The Public Relations of Armed Groups: Competition and Emulation in Multifaceted Conflicts

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Abstract

Research on rebel movements associates group fragmentation with infighting, spoiling, and defection as victory against a common enemy nears. In contrast, we show that pro-government militias (PGMs) face unique incentives which lead them to emulate government behavior. When confronting a common enemy, PGMs highlight their value by signaling their comparative advantage vis-a-vis the central government. As victory nears, however, PGMs act to ensure their survival beyond the conflict by emulating the rhetoric and behavior of state security forces. We illustrate these patterns through a case study of the Iraqi coalition against the Islamic State (IS). We collect a large corpus of social media messages from accounts associated with the Iraqi government, the Kurdish Regional Government, and the Popular Mobilization Forces (PMF), a collection of pro-government militias mobilized to defeat IS. We find that the content of PMF messages shifts as conflict progresses. At the height of the IS threat, PMF messages played to the group's base and emphasized its distinctiveness from government forces. As victory over IS became more likely, PMF messages converged with government messages, increasingly emphasizing professionalism and eschewing sectarianism. This behavior sheds light on the changing incentives and constraints confronting PGMs as conflict processes evolve.

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Civil conflicts are often multifaceted, with each side composed of state security forces, non-state militias and paramilitaries, and other armed groups (Ahram 2011; Jentzsch et al. 2015). Governments frequently ally with militias outside their chain of command in the fight against a common enemy, and existing research details the benefits states receive from these partnerships (Carey et al. 2016; Böhmelt and Clayton 2018; Ambrozik 2019). Leaders and members of pro-government militias (PGMs) benefit from remaining relatively independent from government oversight, creating opportunities to profit from looting or external support. However, when the fighting stops, the government may seek to integrate or demobilize the group, resulting in a loss of access to these benefits. The threat of disbandment at the conclusion of conflict explains why rebel groups frequently turn on each other (Krause 2017; Schulhofer-Wohl 2020). "Wars of movement" against a common enemy give way to "wars of position" as former allies jockey to be on top when the fighting ends, perpetuating violent conflict.

Against this logic, we theorize an alternative path whereby PGMs compete for influence within the state using non-violent means such as forming political parties, participating in elections, and pursuing support from the civilian population (Matanock 2017a,b; Daly 2020). We focus on one important tool of competition in these non-violent wars of position—public messaging. Our theory predicts that the PGMs should deploy public messages that highlight their comparative advantages during wars of movement, then shift towards emulating the state's messaging strategy during wars of position. Compared to rebel groups, pro-government militias are less able to directly engage in violence against the state, both because they do not wish to overturn the political system, and because the state is likely too powerful to defeat. Thus, by the time the war of movement winds down, a war of position via direct military confrontation against the state is unlikely to succeed.

We explore these dynamics by studying Iraq's counterinsurgency campaign against the Islamic State (IS) from June 2014 to December 2017. Dozens of armed forces fought to defend the Iraqi regime, including the Army and Air Force, paramilitary government

forces like the Federal Police, and pro-government militias of varying legality and loyalty. Public messaging is a particularly important subset of behavior in shaping and reshaping a group's image, as it amplifies and contextualizes a group's actions. During fighting, militias highlight their advantages in recruitment, local knowledge, or other factors which make them effective on the battlefield. As victory nears, militias shift their public messaging to publicize state-like characteristics and non-military contributions to society.

We develop and test hypotheses using a new dataset of social media messaging from accounts affiliated with three members of the anti-IS coalition: the government of Iraq (GOI), including the Ministry of Defense; the Popular Mobilization Forces (PMF), a loose conglomeration of militias which fought to expel IS; and the Kurdish Regional Government (KRG), including the Peshmerga. We identify several dozen verified Facebook and Twitter accounts across these three coalition members, and scrape every public message they posted during the years of the conflict. We classify each message by its content and date. We merge this daily time series of public messaging with data on conflict events as well as data on major political events in Iraq to explore how both short- and long-term shifts in the stage of conflict affects public messaging by each group.

We find variation in the PMF's public messaging strategy as the conflict progressed from a war of movement against IS, during which time IS fighters advanced deep into Iraq and posed and existential threat to the Iraqi government, to a war of position, during which PMF and associated parties engaged in non-violent competition for influence within the state. During the peak of the IS offensive, PMF messages are less elitist and more sectarian, consistent with the group's reputation as a grassroots organization legitimized by influential Shia clerics. As the tide of fighting turned, PMF messages become more elitist and less sectarian. Multivariate regression results reveal a consistent narrowing of the gap in rhetoric between government and PMF accounts on these topics. We argue that this shift came as militias attempted to bolster their positions following the end of conflict by signaling professionalism and pursuing a broad base of support among the Iraqi public, and the government

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responded by attempting to harness the populist narrative which benefited the PMF during fighting. We engage with several alternative explanations, including the possibility that short-term changes on the battlefield drove responses in public messaging, and determine that long-term progressions in the stage of conflict are more consequential for messaging strategies than short term battlefield outcomes. Finally, there is evidence that these shifts in messaging effectively broaden the PMF's base of support. During the war of movement, GOI and PMF messages receive engagement from largely distinct subsets of users. During the war of position, an increasing number of users engage with *both* GOI and PMF messages, consistent with the suggestion that PMF messages were successful in appealing to a broader community.

This article contributes to literature on the political behavior of pro-government militias. Centrally, we illustrate the utility of public messaging strategies for political competition. Militant organizations compete against more powerful rivals using public relations campaigns, allowing them to engage with rivals against whom direct violent confrontation would be folly. This behavior is likely a stepping stone on the path towards participation in institutionalized, non-violent political participation like elections (Matanock 2017*a*,*b*; Daly 2020).

We also speaks to governments' increasing use of social media. While existing studies shed light on who among government leaders uses social media (Barberá and Zeitzoff 2018), most focus on civilian leaders' uses of social media to foster electoral support. Our research helps explain the massive and costly public relations efforts of armed forces around the globe. Professional armies and terrorist groups alike have vibrant, professional media wings, and devote substantial resources and effort to refine their public relations with noncombatants (Brockett et al. 2004; Siegel and Tucker 2018).

Finally, this article sheds further light on the multifaceted dynamics of modern conflicts and the behavior of groups which compete in them. Research shows that members of rebel movements often compete with one another (Krause 2017; Schulhofer-Wohl 2020) or

switch sides entirely (Christia 2012) in pursuit of primacy when fighting stops. A largely separate literature deals with the strategic alliances governments make with militias both at home (Ahram 2011; Carey et al. 2016; Böhmelt and Clayton 2018) and abroad (Padró i Miquel and Yared 2012; Biddle et al. 2018; Berman and Lake 2019). By applying insights from work on rebel movements and asking what is different about pro-government versus rebel groups, we arrive at a more complete picture of the incentives which drive conflict processes. Changes in the stage of conflict predict not just violent behavior, the outcome of focus in most existing work, but also non-violent activities like public relations and public goods provision.

Coalition Politics in Multifaceted Conflicts

Governments engaged in civil conflict often formally or tacitly ally with non-state actors which share a common enemy (Ahram 2011; Jentzsch et al. 2015; Staniland 2021; Elias 2020). For example, during Afghanistan's conflict against the Taliban, the Afghan Local Police was actually a network of independent militias aligned to combat the Taliban (Derksen 2017). The Serbian government benefited from violence by the Serb Volunteer Guard during the Yugoslav wars, the Lebanese army fought alongside a handful of sectarian militias during its civil war, and the aforementioned Popular Mobilization Forces proved critical in expelling the Islamic State from Iraq. The Israeli government enlisted the help of the South Lebanon Army during its occupation of Lebanon from 1985 to 2000 (Nanes 2019), and similarly has attempted to use Fatah militants to crack down on Hamas in the West Bank (Abrahams 2019). These partnerships provide the state with numerous benefits, including enhanced local knowledge and intelligence-gathering (Berman and Lake 2019), plausible deniability against battlefield abuses (Carey et al. 2016; Böhmelt and Clayton 2018), and enhanced operational capabilities (Ambrozik 2019). Consequently, pro-regime forces are often a coalition of armed groups with aligned short-term interests.

Armed actors in conflict fight both "wars of movement" against a common enemy and "wars of position" against members of their coalition (Krause 2017). As long as the threat from the common enemy persists, the war of movement takes primacy, and the aligned short-term interests in defeating this enemy bind the coalition together. When victory against the common enemy nears, coalition members begin jockeying for the best possible position in the upcoming post-conflict order. Scholars of rebel movements note that as conflicts deescalate rebel groups increasingly engage in infighting, spoiling, defection, and other behaviors which perpetuate intragroup conflict (Christia 2012; Staniland 2014; Krause 2017; Schulhofer-Wohl 2020). In a movement which seeks to replace the government, the main prize from fighting is the ability to govern and enact one's preferred policies. This benefit accrues to whichever group which is powerful enough to control the new government at the conclusion of fighting. Thus, rebel groups have an incentive to perpetuate conflict as long as they are not at the top of the rebel food chain.

Members of pro-government militias face similar shifts in incentives as victory in the war of movement nears. Staniland (2015) explains that government behavior towards militias depends on ideological convergence between the two actors and the operational value that the militia offers. Governments allow for the continued operation of militias because the convergence in short-term interests enhances the state's capabilities against a common enemy. As the shared opposition to the common enemy loses primacy, the state's incentive to tolerate the existence of other armed actors decreases (Staniland 2021). Militias which the state finds useful during wartime may instead be seen as a threat to security or the state's monopoly on violence during peacetime. In turn, the state may seek to integrate the militia into the state security forces or disband it entirely. Both scenarios reduce or eliminate members' abilities to accrue private goods.

PGMs face an existential challenge as victory nears in the war of movement. Unlike rebel groups, however, they have an inherent interest in avoiding wars of position against the state. PGMs may have similar ideological preferences as the state, or derive legitimacy

from their status as protectors of the regime. More importantly, perhaps, governments on the brink of military victory tend to be quite powerful. By the time victory in the war of movement is imminent, a war of position against state forces is unlikely to succeed. On the other hand, shifting to a war of position earlier in the conflict risks destabilizing the government in the face of a common enemy. Thus a combination of overlapping preference and state hegemony makes wars of position among pro-regime combatants unappealing for PGMs.

Instead, PGMs compete for political influence as victory nears using a suite of non-violent tactics. Indeed, the drive to compete beyond the battlefield may explain why armed groups form political parties and compete in national elections (Matanock 2017*a*,*b*; Daly 2020). The transition from armed conflict to electoral politics ensures that PGMs can maintain power and influence in the postwar period. PGMs may also compete through less institutionalized means by engaging in state-like activities like distributing public goods, setting up informal dispute resolution courts, and combating crime. By emulating state institutions, militias broaden their base of public support and demonstrate value to society beyond the battlefield.

Public Messaging in Wars of Movement

One method through which PGMs compete in wars of position is through public messaging campaigns. Public messaging—especially through online social media platforms—is a critical tool for an organization seeking to shift others' behavior towards it by changing an audience's perception of the group. Public messaging may be a precursor to more institutionalized forms of political participation like competing in elections, or a stand-alone strategy aimed a bolstering public support to make it more difficult for the state to disband the militia. During wartime, armed groups use messaging to recruit fighters (Brockett et al. 2004; Rostker 2006; Rowland 2009; Mitts 2019; Nanes 2021) and promote the war effort among non-combatants. As an example of the latter usage, Jihadist groups like the Islamic

State use social media to market their ideology world-wide by transmitting inspirational messages and images about life in the caliphate (Mitts et al. 2021; Siegel and Tucker 2018; Ying 2020). Public messaging also targets foreign audiences. During its military operation in Gaza in 2008-09, the Israeli Defense Forces (IDF) used blogs, press releases, and social media to make the case that civilian casualties were necessary costs of self defense (Zeitzoff 2011). Hezbollah uses TV programming and social media to claim successes against the Israeli military to bolster support among Palestinians living in Lebanon and abroad (Clarke 2017).

During wars of movement against a common enemy, PGMs' value to the government stems from their added capacity and combat effectiveness, including any advantages the militia might have in recruitment or local intelligence. Accordingly, PGM messaging during wars of movement should emphasize the militia's distinctiveness from the government on dimensions which give it an advantage in recruitment and battlefield performance. In Iraq, for instance, most militias under the PMF umbrella draw support from specific tribes, and many are associated with religious leaders. These local and religious affiliations allowed the PMF to recruit and mobilize fighters who were otherwise uninterested in taking up arms in defense of the Iraqi state. While the PMF's sectarian identity was a boon in recruiting at the height of the conflict, as victory against IS approached the PMF predictably deemphasized their Shia sectarian identity.

Public Messaging in Wars of Position

Most existing accounts of public messaging by armed groups focuses on wars of movement. We contend that public messaging is actually a more valuable asset as conflicts transition to non-violent wars of position. As victory against a common enemy approaches, PGMs shift their messaging to emphasize broader relevance in the national context. A militia which previously recruited from a particular tribe or geographic area should de-emphasize these local roots and instead highlight its contribution to the national fight against the common

enemy. The subnational ties which gave the militias an advantage in recruiting fighters and securing information during conflict limit its appeal when competing for political influence on a national level. Militias may also eschew prior anti-establishment messages in favor of a more organized, professional image.

As the war of position takes primacy, PGMs' messaging strategies should converge with the the public relations of politicians and state security forces. State institutions use legacy and social media platforms to secure electoral support among a broad audience (Barberá and Zeitzoff 2018). Emulating the government's public messaging campaign also signals that the public should perceive the institutions similarly to other state institutions, rather than viewing the militia as an auxiliary or subservient force.

The endgame for PGMs competing in a war of position depends on the opportunities for political participation available to them. In democracies, former fighting forces often transform into political parties which compete in elections (Matanock 2017a,b; Daly 2020). Public messaging is therefore central to an organization's rebranding efforts as it seeks to be perceived as more than just a militia, and as it competes for votes from a broad swath of society. At a minimum, public messaging which shifts public attitudes can contribute to a militia's survival by tying the government's hands (Tomz 2007; Brooks 2009, 2019). Governments may be less likely to disband a militia that holds significant popular support for fear of being overthrown or voted out of office.

Finally, public messages are informative because they provide a direct window into the way that the sender *wants* to be perceived by an intended audience. Public messages also isolate strategy from outcomes, reflecting the sender's preferences regardless of its success in achieving its goals (Garrison 2017). If a change to conflict dynamics causes PGMs to shift strategies, these changes should be reflected in variation in their public messaging over time.

The dynamics described above should hold across a wide range of civil conflicts in which the state allies itself with non-state armed groups. Our primary assumption is that as victory in the war of movement becomes imminent, militias cannot feasibly challenge the

state through direct military confrontation. This difficulty may arise because the state's military forces are much stronger than those of the militia. Alternatively, alliances with powerful foreign actors may deter aggression against state forces. For example, as the anti-IS conflict moved towards victory, the Iraqi military and government benefited from air support from the United States. If the PMF turned their guns against the state, it is likely that US forces would have supported the Iraqi military against the militias, just as it had done against IS. As such, militias are unable to challenge the state in a violent war of position without losing material support and popular legitimacy at home and abroad.

To the extent that their *raison d'etre* is the regime's protection, overtly turning against the government is politically untenable. Conflicts where PGMs can feasibly fight a violent war of position against state forces fall outside the scope of our argument. Due to the nature of government-led coalitions, we expect such cases are rare. Finally, we assume that the leaders and members of militias have something to lose if their organization is disbanded or folded into existing state security forces. As we discuss above, there are a myriad club goods accrue to independent militias which are less available to soldiers in official state forces. Still, if militia members have nothing to lose from disbandment, they should not fight either violent or non-violent wars of position.

Hypotheses

Research suggests that as conflicts transition from wars of movement against a common enemy to wars of position within the winning side, coalitions should fragment, inducing intra-group competition for capabilities, public support, and prestige. We argue that in pro-regime coalitions, these wars of position should manifest non-violently in groups' public messaging strategies. Toward that end, we test one primary hypothesis:

H1: As victory against a common enemy becomes more likely, gaps in the content of public messaging between accounts associated with official state forces and those associated with pro-government militias will shrink.

We test two auxiliary hypotheses about the way in which armed groups use public messaging. First, if the goal of public messaging is to signal information to the general public *about the organization*, messaging may be a substitute for battlefield activity. Military outcomes are relatively easy to observe, as victories and defeats are clearly delineated based on territorial control, and they tend to be widely reported in conventional media. On the other hand, gains and losses in political struggles are less easily observed by the general public aside from at discrete points in time like elections or coups. Thus, public messaging may be less useful for signaling information during wars of movement compared to during wars of position. If true, then

H2: Armed actors engaging in wars of position will use public messaging more frequently than they do when engaging in wars of movement.

Alternatively, armed actors may use public messaging to control the narrative surrounding battlefield events, including advertising victories or strategically providing context around apparent defeats. In this case,

H3: The content of public messaging should change around major conflict events.

In the next section, we provide an overview of the empirical context in which we test these hypotheses, the anti-Islamic State coalition in Iraq. We identify four substantive topics which we expect to be particularly relevant to coalition members' shifting strategic uses of public messaging: elitism, sectarianism, militarism, and provision of services other than security. As predicted in Hypothesis 1, we expect differences between the government's and pro-government militias' usage of each topic to decrease as they transition from a war of movement to a war of position.

Empirical Context

On June 4, 2014, approximately 1,500 IS militants spilled across Iraq's northern border with Syria in an attempt to expand the group's territory. During the subsequent

fighting, nearly 25,000 Iraqi soldiers fled their posts and abandoned equipment and military bases, handing the self-styled caliphate control of large swaths of northern Iraq (Fraiman et al. 2014). By July, IS leader Abu Bakr al-Baghdadi declared himself caliph of an Islamist empire stretching from Aleppo, Syria to Diyala, Iraq.

As the Iraqi army and federal police collapsed in face of the IS offensive, Shia cleric Ayatollah Ali al-Sistani issued a religious ruling (*al-wajib al-kifai fatwa*) calling for "citizens to defend the country, its people, the honor of its citizens, and its sacred places" against Islamic State militants (Chivers 2014). In response, as many as 150,000 civilians mobilized into a network of pro-government militias known as the Popular Mobilizations Forces (*al-Hashd ash-Sha'bi* or PMF). Most PMF units were reconstituted from Shia sectarian groups that resisted the US presence after 2003 (Mansour 2015). Given the dire state of the armed forces and the imminent threat from the Islamic State, the central government publicly recognized the PMFs' role in the anti-IS coalition. However, for the first three years of the conflict they operated as independent units outside of the military's formal chain of command.

In the early months of fighting, the PMF mobilized thousands of volunteers who had previously declined to join the Iraqi Security Forces. The success was thanks largely to the forces' populist image as a loose organization of volunteer fighters defending their home communities. Recruitment was largely a grassroots effort based around personal networks of local Shia elites. Revealing the importance of personal networks in recruitment, individuals from a tribe or community joined en masse and fought alongside one another (Haddad 2018). Some PMF units used sectarian appeals to mobilize Shias against the existential threat posed by IS and its extremist interpretation of Sunni Islam. At the same time, some PMF militias mobilized Sunni fighters using sectarian language, this time to frame their group as an alternative to the Iraqi military and its history of marginalizing the Sunni minority (Mansour 2015; Nanes 2021). In sum, the militias used sectarianism to mobilize fighters by portraying their commitment to Iraqi nationalism, in contrast to the overtly exclusionary

(a) "*Da'esh* is continuing the program of the criminal Saddam and the *Ba'thist* Party."

(b)

"The Popular Mobilization Forces are for all Iraqis: Shia, Sunni, Shabak, Kurds, and Christians; we all fight under the same law."

Figure 1: Sectarian (left) and non-sectarian (right) public messages published by the Popular Mobilization Forces during the height of the anti-IS campaign

practices of the Iraqi military and IS. This strategy helped the PMF's image as a populist force allowed it to recruit nearly ten times as many combatants as the Iraqi army and federal police during the first two years of the conflict (Mansour and Jabar 2017).

The anti-IS campaign began poorly for pro-government forces. From June 2014 until January 2015, the Islamic State advanced rapidly through northern and western Iraq, ultimately controlling a swath of territory stretching from the Syrian border all the way to the outskirts of Baghdad. The tide began to turn in spring 2015, as operations by the PMF and Iraqi military began liberating communities in Diyala and Salah al-Din governorates. A critical victory occurred in December 2015 as Iraqi government and PMF forces retook Ramadi from IS. Fierce fighting led to a steady stream of victories by the anti-IS coalition over the next 18 months, culminating in the liberation of Mosul in July 2017. By December 2017, the Iraqi military and PMF had re-captured 95 percent of the territory previously held by the Islamic State. On December 9th, 2017, Prime Minister Haider al-Abadi announced the government's victory over the Islamic State in Iraq.

After the coalition's string of victories against IS throughout western Iraq in 2016, the relationship between the government and PMF began to change. Whereas the Iraqi

government previously benefited from the PMF's ability to mobilize volunteers to combat IS insurgents, government elites increasingly viewed the militias as a threat to the state's legitimacy and a divisive force in a country with a recent history of sectarian civil war. While an alliance of convenience between the central government and PMF prevented a sustained IS occupation, government elites began to view the PMF as a threat to their political power. In response, the government attempted to integrate some militias into state forces and disband others.

In February 2016, Prime Minister Haider al-Abadi replaced the PMF administrator, Abu Mahdi al-Muhandis, with a retired Iraqi general. Yet, Muhandis fought hard to retain his influence over the PMF and was repeatedly referred to in public communications as the "PMF leader" despite losing his official title (Mansour and Jabar 2017). The governments of al-Abadi and his successor Adel Abdul-Mahdi tried repeatedly over the next several years to impose central state control over the PMF, including placing the organization under the authority of the prime minister's office and forcing them to trade their militia names for "militaresque" brigade numbers (Dodge 2020).

The imminent victory of the Islamic State undercut the PMFs' *raison d'etre*, and attempts by the government to control or disband the militias increased. Doing so would substantially hamper PMF members' and leaders' ability to accrue resources, public support, and political legitimacy. For example, manning security and customs checkpoints creates opportunities to generate revenue, both from collecting "taxes" on goods and from selling expedited access. Militia membership also provided access to lucrative bureaucratic positions. As Mansour (2021, 27) explains, "In Kirkuk, members of Brigade 56 have been employed in around 40 per cent of public vacancies in various sectors, such as education, service provision, and other local and provincial directorates in Hawija, its subdistricts, and in Kirkuk city." Thus, those associated with the PMF had good reason to resist the government's attempts at disbandment or integration.

However, military confrontation with the Iraqi government was not a viable strategy.

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First, despite its shortcomings, the Iraqi army is a modern and well-equipped force capable of imposing significant harm on any adversary. Armed with jets, helicopters, and armored vehicles, it presented an entirely different type of opponent than the IS fighters armed with AK-47s, shoulder-mounted rockets, and pickup trucks against which the PMF had been victorious. Furthermore, the US military maintained a presence in Iraq and seemed committed to protected the Iraqi regime. Had PMF militias turned on Iraqi forces, the US may have defended the Iraqi military, especially given some PMF militias' associations with Iran. Second, the PMFs' support depended on its image as the protector of the state, not a challenger to it. According to Haddad (2018), "It would be near fatal to the [PMFs'] legitimacy if they were seen to be threatening or undermining the very same state that their supporters credit them with saving." Consistent with these challenges, direct military confrontation between PMF and government forces were exceedingly rare. From January 2016 through November 2020, we identified only 13 incidents of violence (out of more than 19,000 with sufficient information) in which PMF and government forces were on opposing sides.[1]

Instead, PMF leaders turned to political lobbying to secure the organization's future as an independent entity (Haddad 2018). PMF leaders exchanged their combat fatigues for western-style suits more appropriate for the halls of parliament and government ministries (Mansour 2018). Participation in elections became central to the PMFs' efforts. In September 2016, former prime minister turned PMF-supporter Nouri al-Maliki requested the establishment of an electoral bloc made up of PMF-affiliated parties (Mansour and Jabar 2017). The courts rejected his proposal, but the PMF won key provisions in November 2016 when the parliament passed a law formally recognizing them as "an independent military formation as part of the Iraqi armed forces and linked to the Commander-in-Chief." Notably, the new law positioned them parallel to the Ministries of Defense and Interior as a member of the civilian-led National Security Council (Mansour 2018). In March 2018, Prime Minis-

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[1]Data comes from the Armed Conflict Location & Event Data (ACLED) project. ACLED identifies 27,746 violent events in Iraq during this period and lists the primary belligerent on each side of the incident. In just over 19,000 of these incidents, we were able to definitively categorize each as either PMF, government, or neither.

ter al-Abadi signed a decree granting PMF fighters equivalent salaries to soldiers, as well as access to military colleges (Reuters 2018).

Under these new laws, the militias "transformed into full-fledged political parties" (Mansour and Jabar 2017), competing in elections and providing state-like services to citizens. Most PMF groups are represented by political parties which compete in legislative elections. Although Iraq's 2015 Law on Political Parties banned parties from working with militias, this provision was widely ignored. In the 2018 national election, the first since the defeat of the Islamic State, a group of PMF-affiliated parties banded together to form the Fateh bloc, winning 48 seats in parliament (Mansour 2021). Today, the PMF are fully integrated into Iraqi politics, but not in the way that al-Abadi or Abdul-Mahdi envisioned. Instead, PMF members "include not only fighters, but also parliamentarians, cabinet ministers, local governors, provincial council members, business figures in both public and private companies, senior civil servants, humanitarian organizations, and civilians," ensuring the organization's continued existence within the peacetime state (Mansour 2021, 2).

Empirical Expectations for the Anti-IS Coalition

In addition to the generalizable hypotheses articulated above, the discussion of government-militia interactions generates several Iraq-specific expectations about strategic messaging. We do not pose or test these expectations as formal hypotheses, but explore them as context-specific indicators of our broader argument that armed actors use public messaging to brand themselves for non-violent political competition. As we describe above, the PMF's initial advantages in recruitment and local knowledge on the battlefield stemmed from militias' uses of local networks. Although the PMF organization overall is not a "sectarian" organization in that it includes both Sunni and Shia militias, individual militias draw from sectarian networks and use sectarian language to stoke a response against both the Sunni extremists in IS and the Shia-dominated GOI security forces. Thus, we expect PMF messages to contain more sectarian content than GOI messages, particularly in the early period. As it shifts

attention away from battlefield recruitment and towards political competition, the PMF should eschew sectarianism in an effort to brand the organization as more inclusive.

Like many militias, the PMF began as a grassroots organization. During the war of movement, we expect messages to emphasize populist (i.e. non-elitist) imagery. In contrast, government accounts should employ elitist content which references specific leaders or institutions in order to emphasize professionalism and organization. As the PMF shift towards a war of position, they too should increasingly employ this type of content as they seek to appear more state-like.

Organizations participating in conflict may use public messaging to advertise battlefield victories. Thus, independent of the overarching expectation that PMF and GOI messaging should become more similar as the war of movement gives way to the war of position, we expect messaging with militaristic content by both groups to be low in the early days of fighting as IS captured large amounts of territory, then increase as these groups advertised their victories over IS in the second half of the conflict, and then decrease again as the frequency of fighting decreases and battlefield prowess becomes less salient to the group's public image.

Finally, as groups shift from a violent war of movement to a non-violent war of position, they should increasingly communicate the value they provide to a peacetime society. Much of that value comes from the delivery of public goods and services. We expect both groups to increasingly message about service provision as conflict shifts to a war of position.

Data and Methods

We test our hypotheses about the public messaging strategies of the anti-IS coalition by collecting social media messages from Twitter and Facebook accounts associated with the three most capable members of the coalition: the government of Iraq (GOI), the Popular Mobilization Forces (PMF), and the Kurdish Regional Government (KRG). We selected

32 accounts of key figures and institutions associated with these groups which were either verified with a blue checkmark on Twitter, had over 10,000 followers, or were followed by official accounts associated with other coalition members. Table 3 in the appendix lists each included account. We then downloaded all messages posted by these 32 accounts in English, Arabic, and Kurdish between June 1st, 2014 and December 31st, 2017, corresponding to the beginning and end of the anti-IS campaign in Iraq.

The corpus includes 196,664 unique words, of which 86 percent are in Arabic, 11 percent in English, and 3 percent in Kurdish.[2] We treat all posts associated with each coalition member in a single week as a discrete document in the corpus. Coalition members posted an average of 3,503 unique words per week, with a maximum word count of 22,597 (25 September 2016) and minimum is 1,079 (1 June 2014). All three coalition members were more active on Twitter than Facebook, although many messages were cross-posted across platforms.

Figure 2 plots the number of weekly public messages posted by accounts associated with each coalition member. As the Islamic State captured broad swaths of territory in early fighting, GOI accounts issued substantially more messages than PMF or KRG accounts. As the tide began to turn in the coalition's favor in 2016, however, PMF-affiliated accounts messaging more frequently, reaching the government accounts' levels in June. From that point forward, as the government coalition celebrated a series of victories over insurgents, both GOI and PMF accounts rapidly increased the frequency of their messaging. While cursory, these patterns are consistent with the logic underlying Hypothesis 2, which suggests that public messaging is more useful for (and consequently should be more common in) wars of position than wars of movement. Notably, the frequency of KRG messages remained steady across the entire period despite the Peshmerga playing an important role in these victories. The rapid increase in messaging by PMF accounts while KRG accounts held steady provides a clue that PMF messaging is not driven solely by battlefield conditions,

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[2]Nearly all Kurdish words are associated with KRG public messages even though English comprises nearly two thirds of all KRG messages in the corpus.
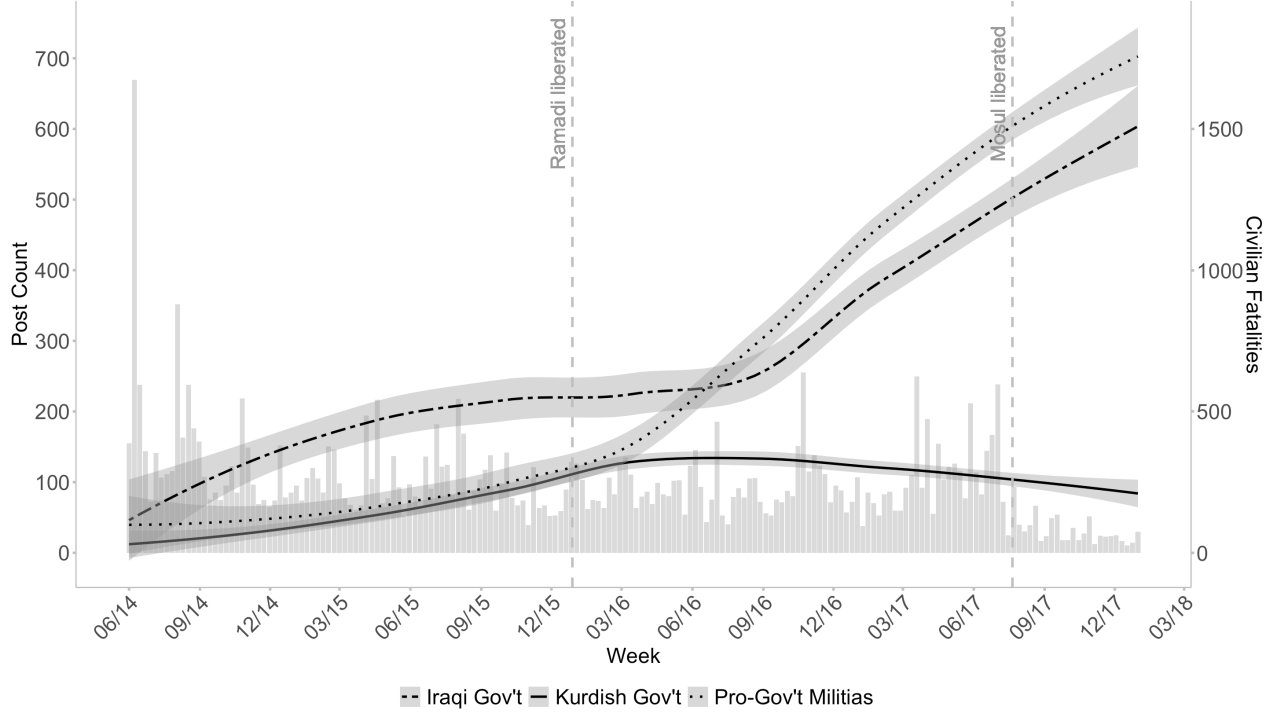
Figure 2: Social Media Posts by Coalition Members per Week
Source: Twitter API v2.0, CrowdTangle; lines correspond to smoothed conditional means (Loess) with 95% confidence intervals; Iraqi fatality counts come from the Iraq Body Count.

and may also depend on political dynamics which differ between the militias and Kurdish government. Since the KRG's peacetime position was already constitutionally guaranteed, it did not participate in the public messaging war of position fought by the GOI and PMF. Generally, forces which already have a legally assured basis in peacetime society should be less inclined to expend resources on strategic public messaging as conflict deescalates.

To measure changes in public messaging over time, we construct a list of keywords associated with four key topics: elitism, militarism, sectarianism, and service provision. We drew from our knowledge of the included actors and common rhetoric in Iraqi politics to create lists of likely key words associated with each topic. We also examined key descriptive statistics within the corpus, including term frequency and inverse document frequency (TF-IDF). TF-IDF is a common, term-weighting statistic that measures the relative importance of a word by multiplying the frequency of a term adjusted for how rarely it is used across time periods (Chang and Masterson 2020; Mozer et al. 2020). Words with a higher TF-IDF

value are most distinct within the corpus, whereas words with a TF-IDF score closest to zero are more common. This fully-supervised method of assigning keywords to topics allows us to categorize the content of each message. We then manually added relevant keywords to our topic lists. In the appendix, we provide additional details about the processes of topic list creation, as well as a full list of the keywords included in each topic (see Figure 6).

After creating these lists of topic keywords, we categorize each message as containing (or not) language related to each topic. We then aggregate messages by actor-week, and calculate the proportion of messages by each actor (GOI, PMF, or KRG) in each week hat contain content from each topic. These topic frequencies at the actor-week level make up our key dependent variables below. We first analyze topic usage by each actor over time. We then construct a variable which is the *difference* in topic usage between GOI and PMF accounts, which we use as the key dependent variable in formal tests of Hypothesis 1.[3] In all cases, the stage of conflict is the key independent variable. We identify two key turning points, the liberation of Ramadi and the liberation of Mosul, as indicators of the approximate shift in conflict context which should spur strategic shifts in public messaging.

Results

We begin our analysis by examining the distribution of topics by coalition members over time. Figure 3 displays the proportion of words associated with each topic, aggregated weekly. We denote two key dates: the liberation of Ramadi in December 2015 and the liberation of Mosul in August 2017. The former denotes the tide beginning to turn in the coalition's favor, while the latter denotes the military defeat of the Islamic State in Iraq.

Figure 3 reveals several trends. First, consistent with our hypothesis, PMF accounts use very little elitist language in the early days of the conflict. Following the liberation of Ra-

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[3]For elitism and militarism, we subtract PMF usage from government usage, as government accounts have a higher usage of these topics in each week. We reverse the coding for sectarianism and service provision, subtracting government usage from PMF usage, as PMF usage is higher. For all variables, a larger value indicates a larger difference in usage between the two sets of accounts.
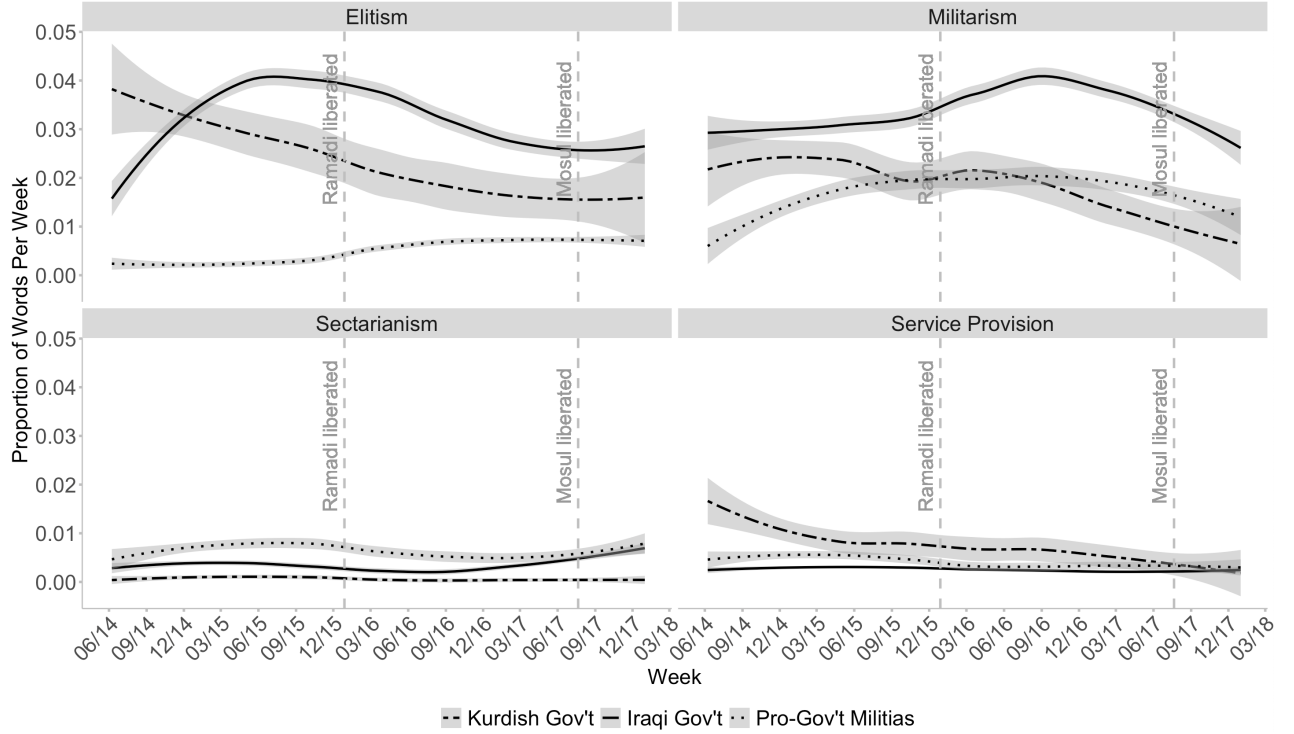
Figure 3: Variation in Topic Proportions by Coalition Member Over Time.
Source: Twitter API v2.0, CrowdTangle; lines correspond to smoothed conditional means (Loess) with 95% confidence intervals.

madi, the content of PMF messages becomes increasingly elitist. This change contrasts with messages by government-associated accounts, whose messages become less elitist following the liberation of Ramadi. Although PMF accounts predictably use far less elitist language throughout compared to government accounts, the increased magnitude across periods is substantial, more than doubling in frequency from the first period to the second. When combined with the corresponding decrease in government elitism, we observe substantial convergence between government and PMF accounts on elitism between the height of the IS threat in spring 2015 and the coalition's victory in December 2017.

Second, PMF messages use more sectarian language than any other group throughout the period of study. However, usage of sectarian language changes as the conflict develops. PMF sectarianism peaks at the height of the IS threat then subsides after Ramadi is liberated, consistent with our argument that pro-government militias should attempt to broaden their appeal as victory in the war of movement nears. Interestingly, sectarianism in PMF

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messages increases again following the liberation of Mosul. We return to this finding in the discussion below. Finally, low levels of sectarianism in messaging by all three actors contradict stereotypes that conflict in Iraq is inherently sectarian. Indeed, despite the existential threat posed by IS and its extremist interpretation of Sunni Islam, neither the Shia-dominated government nor the pro-Iranian PMF leadership make sectarian language a major part of their messaging strategies. Changes over time in sectarian language in PMF messages are substantial, but the overall magnitude of sectarianism is low.

Language surrounding battlefield activities (*"militarism"*) displays trends approximately consistent with our expectations. As fighting against IS ramps up through the early part of the conflict, both government and PMF messages increasingly include militaristic language. This language plateaus for PMF messages after the liberation of Ramadi, and then decreases as Mosul is liberated. In contrast, government messages continue to increase in militarism even after Ramadi is liberated, only decreasing towards the end of the period. One interpretation is that PMF strategists are conflicted between advertising battlefield victories on the one hand, and emphasizing the group's non-military characteristics as attention shifts to the war of position on the other hand.

The government and PMF accounts send very few messages about non-military service provision, regardless of timing. If anything, there is a slight decrease in PMF messages about service provision after Ramadi's liberation, the period during which we would have expected the PMF to begin signaling its contributions to society away from the battlefield. The absence of such messaging is particularly puzzling given that the militias became quite involved in infrastructure reconstruction and bureaucratic matters during this period. There does appear to be convergence between GOI and PMF messaging about service provision during the latter stages of conflict, but the overall trend is relatively flat.

To better understand the political context of these public messages, in the appendix we disaggregate these topics into individual words, focusing on those which are especially closely correlated with timing. While trends in elitism ("leadership" and "minister") and ser-

vice provision ("building" and "project") are driven largely by just two words, the militarism and sectarianism topics contain a wide range of keywords which are individually correlated with the time period in question. Notably, influential words in the sectarian topic include words associated with both Shia ("Tehran" and "al-Sadr") and Sunni ("Wahhabism") Islamism.

To formally test the hypothesis that changes in conflict stage lead militias to emulate government messaging, we estimate a series of multivariate regressions on the same corpus, using the difference between government and PMF topic usage in any given week as the dependent variable. We expect to find larger differences in messaging when the pro-government coalition was fighting a "war of movement" against the Islamic States, and smaller differences when focus shifted to a "war of position" between coalition members. The key predictors are *Ramadi Liberated*, an indicator variable coded "1" from December 2015 through the end of the data, and *Mosul Liberated*, an indicator variable coded "1" from July 2017 through the end of the data. Thus, the coefficient on *Ramadi Liberated* is the conditional effect of being in a week after the liberation of Ramadi (i.e. when the tide began to turn against IS), controlling for whether the week was also after the liberation of Mosul. We expect differences between government and PMF topic usage to decrease from the peak of the IS threat (before Ramadi's liberation) to the point at which victory is all but assured (after Mosul's liberation). We control for civilian fatalities (discussed in detail below), whether the week in question contained a major Muslim or Iraqi holiday,[4] and seasons to isolate the influence of long-term changes in conflict dynamics from shorter-term factors which may also drive public messages.

Results from the regressions presented in Table 1 are consistent with the argument that PGMs differentiate themselves from the state during wars of movement and emulate the state during wars of position. A one unit increase in the coefficient for *Ramadi Liberated*

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[4]Research suggests a number of pathways through which holidays may be correlated with violent conflict, including concerns about violating the sanctity of holy days (Reese et al. 2017), serving as coordination points (Toft and Zhukov 2015), and impacting security procedures (Lucas 2019).

Table 1: Difference in frequency of public messages relating to key topics (Gov't vs. PMF)

	(1) Elitism	(2) Militarism	(3) Sectarianism	(4) Service Provision
Ramadi Liberated	-8.551***	2.922**	-0.730	-1.528**
	(1.271)	(1.440)	(0.787)	(0.625)
Mosul Liberated	-8.154***	-3.130*	-1.666**	0.332
	(1.583)	(1.599)	(0.798)	(0.519)
Civilian Fatalities	-0.0122***	-0.00437	-0.000983	0.000597
	(0.00362)	(0.00409)	(0.00223)	(0.00147)
Controls	Yes	Yes	Yes	Yes
Observations	187	187	187	187
R^2	0.400	0.042	0.059	0.066

OLS regressions with robust standard errors in parentheses.

Controls include holiday and season indicators.

* $p < .10$, ** $p < .05$, *** $p < .01$

or *Mosul Liberated* indicates a one percentage point increase in the difference between government and PMF accounts in the proportion of tweets containing the indicated topic. The difference between government and PMF use of elitist rhetoric shrinks by about 8.5 percentage points as the conflict progresses and victory over IS becomes more likely. The gap in militaristic language increases from the early period to the period following the liberation of Ramadi, then decreases after the liberation of Mosul. As shown in Figure 3, both government and PMF accounts increase their uses of militaristic language in the second period, presumably to advertise battlefield victories, but government accounts increase their usage even more than PMF accounts. In the third period, when victory is all but assured and PMF leaders shift their attention to a war of position, the gap shrinks once again. Like elitism, the gap in sectarian language between government and PMF messages shrinks as conflict progresses. Finally, the gap in messaging about non-military service provision shrinks from the early days of fighting to the period after the liberation of Ramadi. These changes persist after controlling for seasonal dynamics, holidays, and civilian fatalities.

To test the alternative argument in Hypothesis 3, that public messaging content is

Table 2: Frequency of public messages relating to key topics (PMFs)

	(1) Elitism	(2) Militarism	(3) Sectarianism	(4) Service Provision
Ramadi Liberated	3.919***	4.073***	-1.769**	-2.221***
	(0.382)	(1.361)	(0.721)	(0.586)
Mosul Liberated	1.062**	-5.442***	1.897***	0.278
	(0.509)	(1.333)	(0.669)	(0.437)
Civilian Fatalities	-0.000805	-0.00378	0.000377	0.000414
	(0.00123)	(0.00424)	(0.00200)	(0.00135)
Controls	Yes	Yes	Yes	Yes
Observations	187	187	187	187
R^2	0.491	0.098	0.076	0.126

OLS regressions with robust standard errors in parentheses.

Controls include holiday and season indicators.

* $p < .10$, ** $p < .05$, *** $p < .01$

driven by short-term changes in battlefield events, in Table 2 we re-estimate the regressions using the proportion of the PMF accounts' weekly messages containing each of the four content categories as the dependent variables. Here, the dependent variables are the same variables plotted in Figure 3. The models are otherwise the same as those in Table 1. The key independent variable here is *Civilian Fatalities*, the number of civilian casualties from fighting each week. This variable approximates week-by-week variation in the threat that the Islamic State poses to the Iraqi people.[5] Since the models already account for long-term changes in conflict context, *Civilian Fatalities* measures residual short-term variation in violence. We find no evidence of a conditional relationship between weekly conflict fatalities and shifts in messaging content by the PMF. Shifts in messaging content are more likely driven by long-term strategic interests determined by changes in the conflict setting, and not by attempts to communicate about specific battlefield incidents.[6]

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[5]Data comes from Iraq Body Count, and is limited to civilian casualties due to data constraints. In the appendix, we substitute all fatalities from fighting using data from the Armed Conflict Location & Event Data Project (ACLED), not used in the main analysis because the time coverage is more limited. The ACLED data produces similar results.

[6]The coefficients in Table 2 for *Ramadi Liberated* and *Mosul Liberated* confirm that the long-term trends in the raw data displayed in Figure 3 largely present after controlling for seasonality, holidays, and weekly

In the appendix, we test the related possibility that PMF messaging is driven specifically by PMF operations rather than the overall intensity of violence. We use as the key independent variable the number of weekly conflict events involving at least one PMF unit, taken from the Armed Conflict Location & Event Data Project (ACLED). We find no evidence of a relationship between PMF involvement in violent events and the content of PMF messaging that week, negating the counterargument that messaging is used to report on short-term changes in battlefield conditions or outcomes.

Audiences and Networks

To this point, our analysis provides insights into the public relations employed by members of the anti-IS coalition. However, are coalition members' messaging strategies effective? Do PMF messages appeal to an increasingly broad audience during the war of position? If messages during the war of position are intended to curry support from a broader swath of the population, then we should observe accounts that engaged with GOI messages during the war of movement engaging with PMF messages during the war of position.

We measure audience engagement by summing all forms of user interaction with a public message (i.e., likes, quotes, replies, and retweets) and then dividing by the total number of messages posted by the account in a given time period.[7] Including likes, quotes, replies, and retweets, but not views, captures active engagement with messages rather than just the number of people who scrolled past them. Dividing by the account's number of messages accounts roughly for the number of users who would plausibly be exposed to a message without intentionally seeking it out, yielding a more accurate measure of engagement rather than mere exposure. Because Facebook censors user engagement data to a greater extent than Twitter, our analysis of audience engagement is limited to messages in the Twitter corpus.

civilian fatalities.

[7]This statistic differs from Twitter's version of "engagement," which is the ratio of user engagement to impressions (i.e., how many times a tweet has been seen). Twitter's current API (version 2.0) limits access
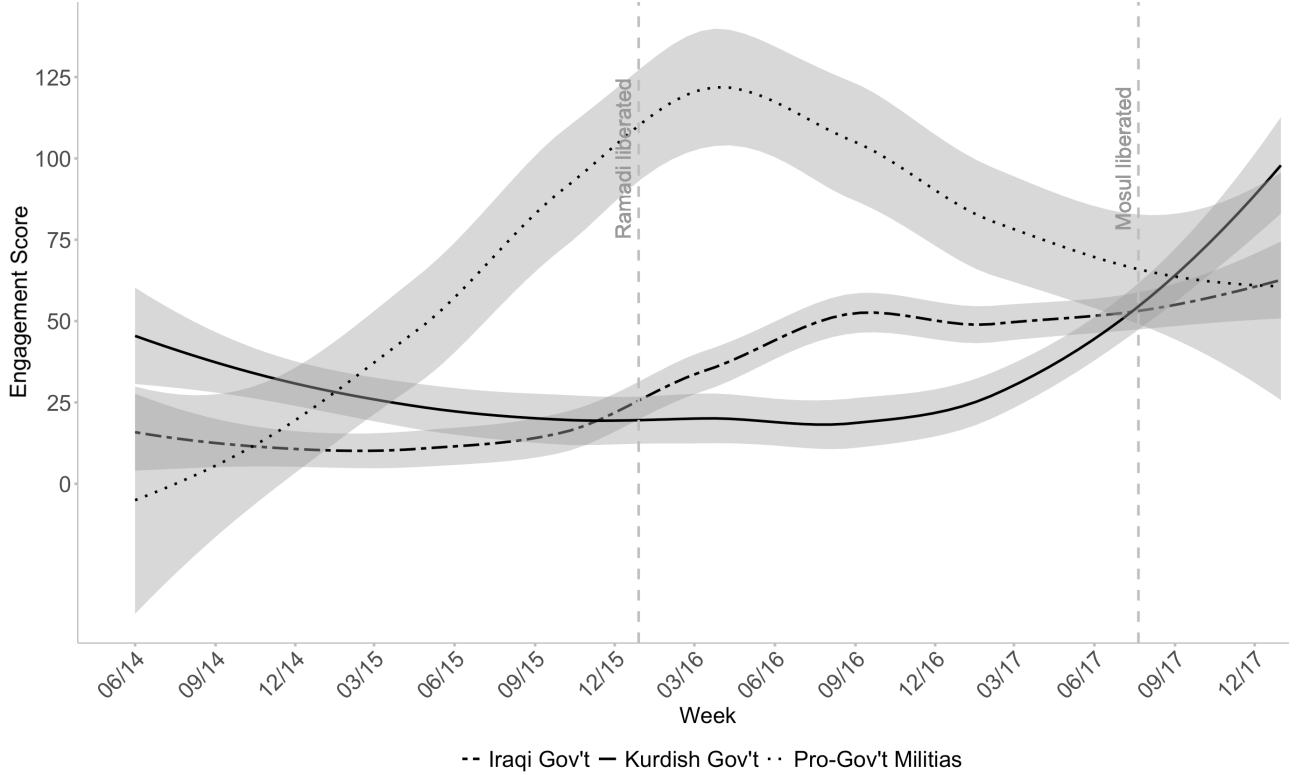
Figure 4: User Engagement by Coalition Member Over Time

Figure 4 shows the mean engagement rate for each actor by week. Since our measure of engagement is scaled by the number of messages sent each week, this figure captures the extent to which users engage with messages independently of how many tweets are sent. Engagement scores increase over time for all actors, indicating that messages are becoming increasingly effective. Still, after the liberation of Ramadi and the shift to a war of position, engagement with KRG and GOI messages is dwarfed by engagement with PMF messages.

Next, which users engage with messages sent by members of the coalition? The evidence in the previous section suggests that the content of PMF and GOI messaging converges as the war of position intensifies. If this shift in content effectively appeals to similar audiences, then we should observe greater overlap in engagement in the form of an increasing number of civilian accounts which engage with messages from *both* the PMF and GOI.

to historical data on tweet impressions, necessitating our use of a different quantity for scaling.

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To investigate this possibility, we construct a network of Twitter users who engaged with tweets sent by members of the anti-IS coalition. In our network, nodes represent individual twitter accounts, and links represent an engagement between a Twitter account and coalition member. Because we are interested in audience-level effects, we limit links to those between a non-coalition account and a coalition message. In other words, we exclude engagement within the coalition (i.e., the prime minister "liking" a tweet issued by the Ministry of Defense), as well as links between dyads of non-coalition accounts. In sum, our engagement network consists of 2,829 nodes and 2,979 links.[8]

Figure 5 displays two subgraphs of the network, examining user engagement with coalition accounts before and after the liberation of Ramadi in 2016. The sheer number of nodes and links makes the entire network difficult to visualize. Our primary interest is in the change in shared engagement across coalition nodes from one period to the next. We want to know whether users which engage with multiple coalition accounts become more likely to do so with both PMF and GOI messages (rather than with only PMF or only GOI messages) as conflict progresses from the war of movement to the war of position.

Figure 5 reveals several noteworthy patterns. Before the liberation of Ramadi (i.e., during the war of movement), the KRG community of the network is bimodal, with two distinct groups of accounts with dense communities of followers connected by a third set of users who engage with KRG accounts from both groups (but not with GOI or PMF accounts). This structure is consistent with the political structure in which two dominant Kurdish parties affiliated with distinct families compete against one another in both local and national politics. The PMF community is also bimodal. One community consists of accounts associated with *Asai'b Ahl al-Haq* and the Badr organization, both pro-Iranian militias. The second PMF community is accounts associated or engaged with Muqtada al-Sadr, a Shia cleric staunchly opposed to interference from Iran or other outside forces. Unlike in the KRG sub-network, the two PMF nodes are not connected by overlapping engagement.

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[8]The density of the network is intentionally sparse (0.0003) since we limit links to user engagement between the coalition members and their audiences.
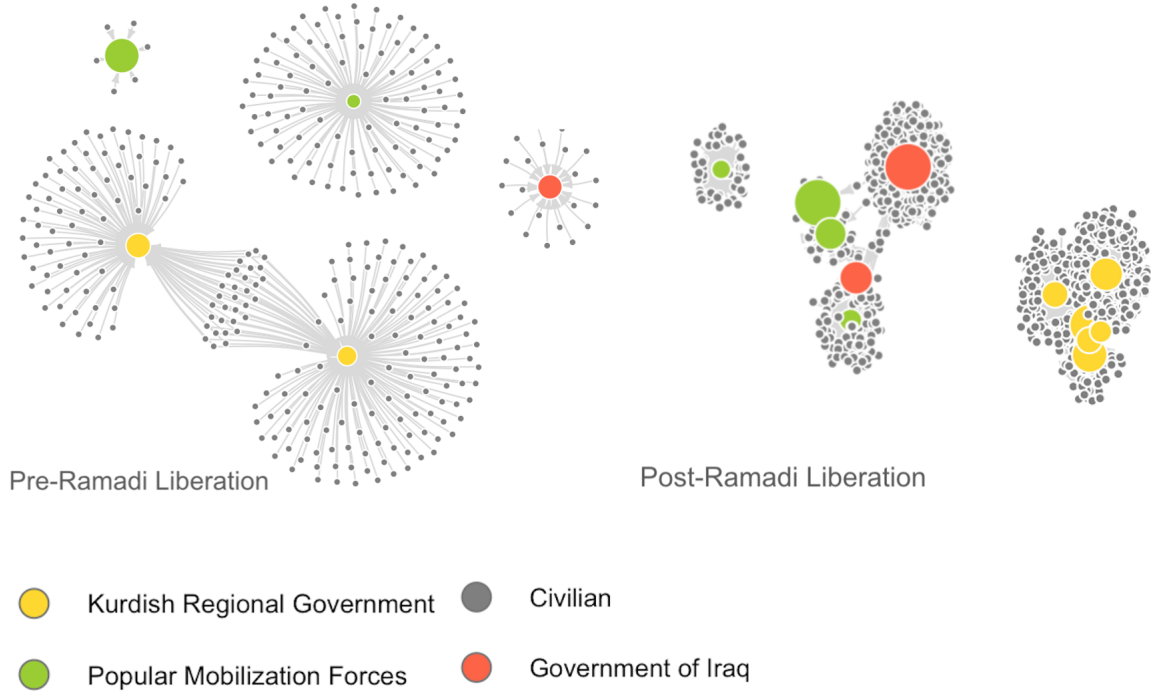
Figure 5: Subgraph of User Engagement Before and After the Liberation of Ramadi

Accounts engaged with GOI messages comprise a fifth distinct community in the network.

The right panel of Figure 5 shows dramatic changes after the liberation of Ramadi as the conflict shifts to a war of position. Engagement with KRG nodes remains fully isolated, and the bimodal structure fragments into a more interconnected community (i.e., a higher density of links). Most relevant for our theory, the PMF and GOI communities merge, showing a substantial increase in the number of accounts engaging with both PMF and GOI messages. Overlapping user engagement is consistent with the convergence in message substance which we observe in the previous section, and indicates that attempts to reach a broader audience are succeeding. Crucial GOI-affiliated accounts in this community include the speaker of the Iraqi parliament, Humam Hamoudi (also the leader of the party leader of the Supreme Islamic Council or ISCI). The other GOI-affiliated account—an officer associated with the Iraqi army—provides a bridge between the PMF and GOI accounts. This account demonstrates high betweenness centrality (i.e., the bridging effect between nodes in different communities) because many of its messages consist of martyrdom announcements

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issued upon the death of coalition combatants in battle. Similar to the previous period, user engagement with Muqtada al-Sadr remains isolated from other nodes central to the PMF community.

Discussion

Collectively, our findings challenge several common preconceptions about coalition dynamics in armed conflict generally, and about the combatants involved in the anti-IS coalition in Iraq in particular. Conventional accounts of the PMF portray them as populist, Shia militias which emphasize martyrdom and grassroots defense. This portrayal is borne out in PMF messaging, in the sense that PMF messages tend to be more populist (less elitist) and more sectarian than either government or KRG messages. However, these characteristics appear to be more instrumental than innate. PMF messaging noticeably shifts away from elitist and militarist rhetoric when a change in context makes doing so advantageous.

Intra-coalition competition suggests a likely reason for the uptick in sectarianism towards the end of the period of study. As victory over IS became all but assured in mid-2017, PMF leaders began preparing for a new stage of competition with the state through party politics. The majority of political parties in Iraq have strong sectarian affiliations. Most parties compete for votes from members of a particular sect against other parties with the same affiliation, creating incentives for sectarian outbidding. Thus, as the 2018 national elections approached, PMF messaging shifted back towards sectarianism in an effort to mobilize traditional bases of support among the Shia Arab population.

Conclusions

This article explores how armed groups within a pro-government military coalition deploy public messages to cooperate and compete with fellow coalition members. It explains how pro-government militias evolve their public messaging strategies as conflicts transition

from wars of movement against a common enemy to wars of position against fellow coalition members. As a coalition succeeds against a common enemy, PGMs seek ways to carve out space for their organization in a post-conflict setting. Given the state's strength and the militia's public association with it, direct military confrontation against the state is less unlikely to succeed and risks alienating civilian supporters. In this regard, PGMs differ from rebel or insurgent groups with respect to the strategies at their disposal. Whereas rebel groups turn on one another in violent wars of position, PGMs compete against their state allies through non-violent strategies, including public messaging campaigns and participation in democratic elections.

We probe our theory by exploring the public messaging strategies of prominent members of the anti-Islamic State coalition in Iraq between June 2014 and December 2017. During the anti-IS campaign, a network of pro-government militias called the Popular Mobilization Forces differentiated their public messaging strategy early in the conflict to signal their competitive advantage vis-a-vis other coalition members. As the coalition succeeded against IS on the battlefield, the PMF shifted the content of their public messages to pursue a broader base of support through signaling military professionalism and Iraqi nationalism rather than Shia sectarianism.

Importantly, our findings on the public relations strategies of pro-government militias have implications beyond Iraq. Pro-government militias in all conflicts face a common challenge of justifying their existence once fighting ends. Disbanding the militia or allowing it to be folded into the state security forces threatens the power and influence of militia leaders, and tests the loyalty of militia members. Although direct military confrontation with the state is unlikely to succeed, PGMs and their leaders may compete with the regime in other ways. The tools available to them depend in part on the political system in which they operate. In Iraq, relatively open democratic elections permitted PMF leaders to infiltrate government peacefully by running for office. The Iraqi public's power over elected officials also privileged activities aimed at acquiring broad societal support, pushing the PMF to

demonstrate professionalism and eschew sectarianism. Militias operating under authoritarianism may instead pursue the support of a small number of powerful individuals, making public messaging less relevant.

Social media usage has become a hallmark of armed actors, including militias, military branches, and terrorist organizations. Broadly speaking, we find that pro-government militias' messaging is driven largely by long-term strategic goals, with different stages of conflict necessitating different messaging strategies. On the other hand, we find little evidence that messaging is driven by short-term reactions to battlefield conditions.

Finally, our findings suggest implications for military coalitions and conflict outcomes. To the extent that PGMs draw legitimacy and support from fighting on the side of the government, they can bolster their legitimacy by moving *closer* to the state. Militias and their leaders consolidate influence during peacetime by competing *within* the state rather than against it. The resulting consolidation of power may strengthen the state against external threats in the long run.

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Appendices

Social Media Data Selection and Processing

Table 3: List of Actors and Corresponding Social Media Accounts (June 2014–May 2021)

Account	Affiliation	Tweets	Facebook	Verified?
@AdilAbdAlMahdi	Iraqi Prime Minister (2018–2020)	2,846	–	✓
@AlghanmiOthman	Chief of Staff of Iraqi Army (2017–2020)	87	–	✓
@alhikmamovement	official page of the National Wisdom Movement	914	157	✗
@Ammar_Alhakeem	chairman of the National Wisdom Movement	3,765	99	✓
@badrnewsagency	Badr News Agency	26,817	–	✗
@BarhamSalih	Iraqi President (2018–present)	1,673	–	✓
@DMI_KRG	KRG Department of Media & Information	3,229	155	✓
@GCPFKurdistan	KRG Peshmerga Command	255	–	✗
@HaiderAlAbadi	Iraqi Prime Minister (2014–2018)	4,718	–	✓
@Humam_Hamoudi	Leader of the Islamic Supreme Council of Iraq (ISCI) (2017–present)	1,180	–	✗
@IKRPresident	KRG Presidency	452	–	✓
@iraqicts	Iraqi Counter-Terrorism Service	3,002	–	✗
@IraqiPMO	Iraqi Prime Minister's office	8,752	120	✓
@IraqiSpoxMOD	Iraqi Ministry of Defense spokesman	3,094	–	✓
@isof_iq	Iraqi Social Operations Forces	9,627	–	✗
@Jouma_Anad	Iraqi Minister of Defense (2020–present)	304	–	✓
@KRG_DFR	KRG Department of Foreign Relations	1,0384	–	✓
@KRG_MOPE	KRG Ministry of Peshmerga Affairs	546	19	✗
@KRGSpokesperson	KRG spokesperson (Ministry of Media & Information)	792	–	✓
@KRSCPress	KRG Security Council	1,303	–	✓
@Kurdistan	Kurdistan Regional Government	9,530	170	✓
@masoud_barzani	KRG President; KDP party leader (2005–2017)	413	–	✓
@masrour_barzani	KRG Prime Minister (2019–present)	1,349	154	✓

List of Actors and Corresponding Social Media Accounts (June 2014–May 2021), continued

Account	Affiliation	Tweets	Facebook	Verified?
@NechirvanBarzani	KRG President	104	314	✓
@modmiliq	Iraqi Ministry of Defense	13,390	7,438	✓
@Mu_AlSadr	Mutada Al-Sadr	476	–	✗
@nourialmalikiiq	Iraqi Prime Minister (2006–2014)	837	–	✓
@Qais_alkhazali	Secretary-General of *Asa'ib Ahl al-Haq* (2006–present)	1,284	–	✓
@S_5_313	"In Support of the Iraqi Security Forces"	40,801	–	✗
@SecMedCell	Iraqi Security Press Office	480	–	✗
@socialmoigoviq	Iraqi Ministry of Interior	1,781	–	✓
@teamsmediawar	Popular Mobilization Forces Press Office (Arabic)	5,752	831	✗
@warmediateam	Popular Mobilization Forces Press Office (English)	871	–	✗

[1]Post languages include Iraqi Arabic, English, and Kurdish

Pre-Processing Procedures for Social Media Corpus

We preprocessed the raw posts by first removing punctuation, numbers, diacritical marks, and non-Arabic symbols. Next, we partially stemmed each term by removing definite articles and pronoun-specific prefixes and suffixes. We left proper nouns—including places, names, and titles—unstemmed. Finally, we filtered out the 750 most common stop words in Modern Standard Arabic based on a list maintained by Mohamed Taher Alrefaie of Loughborough University. After preprocessing, we aggregated tweets by affiliation (GOI, PMF, or KRG) and week, resulting in a total of 188 time slices over the course of the anti-ISIS campaign.

Elitism	Militarism	Sectarianism	Service Provision
minister, president, leader, leadership, inspector, generals, alabadi, almaliki, othman, alghanimi, ghanimi, elite, elites, officers, أركان, رئيس, زير, وزير, القيادة, قيادة, لقيادة, وقيادة, بقيادة, بقيادة, للقيادة, لواء, أركان, الأركان, النخبة, نخبة, ونخبة, الضباط, ضباط, وضباط, للضباط, الغانمي, المالكي, والمالكي	combat, fight, fighting, fought, protecting, protected, saved, valiant, clashes, victory, battle, battles, operation, operations, tactical, strategy, liberation, liberating, liberated, freeing, recruit, recruiment, mobilized, mobilize, training, defeat, gangs, gang, terrorist, terrorists, insurgents, extremist, extremists, murders, destroy, destroyed, martyr, martyrs, paradise, soldier, soldiers, brigade, division, unit, forces, جرائم, الجرائم, بجرائم, القتالية, القتال, القتالي, قتالية, قتال, القتالية, جندي, جنود, الفرقة, قطاع, القوات, قواتنا, كتائب, جنود, الفرقة, قطاع, القوات, قواتنا, لجنة, اللجنة, اللجنة, للجنة, الجنة, شهيد, شهداء, هدم, تدمير, وتدمير, دمرت, عصابة, العصابة, المجرمة, المجرمين, المجرمين, المجرم, المجرم, مجرمي, المتمردون, المتطرفين, المتطرف, المتطرفة, المتطرف, إرهابي, إرهابيين, الإرهابية, الإرهابيين, للإرهابيين, إرهابي, إرهابية, إرهابيا, إرهابيا, الإرهابيون, إرهابيين, للإرهابي, الهزيمة, هزيمة, هزيمة, الهزيمة, وهزيمة, والهزيمة, لهزيمة, التدريب, تدريب, والتدريب, للتدريب, التدريبية, التدريبي, تدريبية, تدريب, وتدريب, لتدريب, معركة المعارك, عملية	muqtada, sadr, amri, alamri, alkhazali, iran, iranian, amiri, alsistani, alarbaien, mujahideen, najaf, karbala, tehran, assadr, alsadr, infidels, kafir, takfiri, takfiris, takfirism, takfir, takfirist, takfirists, hawza, hawzas, marjaiya, marja, marjaiyas, zainab, hussain, hussaini, ayatollah, ayatollahs, khamenei, خامنئي, حوزة, بحوزة, اربعين, وهابية, وهابي, وهابيون, وهابيين, شيطان, شيطانية, شيطانية, شيطاني, مرجع, مرجعية, مرجعيتنا, مرجعيه, مرجعي, تكليف, نصاب, انصابت, زينب, يزيد, معاوية, طهران, إيران, إيراني, إيرانية, خزعلي, قيسالخزعلي, عامري, السليمانية, سليماني, قاسمسليماني, سيستاني, المهندس, صدر, مقتدىالصدر, ابومهدىالمهندس, الحسين, ياحسين, صدر, الشيعة, الشيعي, شيعي, الكافر, الكافرين, التكفيري, التكفيرية, التكفيريين, التكفيرية, والتكفير, التكفيري, التكفير, والتكفيريين, شهيد, شهدا, الطائفية, طائفية, مجاهد, مجاهد, النجف, كربلا	project, program, electricty, sewage, water, well, assistance, build, rebuild, construction, reconstruction, investment, investments, school, food, farm, feed, jobs, employment, assistance, loan, loans, development, aid, relief, refugee, refugees, displacement, peacebuilding, usaid, استثمار, استثمارات, استثمارية, استثماري, مساعدة, يقرض, قروض, تطوير, يساعد, تضاريس, لاجئين, لاجئ, ملاجئ, ازاحة, إعمار, الإعمار, المشروع, مشروع, برنامج, البرنامج, كهرباء, الكهرباء, وظائف, الوظائف, توظيف, يبني, تغذية, التغذية, بئر, البئر, أبناء, بناء, وبناء, بناءا, لأبناء, المزرعة, مزرعة, مجاري, المجاري

Figure 6: List of Keywords Across Topics

Additional Analyses

To better understand the dynamics described in-text, we disaggregate the topics into individual words, focusing on those which are especially closely correlated with timing. Figures 7 through 10 plot the PMF accounts' over time usage of all keywords which are significantly correlated with the weekly measure of time, i.e. the keywords which are most influential in driving any observed long-term time trends within the data. The two most

influential keywords in the *elitism* topic are "leadership" and "minister." While PMF usage of "leadership" decreases slightly from the liberation of Ramadi to the liberation of Mosul, usage of "minister" increases dramatically, reflecting that PMF accounts became substantially more likely to discuss the behaviors or statements of government ministers. This shift corresponds with an increase in the number of PMF sympathizers, many of who were current or former militia commanders, appointed to cabinet positions.
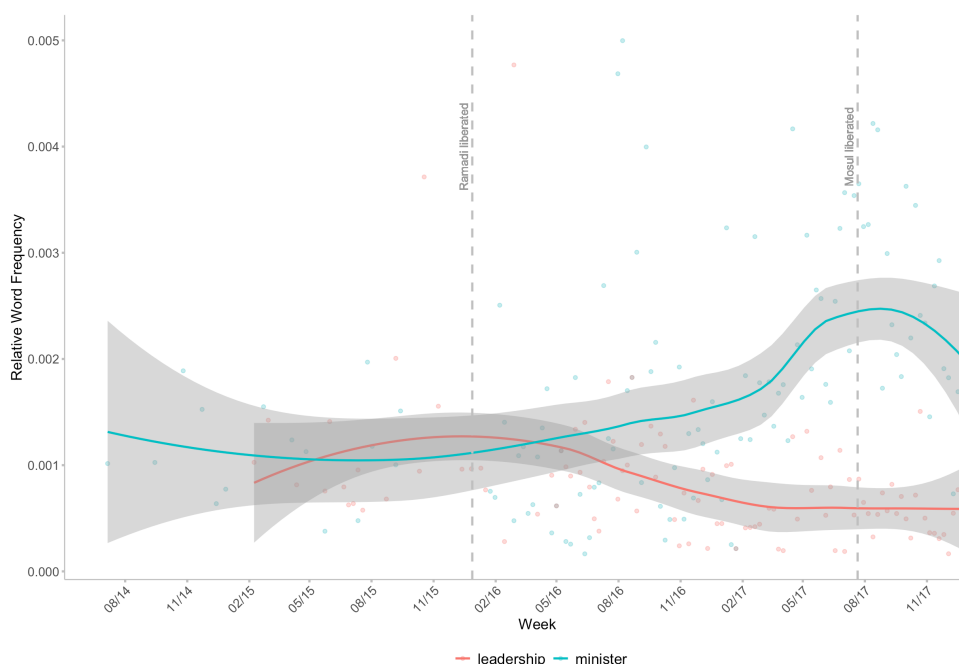
Figure 7: Changes in elitism keywords over time

Figure 8 reveals two patterns. First, a large number of keywords are significantly correlated with time, and second, their individual usage has a gradual negative slope across the time period. One notable exception is "battle," which tracks approximately with PMF participation in fighting, peaking just before the liberation of Ramadi.

The sectarian keywords plotted in Figure 9 include a mix of individual leaders like Abu Mahdi al-Muhandis, the leader of the Popular Mobilization Committee with close links to Iran, and Muqtada al-Sadr, an influential Shia cleric; words used to frame the conflict in sectarian terms like "martyr" and "clerical class;" words referencing Iranian influence ("Tehran"); and "Wahhabism," a fundamentalist branch of Sunni Islam. Thus, the trends
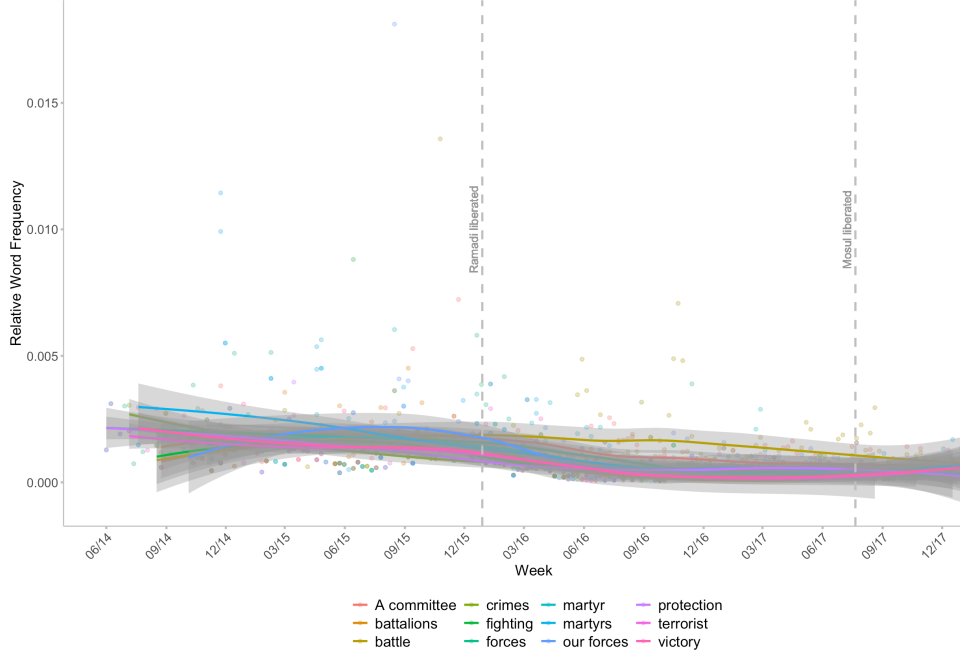
Figure 8: Changes in militarism keywords over time

in sectarian usage by the PMF shown in Figure 3 are driven by a diverse vocabulary which all reveal approximately similar trends: high levels of sectarianism when the threat from IS was greatest, and lower levels of sectarianism as victory over IS became increasingly certain. Notably, none of these individual keywords exhibits the increased usage around the liberation of Mosul observed in the aggregated topic.

Finally, Figure 10 shows that "building" and "project" exhibit similar downward trends in usage over time as the aggregate *service provision* topic. However, usage of both words is so infrequent as to make these trends somewhat meaningless.

Table 1 in the main text measures short-term variation in conflict intensity using weekly civilian fatalities from conflict collected by Iraq Body Count. The restriction to *civilian* casualties is due to limitations in the IBC data. A better measure for our purposes would account for *all* fatalities from conflict, including both civilians and combatants. The Armed Conflict Location & Event Data Project (ACLED) collects such data, but only since 2016. Still, substituting the two measures may indicate whether limiting the measure to civilians affects the main results. Table 4 replicates the regressions from Table 2, but
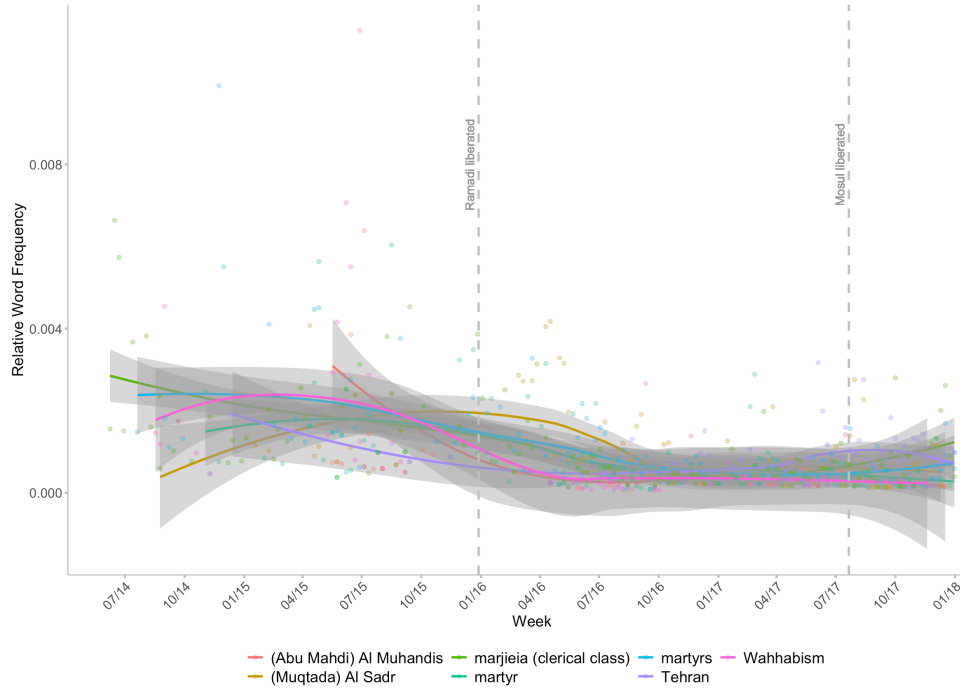
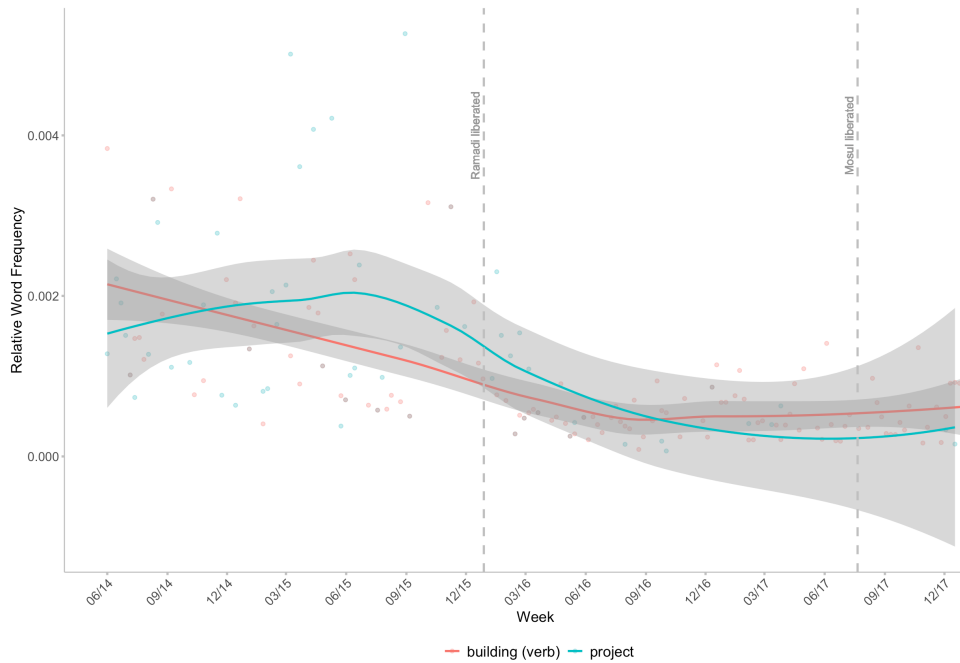Figure 9: Changes in sectarian keywords over time

Figure 10: Changes in service provision keywords over time

substitutes ACLED's measure of conflict fatalities for IBC's measure of civilian fatalities. Since the ACLED data start later, the regressions have fewer observations, all of which fall after the liberation of Ramadi. Still, the effects of *Mosul Liberated* (now simply a measure

of after/before government victory of IS was assured) on difference in messaging content is negative for all topics, though only significant for elitism.

Table 4: Differences in the frequency of public messages relating to key topics (Gov't vs. PMF)

	(1) Elitism	(2) Militarism	(3) Sectarianism	(4) Service Provision
Mosul Liberated	-4.548**	-1.491	-0.951	-0.353
	(1.969)	(1.577)	(0.647)	(0.499)
Fatalities from fighting	0.00276	0.00172	0.00120*	-0.000573
	(0.00228)	(0.00162)	(0.000666)	(0.000384)
Controls	Yes	Yes	Yes	Yes
Observations	105	105	105	105
R^2	0.288	0.054	0.111	0.078

OLS regressions with robust standard errors in parentheses.

Controls include holiday and season indicators.

* $p < .10$, ** $p < .05$, *** $p < .01$

Table 2 shows no apparent relationship between civilian fatalities and PMF messaging content, after controlling for long term changes in conflict context. A related possibility might be that PMF messaging content depends on PMF participation in fighting. In Table 5, we use as the key independent variable the number of weekly events involving a PMF-affiliated militia. Data on conflict events comes from the Armed Conflict Location & Event Data Project (ACLED), and we coded each actor's membership in the PMF. Our data includes 13,492 violent events over 105 weeks, of which 583 involved a PMF unit. Table 5 shows no apparent relationship between PMF involvement in violent events and the content of PMF messaging. In fact, we find a negative relationship between PMF involvement in violent events and the total number of words posted in public messages that week ($p < 0.05$, not shown for space), likely driven by the overall increase in public messaging across the second half of the conflict period. In short, there is little evidence that the battlefield activities are the primary driver of the PMF's public messages.

Next, it may be that fighting and service provision are substitutes. The end of

Table 5: Frequency of public messages relating to key topics (PMFs)

	(1) Elitism	(2) Militarism	(3) Sectarianism	(4) Service Provision
Events w/ PMF	0.0199	0.0476	0.0254	-0.00424
	(0.0295)	(0.0762)	(0.0262)	(0.0191)
Controls	Yes	Yes	Yes	Yes
Observations	105	105	105	105
R^2	0.118	0.021	0.022	0.187

OLS regressions with robust standard errors in parentheses.

Controls include holiday and season indicators.

* $p < .10$, ** $p < .05$, *** $p < .01$

fighting may free up resources to provide public goods and services, or militias may turn to state-like activities to bolster their legitimacy and signal value beyond the battlefield. Regression models in table 6 test whether PMF messaging about service provision changes based on short-term changes in conflict intensity. The dependent variable is the frequency of keywords related to non-military service provision included in PMF messages. To fully isolate the short term conflict dynamics from long-term trends, we include controls for week, week squared, and week cubed (not shown for space). Model 1 shows that across the entire period of study, weekly civilian fatalities from fighting are uncorrelated with the frequency of messaging about service provision. Model 2 uses the more inclusive ACLED data on overall conflict fatalities, with the tradeoff that the data do not begin until early 2016. Across this shorter time frame, the number of conflict fatalities are negatively and significantly associated with messaging about service provision: the fewer fatalities from fighting, the more frequently messages contain discussions of goods and services provision.[9] Yet, Model 3 does not show evidence of a relationship between conflict events which involve the PMF and PMF messaging about service provision.

The null result from Model 3 provides no support for the argument that direct participation in conflict and (talking about) service provision are substitutes. There is some

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[9]The difference between Models 1 and 2 are *not* caused by the change in time coverage, as using the IBC civilian casualties data restricted to the weeks included in Model 2 yields a similar null result.

indication from Model 2 that conflict intensity which affects combatants is associated with short-term changes in PMF messaging about service provision, but the mechanism is unclear in the face of the other results. One possibility is that PMF participation in non-military service provision is relatively constant in the short term, but public messaging is more likely to highlight those accounts when violence is lower, perhaps because it is less relevant to discuss other issues during combat operations. Given the null finding from Model 1, the results in Model 2 may also be spurious, given that they include only data from 2016 and 2017, after the tide had already shifted in the anti-IS coalition's favor.

Table 6: Frequency of public messages relating to service provision

	(1)	(2)	(3)
Civilian Fatalities	0.000574		
	(0.00134)		
Fatalities from fighting		-0.00107***	
		(0.000390)	
Events w/ PMF			-0.0141
			(0.0201)
Season indicators	Yes	Yes	Yes
Time control	Yes	Yes	Yes
Observations	187	105	105
R^2	0.099	0.314	0.278

OLS regressions with robust standard errors in parentheses.
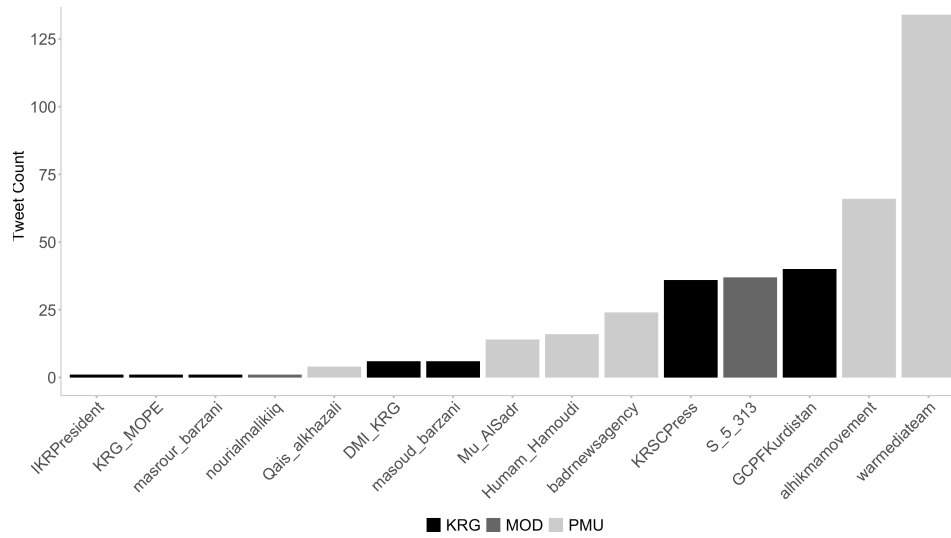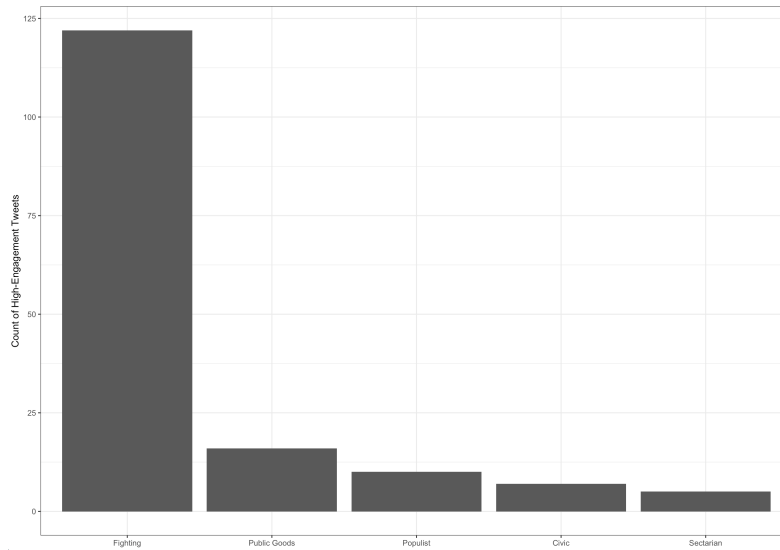* $p < .10$, ** $p < .05$, *** $p < .01$

Figure 11: User Engagement by Coalition Member

Figure 12: Engagement Rate by Topic