Palestinian fedayeen—*  
Shafiq Al-Hout, *My Life in the PLO*

In the mid-1960s, the founders of the Palestinian Liberation Organization (PLO) faced a dilemma. They wanted to create an umbrella organization for the Palestinian national movement. However, militancy had become more popular than the leftist Nasserite ideology preferred by the PLO's Executive Committee. Even worse, members of the Executive Committee believed that the *fedayeen* militant groups were rushing into a confrontation with Israel that the Palestinian nationalist movement was not ready for and which would likely result in a serious setback for the Palestinian cause. As PLO co-founder, Shafiq Al-Hout recounted in his memoir, the Executive Committee tried to unify the Palestinian movements without adopting the aggressive agenda of the militant groups. Initially, the Chairman, Ahmed al-Shuqayri, “tried to absorb the inter-Palestinian problems by forming a new Executive Committee, which was intended to bring the two generations—the traditional bureaucratic one and the young revolutionary one which was keen on initiating new practices—and to be capable of absorbing the factions that were still refusing to participate” (Al-Hout 2011, p. 53). Within two years, however, the Executive Committee was obliged to accommodate the militant factions after “debate intensified between the conventionalists and the newcomers” and “al-Shuqayri was forced to accept new members of the Executive Committee from the younger generation” (Al-Hout 2011, p. 54).

A decade later, and half a world away, pragmatic commanders of Arab battalions participating in the Soviet-Afghan and Afghan Civil Wars found themselves with a windfall of Salafi recruits from Arab countries. The commanders quickly learned that these new members were impatient with training and strategic restraint. Instead, seeking excitement and

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martyrdom, the young Arab fighters agitated for rapid engagement in battle, heedless of their preparation—or lack thereof—or of the long-term objectives of the groups that were hosting them (Hamid and Farrall 2015). The volunteers created problems within their host groups, in part by being violently opposed to non-Salafis. However, despite their indifference to strategy and propensity to redirect operations towards sectarian violence, the Arab fighters were also conduits for donations from foreign backers which gave them a “very high” influence on the Afghan militias (Hamid and Farrall 2015, p. 51).

In each of these vignettes, recruitment opportunities that initially seemed to improve the strength and resilience of an organization profoundly undermined the original leadership’s long-term goals. This manuscript argues that opportunities for rapid expansion can strengthen an organization in the short run, but undermine the leader’s ability to pursue their goals by introducing internal pressure to satisfy the priorities of new recruits. This pressure may initiate a process of internal transformation that reshapes the the organization according to preferences of the new recruits and instead of the original leaders. In theorizing a recruitment-driven process of organizational change, I analyze an underexplored, yet widespread, trade-off that organizations face as they grow.

Although there is extensive scholarship on organizational change, existing work tends to focus on leader-driven and top-down changes (see, for example, Armenakis and Bedeian 1999; Christia 2012; Fernandez and Rainey 2017; Hannan and Freeman 1984; Kanter 2003) or on the downstream effects of initial institutional, material, and social endowments (*e.g.* Johnston 2008; Parkinson 2013; Sinno 2010; Staniland 2012; Staniland 2014; Weinstein 2006). A related literature on militant selection and recruitment emphasizes how militant leaders recruit and socialize carefully in order to minimize agency problems between the preferences of leaders and their rank-and-file (Cohen 2013; De Mesquita 2005; Hegghammer 2013; Shapiro and Siegel 2007; Weinstein 2006). Likewise, research on mission drift addresses the dynamics that drive organizations to change in ways not intended by the leadership, but both academics and practitioners tend to emphasize financial influences rather than personnel

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changes (*e.g.* Cornforth 2014; Jones 2007; Schleckser 2015; Tamm 2016).

Yet, the histories of many organizations feature internal transformations initiated and driven by recruits. Understanding the process and consequences of bottom-up change pathways has implications for researchers and practitioners interested in the dynamics of evolution in organizations, both violent and non-violent. This manuscript contributes to the growing literatures on the consequences of socialization failure and grassroots agency in socialization (Checkel 2017; Barker 2003; Wood and Toppelberg 2017) and the downstream effects of existing social structures on organizations (Benford and Snow 2000; Manekin 2017; Staniland 2014). In using militant groups to illustrate the dynamics of recruit-driven changes, this article contributes to the growing literature on the organizational behavior of militants and insurgency (Checkel 2017; Hoover Green 2016; Humphreys and Weinstein 2006; Gates 2002; Green 2017; Gutiérrez and Giustozzi 2010; Gutiérrez 2012; Mironova 2019; Parkinson and Zaks 2018; Salehyan, Siroky, and Wood 2014; Schram 2019; Sann and Wood 2014; Tamm 2016; Wood 2003; Wood 2008).

This article proceeds in two parts: first, I outline a general theory of bottom-up organizational transformation, with particular focus on how the process influences militant revolutionary organizations. These organizations are particularly susceptible to experiencing a success trap caused by the bottom-up transformation process. Militant groups face a particularly stark tradeoff in that integration with local communities provides resources and protection but can undermine broader goals by leaving the organization beholden to the parochial interests of local recruits.

Second, I draw out the empirical implications of a bottom-up transformation via an extended case study of al-Qaeda in the Arabian Peninsula (AQAP) that combines qualitative and text-as-data approaches to build a holistic picture of group behavior in an information-poor setting. The second half illustrates AQAP's recent history as an illustrative example of an organization induced to suddenly expand into a new recruitment base. The section con-

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cludes by analyzing English translations of over 800 pieces of propaganda released by AQAP and direct precursors from 2004 through 2016, using changes in AQAP’s self-presentation and reported activities as a plausibility test of shifting organizational priorities following recruitment shocks.<sup>1</sup>

## **Theoretical Contribution: A Personnel Resource Curse**

When resource-constrained organizations grow quickly, their leaders may face a bind if short-term gains in strength come at the cost of long-term mission focus. Rapid intake strains the organization’s selection, socializing, and monitoring capacities. With neither the capacity to reinforce the institutions that monitor and enforce compliance nor the time to foster commitment via socialization, leaders manage their rank-and-file via compromise. In these situations, leaders require buy-in from their members and thus recruits gain leverage over group decisions about strategies and tactics. In this way, the relationship of the group’s leaders to the rank-and-file increasingly takes the form of a negotiation. Often this negotiation results in the leaders incorporating the recruits’ original preferences into the group’s mission.

The leverage that allows recruits to exert upwards pressure on their leadership comes from restricted ability, or desire, to limit the inflow of new members and the possibility that these members may subsequently leave, taking with them the skills and resources that made them

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<sup>1</sup>The text analysis was conducted using English translations as the morphology of Arabic presents challenges for topic modeling. Although the development of text-as-data methods for Arabic is an active research area (Brahmi, Ech-Cherif, and Benyettou 2012; Abbas, Smaili, and Berkani 2011; Salloum et al. 2018), the existence of an accessible corpus of professional translations for these texts allowed for a more straightforward research design, although at the cost of nuance and depth present in the original Arabic documents.

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attractive. When leaders can not, or do not want to, limit recruitment, they lose some of their most powerful managerial tools. Large inflows discourage leaders from implementing the selection and screening mechanisms that typically constitute an important part of the rebel leadership toolkit (see, for example, Salehyan 2010; Forney 2015; Hegghammer 2013; Weinstein 2005). Furthermore, a large cohort reduces the ability of the organization to focus on any particular member and thus diffuses the already-strained socialization capacity. The combination of many recruits and limited ability to socialize them increases the chance that the new recruits will retain strong ties among themselves and with external communities. Although these ties provide strength, they further limit the ability of group leaders to shift recruits' preexisting preferences (Manekin 2017; Mosinger 2017).

When would a strategic leader grow their organization in a way that undermines their ability to manage it? Survival threats or a vast power differential with their main adversary provide powerful reasons to downplay the effects of a goal mismatch. Facing uncertainty about the future, leaders may grasp at a demographic lifeline if a new source of personnel and resources presents itself. A militia commander in Taiz, Yemen succinctly described how survival threats can induce leaders to accept personnel due to short-term considerations, even knowing that those same members are likely to generate long-term problems. In explaining why he allied with al-Qaeda fighters despite not supporting their ideology, the commander explained: "when you are days, if not hours from being over-run, you do not care where the supplies or men come from or what their beliefs are so long as they can fight and are fighting the same enemy you are...we can sort out al-Qa'ida after we've beaten the Houthis" (Horton 2017, p. 7).<sup>2</sup> The following paragraphs illustrate how both short-term considerations and successes can induce leaders to bring in more recruits than their socializing infrastructure

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<sup>2</sup>For a discussion of using memoirs for insight into the organizational dynamics of revolutionary and terrorist groups, see Shapiro (2013).

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can handle.

Efforts to consolidate their short-term position can also cause leaders downplay the consequences of changing the organization's demographics. External shocks and sudden military successes can rapidly change the political calculus of actors in a conflict and, in one fell swoop, both mobilize new partisans and make the group more attractive. In turn, leaders may view these potential recruits as way of ensuring short-term survival or capitalizing on battlefield momentum in their favor.

The Sandinista National Liberation Front (FSLN) in Nicaragua illustrates how external community shocks can initiate bottom-up transformations. As Mosinger (2017) details, in 1967 and 1972, "grievance-triggering focus event[s]" motivated new constituencies to regard the FSLN as a viable avenue through which to express anti-state grievances. In 1967, the violent repression of a demonstration mobilized radical student organizations. Five years later, in 1972, government mismanagement of relief efforts after the Managua earthquake mobilized Christian activists. Recruits from the new constituencies then flocked to the FSLN and created new internal factions and external bases (Mosinger 2017, p. 210). Following both recruitment shocks, the FSLN was riven by internal power struggles as the new members sought to advance their preferences within the group.

Success can also bring inflows of recruits who drive transformation. Indeed, the history of militant movements often features military or political gains followed by internal stress as the organization tries to manage the recruits who responded to the battlefield momentum by rushing in. Two illustrative examples demonstrate how a windfall of recruits following successes can seed long-term problems.

In 1968, the Palestine Liberation Organization claimed credit for fighting the Israeli Army to a stalemate in Karameh, Jordan. Reaping the rewards of a symbolic victory, the movement quickly gained thousands of new Palestinian and Arab recruits (Sharif 2009). However, this bounty rapidly turned toxic, as the new manpower quickly exceeded the PLO's absorption

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capacity, and the new fighters began abusing their host population in Jordan (Szekely 2017). This abuse exacerbated tensions between the PLO and their Jordanian and Lebanese hosts, undermining the Executive Committee's strategic goal to remain on good terms with their sponsors (Szekely 2017).

Seven years later, in 1975, a founder of the Eritrean Liberation Front (Jebha), Said Hussein, returned to the group after nine years in prison only to discover his organization transformed. A nationalist group formerly dominated by conservative highland Muslims, the Jebha militia had been molded by an influx of Christians after Ethiopian crackdowns in 1974 and 1975. Indeed, after one crackdown the number of prospective members so exceeded Jebha's absorption capacity that the group asked potential members to remain home until camp space opened (Woldemariam 2016, p. 155). The new members, largely drawn from lowland Christian communities, quickly began pushing for Jebha to adopt a Marxist ideology anathema to the original founders' socially conservative inclinations (Woldemariam 2018, p. 111).

Bottom-up transformation is driven by the threat that dissatisfied members can leave the group. In order to have the internal leverage to force the inclusion of their goals, the rank and file must be credibly able to exit if the organization does not accommodate their priorities. Similarly, the leader must be invested in keeping the recruits. Thus, labor mobility is a necessary condition for leaders to be induced to move their groups away from their own goals and towards the preferences of their grassroots. Leaders have reason to be concerned about the possibility of critical recruits and units leaving their group as group exit, including defection and fragmentation, is a common feature of organizational histories (Bakke, Cunningham, and Seymour 2012; McLauchlin 2010; Seymour 2014; Pearlman and Cunningham 2012)

Transformation occurs when the leader's interest in keeping the recruits is such that they are willing to compromise other goals or best practice in order to keep the recruits from leaving. Mustafa Hamid, an advisor and jihadi strategist involved in the early years of al-

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Qaeda, articulated how worry about losing recruits can induce leaders to grant self-defeating concessions to rank-and-file members. Reflecting on the quality of Arab foreign fighters in Usama bin Laden’s Afghan camps in the late 1980s, Hamid observed that trainees would lobby bin Laden to reduce the intensity of the camp. Hamid noted: “...discipline was a serious issue but [trainers] Abu Ubaydah and Abu Hafs did a very good job under difficult circumstances. They tried to control the youth and train them in the severe way that creates discipline. Then the youth would go to Abu Abdullah [bin Laden] and he would be gentle with them, perhaps because he feared they might leave— and the work of Abu Ubaydah and Abu Hafs became harder” (Hamid and Farrall 2015, p. 99). As a result, the trainees were “woefully unprepared” for a critical May 1987 battle and were ultimately saved by luck and the intervention of local allies (Hamid and Farrall 2015, p. 100).

A domain in which these tensions feature prominently is the transnational jihadi movement of the late 20<sup>th</sup> and early 21<sup>st</sup> century. Jihadi memoirs and strategic documents record the challenges that al-Qaeda’s regional branches face in managing difference in priorities between the rank-and-file members and the leadership. Letters from al-Qaeda Central to AQAP’s leadership feature strategic advice about avoiding local co-optation.<sup>3</sup> One such instruction, believed to be written by al-Qaeda strategist Atiyah Abd al-Rahman, directed al-Qaeda’s Yemeni front to be wary of becoming co-opted by local political concerns. The author reminded the Yemeni leaders that without training and careful monitoring, local grievances would prevail, writing “...it is very important to remind all of our brothers about it with a note to the new generation, who joined the jihad road and were not advised about this issue. Thus, they conduct separate operations rather than concentrating on the main objective [the external enemy, *i.e.* the US]...” (al-Qaeda strategist 2006-2011, p. 6). The author pointedly

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<sup>3</sup>I refer to al-Qaeda’s global leadership as “al-Qaeda Central” to distinguish leaders such as Ayman al-Zawahiri and Atiyah Abd al-Rahman from the Yemeni al-Qaeda leadership.

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warned the Yemeni al-Qaeda leaders of the dangers of being locally co-opted, as “...many jihadist groups did not succeed in gaining their objective because they concentrated on their internal enemy” (al-Qaeda strategist 2006-2011, p. 11).

These tensions were memorably summarized by Osama bin Laden’s former bodyguard, Nasser al-Bahri. Writing about al-Qaeda’s recruitment policies in Afghanistan before 2001—a time when al-Qaeda had relatively strong socializing capabilities because they were able to operate training camps—Bahri complained that the organization was being co-opted because they were insufficiently discriminating with prospective recruits. He predicted that the co-optation of the local branches would lead to rejection of al-Qaeda’s revolutionary mission:

One of al-Qaeda’s biggest faults is in its recruitment mechanism. The organization should have chosen its jihadis with more care. Unfortunately, no aspiring jihadi is turned away. There should be a selection process, based on the candidates knowledge and abilities in the areas of religion, culture, and science. For these young men will be al-Qaeda leaders in the future... The negative consequences of this “anything goes” recruitment policy are obvious in Saudi Arabia, one of al-Qaeda’s main targets. What has the organization been doing these past years in Riyadh and other places? It has attacked police stations, killing civilians too. The general population is unhappy about this, with good reason, and is increasingly critical of al-Qaeda (al-Bahri 2013, p. 201)

In summary, the theory and vignettes suggest that access to a new recruitment base can be both vital and dangerous. An influx of members and their social connections bring strength, resilience, and resources. However, recruits are the future of an organization and changing the membership base without a correspondingly strong socialization capacity can result in transforming the organization’s own priorities.

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## Case Study: Local and Transnational Tensions For AQAP In Yemen

The remainder of this manuscript discusses the downstream consequences of accessing a new recruitment base. The analysis treats al-Qaeda in the Arabian Peninsula as an illustrative case of the theory. Through machine learning, primary sources, secondary reporting, and text analysis, the case study underscores how changing the sources of recruitment can strengthen an organization while precipitating major changes in self-presentation and articulated goals. In doing so, it highlights the insights that the bottom-up transformation theory can bring to analysis of the dynamics of ongoing conflicts.

Primary and secondary sources document the changing fortunes of AQAP's attempts to source manpower from local Sunni tribes. In 2009, the United States Department of State estimated that AQAP's membership was approximately 200-300 (Johnsen 2012). At the time, AQAP had difficulty recruiting within Yemen's Sunni tribal communities. The organization's attempts to integrate themselves into the tribal areas of Marib and al-Jawf were being rebuffed and they failed to generate support through dispute resolution, intermarriage, or the provision of public services (Koehler-Derrick (ed) 2011). Indeed, interviews with Yemen's Sunni tribes in 2008 and 2009 suggested that AQAP's recruitment base was concentrated in urban centers— particularly Sanaa and Taiz—rather than among tribal communities (Koehler-Derrick (ed) 2011, p. 138). By 2010, the Department of State's estimate of AQAP's membership had barely changed, remaining at a “few hundred” (Bureau of Counterterrorism 2011).

From 2010 onwards, domestic instability and international military engagements created an opportunity for AQAP to make inroads into Sunni tribes that had previously eluded their efforts (Abdul-Ahad 2015). Once they were able to recruit from the tribal communities AQAP experienced a dramatic personnel inflow and steadily gained strength in the tribal regions. Estimates of their membership spiked dramatically, jumping to “few thousand members” in 2011 and then again to as many as “four thousand members” in 2015 and

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2016 (Bureau of Counterterrorism 2012; Bureau of Counterterrorism 2015, p. 395).<sup>4</sup>

Anger over drone strikes and sectarian polarization after the rise of the Houthi movement account for much of the rise (Bayoumy 2013; Kendall 2018a; Campbell 2015; Worth 2015; Hubbard 2015; Michael, Wilson, and Leath 2018). As reflections of local security concerns, each of these motivators can be expected to introduce members into AQAP with local rather than global preferences. Furthermore, as in other conflict zones, AQAP's strategists and commanders contend with labor mobility. Notably, counter-insurgency campaigns have tried to deplete AQAP by encouraging desertion and defection of fighters and tribal allies (Kendall 2018b; Kendall 2018a). Other reporting notes that fighters have transitioned between AQAP and tribal militias (Michael, Wilson, and Leath 2018).

## **Empirical Implications and Quantitative Analysis**

The bottom-up transformation theory suggests that increased recruitment from among Yemeni tribes should result in AQAP increasingly engaging with local conflicts and priorities. As AQAP became more deeply tied to Sunni tribes, the theory predicts that their new membership base will create an internal constituency for whom Yemeni military and political developments are relevant than abstract global jihadi revolution.

In developing the plausibility test below, this article leverages three structural features of the conflict in Yemen. First, widespread interest in al-Qaeda also means that although the microdynamics of Yemen's civil war remain opaque, primary and secondary sources document the strategic goals and self-presentation of both al-Qaeda's central leadership and the Yemeni AQAP. Similarly, memoirs provide occasional windows into the internal dynamics of AQAP (*i.e.* al-Bahri 2013; Storm, Cruickshank, and Lister 2014). Moreover,

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<sup>4</sup>The 2013 and 2014 Country reports revised the strength estimate to about a thousand members.

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AQAP is closely associated with a global ideology that is heavily promoted by a multilingual propaganda effort. As such, AQAP's investment in creating a large corpus of ideological material strongly ties the group to a particular ideology, and makes shifts in ideological focus more visible. Their significant investment in creating and disseminating a huge corpus promoting a particular ideological perspective should also render AQAP a hard case for the theory as the group's transnational profile means that they have a strong incentive to neither allow nor signal mission creep.

Second, AQAP created a comparison case by founding a local spin-off organization, Ansar al-Shariah (Supporters of the Shariah). Ansar al-Shariah was established in 2011 as an arms-length local wing that could focus on domestic grievances and administration rather than AQAP's transnational mission and which would be free of negative local sentiment associated with the al-Qaeda brand (International Crisis Group 2017). Although quickly identified as an alias for AQAP, having two different brands provides a reference point. Under the Ansar al-Shariah name, AQAP could strike a more parochial message, exploit local grievances, and avoid the encumbrances of the al-Qaeda brand (Swift 2012). In keeping with the expectation that local recruits would be primarily invested in the local conflict, many of these fighters "have deployed exclusively for an insurgency against the Yemeni government" (Human Rights Watch 2013, p. 14).

Third, the weakness of the Yemeni state means that AQAP's trajectory is less likely to be driven by strategic interaction with a strong state and security apparatus (Bureau of Counterterrorism 2017). In particular, Yemeni political and military institutions imploded in 2011 and 2012. The subsequent disruption allowed AQAP to take and hold territory in the southern Abyan and Sabwa governorates, engage with government forces, and even approach Yemen's capital, Sanaa.<sup>5</sup>

From the structural features outlined above and the expectations of the grassroots-transformation

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<sup>5</sup>The Yemeni state reclaimed the lost urban areas in 2013, but AQAP has continued fighting in southern provinces (Sharp 2015, p. 9)

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theory, we can identify outcomes that would support the bottom-up transformation hypothesis over counterfactual scenarios. The theory predicts that AQAP has become increasingly constrained by growing local preferences within their rank-and-file. If this is the case, despite AQAP's attempt to create a local spin-off, their base could be expected to exert internal pressure to become more locally involved and the actions of AQAP should be similar to those of Ansar al-Shariah. Conversely, if AQAP's leaders are not experiencing internal pressures to accommodate local preferences and interests, AQAP should be expected to implement their leaders' stated preferences to clearly differentiate the globally-branded AQAP from the locally-branded Ansar al-Shariah.

An ideal quantitative test of the theory would draw on micro-level recruitment and operations data that can identify actors, tactics, and strategic priorities. Absent this systematic feature rich organizational data, I treat news texts as a source of data that encodes observed behavior of local actors and the views of regional experts.<sup>6</sup> I accompany the analysis of reported group behavior with an analysis with an thematic analysis of material released by AQAP itself. Text methods have been adopted in other difficult-to-reach domains, such as in analysis of the influence of Russian elites on foreign and defense policy (Baturro and Mikhaylov 2013; Stewart and Zhukov 2009) and how career and educational networks influence the adoption of jihadi rhetoric (Nielsen 2014).

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<sup>6</sup>Existing sources of conflict event data emphasize accuracy of event counts over dense metadata. Although these the emphasis on event de-duplication is important, exiting sources of conflict event data often do not feature granular attribution of activities to specific conflict actors. Because this project is interested in whether groups behave more or less similarly to each other rather than their absolute activity levels, my data do not need the same level of attention to deduplication of reports as most automatically-generated event data.

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In using news media to generate data and predictions about conflict, I follow a large and established literature on automated coding of news articles for event data (*e.g.* Bond et al. 2003; Gerner et al. 1994; Hammond and Weidmann 2014; King and Lowe 2003; Raleigh et al. 2010) and an emerging avenue of scholarship that uses machine learning techniques to generate data on the behavior of specific actors (*e.g.* Baum, Cohen, and Zhukov 2018; Cook and Weidmann 2019; Mueller and Rauh 2018). Finally, while quantitative analysis of texts in political science research has historically focused on the development of models to identify thematic trends in content over time, the clustering techniques used here—random forest, support vector machine, and t-distributed stochastic neighbor embedding—have been used by political scientists to analyze text data in a number of substantive contexts (*e.g.* Beauchamp 2017; Jones and Linder 2016; Muchlinski et al. 2015; Siroky 2009; Spirling 2012).

The following section opens by introducing a “plausibility test” benchmark for whether the machine learning classification algorithms identify meaningful underlying variation in reporting on group behavior. It then summarizes the results of the machine learning and text analysis, with an emphasis on the substantive interpretation of the outcomes. The machine learning analysis employs random forest, support vector machine, and t-distributed stochastic embedding (tSNE) algorithms to group reported militia activity according to similarity of the described behavior. All three algorithms return similar results. As the output from random forest clustering is more straightforward to interpret substantively, the random forest are presented below with a full discussion of the data, processing, support vector machine, and tSNE analysis available in Section Five of the Technical Appendix. After presenting the analysis of news reports, I evaluate trends in how AQAP presents its activities and characterizes its goals. In this second half of the quantitative analysis, I use a structural topic model to evaluate whether changes in the themes featured in a decade of AQAP-issued communiques support the expected observable implications of the grassroots transformation hypothesis.

In order to pass face validity as a strategy to analyze group behavior, the classifiers must

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pass the plausibility test of being able to differentiate reports about AQAP and Ansar al-Shariah from stories about the activities of other domestic conflict actors. In the analysis presented here, Houthi rebels fill the role of non-AQAP/Ansar al-Shariah militants.<sup>7</sup> The Houthi movement is a Zaidi Shia insurgency that has been active throughout Yemen during the same time period as AQAP and Ansar al-Shariah, but which does not share priorities or targets with AQAP. A meaningful classifier should find distinctive patterns separating AQAP and Ansar al-Shariah from the Houthi movement.

If the algorithms pass the plausibility test of differentiating unrelated militant groups based on reporting of their activities, the same techniques should be able to provide a high-level view of whether AQAP and Ansar al-Shariah behave similarly on the ground. As outlined above, if stories about AQAP and Ansar al-Shariah are difficult for the clustering algorithms to accurately classify, this result suggests that the two groups are behaving similarly. Lack of differentiation would be evidence consistent with the theory's expectation that AQAP's increasingly local grassroots pushed a local focus. Conversely, if the clustering algorithms are able to accurately identify which news stories reported on AQAP's activities and which reported on Ansar al-Shariah's activities, the result can be interpreted as indicating that the two Sunni groups are behaving differently. Differentiation is thus evidence against the transformation hypothesis.

In conducting the analysis of news articles, I generated a corpus of media reports of violent activity from Yemen for 2009-mid 2015 from the ICEWS database. This generated 10,818 stories, covering November 1993 through January 2015. For tractability, I randomly sampled 1,772 stories of violent activities and then hand-coded the story according to the primary

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<sup>7</sup>The Zaidi Shia insurgency is officially called "Ansarallah" (Supporters of God), but widely known as the "Houthi" movement. For clarity, I use the more commonly used "Houthi" name.

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actor identified<sup>8</sup> To tighten the focus on whether AQAP is distinguishable from Ansar al-Shariah, I subset the corpus to 566 articles that reported on events attributed to al-Qaeda in the Arabian Peninsula, Ansar al-Sharia, and the Houthi militias. The stories were randomly divided into training (67%) and test sets (33%), yielding a training corpus with 432 articles and a test corpus with 144 articles. The publication dates for the articles in both the training and test corpus ranged from October 30, 2002 through January 3, 2015. Each tagged story was converted into a tokenized bag of words, normalized via term frequency-inverse document frequency (tf-idf). This produced a 432 x 2,222 matrix of tokens common to both sets

The random forest classification of the news articles is consistent with the expectations from the plausibility test and the convergence expectation. Random forest algorithms seek features in the data that allow the algorithm to accurately classify each item in the dataset. In this case, the random forest uses words in the news articles as features to predict the group that each article is reporting on. The predictions are easily summarized by a “confusion matrix” that records the number of successful classifications on the matrix diagonals, misclassifications on the off-diagonals, and reports the overall error rate for a given category at the row margins. Table 1 shows the random forest confusion matrix. In the outcome, articles about AQAP and the Houthi insurgency separate cleanly. However, the model consistently misclassifies Ansar al-Shariah stories as belonging to al-Qaeda in the Arabian Peninsula. These results indicate that any differences in reporting on the activities of al-Qaeda in the Arabian Peninsula and Ansar al-Shariah are overwhelmed by the differences between the two Sunni groups and the Houthi movement.<sup>9</sup>

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<sup>8</sup>Approximately 15% of the data was coded by workers on Mechanical Turk, the rest was coded by the author.

<sup>9</sup>The results are similar if the random forest classifier is weighted to reflect the imbalance of stories about AQAP and Ansar al-Shariah.

	Ansar al-Shariah	AQAP/Al-Qaeda	Houthi/Ansarallah	Class Error
Ansar al-Shariah	0.00	6.00	3.00	1.00
AQAP/Al-Qaeda	0.00	48.00	19.00	0.28
Houthi/Ansarallah	0.00	14.00	25.00	0.36

Table 1: Random Forest Confusion Matrix, Test Data

A visual summary of the results of the random forest analysis can be seen in Figure 1. In this figure, stories from the training set are plotted according to the proportion of times that individual stories are in the same terminal (classification) node (Jones and Linder 2016). The visualization reaffirms the descriptive takeaway from the predictions on the test set: Houthi stories are distinct from AQAP stories, but Ansar al-Shariah stories contain enough words in common with AQAP stories that the two are difficult to distinguish via iterated decision trees. The t-SNE and support vector machine results, which can be found on pages 5-14 of the Supplemental Information, feature the same pattern: stories about AQAP and Ansar al-Shariah are clearly differentiated from stories about the Houthi militant groups. However, all three techniques are unable to consistently differentiate stories about activities attributed to Ansar al-Shariah from stories about activities attributed to AQAP.

The clustering analysis is suggestive of convergence in reporting on activities of AQAP and Ansar al-Shariah. However, these methods do not adjudicate between competing explanations for the similarity. Potential reasons for the lack of differentiation include AQAP acting like Ansar al-Shariah; Ansar al-Shariah acting like AQAP; or the algorithms identifying shared features other than underlying behavioral similarity. Moreover, the news classification approach does not directly measure activity. In evaluating the style and coverage of third-party reporting, the results are sensitive to descriptive idiosyncrasies. For example, given the international salience of the al-Qaeda name, the news corpus likely contains over-attribution to AQAP. Similarly, under-attribution of Ansar al-Shariah activities can be introduced by journalists associating AQAP and Ansar al-Shariah.<sup>10</sup> This may be a result

<sup>10</sup>Notably, 11 of the stories in the corpus carried language that blurred the distinction between AQAP and Ansar al-Shariah. For example, an article from Xinhua News stated:

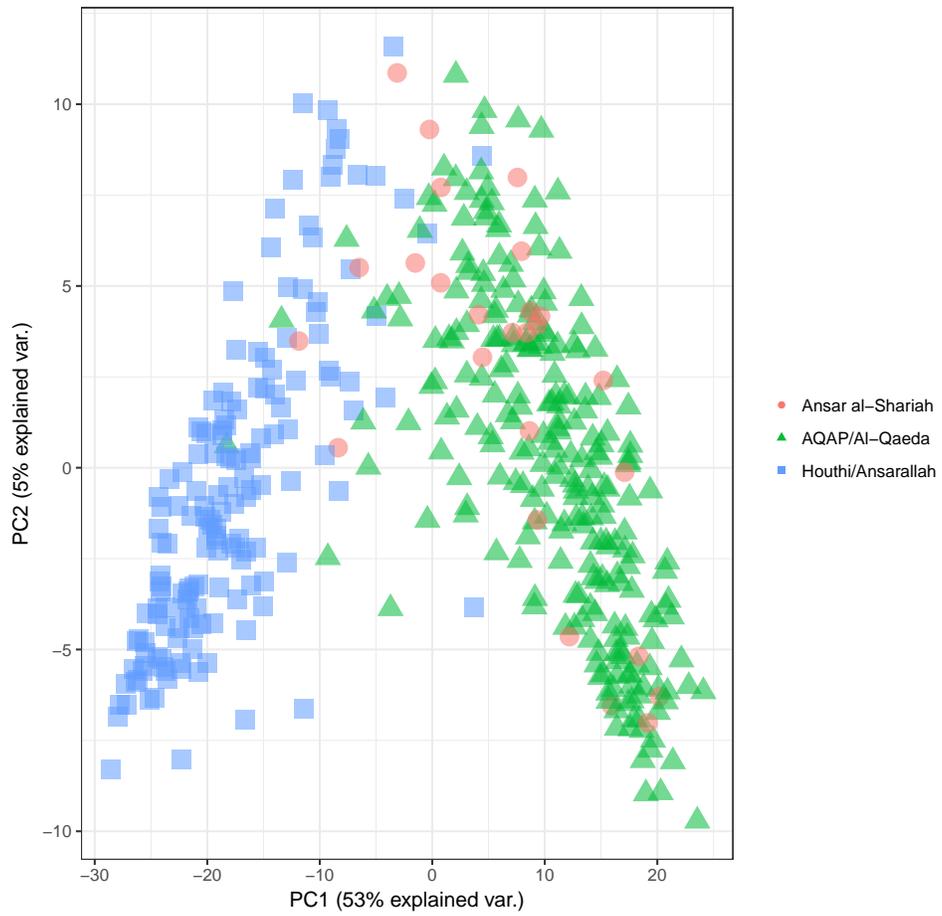


Figure 1: PCA Visualization of Group Classification

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of journalists including more contextual discussion as the security situation unraveled, thus dedicating article space to similar content. Alternately, the increased conflation of AQAP and Houthi stories may pick up a tendency of writers to frame AQAP mobilization using the rebellion frame that dominates coverage of Houthi activities.

## **Direction of Convergence**

A second approach to using text data as a window into opaque organizations leverages topic models applied to materials issued by the groups themselves. To adjudicate the possible direction of convergence in descriptions of AQAP and Ansar al-Shariah activity, I use the Structural Topic Model to summarize changes in latent topics within the corpus (Roberts, Stewart, and Tingley 2014). The model is well suited to addressing questions of convergence as it permits modeling group-level changes in attention over time by incorporating document-level information as a covariate related to topic prevalence. Existing work has applied the STM to a variety of corpora similarly comprised of short and moderate-length documents (Roberts et al. 2014), such as open-ended surveys (Tingley 2017), social media messages (Bail 2016), and deepweb forum posts (Munksgaard and Demant 2016).

## **Communique Analysis**

To address the question of the direction of the apparent convergence of AQAP and Ansar al-Shariah behavior, the following section presents selected results from three Structural Topic Models estimated on AQAP and al-Qaeda Central propaganda releases, showing a general localizing trend in AQAP’s self-presentation.<sup>11</sup> The following analysis interprets risk—“Al-Qaida in the Arabian Peninsula, also known locally as Ansar al-Sharia.”

<sup>11</sup>Pages 19-26 of the Supplemental Information provides information about text processing and a fuller characterization of the results.

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ing prevalence of Yemen-specific topics and decreases in transnational and pan-jihadi topics as suggestive of an influential parochial base. The timing and content of any change in self-presentation can shed light on the question of whether the topic models reflect underlying ground truth: although communiqués and speeches do not necessarily align perfectly with ground truth, finding that themes in AQAP self-presentation move along with the convergence in stories about AQAP and Ansar al-Shariah should bolster confidence that each technique is picking up a real change.

The analysis was conducted on a corpus of 875 documents released by al-Qaeda in the Arabian Peninsula from June 18, 2004 through September 18, 2016.<sup>12</sup> The corpus consists of English translations of documents originally released in Arabic and, occasionally, the original text of English-language releases.<sup>13</sup> These documents were collected and translated by the SITE Intelligence group, a private research organization that collects and translates jihadi media.<sup>14</sup> As no official universal archive of AQAP’s releases exists in the public domain, the corpus is necessarily a sample of the releases. However, as the SITE Intelligence Group is an

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<sup>12</sup>The corpus includes content from both the current—*i.e.* post-2006— AQAP and a predecessor organization of the same name that is occasionally referred to as al-Qaeda in Saudi Arabia. AQAP is a direct successor to the Saudi Arabian-based “AQAP”, and the Yemen-based AQAP leadership actively sought to present the organizations as linked entities. Therefore, I allow the AQAP corpus to accommodate both the current Yemeni-based AQAP and the earlier Saudi-based “AQAP” as this permits examination of the impact of the upswing in drone casualties in 2009 and 2010.

<sup>13</sup>A very small portion of the documents, such as individual articles from *Inspire Magazine*, were distributed in English.

<sup>14</sup>SITE Intelligence Group translations are advantageous for this project, as the company maintains near real-time coverage of prominent online distribution sites and has internal

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internationally-focused monitoring organization, any systematic selection effects should bias the results against finding increased local self-presentation because bias could be expected to prioritize documents intended for an international audience which should then carry an internationalist message.

Official releases are an attractive source of information about changing organizational priorities because, within certain ideological constraints, these documents provide a forum on which an organization can choose how to frame their self-presentation. As well, the technological environment makes propaganda documents appealing in this context: since 2011, online platforms have been a “major means of communication” within Yemen (Carapico 2014, p. 33). This implies that media distributed online can be consumed by domestic as well as international audiences. The two-level audience can be expected to discourage AQAP from strategically differentiating their online signaling from their local self-presentation. Readers may worry that even if online platforms are important for communication in the country, Yemen’s relatively low internet penetration rate may imply that AQAP’s online propaganda is not intended for a domestic audience. If this the case, it should likewise bias the results against findings in support of the bottom-up localizing hypothesis.<sup>15</sup> The first model addresses the question of direction of convergence in third-party reporting about the activities of AQAP and Ansar al-Shariah. The outcome predicted by the bottom-up theory of organizational change expects that an influx of fighters was followed by AQAP adopting a more procedures to ensure consistent translation in style and tone.

<sup>15</sup>As well, one may be concerned that a strategic actor could use in-person networks to signal which documents are intended for local versus international audiences. However, the difficult information and security environment in Yemen makes it risky to rely on a bifurcated media strategy.

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local, Yemeni-centric, self-presentation.

The bottom-up transformation theory described above predicts that an influx of local recruits should encourage AQAP to adopt increasingly local priorities, and thus that convergence in third-party media coverage of AQAP and Ansar al-Shariah should be driven by changes in AQAP. If, as argued above, organizational messaging tracks true organizational priorities, changes in AQAP's focus should manifest in the topic model identifying an increased prevalence of themes relating to domestic fissures, such as the Houthi-Sunni civil war, and a decline of transnational themes.

Although general trends alone are unable to directly test the predictions of the bottom-up transformation theory, relative differences in the proportions of themes can indicate the general plausibility of the argument. In the case of Yemen, the theory predicts that increased access to local recruits should drive AQAP to adopt an increasingly localized agenda. If AQAP is increasing attention to domestic considerations and themes, the localizing trend suggests that changes in AQAP are driving the difficulty in classifying AQAP and Ansar al-Shariah's activity.

Attention within the AQAP corpus is modeled via an 18-topic structural topic model.<sup>16</sup> The topics are presented in Figures 2 and 3, clustered into four thematic groupings: locally-focused war reports, discussions about and threats of clandestine operations, topics promoting transnational jihadi sentiments and goals, and jihadi-associated descriptors. Within each cluster, topics are summarized by their FREX words, which are words or tokens that are associated with the topic but relatively unlikely elsewhere in the corpus. Figure 4 shows proportion of the entire corpus of communiqués is expected to be assigned to each of the fifteen substantively interesting topics.<sup>17</sup> As the figure indicates, when the entire corpus is taken together without any disaggregation by document release date, the two most common

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<sup>16</sup>For discussion of model specification, see page 17 of the Supplemental Information.

<sup>17</sup>The three remaining topics relate to the construction of the documents themselves, and

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topics are related to the Houthi militias and terms that describe local targets and operations. From there, a number of topics that associate words around ideological and tactical themes are each expected to feature in about 10% of the total documents.

The relative frequency of topics specifically about Yemen provide the first place to look for evidence of a local trend in AQAP’s messaging. As several of the thematic clusters identified by the model relate to facets of AQAP’s activities in Yemen—including discussion of Houthi militants, activities in Southern Yemen, castigation of the Yemeni government, and descriptions of local operations— combining the estimated prevalence of each Yemen-centric topic gives an easily-visualized overview of the changing salience of local concerns in AQAP propaganda output. Figure 5 depicts the expected document-level topic proportion for the “Local Conflict” cluster. The cluster is characterized by words that refer to specific local operations, geography, and political jurisdictions. Indeed, documents representative of this topic are often battlefield communiqués issued to claim local territorial control. Even the most transnational of the topics, the “US in Yemen” topic, emphasizes political events in the country. Thus, document space dedicated to each of the “Local Conflict” topics reflects a prioritization of domestic Yemeni issues over transnational themes. Furthermore, a localizing trend is underscored by looking at changes in the expected prevalence of the four topics that speak to a transnational jihadi sentiment. These topics refer to regional power centers, notably the government and security apparatus of Saudi Arabia, and social concerns that are typical of the transnational jihadi movement. Taken together, the prevalence of these four topics begins to decline from a peak in late 2012, as AQAP’s propaganda becomes increasingly focus on the local Yemeni civil war.<sup>18</sup>

are less interesting as a reflection of AQAP’s self-presentation. These topics relate to videography, habitual sign-off terms, and transcript production.

<sup>18</sup>Readers might be concerned that the inverse relationships between topic proportion allocated to the “transnational” and “local conflicts” are simply mechanical. Although the total prevalence assigned to all topics in the model does sum to one, and thus increased atten-

Figure 2: Groupings of Substantive Topics in General Trends Model

**Local Conflict Topics**

<p>Southern Yemen madad, waqar, zinjibar, didnt, resid, captiv, jaar, dont, azan, abyan, alshariah, ansar, battalion, lawdar, amongst, doesnt, dofa, institut, electr, plane</p>
<p>Local Targets soldier, vehicl, brigad, offic, hadramawt, led, sanaa, injur, militari, ten, clash, sana, marib, martyrdomseek, aljawf, explosivesladen, polit, armi, guard, armor</p>
<p>US in Yemen razzaq, alqaeda, journalist, organ, hadi, aljam, revolut, yemeni, presenc, rabbuh, region, presid, fahd, alquso, anwar, popular, parti, relationship, abd, recent</p>
<p>Houthis albayda, ibb, truck, saturday, turnedhouthi, sunday, monday, deton, akher, exclus, yesterday, alzah, dhi, wednesday, explos, rada, devic, tuesday, thursday, yemeniturnedhouthi</p>

**Attacks and Operations**

<p>Operational Security chip, spi, humam, ahm, nayef, alasiri, alkheir, inform, recruit, interrog, almuhajir, airport, investig, princ, issa, murjan, told, communic, assassin, servic</p>
<p>Attacks on West lone, nidal, parcel, inspir, economi, obama, alfarouk, jihd, shaykh, franc, hostag, umar, econom, clinton, britain, hasan, boobytrap, french, america, samir</p>

Figure 3: Groupings of Substantive Topics in General Trends Model, Continued

**Trasnational Jihadi**

<p>Demise of al-Saud  saudi, isi, saud, arabia, interior, ministri, imprison, prison,  king, releas, sudan, consul, channel, demand, sharia, reform,  kidnap, iran, detaine, minist</p>
<p>Clash of Civilizations  humili, faith, defeat, idl, jew, bewar, christian, allianc, till,  palestin, victori, apost, injustic, land, conquer, today, helper,  ummah, uniti, somalia</p>
<p>Jihadi Revolution  implement, sunni, shariah, shiit, democraci, countri, revolut,  secular, truce, rule, law, parti, societi, scholar, peopl,  corrupt, fight, ruler, rafidah, constitut</p>
<p>Jihadi Factionalism  loyalti, method, infidel, can, faction, restrict, imam, matter,  univers, argument, answer, allegi, discuss, brand, clarifi, mean,  realiz, idea, pledg, disagre</p>

**Jihadi Platitudes and Religion**

<p>Rewards to the Martyr  merit, paradis, hereaft, heaven, deed, hadith, almighti, sin,  verili, life, vers, love, manhaj, sake, alimran, magnifi,  resurrect, garden, prophet, hellfir</p>
<p>Greetings to Leaders  sheikh, ibrahim, tariq, knowledg, merci, may, aldhab,  alrubeish, nasser, eulog, noor, immigr, preach, vast, usama,  qaid, knew, manner, son, moral</p>
<p>Ummah and Brotherhood  patienc, belov, afflict, sham, firm, supplic, bless, congratul,  wait, tide, patient, jihad, knight, poetri, tast, glad, reward,  heal, ummah, heroic</p>
<p>Fire and Brimstone  curs, evil, messeng, transgress, prayer, insult, peac, women,  ibn, woman, prophet, freedom, upon, slander, apostasi, sister,  alsaud, sanctiti, dare, polytheist</p>
<p>Prisoners and Memoirs  chant, jamil, muwahhid, memor, atta, alsayaari, saeed, beauti,  albara, chanter, qualiti, stori, qur, join, poetri, muhajireen,  escap, sufyan, smile, cri</p>

**Top Topics Model 1**  
**AQAP Corpus With Day Covariates**

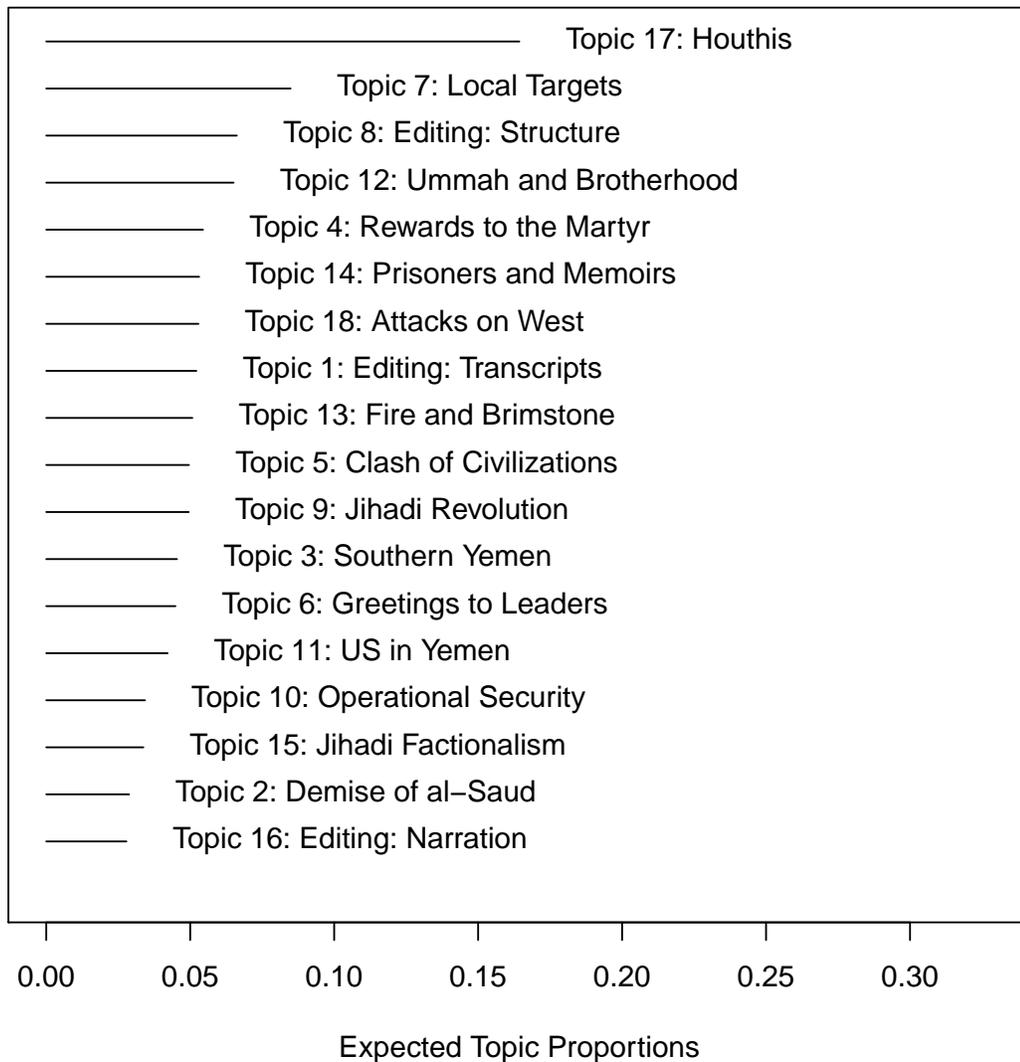


Figure 4: Estimated Topic Proportions in al-Qaeda in the Arabian Peninsula Corpus

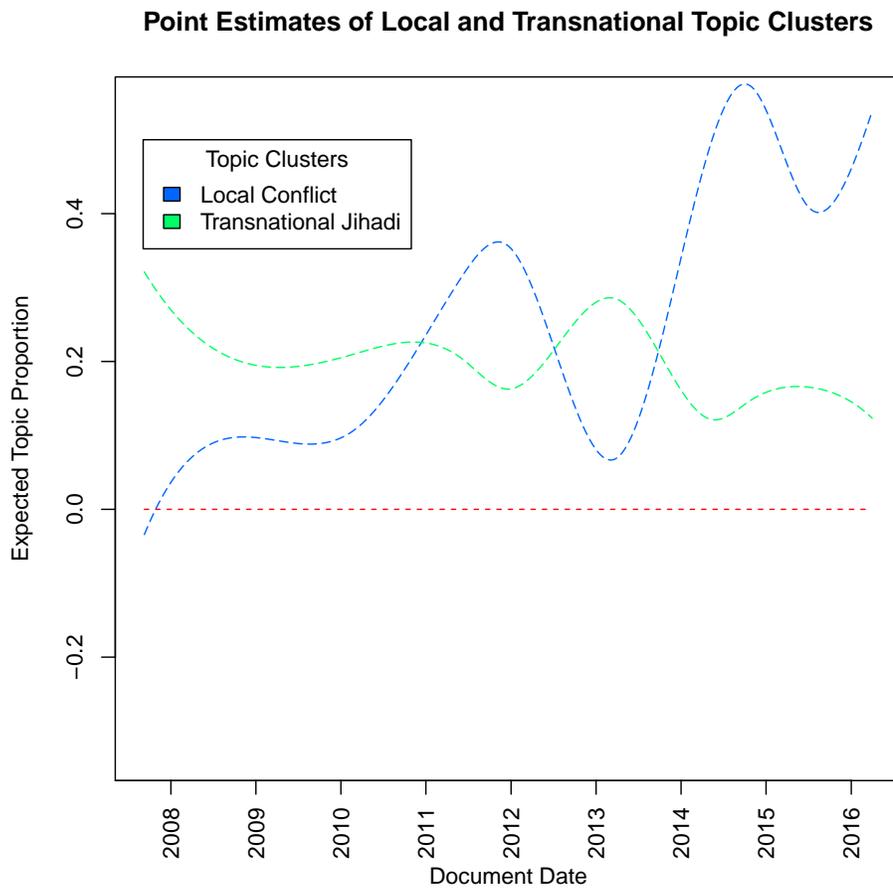


Figure 5: Changes over time to attention dedicated to local and transnational themes

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Thus far, the analysis has suggested that local observers generally characterized AQAP and Ansar al-Shariah using similar terminology and framing, and despite investment in Ansar al-Shariah as the local face of the movement, AQAP's communiques become progressively more local in theme. Although these results are generally consistent with the theory's expectation that an influx of local fighters generated internal pressure on AQAP to focus on local issues, an alternate explanation could point to broader forces among the transnational jihadi community. One possible counter-narrative to the bottom-up transformation argument maintains that the change in al-Qaeda's leadership may have triggered a wider ideological shift that filtered to local branches and that Awlaki's death amplified the effect in Yemen. Indeed, if AQAP was following the lead of al-Qaeda Central after 2011, changes in AQAP's self-presentation would not be informative about the grassroots transformation theory. However, analyzing communiques released by AQAP from those released by al-Qaeda's central propaganda mouthpiece, as-Sahab, indicates that as AQAP becomes more locally focused, their messages increasingly diverges from propaganda released by al-Qaeda's central leadership.

## Conclusion

For many organizations, recruits are the future. Not only do new members bring manpower and material, but they can introduce new strategic priorities and internal constituencies. These priorities can eventually push the organization into directions that the leadership does not want. This process, a personnel-driven resource curse, has been described as a human attention to one topic necessarily means less attention to others, the "transnational" and "local conflicts" clusters never exceed an expected topic percentage of 75% of any given document. Moreover, the mean expected topic proportions dedicated to the two topics is 45%. Thus, the two topics could co-exist if desired by AQAP's propagandists.

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resources challenge by militant leaders in a wide variety of contexts. Leaders may be able to anticipate this pressure. Ideally, organizations recruit only those members that are already in alignment with their goals or when they have the ability to socialize or incentivize new agents into conformity (*e.g.* Laffont and Martimort 2009). However, in practice, situational factors can encourage leaders to discount the possibility of future internal stress and rapidly admit new members. As in the opening vignettes, vulnerability to survival threats or a desire to consolidate recent gains have been powerful motivators for leaders to either overlook, or discount, the transformative pressure of new recruits.

The paper has presented a novel theoretical insight into organizational change, via a theory of grassroots-driven, bottom-up organizational transformation. This insight has consequences for domains beyond the militant context presented here: it suggests that what appears to be a process that brings in strength and resources can create internal strains. Such strains introduces a vector through which internal fissures, reduced operational efficacy, and schism can sap capacity (Pearlman and Cunningham 2012; Bakke, Cunningham, and Seymour 2012; Bueno de Mesquita 2008; Bloom 2004). By presenting a theory of grassroots-driven organizational change that unifies the experiences of many militant groups, this paper outlines the contexts and processes in which recruitment shocks lead to change. This theory can inform scholars and practitioners to similar underlying contexts among groups experiencing the structural characteristics that precede grassroots- transformation. By identifying structural similarities, analysts can draw on a range of cases to generate predictions about the trajectory of a particular organization that may be experiencing grassroots-driven transformation.

Additionally, this article makes a twofold methodological contribution for research in information-poor settings. First, it suggests a method for treating the text of news reports as a readily-accessible source of feature-rich data about the tactical and strategic goals of a local actor. Secondly, it uses multiple methods and data sources to triangulate insights into the behavior of actors that would otherwise be difficult to systematically characterize. In overlapping

distinct methods and data, the empirical approach builds confidence in the absence of a ground truth against which to compare the findings.

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