

# Peacefully demobilizing rebels: Identities, emotional cues, and the *FARC*\*

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## Abstract

In 2005, the Colombian government started airing messages during games of the national football team, urging *FARC* rebels to demobilize. We first study the strategy's effectiveness, leveraging game dates, kick-off times, and spatial-temporal variation in rain-induced signal strength at the municipality-day level from 2003-2016. Findings suggest over 1,000 rebels demobilized because of *family*-themed (but not *national-unity*-themed) messages, received during *unexpected losses* (i.e., negative emotional cues). Results prevail when accounting for municipality-sample-week-fixed effects and municipality-weekday-fixed effects, with various robustness checks producing consistent estimates. We then model a rebel's demobilization decision, combining insights related to identity salience with the persuasive power of transient emotional states (specifically sadness). Finally, we corroborate the model's predictions examining demobilizations after family-specific holidays (as a primer for family identity) and unusually cold weather at the local level (to proxy sadness).

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# 1 Introduction

Force-based counter-insurgencies often exacerbate civil wars, escalate casualty counts, and deepen conflict lines (Dixon, 2009). Even if domestic conflicts are concluded by force, governments can nevertheless lose legitimacy, while “victors and vanquished (and victims) are condemned to coexist in the same society” (Blattman and Miguel, 2010). Approximately half of all civil conflicts therefore backslide into violence within a decade (Collier, 2008; Blattman and Miguel, 2010). Unfortunately, *peaceful*, as opposed to *force-based*, resolutions to civil conflicts largely remain elusive.

For decades, the Colombian government’s counter-insurgency against the *Fuerzas Armadas Revolucionarias de Colombia (FARC)* was no exception. Since the 1960s, over 200,000 casualties have resulted (Centro Nacional de Memoria Histórica, 2020), as the government predominantly pursued military victory through force-based strategies. In 2003, however, the Ministry of Defense introduced a demobilization program, promising *FARC* defectors a peaceful pathway to reintegrate into civil society (Congreso de Colombia, 2002). A *FARC* rebel could enter any local government building to initiate their demobilization process. Over the following 14 years, more than 16,000 *FARC* rebels surrendered under the program – almost three times as many as during the 2016 peace accord (ARN, 2020). These demobilizations have been credited as the main reason for the *FARC*’s decline, as defecting rebels meant losses of both experienced fighters and sensitive intelligence (Bjørkhaug, 2010; Nussio, 2013; McLaughlin, 2015; Hafez, 2017; Nussio, 2017, 2018; Oppenheim and Söderström, 2018; Richards, 2018).

The program initially suffered low take-up rates, however. Two years later, in response, the Colombian government began broadcasting short propaganda messages during games of the national football team, both on radio and television. Football was chosen since the sport has widely been championed as the sole uniting force of Colombia’s fractured society (Watson, 2022), and the national squad constitutes the predominant team of interest around which all Colombians, including *FARC* members, rally.<sup>1</sup> These demobilization messages reminded guerrillas of their prior family identity, i.e., the life they forewent as a *FARC* rebel (Caracol Radio, 2015; Fattal, 2018). For example, one frequently aired message simply

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<sup>1</sup>94% of respondents to a 2014 government survey believed football was either *important* or *very important* for Colombia. The most popular TV show ever aired would not enter the top ten list of the most-watched football games in the last ten years (Rating Colombia, 2020).

states: “Rebel! Your mom is telling you that she is waiting at home for you during this *Month of the Mother*. Demobilize!”<sup>2</sup> After five years, however, the propaganda campaign switched focus, instead emphasizing messages of *national unity*. Then, a typical message featured a uniformed Colombian soldier asserting: “Rebel, I am saving you a spot [pointing to an empty seat next to him], so we can watch the best football together! Come on over, buddy, Colombia is saving you a spot.”<sup>3</sup>

Our paper makes four distinct contributions. First, we aim to isolate causal effects of the demobilization messages, pursuing three distinct identification strategies. Our database comprises daily information on demobilizations for all 1,122 Colombian municipalities between 2003 and 2016 – a period during which the Colombian team contested 176 games. Second, we seek to uncover the mechanisms at play. Third, inspired by our findings, we sketch a simple theoretical model that would be able to explain the empirical patterns we observe. To do so, we combine two long-standing literatures emphasizing (i) social identity theory and (ii) the power of emotional cues in individual decision-making pertaining to group membership. Fourth and finally, we test the model’s implications by studying demobilizations after family-specific holidays (as a proxy for identity salience) in combination with local climatic anomalies of unusually cold temperatures (as a proxy for a rebel’s emotional state of mind).

To begin, we compare post-match demobilization numbers before and during the messaging period, i.e., contrasting 2003/2004 (no messages) with 2005-2016 (messages). The derived estimates reveal post-match day spikes in *FARC* demobilizations – but only during the messaging periods. Coefficients are robust to the inclusion of granular municipality-weekday- and municipality-sample-week-fixed-effects, as well as binary indicators capturing the government’s conflict-relevant annual budget announcements. On average, eleven additional *FARC* rebels demobilized nationwide on days immediately following national team games beyond the sample average of 3.25. Event-study diagnostics illustrate demobilizations only surged on days immediately following the games.

We subsequently combine the exogenous scheduling of within-day kickoff *times* with the documented observation that *FARC* rebels typically enjoy their leisure hours (i.e., when they are most likely to be able to closely follow the games and receive the messages) during evening hours ([LA FM Noticias](#),

<sup>2</sup>Original Spanish: “¡Guerrillero! Su mama le manda decir que este mes de la madre lo espera en casa. ¡Desmovilícese!”

<sup>3</sup>Original Spanish: “¡Guerrillero, aquí te estoy guardando el puesto para que veamos el mejor futbol! Vente para acá, papa, Colombia le está guardando el puesto. ¡Desmovilícese!”

2016; Fattal, 2018). As the *FARC*’s third-in-command A.K.A. *Cremallera* states: “There you could hear everything on AM. [...] *Antena 2* [a radio station] for the football games, mostly from 17h to 20h because during the day everyone was very busy” (Lowe SSP3, 2014). As expected, demobilization estimates increase further (by an additional 27%) after games played during these dusk hours but, again, only during the messaging period.

Our third identification strategy leverages cross-municipality variation resulting from ‘rain scattering’ (Lin, 1973) since rain disturbs radio and television signals, thereby reducing message exposure. Indeed, municipality-level rain during dusk games emerges as a negative predictor of post-match day demobilizations. Dusk rain on *non-game* days, however, remains quantitatively irrelevant (and marginally *positive*) in predicting demobilizations the next day. This means we can rule out the possibility of local dusk rain independently hindering demobilization patterns, e.g., due to challenging weather conditions. Taken collectively, these results are consistent with the hypothesis that the propaganda messages successfully encouraged numerous *FARC* rebels to demobilize.

Our second contribution explores underlying mechanisms. How could these messages have convinced a guerrilla to demobilize? To answer this question, we first exploit the change in messaging narrative in 2010, away from highlighting family identity to instead emphasizing national unity. Contractual information and text analyses allow us to cleanly delineate both campaign periods. Notably, we observe increased demobilization numbers *exclusively* after family-themed messages, while identifying a precisely estimated null effect after national-unity-themed messages. These results imply narratives matter, above and beyond the messages’ informational content.

To better understand these patterns, we draw on insights from social psychology related to (i) social identity theory and (ii) the importance of emotional cues in decision-making. Social identity theory (Tajfel and Turner, 2004; Hogg, 2016) positions an individual’s sense of who they are as a function of the group they belong to. This includes an individual’s sense of value (e.g., self-esteem) and the emotional significance they attach to membership of a particular group. In the Colombian context, political psychologists explicitly contrast *FARC* members’ rebel identity against their family identity (Rodríguez López et al., 2015; Wessells, 2016; Kaplan and Nussio, 2018; González and Clémence, 2019; Gluecker et al., 2021). This comparison between salient personal identities, which is able to explain the persuasive power

of family-themed messages (but not national-unity-themed messages), will form a fundamental part of our simple theoretical framework.

Notably, these spikes in demobilizations occurred only immediately after matches, i.e., within 24-48 hours. Guided by these short-run effects, we explore the role of unexpected transitory emotional shocks, commonly labeled ‘visceral factors’ (Loewenstein, 1996, 2000), since emotions often inform decision-making (Lerner et al., 2015). Visceral factors can influence *how much* actions are valued temporarily, while these preferences need not be stable in the short-run; rather, they can be influenced by how one feels momentarily in tandem with external stimuli. In practice, visceral factors are often associated with impulsive actions that can fundamentally affect one’s life (Baumeister and Heatherton, 1996; Loewenstein, 2000).<sup>4</sup> In our case, emotional factors may contribute towards a rebel’s decision to risk their life and leave the *FARC*.

In the context of persuasion, the main emotion that has received substantial scholarly attention concerns sadness (Petty et al., 2003; also see Petty and Cacioppo, 1986, DellaVigna and Gentzkow, 2010, and Marquart and Naderer, 2016). Exploring that avenue, we take inspiration from Card and Dahl (2011) to distinguish unexpected from expected wins and losses of the Colombian team as a powerful barometer of a rebel’s emotional state of mind during the delivery of these demobilization messages. Given Colombians’ (and *FARC* rebels’) well-documented love of the national football team, unexpected losses likely elicit sadness and, therefore, potentially visceral responses (e.g., see El Tiempo, 2018). Indeed, demobilization numbers surged to 35 guerrillas country-wide (or twelve times the average) after family-themed-messages *that aired during unexpected losses*. Importantly, we do not identify *any* meaningful effects after victories, whether expected or not. In sum, the two characteristics that combine forcefully to predict exceptional demobilization surges concern (i) message narrative, positioning family as the alternative identity, and (ii) emotional cues, i.e., a sad emotional state elicited by an unexpected loss.

With these empirical patterns in mind, we introduce a basic theoretical framework of a rebel’s demobilization decision. Built on Akerlof and Kranton’s (2000) model of individual identities, we posit a guerrilla decides between remaining in their social group (i.e., the *FARC*) and returning to their al-

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<sup>4</sup>Prominent examples include consuming goods that are inherently bad for us (Laibson, 2001), becoming addicted to drugs (Bernheim and Rangel, 2004), and engaging in domestic violence (Card and Dahl, 2011).

ternative group (i.e., their pre-*FARC* family). The model predicts a positive priming of the alternative identity (e.g., through family-themed messages) should increase the demobilization messages’ persuasive effects – but particularly so if these messages reach the individual in a sad state of mind. Combining these branches of social psychology yields a powerful, testable proposition pertaining to demobilization patterns.

Remaining within the Colombian context, our final contribution ventures beyond the government’s demobilization messages to test this proposition. Specifically, we first identify family-themed holidays (e.g., Mother’s Day) through an objective, data-driven approach, which systematically studies the day-to-day terminology employed by Colombia’s largest newspaper (*El Tiempo*). To proxy for transitory emotional shocks, we focus on local climatic anomalies, specifically unusually cold temperatures, as a long-standing line of research shows people to more likely be sad on unusually cold days (Cunningham, 1979; Sanders and Brizzolara, 1982; Hirshleifer and Shumway, 2003; Keller et al., 2005; Guven and Hoxha, 2015). In accordance with the model’s predictions, we observe a spike in demobilizations immediately following family holidays – but only when local temperatures are unusually cold for that particular municipality. As expected, we do not observe such dynamics after *non*-family-themed holidays. These results are consistent for alternative definitions of family holidays and unusually cold days.

Our contributions inform two distinct branches of literature. First is the topic of empirically identifying potential effects of persuasion, particularly when it comes to conflict settings. Recent studies highlight the power of propaganda messages in instigating (i) violence in Rwanda (Yanagizawa-Drott, 2014), (ii) political division in pre-WWII Germany (Adena et al., 2015), (iii) ethnic tensions in the former Yugoslavia (DellaVigna et al., 2014), and (iv) resistance against the Nazis during WWII (Gagliarducci et al., 2020; Adena et al., 2021). Closely related to our analysis, Armand et al. (2020) find evidence of demobilization messages successfully targeting members of the Lord’s Resistance Army (LRA). Our municipality-day-level data allow us to pursue three identification strategies, exploiting the exogenous scheduling of game days and times, as well as spatial and temporal reductions in signal strength induced by rainfall. These rich panel data also allow us to impose granular fixed effects that further insulate our estimates from the influence of potential unobservables. Specifically, our results account for municipality-sample-week-fixed effects, i.e., we compare demobilizations *within the same municipality*

*and week*. Event-study diagnostics demonstrate that our estimated effects operate immediately, in a narrow window following game days. Thus, our analysis is able to strengthen the empirical identification and quantification of demobilization messages in Colombia, adding to the findings produced by [Armand et al. \(2020\)](#) for the LRA.

Our paper also shares core elements with [Depetris-Chauvin et al.'s \(2020\)](#) canonical work in that aspects associated with games of the national football team can serve as a powerful vehicle to overcome civil conflict lines. [Depetris-Chauvin et al. \(2020\)](#) find African individuals' survey-based self-identification with ethnicity, as well as inter-ethnic violence, diminishes after their national football team enjoys a substantial victory. Our setting also focuses on national football games as the platform through which actors are reached and also addresses identity as a core mechanism. Our work contrasts with [Depetris-Chauvin et al.'s \(2020\)](#) in that we *(i)* study demobilization messages communicated during games, *(ii)* directly observe rebels' demobilization decisions, *(iii)* are able to identify immediate day-to-day effects in each municipality, and *(iv)* propose family as a powerful alternative identity through which combatants can be reached and potentially persuaded to leave their group. Further, our theoretical demobilization framework proposes a novel mechanism, combining two independent strands of research in social psychology, to reach propositions that are consistent with our empirical observations, within football games and then, finally, in an alternative context within the Colombian setting.

Second, we extend our understanding of underlying mechanisms, i.e., *why* some persuasive efforts succeed in demobilizing rebels, while others may not. Obtaining the universe of demobilization messages, we analyze the language employed by the contrasting campaigns, thereby distinguishing family-themed from national-unity-themed messages. Results suggest even highly ideologically invested individuals, such as *FARC* members, are affected by well-tailored messages aimed at their core identity. Crucially, these family-themed messages only worked if the rebel found themselves in an emotional state of sadness – a result that, to our knowledge, for the first time empirically connects an application of social identity theory with the power of negative emotional cues in a real-life, conflict-relevant setting. These empirical patterns motivate us to propose a theoretical framework that, we hope, can form a starting point to better understand similar settings where group identity plays a fundamental role, such as rebel and terror groups beyond the *FARC*, cults, or other extremist organizations. By incorporating emotions

into our model, we also answer [Elster’s \(1998\)](#) call to better understand how emotions influence human behaviour.

Peaceful propaganda (e.g., see [Taylor, 2013](#)), as an integral element of non-coercive efforts to end civil conflict ([Dixon, 2009](#)), constitutes a powerful weapon that can be wielded for the sake of nation-building and achieving post-conflict status. Beyond our empirical identification strategies and suggesting an explicit mechanism, our paper contributes to the growing empirical literature on the Colombian conflict ([Dal Bó et al., 2006](#); [Dube and Vargas, 2013](#); [Arjona, 2014](#); [Fergusson et al., 2016, 2020](#)) by providing evidence of preference-based models of persuasive communication that affect behavior beyond traditional settings (see [DellaVigna and Gentzkow, 2010](#)).

## 2 Background

### 2.1 War Strategies and the Colombian Demobilization Program

In intra- and interstate warfare alike, hearts-and-minds-based strategies are frequently contrasted with force-based approaches. Coined by the ‘Tiger of Malay’ General Sir Gerald Templer, the term *hearts and minds* constitutes a less coercive approach to foiling insurgencies aimed at minimizing civilian casualties.<sup>5</sup> In this context, *hearts* refers to ‘winning the emotional support of the people’, while *minds* refers to ‘people pursuing their rational self-interest’. Such strategies occurred in ancient conflict theaters (e.g., Julius Caesar’s domestic maneuvers), as well as contemporaneous settings, such as the Vietnam War ([Dell and Querubin, 2018](#)) or the War on Terror ([Berman et al., 2011](#)).

Along related lines, in 2003, at the height of the *FARC*’s power, the Colombian government introduced a demobilization program in an attempt to peacefully bring rebels back into civilian life ([Congreso de Colombia, 2002](#); [ARN, 2021](#)). In practice, *FARC* rebels could demobilize at any military, political, or civil authority, which includes any government building ([ARN, 2021](#)).<sup>6</sup> The program offered protection from the *FARC*, tertiary education, and generous financial incentives ([Nussio, 2013](#)). Complementing

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<sup>5</sup>As detailed by [Dixon \(2009\)](#), not only might this quote be misattributed to Templer, but so too was the Malayan campaign characterized by coercive policies.

<sup>6</sup>The official formulation is “[u]na persona que abandona un grupo armado debe dirigirse a cualquier autoridad militar, policial o civil” ([ARN, 2021](#)).



conventional warfare efforts, this hearts-and-minds-type strategy marked a fundamental shift in government policy (Fattal, 2018).

## 2.2 Family-Themed Propaganda Messages (2005-2009)

Initially, the program experienced little success, however (Nussio, 2013, 2018; ARN, 2020). In response, the Colombian Ministry of Defense commissioned the production of short informative messages, urging guerrillas to demobilize (Fattal, 2018). While these messages also occasionally aired during other radio and television programs, up to 90% of the campaign budget was spent on broadcasting rights during games of the national football team (Lowe SSP3, 2014).

The messages reminded *FARC* members of their family lives before they became a guerrilla (Fattal, 2018). One message, for example, stated: “If you are going to support someone, let it be your team: your family!”<sup>7</sup> Appendix 8 documents several other prominent messages, all of which explicitly position family life as the alternative to a rebel’s guerrilla identity. Among the most frequent words employed across all television messages are *vida* (life), *guerrillero* (rebel), and *familia* (family; see Table B1). Considering bigrams, *nueva vida* (new life) and *familia inicie* (family begins) are among the top three entries.<sup>8</sup> The first message aired during a game against Paraguay on January 15, 2005. Messages subsequently aired in every game of the national football team until the end of 2009 (Sokoloff, 2014; Fattal, 2018; Bonnet Tello, 2020).

## 2.3 National-Unity-Themed Propaganda Messages (2010-2016)

In early 2010, however, the government’s advertisement agency (Lowe/SSP3) shifted the campaign’s creative direction (Sokoloff, 2014; Fattal, 2018; Bonnet Tello, 2020). As a result, the family-themed messages ceased immediately (Lowe SSP3, 2014; Caracol Radio, 2015). Drawing on successful marketing campaigns of consumer goods, the agency instead created cheerful messages that promoted the idea of a joint national identity (Sokoloff, 2014; Samper, 2017). One prominent message, for example,

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<sup>7</sup>Original Spanish: “Si va a apoyar que sea a su selección, a su familia!”

<sup>8</sup>Appendix B further details how these family-themed messages were less analytical and more negative in tone, but rank far above average for clout and authenticity. In addition, these messages emphasized affective and biological processes, while being decidedly less appealing to cognitive rational processes (Pennebaker et al., 2001).

featured soldiers of the Colombian army inviting *FARC* members to demobilize by reminding them they were all part of ‘Team Colombia’ (Lowe SSP3, 2014; Fattal, 2018). This new set of national-unity-themed-messages aired until the signing of the peace agreement in September 2016.

A text analysis of the national-unity-themed messages (see Appendix 8) shows a firm emphasis on the national football team and the country as a whole, contrasting being a member of the *FARC* with being a member of the national team. Word counts highlight some of the most frequently cited words as *futbol* (football), *equipo* (team), and *Colombia*. A systematic text analysis reveals these messages to be substantially more analytical, to exhibit less clout, and as markedly more positive than the family-themed messages.<sup>9</sup> Thus, while the informational content remained unchanged, the framing of the demobilization message changed.

### 3 Data

#### 3.1 Overview

Data for our main analysis derive from four sources, with Table 1 documenting summary statistics for all municipality-day level observations from January 1, 2003 until September 25, 2016. Table A3 reports all additional variables introduced at later stages. Daily municipality-level numbers of demobilized rebels come from the government’s Agency for Reincorporation and Normalization (*Agencia para la Reincorporación y la Normalización*, *ARN*). In the most recent update of the *ARN* records, 16,172 events constitute individual surrenders by *FARC* rebels. Importantly, there were only 193 *collective FARC* demobilizations before 2016, meaning the vast majority pertains to individuals. The *ARN* delineates between *collective* demobilizations (e.g., a whole squadron negotiating a collective surrendering) and *individual* demobilizations, in which single soldiers decide to surrender without any type of previous negotiation with a governmental entity (ARN, 2018, 2019). Our focus lies on these individual demobilizations of *FARC* members, since these individuals constituted the target audience of the government’s

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<sup>9</sup>Importantly, the *FARC* are not anti-Colombia per se but rather anti-Colombian government. For example, the colors of the national flag feature prominently on the left shoulder of the *FARC* uniform. As *FARC* spokesman Luis Edgar Devia (nom de guerre Raúl Reyes) explained: “The objective of *FARC*’s revolutionary struggle is to conquer the political power to govern with the people” (*emphasis added*; La Haine, 2003). The original Spanish reads: “El objetivo de la lucha revolucionaria de las *Farc-EP* es conquistar el poder político para gobernar a Colombia con el pueblo”.

propaganda campaign (Lowe SSP3, 2014; Sokoloff, 2014; Samper, 2017).

On an average day, a municipality experienced 0.0029 individual demobilizations (or approximately one demobilization per year), which amounts to 3.22 demobilizations at the national level per day. Over the entire 2003-2016 time period, 708 of the 1,122 municipalities were witness to at least one demobilization, with the maximum number of demobilizations occurring in Bogotá (2,984 individuals).

**Table 1:** Summary statistics for all 1,122 municipalities and 5,017 days ( $N = 5,629,074$ ).  $\text{Rain}_{i,t}$  is only available for 1,120 municipalities, producing 5,619,040 observations.

Variable	Mean (Std. Dev.)	Min. (Max.)	Source <sup>a</sup>	Description
Demobilized <i>FARC</i> rebels $_{i,t}$	0.0029 (0.1221)	0 (50)	<i>ARN</i>	# of demobilized <i>FARC</i> members
Campaign period $_t$	0.8543 (0.3528)	0 (1)	<i>SECOP 2</i>	= 1 if campaign period is active
Game day $_t$	0.0353 (0.1845)	0 (1)	<i>FCF</i>	= 1 if a game by the national football team is contested
Dusk game $_t$	0.0100 (0.0993)	0 (1)	<i>FCF</i>	= 1 if a game begins between 4pm and 6pm
Rain $_{i,t}$	0.3259 (1.0586)	0 (67)	<i>NASA</i>	Rainfall rate (mm/h) 4-7pm
Family-themed campaign period $_t$	0.3640 (0.4811)	0 (1)	<i>SECOP 2</i>	= 1 if family-themed campaign period is active
National-unity-themed campaign period $_t$	0.4901 (0.4999)	0 (1)	<i>SECOP 2</i>	= 1 if national-unity-themed campaign period is active

Notes:<sup>a</sup>*ARN* = *Agencia para la Reincorporación y la Normalización* (Agency for Reincorporation and Normalization); *SECOP 2* = Colombia's government archive holding the contracts between the Ministry of Defense and the broadcasting stations; *FCF* = *Federación Colombiana de Fútbol* (Colombian Football Federation); *NASA* = *National Aeronautics and Space Administration* and *Tropical Rainfall Measuring Mission*.

To track propaganda campaigns, we derive information from the contracts signed between the Ministry of Defense and the two media stations broadcasting national football team games: *Caracol* and *RCN* (Dinero, 2018). These data are available from the *Electronic Public Procurement System* (*SECOP 2*), a public repository in which the government lists all third-party contracts (SECOP II, 2020). We corroborated this information by studying *all* individual games in addition to conducting interviews with primary sources, who independently confirmed when each message was aired (El Comercio, 2014; Corona, 2017; Samper, 2017).

National team game dates and kick-off times are recorded by the Colombian Football Federation

*FCF* (*Federación Colombiana de Fútbol*). The footballing calendar is coordinated between national and regional bodies in addition to the international football federation *FIFA* (*Fédération Internationale de Football Association*; see [FIFA, 2013, 2019](#)). For Colombia, *FIFA* assigns five to seven international time windows every year. The South American football association *CONMEBOL* (*Confederación Sudamericana de Fútbol*) then assigns dates for each game, while the national football federations decide each game’s location and kick-off time ([FIFA, 2013, 2019](#)).<sup>10</sup> During our period of interest, the Colombian team played 176 games, i.e., 3.5% of all days featured a game. Of these, 33 occurred before the information campaign began, in 2003/2004.

We further distinguish dusk games (i.e., encounters with a kickoff time between 4-6pm) from non-dusk games (all other games). Since football matches usually last 105 minutes (two halves of 45 minutes and 15 minutes of half time), we define dusk games as those played within the two hours before sundown, which occurs at approximately 6pm throughout the year (since Colombia is located on the equator). This identification strategy exploits the often-reported observation that the typical *FARC* member’s daily routine permits leisure time during these evening hours ([LA FM Noticias, 2016; Fattal, 2018](#)). All else equal, dusk games should therefore attract larger *FARC* audiences. The Colombian team played 50 dusk games between 2003 and 2016.

Turning to our third and final identification strategy, Table 1 reports average rainfall data, derived from *NASA’s Tropical Rainfall Measuring Mission (TRMM; NASA, 2020)*. We employ the highest resolution data available (0.25 latitude  $\times$  0.25 longitude degrees;  $\approx 27km^2$  at the equator). These data, expressed in average mm/h, are recorded at three-hour intervals. For Colombia, these intervals are 4-7pm, 7-10pm, and so on ([NASA, 2020](#)). Since we are particularly interested in dusk games, we report the measure of rain that coincides with the 4-7pm *NASA* window. Section 5 documents how results are consistent when employing an alternative time window around these dusk hours.

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<sup>10</sup>For example, the *FCF* is well-known for scheduling home games at 3pm in the coastal city of Barranquilla because players from other countries are often not used to the intense humidity ([GOAL, 2015](#)).

### 3.2 Descriptive Statistics

The top graph of Figure 1 plots country-wide average demobilization numbers for regular days, as well as days following national team games, both within and outside of the messaging periods. While these means are yet to account for potential confounders, they do imply systematic differences. We fail to identify any statistically or quantitatively significant differences between game and non-game days before the message period began. Demobilizations are particularly frequent on days following national football games during the message period, however: Approximately 8.6 *FARC* rebels actively return to Colombian society on these days – a rate that is 165% higher than the overall average of 3.25.

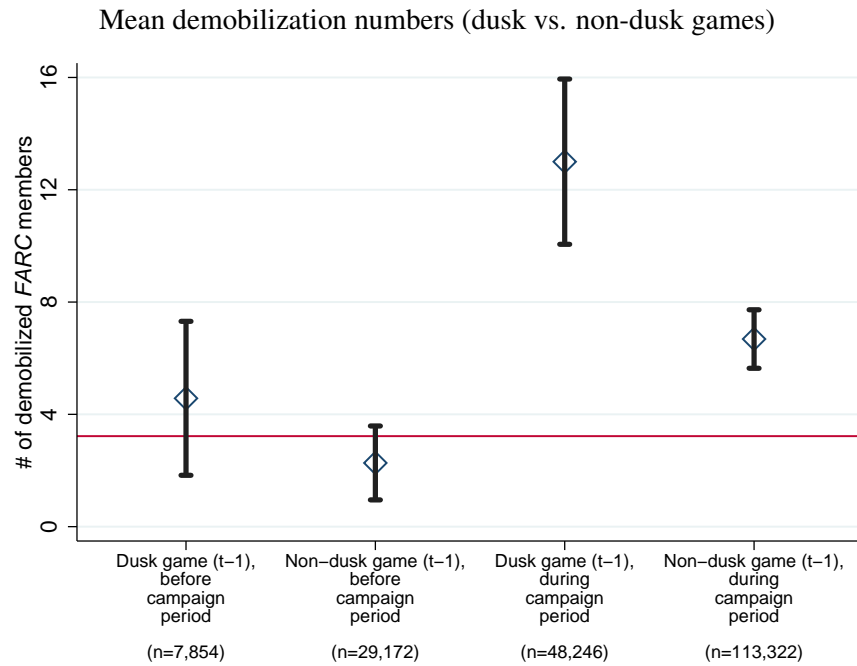
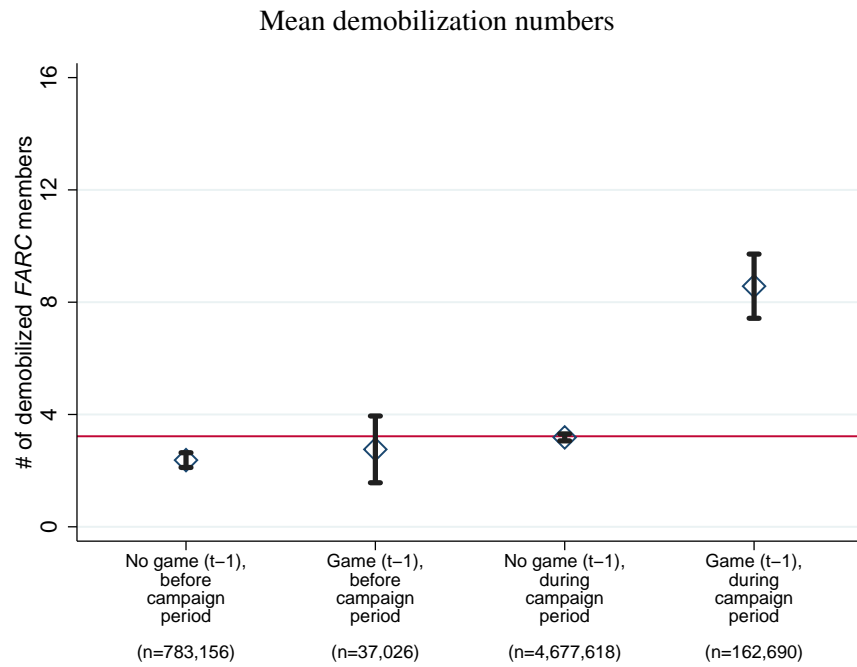
The bottom graph of Figure 1 visualizes demobilization means on the day after dusk versus non-dusk games, again distinguishing within versus outside the messaging campaign period. Before any messages were sent, we do not observe any meaningful differences. When the messages aired, however, more than 13 rebels demobilized after a dusk game – a fourfold increase relative to the mean. Non-dusk games are still accompanied by a substantial jump in demobilizations but only to about half the magnitude of dusk games (6.7 versus 13).

## 4 Main Empirical Strategies

### 4.1 Overview and Covariates

We pursue three distinct identification strategies to isolate causal estimates of the government’s propaganda campaigns. First, we predict the number of demobilized *FARC* rebels at the municipality-day level, focusing on days immediately following game days of the national team. Second, we distinguish dusk from non-dusk games, since *FARC* rebels are more likely to be able to follow games during dusk hours. Third, we leverage disruptive effects of rain on electromagnetic waves to exploit geographical and temporal variation in the exposure to campaign messages. While we expect demobilizations to increase after dusk games, we predict higher local rainfall during dusk games to be associated with fewer post-game day demobilizations in that particular municipality.

Captured by the vector  $\mathbf{X}_{i,t}$  below, our analysis first accounts for municipality-sample-week-fixed effects to control for locality- and locality-time-specific influences in municipality  $i$  on day  $t$  that could



**Figure 1:** *Top:* National demobilization averages outside and during the campaign periods. *Bottom:* National demobilization averages after dusk and non-dusk games outside and during the campaign periods. The red horizontal line marks the overall average.

independently affect demobilization decisions. Some municipalities, for example, would be (i) situated in less accessible geographies that could correlate with *FARC* presence and activities; (ii) located closer to easily accessible government buildings (e.g., in urban areas); (iii) characterized by cultural and historical particularities that inform demobilization numbers; and (iv) feature a resident population that holds specific (positive or negative) views towards the *FARC* for a number of reasons. Allowing these fixed effects to vary by sample week for each municipality accounts for such influences changing over time. In sum, municipality-sample-week-fixed effects ensure we compare demobilizations *within the same municipality and week* to one another.

Second,  $X_{i,t}$  incorporates municipality-weekday-fixed effects, ensuring municipality-specific weekly schedules do not confound our estimates. These not only capture countrywide weekday-specific patterns (e.g., workdays are commonly Monday through Friday) but also municipality-specific regularities, such as markets occurring on Mondays in some localities and on Tuesdays in others. This also acknowledges industry- and profession-specific patterns that vary across space. Rural municipalities, for example, are often dominated by agricultural activities and may exhibit different, quieter dynamics on weekends than urban municipalities, which feature nightlife and other leisure time activities.

Third,  $X_{i,t}$  includes fixed effects for days on which the Colombian government announced its annual budget. These constitute highly anticipated, conflict-relevant events in which new directions in the fight against the *FARC* become public knowledge. For example, the 2007 announcement included a 12% increase in national defense spending – a development that could well affect *FARC* demobilization patterns ([Congreso Visible, 2022](#)).

Finally,  $X_{i,t}$  contains fixed effects for two days on which extraordinary conflict-relevant negotiations were publicly announced. After the kidnapping of then-presidential candidate Íngrid Betancourt in 2002, the idea of a prisoner exchange program gained popularity ([Aparicio and Jetter, 2022](#)). Although that program never materialized, two significant developments were leaked. First, on April 23, 2003, a draft of the exchange terms emerged in the public sphere, causing the *FARC* to make a rare public statement addressing the topic ([FARC-EP, 2004](#)). Second, on September 1, 2004, the government revealed communications with the guerrilla group after having initially denied contact ([El Tiempo, 2003a,b](#)).

## 4.2 Identification Strategy I: Game Days

We start by regressing the number of demobilizations in municipality  $i$  on day  $t$  against a binary indicator that takes on the value of one the day after the national football team contests a match. Further, we include a binary indicator capturing whether  $t - 1$  falls into the propaganda campaign periods. Next, we explore whether demobilizations are systematically different if both variables are triggered, i.e., we incorporate an interaction term between a game occurring yesterday and that date falling in the propaganda campaign period windows. For now, we group the family- and national-unity-themed propaganda periods together. Specifically, we estimate the following equation in a standard OLS format – nevertheless, employing negative binomial or Poisson regressions to explicitly recognize the count nature of the dependent variable yields consistent findings (see Table A1):

$$\begin{aligned} Demob_{i,t} = & \beta_1(Game_{t-1}) + \beta_2(Campaign_{t-1}) + \beta_3(Game_{t-1} \times Campaign_{t-1}) \\ & + \mathbf{X}_{i,t-1} + \epsilon_{i,t}. \end{aligned} \quad (1)$$

If the propaganda campaigns were successful, we should expect a positive coefficient  $\beta_3$  that is statistically and quantitatively significant.  $\epsilon_{i,t}$  constitutes the usual error term, and we cluster standard errors at the municipality-year level, although conclusions remain unaffected when employing alternative clustering levels or when calculating robust standard errors (see Table A2).

## 4.3 Identification Strategy II: Dusk Games

Nevertheless, one may be concerned about unobservable factors that coincide with the day after national team games during the propaganda periods. Our second identification strategy therefore exploits kickoff times. Specifically, we estimate

$$\begin{aligned} Demob_{i,t} = & \gamma_1(Dusk\ game_{t-1}) + \gamma_2(Non - dusk\ game_{t-1}) + \gamma_3(Campaign_{t-1}) \\ & + \gamma_4(Dusk\ game_{t-1} \times Campaign_{t-1}) \\ & + \gamma_5(Non - dusk\ game_{t-1} \times Campaign_{t-1}) \\ & + \mathbf{X}_{i,t-1} + \delta_{i,t}. \end{aligned} \quad (2)$$



Our main coefficient of interest is now  $\gamma_4$ . If *FARC* rebels are more likely to follow games during dusk hours, then demobilizations should spike particularly after such games during the campaign period. Nevertheless, we would still expect a positive coefficient  $\gamma_5$ , i.e., increased demobilizations on days after non-dusk games during the campaign period – although we should observe a smaller magnitude than that associated with  $\gamma_4$ .

#### 4.4 Identification Strategy III: Rain Scattering

Our third identification strategy introduces municipality-day-level differences by relying on a physical phenomenon known as “rain scattering” or “rain fade” (Lin, 1973). Essentially, rain acts as both a sponge and a mirror, absorbing and refracting the microwaves that carry broadcasts, which ultimately distorts transmission (Lin, 1973; Crane, 1975; Ippolito, 1981; Ishimaru et al., 1982; Tewari et al., 1990; Qingling and Li, 2006). Thus, during the same game, rebels located in municipalities that experience heavy rain would be less likely to be exposed to propaganda messages relative to rebels located in municipalities that experienced less or no rain. We focus on the propaganda campaign period only to estimate

$$\begin{aligned}
Demob_{i,t} = & \pi_1(Dusk\ game_{t-1}) + \pi_2(Non - dusk\ game_{t-1}) + \pi_3(Dusk\ rain_{i,t-1}) \\
& + \pi_4(Dusk\ game_{i,t-1} \times Dusk\ rain_{i,t-1}) \\
& + \pi_5(Non - dusk\ game_{t-1} \times Dusk\ rain_{i,t-1}) \\
& + \mathbf{X}_{i,t-1} + \mu_{i,t}.
\end{aligned} \tag{3}$$

If “rain scattering” occurs, we would expect positive and statistically significant coefficients for  $\pi_1$  and  $\pi_2$ , but a negative and statistically significant coefficient for  $\pi_4$ . As before, we would expect  $\pi_1$  to exhibit a coefficient that is larger in magnitude than  $\pi_2$ . Further,  $\pi_3$  informs us whether dusk rain alone predicts demobilizations the following day, for example by complicating travel conditions. Finally,  $\pi_5$  should remain statistically insignificant.

## 5 Main Empirical Findings

### 5.1 Baseline Results

Table 2 reports regression results from pursuing these empirical strategies. Columns (1), (3), and (5) display coefficients from parsimonious specifications, while columns (2), (4), and (6) report results from incorporating all control variables and fixed effects.

**Table 2:** Results from OLS regressions, predicting *FARC* demobilizations in municipality  $i$  on day  $t$ .

<i>Dependent variable: Demobilized FARC rebels<sub>i,t</sub> (mean=0.0028)</i>						
Time period:	Full (2003-2016)				Campaign periods (2005-2016)	
Mean of dependent variable:	(1)	(2)	(3)	(4)	(5)	(6)
Game <sub><math>t-1</math></sub> × Campaign <sub><math>t-1</math></sub>	0.0045*** (0.0010)	0.0067*** (0.0013)				
Dusk game <sub><math>t-1</math></sub> × Campaign <sub><math>t-1</math></sub>			0.0068** (0.0025)	0.0074** (0.0022)		
Dusk game <sub><math>t-1</math></sub> × Dusk rain <sub><math>i,t-1</math></sub>					-0.0019*** (0.0004)	-0.0015*** (0.0004)
Game <sub><math>t-1</math></sub>	0.0003 (0.0006)	-0.0023* (0.0009)				
Campaign <sub><math>t-1</math></sub>	0.0007 (0.0006)	-0.0032*** (0.0007)	0.0007 (0.0006)	-0.0032*** (0.0007)		
Non-dusk game <sub><math>t-1</math></sub> × Campaign <sub><math>t-1</math></sub>			0.0032*** (0.0007)	0.0058*** (0.0012)		
Dusk game <sub><math>t-1</math></sub>			0.0020 (0.0014)	0.0015 (0.0011)	0.0094*** (0.0022)	0.0091*** (0.0020)
Non-dusk game <sub><math>t-1</math></sub>			-0.0001 (0.0005)	-0.0033*** (0.0011)	0.0032*** (0.0005)	0.0024*** (0.0005)
Non-dusk game <sub><math>t-1</math></sub> × Dusk rain <sub><math>i,t-1</math></sub>					-0.0002 (0.0003)	-0.0002 (0.0003)
Dusk rain <sub><math>i,t-1</math></sub>					0.0000 (0.0000)	0.0001* (0.0000)
Control variables <sup>a</sup>		✓		✓		✓
$N$	5,629,074	5,629,074	5,629,074	5,629,074	4,799,200	4,799,200
$R^2$	0.000	0.195	0.000	0.195	0.000	0.208

Notes: Standard errors clustered at the municipality-year level are displayed in parentheses. \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ .  
<sup>a</sup>Includes fixed effects at the municipality-sample-week level and the municipality-weekday level, as well as binary indicators for days after the Colombian government's annual budget announcements and two leak days in which important conflict-relevant information was publicized (see Section 4.1).

The results in column (1) confirm the descriptive insights from Figure 1, as the coefficient associated

with the interaction term between  $game_{t-1}$  and  $campaign_{t-1}$  is positive and statistically significant at conventional levels ( $p < 0.001$ ). In terms of magnitude, 0.0045 demobilizations per municipality aggregate to just over five demobilizations at the national level ( $0.0045 \times 1,122$  municipalities). This constitutes more than a 150% increase beyond the mean of 3.22. Accounting for the full set of regressors in column (2) raises that magnitude to 0.0068, which translates to 7.6 national demobilizations – an increase of 2.4 times the national average ( $p < 0.001$ ). As a back-of-the-envelope calculation, this implies approximately 1,137 *FARC* rebels demobilized because of these demobilization messages.<sup>11</sup>

With all observable confounders included, it also proves useful to interpret the coefficients of the individual variables that form the interaction term. Demobilizations after game days before the campaign periods *fell* by 0.0023 (or 2.6 demobilizations nationally). Further, a regular day during the campaign period (i.e., any day other than right after a game day) also witnessed significantly fewer demobilizations than before the campaign period.

Delineating kickoff times in columns (3) and (4), we find demobilizations to be particularly elevated the day after dusk games, i.e., when *FARC* rebels are more likely to follow games. In reality, while we cannot observe an individual rebel’s exposure to messages, this empirical design constitutes an *intent-to-treat* study, where any increase in focalization should result in larger estimates. Indeed, this is what we observe in column (4) with 8.3 additional demobilizations after dusk games during the campaign periods ( $0.0074 \times 1,122$  municipalities) compared to 6.5 additional demobilizations after *non*-dusk games during the campaign periods ( $0.0058 \times 1,122$ ).

Columns (5) and (6) present results from incorporating local precipitation levels. We now focus on the campaign periods only to facilitate suitable interpretation of our coefficients. Nevertheless, results are consistent when including triple-interaction terms for the full period (available upon request). In the full specification of column (6), a one standard deviation increase in rainfall during a dusk game translates to 1.78 fewer demobilizations the following day ( $-0.0015 \times 1.0586 \times 1,122$  municipalities). In contrast, dusk games trigger large demobilization responses in municipalities that did not experience any rain during dusk hours. The relevant coefficient (0.0091) translates into 10.2 additional demobilizations at

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<sup>11</sup>Calculation: 0.0535 (mean for the variable  $game_{t-1}$ ) multiplied with 0.08543 (mean for  $campaign_{t-1}$ ) multiplied with 0.0067 (coefficient) multiplied with 5,629,074 (the number of municipality-day level observations) equals 1,137.

the national level, which constitutes more than a fourfold increase relative to the daily average.

These results from Table 2 remain consistent in various alternative specifications (see Table A1). These include (i) controlling for contemporaneous *FARC* attacks against the government and government attacks against the *FARC*; (ii) employing negative binomial and Poisson regressions to explicitly account for the discrete nature of the dependent variable; (iii) expanding the 4-7pm rain window; and (iv) using an alternative rain measure at the local level, collected from the *Institute of Hydrology, Meteorology and Environmental Studies (IDEAM)*.

## 5.2 Timing of Effects

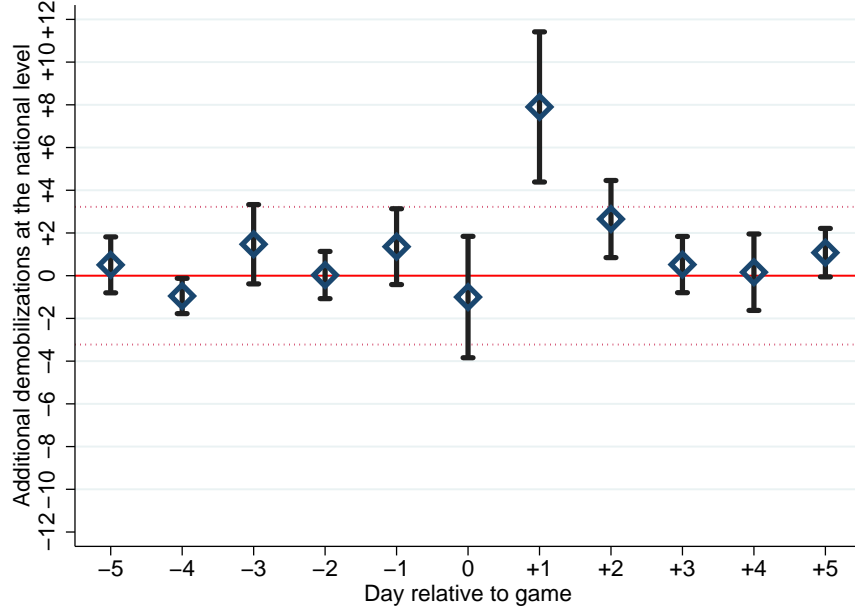
Next, we explore the timing imposed by our empirical structure. Rebels may anticipate game days, and demobilizations could fluctuate around such days for various reasons. In addition, potential game day and propaganda effects might last longer than a single day. This could also be the case if demobilizing took longer, perhaps because the rebel needed to find the best moment to flee their unit, or because they need longer to reach the nearest demobilization site. Thus, it is important to expand our analysis beyond the immediate day after games.

To do so, we re-run our main specification, incorporating (i) eleven binary indicators relative to game days (ranging from five days before to five days after each game), (ii) eleven indicators for whether the respective day falls within the campaign periods, and (iii) eleven corresponding interaction terms. Formally, we estimate

$$Demob_{i,t} = \sum_{k=-5}^5 (Game_{t+k}) + \sum_{k=-5}^5 (Campaign_{t+k}) + \sum_{k=-5}^5 (Game_{t+k} \times Campaign_{t+k}) + \mathbf{X}_{i,t-1} + \epsilon_{i,t}. \quad (4)$$

Figure 2 visualizes the coefficients associated with the interaction terms. The results suggest demobilization spikes occur within a narrow window after game days – especially the day immediately thereafter is associated with eight additional demobilizations at the national level. Before, during, and after that day, coefficients are neither statistically nor quantitatively as remarkable. The only exception is day  $t + 2$ , where we still identify an approximate doubling of average demobilization numbers. Thus,

while potential effects may last for up to two days, Figure 2 emphasizes the primary importance of day  $t + 1$ . How and why this effect operates are the topics to which we now turn.



**Figure 2:** Results from OLS regressions, predicting *FARC* demobilizations in municipality  $i$  on day  $t$ . The full set of control variables is included (see equation 1) and two-sided 95% confidence intervals are displayed. The y-axis is scaled to measure demobilizations at the national level, i.e., we multiply each coefficient by 1,122 (the number of Colombian municipalities). The dotted horizontal lines denote the overall average number of demobilizations as a reference.

### 5.3 Mechanism I: Family- vs. National-Unity-Themed Campaigns

Our main results imply the propaganda campaign periods, overall, were successful. However, we know the *type* of message changed fundamentally at the beginning of 2010. This allows us to contrast the family-themed campaign period (2005-2009; 67 games) against the national-unity-themed campaign period (2010-2016; 76 games). If the messages' informational content associated with the demobilization program was sufficient, as the Colombian government originally speculated (Fattal, 2018; also see Appendix B), then we should not observe any meaningful differences in post-match demobilizations between campaign periods. If the narrative of the messages mattered, however, we should be able to identify differences.

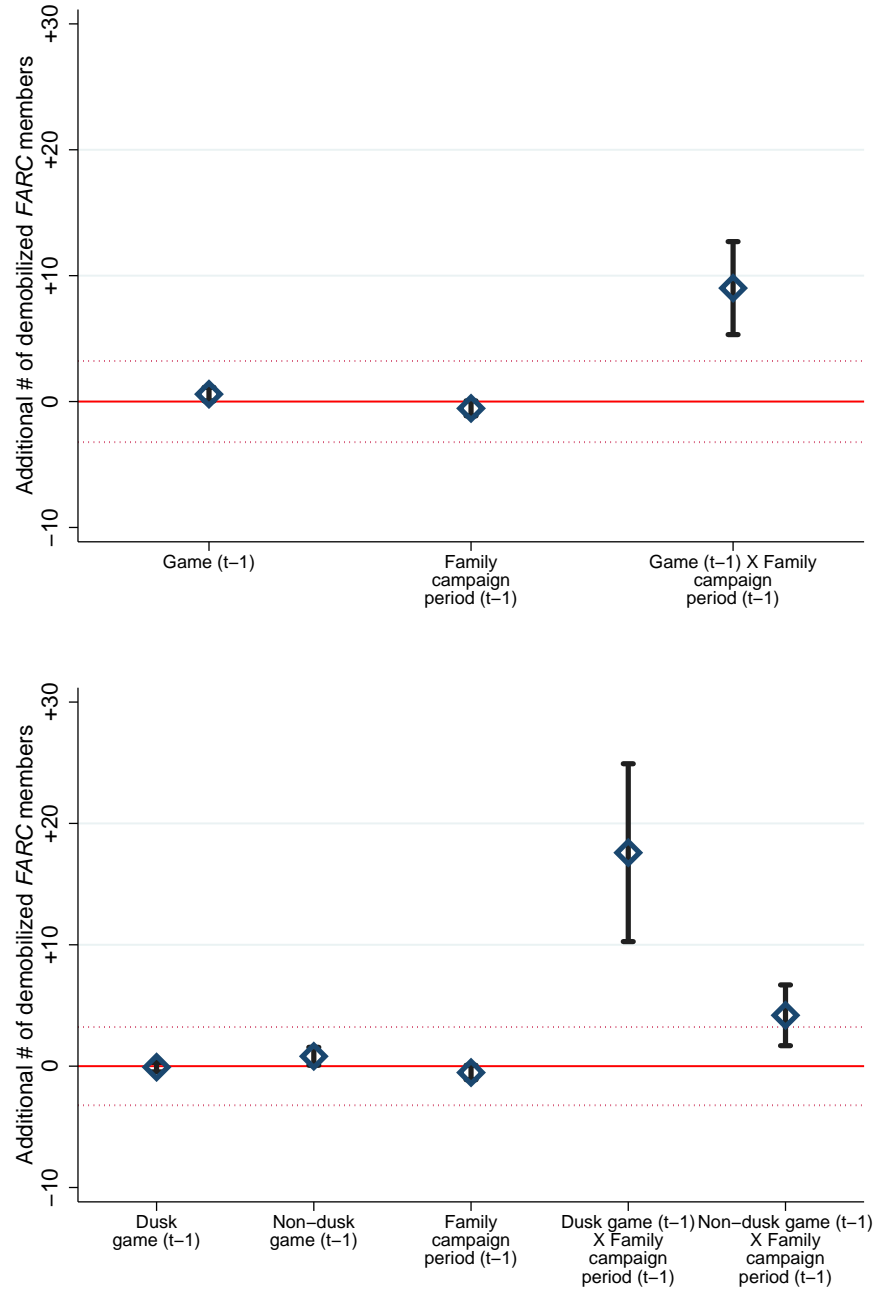
Figure 3 visualizes the results from two regressions, implementing data pertaining to the campaign periods only, i.e., 2005-2016. The top graph plots coefficients when incorporating binary indicators for a game at  $t - 1$  and the family-themed campaign period at  $t - 1$ , as well as an interaction term between the two. This interaction term identifies whether demobilizations after games that featured family-themed messages are associated with differential demobilization rates thereafter, relative to national-unity-themed messages. The results suggest demobilizations *only* spiked after games featuring family-themed messages, inducing nine additional guerrillas to lay down their arms. Games featuring national-unity-themed messages, however, do not appear to have had *any* effect, as we derive a precisely estimated null relationship for the  $game_{t-1}$  coefficient.

These results are buttressed when delineating dusk from non-dusk games in the bottom graph of Figure 3. Estimates indicate 17.6 additional demobilizations following dusk games during the family-themed messages and 4.2 additional demobilizations after non-dusk games during that campaign period. However, we derive statistically and quantitatively irrelevant estimates in post-game days (dusk or non-dusk) during the national-unity-themed campaign period.

Thus, explanations emphasizing the pure informational content of the propaganda messages appear less plausible. Rather, the differing narratives portrayed by demobilization messages may be able to explain our results. This result is consistent with the idea that priming a rebel with their alternative family identity (but not with a message advancing national unity) can elicit demobilization.

## 5.4 Mechanism II: Game Results and Expectations

Figure 2 highlights how demobilizations follow *immediately*, within 24-48 hours, after the airing of family-themed messages during national team games. Inspired by Card and Dahl (2011), we dig further into this transitory nature of our findings by first examining game results and then specifically delineating expected from unexpected wins and losses. The top graph of Figure 4 visualizes estimates from the following regression, again focusing on the time period of the two propaganda campaign periods (2005-



**Figure 3:** Results from OLS regressions, predicting *FARC* demobilizations in municipality  $i$  on day  $t$ , first in general (*top graph*) and then delineating dusk from non-dusk games (*bottom graph*). The full set of control variables is included (see equation 1) and two-sided 95% confidence intervals are displayed. The y-axis is scaled to measure demobilizations at the national level, i.e., we multiply the respective coefficient with 1,122 (the number of Colombian municipalities). The dotted horizontal lines denote the overall average number of demobilizations as a reference.

2016):

$$\begin{aligned}
Demob_{i,t} = & \beta_1(Win_{t-1}) + \beta_2(Loss_{t-1}) + \beta_3(Family - themed\ campaign)_{t-1} \\
& + \beta_4(Win_{t-1} \times Family - themed\ campaign_{t-1}) \\
& + \beta_5(Loss_{t-1} \times Family - themed\ campaign_{t-1}) + \mathbf{X}_{i,t-1} + \epsilon_{i,t}.
\end{aligned} \tag{5}$$

This specification allows for differential demobilization patterns after wins and losses, within the family- and within the national-unity-themed campaign periods, while incorporating the standard set of covariates ( $\mathbf{X}_{i,t}$ ). Without considering any confounders, demobilizations on the day after losses during the family campaign period average 23, i.e., far higher than the average day (3.22) or days after losses during the national-unity-themed campaign period (0.29). Days after wins average 2.6 demobilizations during the national-unity-themed campaign period and 6.4 when family-themed messages aired.

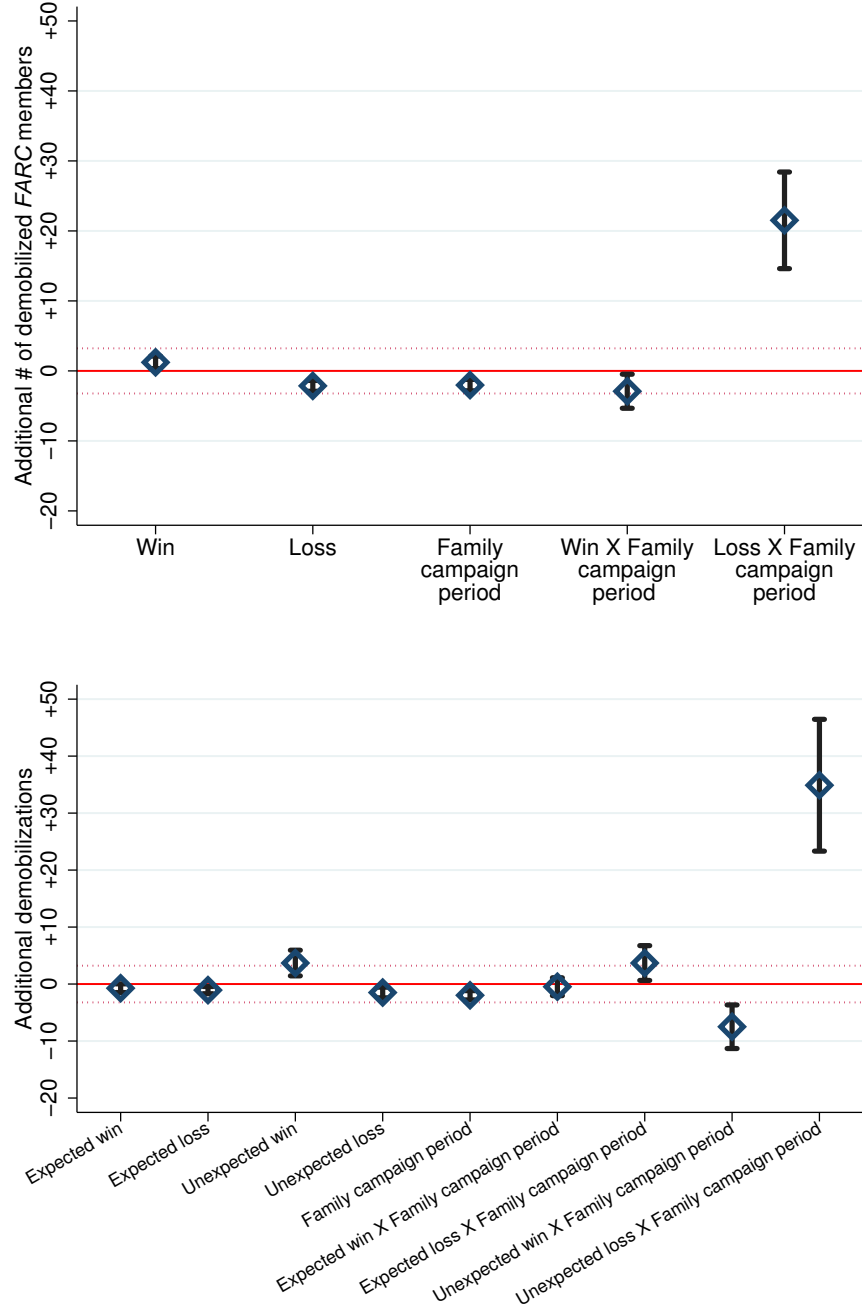
Accounting for  $\mathbf{X}_{i,t}$ , the estimates derived from equation (5) further demonstrate how losses during the family-themed campaign period are followed by large and statistically significant spikes in demobilizations. In fact, the entire result is *exclusively* driven by losses after family-themed messages, with additional demobilizations surging to 21.5 in that specification – seven times the overall average. None of the other coefficients are comparable in magnitude.<sup>12</sup>

The bottom graph of Figure 4 introduces pre-match expectations of game outcomes by accessing betting data and, where such betting data are unavailable, contemporaneous *FIFA* rankings ([OddsPortal.com](http://OddsPortal.com), 2021; [FIFA](http://FIFA.com), 2022). We code a game as an (un)expected win if betting odds to win are more (less) favorable than the odds to lose, and the Colombian team ends up winning. When betting data are unavailable, we alternatively code an (un)expected win as a win in which the Colombian team was ranked better (worse) than their opponent on the contemporaneous *FIFA* rankings. Expected and unexpected losses are coded accordingly. Comparing simple means, demobilizations after unexpected losses during the family-themed campaign period rise to 40, compared to 0.5 after unexpected losses during the national-unity-themed campaign period. In fact, in the entire time period of 2003-2016, five of the days with the most demobilizations occurred on the day after these unexpected losses with 139, 138, 117, 77, and

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<sup>12</sup>If anything, wins after family-themed messages are followed by marginal decreases in demobilization numbers (-2.9 demobilizations at the national level;  $p = 0.019$ ).





**Figure 4:** Results from OLS regressions, predicting *FARC* demobilizations in municipality  $i$  on day  $t$  by game outcome of day  $t - 1$  (*top graph*) and by game outcome relative to expectations of day  $t - 1$  (*bottom graph*). The full set of control variables is included (see equation 1) and two-sided 95% confidence intervals are displayed. The y-axis is scaled to measure demobilizations at the national level. The dotted horizontal lines denote the overall average number of demobilizations as a reference.

47 demobilizations nation-wide.<sup>13</sup> Incorporating the associated interaction terms in our usual regression format and incorporating  $X_{i,t}$ , the bottom graph of Figure 4 illustrates how the entire post-game demobilization dynamics occurred after *unexpected losses* during the family-themed campaign period (26 games throughout the entire time frame; 13 games during the family-themed campaign period). That magnitude of 35 additionally demobilized *FARC* members dwarfs all others by orders of magnitude.

Viewed from the scholarly perspective of persuasion, this result is consistent with the idea that unexpected losses elicited sad emotional responses from football-loving Colombian audiences, since sadness has been singled out as a key driver of persuasion (Petty et al. 2003; see DellaVigna and Gentzkow, 2010 for an overview). This extraordinary spike in demobilization numbers after (i) family-themed demobilization messages aired during (ii) unexpected losses of the national team motivates us to introduce a simple theoretical framework, combining these elements from social identity theory with the power of emotional cues.

## 6 Modelling Demobilizations: Identity Primers and Emotional Cues

### 6.1 Theoretical Foundations

Social identity theory (Tajfel and Turner, 2004; Hogg, 2016) understands an individual’s sense of who they are as a function of the group they belong to, referring to their sense of value and the emotional significance they attach to membership of a particular group. In the Colombian context, much scholarly attention has been paid to the dichotomy between a *FARC* member’s rebel identity and that of their family – the life they forego while being with the *FARC* (Rodríguez López et al., 2015; Wessells, 2016; Kaplan and Nussio, 2018; González and Clémence, 2019; Gluecker et al., 2021). Social identity theory implies individuals distinguish between different social groups (social categorization) before adopting the identity of a specific group (social identification). Incorporating this distinction between two core identities, our model starts from Akerlof and Kranton’s (2000) framework of individual identities.

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<sup>13</sup>These were the following games: September 10, 2008 (World Cup qualifying loss against Chile; 139 demobilizations the day after); March 26, 2008 (friendly game loss against Honduras; 138 demobilizations); May 29, 2008 (friendly game loss against Ireland; 117 demobilizations); August 12, 2009 (friendly game loss against Venezuela; 77 demobilizations); and February 7, 2007 (friendly game loss against Uruguay; 47 demobilizations). The first three of these days range in the 99<sup>th</sup> percentile of all days in terms of demobilizations, while the other two range in the 97<sup>th</sup> percentile.

The second component of our theoretical framework derives from the power of negative emotional cues, which in our case come from unexpected losses of the national football team. In this, we also draw inspiration from long-established literatures on persuasion (DellaVigna and Gentzkow, 2010), the ability to change hearts and minds (Petty and Cacioppo, 1986; Marquart and Naderer, 2016), and ‘visceral factors’ (Loewenstein, 1996; Metcalfe and Mischel, 1999; Loewenstein, 2000). Specifically, we focus on emotional sadness since sadness has been identified as a key driver of persuasion (Petty et al., 2003).

## 6.2 Assumptions

Suppose a rebel has to decide whether to *stay* with their group or *demobilize*. This constitutes a binary choice, as abundant anecdotal evidence confirms a *FARC* member is not permitted to hold contact with their family members (Ministerio de Defensa Nacional, 2012, 2013; La Campana, 2015). Staying yields utility

$$U_{stay} = I_{rebel}, \quad (6)$$

where  $I_{rebel}$  captures the projected benefits of the respective group identity throughout the remainder of the rebel’s life. Demobilizing irreversibly changes the status quo: Once a rebel leaves the *FARC*, returning becomes impossible, since group betrayal is punishable by death (La Campana, 2015). The decision to leave yields utility

$$U_{leave} = \beta_t I_{family} - L, \quad (7)$$

where  $\beta_t$  denotes the value the rebel currently attaches to living their family identity  $I_{family}$  (with  $\beta \geq 0$ ). We assume  $\beta_t$  to be distributed normally with mean  $\bar{\beta}$  and variance  $\sigma^2$ .  $I_{family}$  captures the expected returns to living the family identity, i.e., how a rebel envisions their life among their family. This includes relationships with parents, siblings, grandparents, friends, and perhaps even extended family. Put differently,  $I_{family}$  captures *what* family life would be like, while  $\beta_t$  concerns the rebel’s *current emotional valuation* of that life. Finally,  $L$  describes the costs and risks associated with leaving, incorporating the psychological burden of betraying fellow group members and more tangible consequences, such as group retribution.

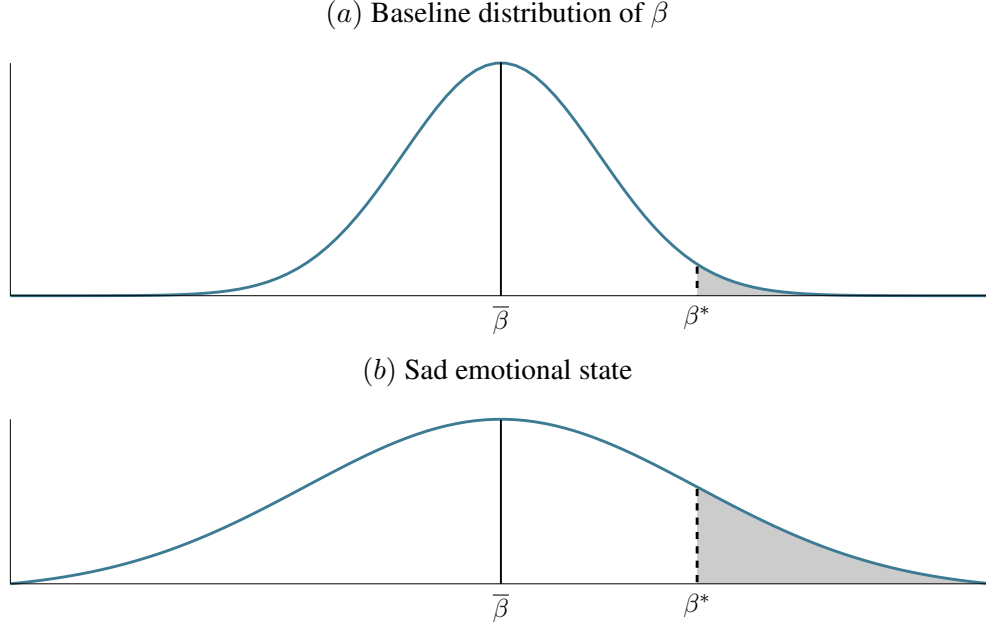
### 6.3 The Demobilization Decision

On a given day  $t$ , nature draws  $\beta$  from the suggested distribution with mean  $\bar{\beta}$  and variance  $\sigma^2$ . The rebel leaves the group if  $U_{leave} > U_{stay}$ , which, following equations (6) and (7), holds if

$$\beta_t > \beta^* = \frac{I_{rebel} + L}{I_{family}}. \quad (8)$$

The likelihood to demobilize decreases with the benefits of rebel group membership ( $I_{rebel}$ ) and the costs and risks associated with leaving ( $L$ ). In turn, a stronger family identity to begin with (a higher  $I_{family}$ ) increases the chances of demobilization.

Figure 5(a) plots the distribution of  $\beta_t$  with its associated cutoff  $\beta^*$ . If  $\beta_t$  falls to the right of  $\beta^*$ , the rebel demobilizes. If  $\beta_t$  falls to the left of  $\beta^*$ , they do not. Note that Figure 5(a) assumes  $\beta^* > \bar{\beta}$  to capture rebel groups that enjoy sustained group membership. If  $\beta^* < \bar{\beta}$ , then group members would demobilize frequently, and the group would not be sustainable.



**Figure 5:** Distribution of  $\beta$  under regular conditions (*top graph*) and in an emotional state of sadness (*bottom graph*). The gray-shaded area to the right of  $\beta^*$  captures the decision to demobilize.

## 6.4 Theory Component I: Intergroup Comparisons

What influences the realization of  $\beta$ ? We first consider how making a rebel’s alternative identity salient could affect Figure 5(a).

Consistent with insights from social psychology and behavioral economics (Turner et al., 1987; Tajfel and Turner, 2010; Hogg et al., 2017), we propose a priming of the alternative identity ( $\pi$ ) shifts the realization of  $\beta_t$  on that particular day  $t$  to the right ( $\frac{\partial \beta_t}{\partial \pi} > 0$ ). This assumption is consistent with research emphasizing how priming of an individual’s identity can temporarily enhance that identity’s salience (e.g., see Cohn et al., 2014 or Cohn et al., 2015). Intuitively, psychological cues associated with family identity (e.g., childhood memories, birthdays, family holidays, or tokens reminding the individual of cherished family memories) make that identity salient.

## 6.5 Theory Component II: Sadness

The second element we incorporate relates to the rebel’s emotional state. For example, Petty and Briñol (2008, p. 141) write “[p]eople might think about messages more when in a sad state rather than a happy one because sadness signals a problem to be solved (Schwarz et al., 1991) or because it conveys a sense of uncertainty (Tiedens and Linton, 2001). If sadness increases thinking over happiness, then *sadness should increase persuasion*” (*emphasis added*).

The introduction of sadness as an emotional state into our model also provides a plausible explanation for the transitory nature of our results, i.e., why additional demobilizations following unexpected losses only occur in a tight window after match days. This result is consistent with the concept of visceral responses, i.e., the idea of an immediate unexpected transitory emotional shock driving behavior (Loewenstein, 1996, 2000). Visceral factors influence how much goods and actions are valued but contrast with orthodox economic preferences since they need not be stable in the short-run and can rather be influenced by how one feels in tandem with external stimuli.

In general, self-control refers to an individual’s discipline or restraint from acting on urges or impulse. Visceral factors, however, are often closely associated with self-control problems and contribute to individuals acting on impulse to take extreme actions – in our case, risking their lives to leave the FARC. Other prominent examples include being tempted to consume inherently harmful goods (Laibson,

2001), becoming addicted to drugs (Bernheim and Rangel, 2004), and engaging in domestic violence (Card and Dahl, 2011).

Translated to our theoretical setting, this means the likelihood to reconsider identity affiliation increases when a rebel finds themselves in a sad emotional state. Our model captures that idea through a mean-preserving spread of the  $\beta$  distribution, changing Figure 5(a) to Figure 5(b). This elevated readiness to reconsider one's primary identity is reflected by a flatter  $\beta$  distribution and fatter tails, while leaving  $\bar{\beta}$  unchanged. As a consequence, any random draw from the  $\beta$  distribution in Figure 5(b) is now more likely to yield  $\beta > \beta^*$ .

## 6.6 Theoretical Implications

Combined, the concepts related to intergroup comparisons (Section 6.4) and sadness (Section 6.5) produce a powerful proposition:

**Proposition 1.** *Positive cues reminding the rebel about their alternative family identity particularly increase the likelihood of demobilization when reaching the rebel in an emotional state of sadness.*

While alternative (and perhaps complementary) explanations are possible, *Proposition 1* provides a theoretical foundation to the empirical results we observe in Figure 4. It is consistent with the stark jump in demobilization numbers after unexpected losses (eliciting sadness) that only occurred during the family-themed campaign period. Beyond our setting associated with demobilization messages aired during football games, *Proposition 1* provides a more general hypothesis that should, if valid, apply to other combinations of priming a rebel of their family identity during emotional states of sadness. We now turn to one such example for the final segment of our paper.

## 7 Family Holidays, Unusually Cold Days, and Demobilizations

### 7.1 Family Holidays

To test *Proposition 1*, we require (i) an objective, measurable primer of a rebel's family identity, combined with (ii) a proxy for sadness. For the former, we turn to family holidays as powerful reminders of

a rebel’s alternative life with their family. To objectively derive a comprehensive list of family-specific holidays, we explore which of the officially recognized holidays are marked by significant increases in family-specific terminology (as captured by the family dictionary of the *Language Inquiry and Word Count* or *LIWC* program) in the most prominent Colombian newspaper, *El Tiempo*. The *LIWC* family dictionary contains 118 words in the English language. We translate these to Spanish (using *Google Translate*) and then apply that dictionary to the universe of *El Tiempo* articles, separately for every day from 2003 to 2016. We then run a regression in which we incorporate 35 binary indicators for the country’s 35 official holidays for our time period of interest (2003-2016) to predict the frequency of family-specific terminology on the respective day.

The corresponding results are reported in Table A4, showing family-specific terminology is significantly elevated (at the 5% level) on Christmas Eve, Maundy Thursday, Mother’s Day, and Women’s Day. Thus, we denote these days as those marked by an objective primer of family identity. Including holidays that are statistically significant at the 10% level, thereby also capturing Father’s Day and Palm Sunday, produces consistent findings (see Figure 6).

## 7.2 Unusually Cold Days

Next, for a proxy of sadness, we build on scholarship that firmly connects local temperatures to people’s emotional states. In particular, we draw on Cunningham (1979), Sanders and Brizzolara (1982), Hirshleifer and Shumway (2003), Keller et al. (2005) and Guven and Hoxha (2015) who propose unusually cold conditions would, everything else equal, evoke sadness. Importantly, this provides us with spatial and temporal variation across the 1,122 Colombian municipalities at the daily level.

Our baseline specifications define an unusually cold day as any day during which the minimum local temperature falls to more than one standard deviation below the municipality-month-specific mean of the local daily minimum temperature throughout the 2003-2016 period. Thus, for each municipality, we first calculate the mean and standard deviation of the minimum daily temperature for a particular month throughout our time period of interest. This provides baseline expectations in terms of the minimum daily temperature in that particular municipality and month. For example, we derive one measure for January in the Envigado municipality, another for February in Envigado, and so on. Then, we explore

whether day  $t - 1$  in municipality  $i$  experienced a minimum temperature of more than one standard deviation below that mean as our proxy for an unusually cold day. In an alternative specification, we calculate municipality-*week-of-year*-specific means (rather than municipality-*month*-specific means).

### 7.3 Empirical Strategy and Results

Combining family holidays (as a primer for the rebel’s family identity) with particularly cold days (as a proxy for sadness), we estimate

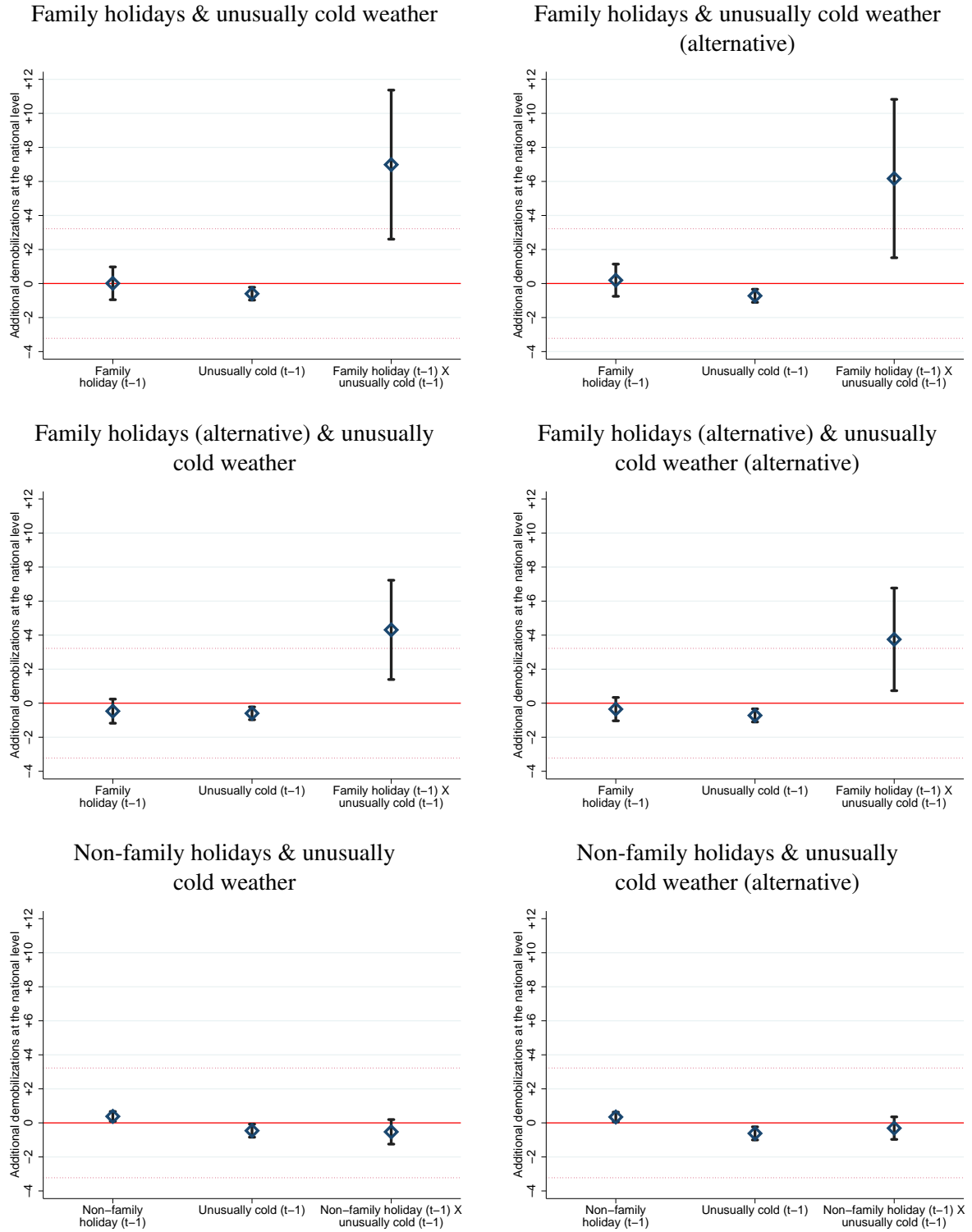
$$\begin{aligned} Demob_{i,t} = & \beta_1(Family\ holiday)_{t-1} + \beta_2(Unusually\ Cold\ day)_{i,t-1} \\ & + \beta_3(Family\ holiday_{t-1} \times Unusually\ Cold\ day_{i,t-1}) + \mathbf{X}_{i,t-1} + \epsilon_{i,t}. \end{aligned} \quad (9)$$

From *Proposition 1*, we would expect a positive and statistically significant coefficient  $\beta_3$ . As a placebo exercise, we also code *non*-family holidays, i.e., days categorized as holidays in Colombia (including the actual holiday and the observance day) on which family terminology in *El Tiempo* does not rise significantly, and interact the corresponding binary indicator with our measure for an unusually cold day in municipality  $i$ . If *Proposition 1* was of substance, we should not expect a statistically significant coefficient of the interaction term in that specification.

Figure 6 visualizes estimates from six specifications. First, we employ our benchmark measures of family holidays and unusually cold days, with the results displayed in the top left graph. The results indicate a positive, statistically significant, and quantitatively sizeable coefficient of the interaction term. In terms of magnitude, we observe a spike of 7 additional demobilizations in a municipality that experienced an unusually cold day after a family holiday. This result prevails if we employ the alternative definition of an unusually cold day (using municipality-*week-of-year*-specific means), as visualized in the top right graph of Figure 6. Notably, both graphs illustrate how a family holiday on its own is not followed by changes in demobilization frequencies. Unusually cold days by themselves are, if anything, a predictor of marginally diminished demobilization numbers, although the corresponding magnitude remains negligible (with 0.6 and 0.7 fewer demobilizations).

The middle graphs of Figure 6 re-estimate both specifications when also coding Father’s Day and Palm Sunday as family holidays, i.e., those holidays for which we find modest statistical evidence of





**Figure 6:** Results from OLS regressions, predicting *FARC* demobilizations in municipality  $i$  on day  $t$ . The full set of control variables is included (see equation 1) and two-sided 95% confidence intervals are displayed. The y-axis is scaled to capture demobilizations at the national level. The dotted horizontal lines denote the overall average number of demobilizations as a reference.

rising family terminology in *El Tiempo* (see Table A4). Again, we identify powerful spikes for the interaction term, now implying 3.8-4.3 additional demobilizations. As in the top graphs, magnitudes of the interaction terms dwarf those of the individual variables.

Finally, the bottom graphs of Figure 6 present estimates from two placebo specifications in which we interact *non-family* holidays with unusually cold days in municipality  $i$ . For those, we should not observe uncommon demobilization patterns, as a specific family primer remains absent. Indeed, we identify precisely estimated and quantitatively negligible null relationships for the respective interaction terms when employing either definition of unusually cold days ( $p$ -values of 0.15 and 0.36). While these results are of course unable to fully exclude alternative explanations, they are consistent with *Proposition 1*.

## 8 Conclusion

Can violent insurgencies be resolved peacefully? This paper presents empirical evidence to indicate the Colombian government’s campaign of encouraging *FARC* rebels to demobilize through short clips aired during games of the national football team was successful. To isolate causality, we leverage (i) game dates (before and during that propaganda period), (ii) the quasi-exogenous within-day scheduling of game times, and (iii) local rain conditions. Overall, we estimate more than 1,000 rebels demobilized because of these demobilization messages. To provide context, demobilizations have widely been credited as the main reason for the *FARC*’s decline, paving the way for the 2016 peace agreement (Bjørkhaug, 2010; Nussio, 2013; McLauchlin, 2015; Hafez, 2017; Nussio, 2017, 2018; Oppenheim and Söderström, 2018; Richards, 2018).

To explore mechanisms, we first distinguish between the family- and national-unity-themed message campaigns. Our analysis shows family-themed messages were successful in generating demobilizations, while national-unity-themed messages were not. Further, demobilizations spiked significantly following *unexpected losses* of the national team but not after wins, whether expected or not. Indeed, the combination of (i) family-themed messages (ii) aired during unexpected losses explains virtually the entirety of effects.

These stark empirical regularities motivate our introduction of a theoretical framework, combining social identity theory and a rebel's core identities (the *FARC* versus their family) with the emotional state during which a demobilization message finds them. The model predicts demobilizations to spike noticeably when a primer of the rebel's alternative identity (i.e., their family) reaches them during an emotional state of sadness, which invites a reconsideration of the rebel's primary group association. This combination of insights from social identity theory with the power of emotional, visceral factors constitutes the key novelty of our model.

Moving beyond demobilization messages aired during football games, we then test the model's predictions by combining occurrences of family holidays (e.g., Mother's Day) with exceptionally cold local temperatures (as a proxy for sadness). This provides not only an objective, measurable primer of family identity but also a *local* proxy of sadness that varies across each of the 1,122 Colombian municipalities for every individual day. Consistent with our theoretical proposition, we indeed observe sizeable and statistically significant spikes in demobilization numbers after family holidays – but only in municipalities that experienced an extraordinarily cold day. Placebo exercises studying *non*-family holidays produce estimates that are statistically indistinguishable from zero and irrelevant in terms of magnitude.

While our results imply targeted propaganda campaigns can constitute an effective counter-insurgency strategy, the true value of any such campaign can nevertheless be measured in human lives. This is true, both in the sense that force-based counter-insurgencies are typically particularly bloody and self-reinforcing, such that ending them peacefully can save lives; and since each demobilized rebel represents not only one fewer adversary on the battlefield but also a reintegrated member of society. Our results therefore accord with propaganda historian Philip Taylor's view that "we need peace propagandists, not war propagandists". Yet, as [Gallo \(2019\)](#) writes, "the art of persuasion hasn't changed in 2,000 years...persuasion cannot occur in the absence of emotion". It is this combination of (i) priming a rebel with their alternative family identity (ii) during an emotional state of sadness that, we hope, can provide a powerful starting point to explore conflict settings beyond the *FARC*.

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## Online Appendix A: Additional Empirical Results

**Table A1:** Results from alternative regressions, predicting *FARC* demobilizations in municipality  $i$  on day  $t$ .

<i>Dependent variable: Demobilized FARC rebels<sub>i,t</sub> (mean=0.0028)</i>									
Identification:	Game (identification strategy I)		Kickoff times (identification strategy II)		Rain (identification strategy III)				
Estimation method:	(1) (OLS)	(2) (Poisson) [NBREG]	(3) (OLS)	(4) (Poisson) [NBREG]	(5) (OLS)	(6) (NBREG)	(7) (Poisson)	(8) (OLS)	(9) <sup>c</sup> (OLS)
Game <sub><i>t</i>-1</sub> × Campaign period <sub><i>t</i>-1</sub>	0.0067 (0.0013)***	0.8391 (0.1167)*** [0.1796]***							
Dusk game <sub><i>t</i>-1</sub> × Campaign period <sub><i>t</i>-1</sub>			0.0074 (0.0022)***	0.7504 (0.1493)*** [0.3445]*					
Dusk game <sub><i>t</i>-1</sub> × Dusk rain <sub><i>i,t</i>-1</sub>					-0.0015 (0.0004)***	-0.3975 (0.1543)*	-0.4555 (0.1803)*		-0.0004 (0.0001)***
Game (kickoff 4-5.40pm) <sub><i>t</i>-1</sub> × Rain (4-7pm) <sub><i>i,t</i>-1</sub>								-0.0016 (0.0004)***	
Game (kickoff 7-8.40pm) <sub><i>t</i>-1</sub> × Rain (7-10pm) <sub><i>i,t</i>-1</sub>								-0.0009 (0.0004)*	
Fixed effects <sup>a</sup>	✓		✓		✓			✓	✓
Additional control variables <sup>b</sup>	✓		✓		✓				
<i>N</i>	5,627,952	5,629,074	5,627,952	5,629,074	4,799,200	4,799,200	4,799,200	4,800,320	3,449,358

*Notes:* In columns (1), (3), (5), (8), and (9), standard errors clustered at the municipality-year level are displayed in parentheses. In columns (2) and (4), standard errors from Poisson regressions, clustered at the municipality level are reported in parentheses, while no clustering is applied for standard errors reported in brackets that come from negative binomial regressions. In column (6), no clustering is applied to standard errors. In column (7), standard errors are clustered at the municipality level. \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ . <sup>a</sup> Includes fixed effects at the municipality-sample-week level and the municipality-weekday level, as well as binary indicators for days after the Colombian government's annual budget announcements and two leak days in which important conflict-relevant information was publicized (see Section 4.1). <sup>b</sup> Includes two variables measuring *FARC* and government attacks on day  $t-1$ . <sup>c</sup> Employs alternative rain data from the Institute of Hydrology, Meteorology and Environmental Studies (*Instituto de Hidrología, Meteorología y Estudios Ambientales*; *IDREAM*).

**Table A2:** Results from OLS regressions, predicting *FARC* demobilizations in municipality  $i$  on day  $t$ , calculating alternative standard errors.

<i>Dependent variable: Demobilized FARC rebels<sub>i,t</sub> (mean=0.0028)</i>						
Sample:	Full (2003-2016)				Campaign period (2005-2016)	
	(1)	(2)	(3)	(4)	(5)	(6)
$\text{Game}_{t-1}$	0.0003 (0.0006) [0.0002]	-0.0023 (0.0007)** [0.0006]***				
$\text{Campaign period}_{t-1}$	0.0007 (0.0001)*** [0.0003]*	-0.0032 (0.0008)*** [0.0007]***	0.0007 (0.0001)*** [0.0003]*	-0.0032 (0.0008)*** [0.0007]***		
$\text{Game}_{t-1} \times \text{Campaign period}_{t-1}$	0.0045 (0.0008)*** [0.0010]***	0.0067 (0.0009)*** [0.0015]***				
$\text{Dusk game}_{t-1} \times \text{Campaign period}_{t-1}$			0.0068 (0.0018)*** [0.0016]***	0.0074 (0.0017)*** [0.0017]***		
$\text{Non-dusk game}_{t-1} \times \text{Campaign period}_{t-1}$			0.0032 (0.0008)*** [0.0008]***	0.0058 (0.0009)*** [0.0015]***		
$\text{Dusk game}_{t-1}$			0.0020 (0.0013) [0.0009]*	0.0015 (0.0012) [0.0011]	0.0094 (0.0014)*** [0.0021]***	0.0091 (0.0012)*** [0.0021]***
$\text{Non-dusk game}_{t-1}$			-0.0001 (0.0006) [0.0003]	-0.0033 (0.0008)*** [0.0010]***	0.0032 (0.0005)*** [0.0006]***	0.0024 (0.0005)*** [0.0005]***
$\text{Dusk game}_{t-1} \times \text{Dusk rain}_{i,t-1}$					-0.0019 (0.0004)*** [0.0005]***	-0.0015 (0.0004)*** [0.0004]***
$\text{Non-dusk game}_{t-1} \times \text{Dusk rain}_{i,t-1}$					-0.0002 (0.0003) [0.0002]	-0.0002 (0.0003) [0.0003]
$\text{Dusk rain}_{i,t-1}$					0.0000 (0.0000) [0.0001]	0.0001 (0.0000)* [0.0001]
Control variables <sup>a</sup>		✓		✓		✓
$N$	5,629,074	5,629,074	5,629,074	5,629,074	4,799,200	4,799,200
$R^2$	0.000	0.195	0.000	0.195	0.000	0.208

*Notes:* Robust standard errors are displayed in parentheses, while standard errors clustered at the municipality level are displayed in brackets. \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ . <sup>a</sup>Includes fixed effects at the municipality-sample-week level and the municipality-weekday level, as well as binary indicators for days after the Colombian government's annual budget announcements and two leak days in which important conflict-relevant information was publicized (see Section 4.1).

**Table A3:** Additional summary statistics for all 1,122 municipalities from January 1, 2003 until September 25, 2016 ( $n = 5,629,074$  unless noted otherwise).

Variable	Mean (Std. Dev.)	Min. (Max.)	Source <sup>a</sup>	Description
Expected win <sub><i>t</i></sub>	0.0140 (0.1173)	0 (1)	<a href="#">OddsPortal.com (2021)</a> & <a href="#">FIFA (2022)</a>	= 1 if Colombian team wins as expected
Expected loss <sub><i>t</i></sub>	0.0078 (0.0878)	0 (1)	<a href="#">OddsPortal.com (2021)</a> & <a href="#">FIFA (2022)</a>	= 1 if Colombian team loses as expected
Unexpected win <sub><i>t</i></sub>	0.0068 (0.082)	0 (1)	<a href="#">OddsPortal.com (2021)</a> & <a href="#">FIFA (2022)</a>	= 1 if Colombian team wins unexpectedly
Unexpected loss <sub><i>t</i></sub>	0.0052 (0.0718)	0 (1)	<a href="#">OddsPortal.com (2021)</a> & <a href="#">FIFA (2022)</a>	= 1 if Colombian team loses unexpectedly
Family holiday <sub><i>t</i></sub>	0.0110 (0.1041)	0 (1)	<a href="#">timeanddate.com (2022)</a>	= 1 if family holiday (see Section 7 and Table A4)
Non-family holiday <sub><i>t</i></sub>	0.0991 (0.2987)	0 (1)	<a href="#">timeanddate.com (2022)</a>	= 1 if non-family holiday (see Section 7 and Table A4)
Unusually cold day <sub><i>i,t</i></sub>	0.1533 (0.3603)	0 (1)	<a href="#">NASA (2022)</a>	= 1 if minimum temperature more than one standard deviation below municipality-month-specific sample mean
Unusually cold day <sub><i>i,t</i></sub> (alternative calculation)	0.1558 (0.3627)	0 (1)	<a href="#">NASA (2022)</a>	= 1 if minimum temperature more than one standard deviation below municipality-week-of-year-specific sample mean
# of government attacks on <i>FARC</i> <sub><i>i,t</i></sub>	0.0005 (0.0226)	0 (3)	<i>CNMH</i>	# of military clashes between the Colombian state and the <i>FARC</i> , allegedly initiated by the government
# of <i>FARC</i> attacks on government <sub><i>i,t</i></sub>	0.0005 (0.0240)	0 (3)	<i>CNMH</i>	# of military clashes between the Colombian state and the <i>FARC</i> , allegedly initiated by the <i>FARC</i>
Rain <sub><i>i,t</i></sub> (7-10pm) ( $n = 5,619,034$ )	0.357 (1.1212)	0 (46)	<i>NASA</i>	Average rain rate (mm/h) in a municipality between 7pm and 10pm
Rain <sub><i>i,t</i></sub> (alternative source; $n = 4,035,363$ )	5.6966 (12.0082)	0 (586)	<i>IDEAM</i>	Total daily precipitation in a municipality (mm)

Notes:<sup>a</sup> *CNMH*= National Center for Historical Memory (*Centro Nacional de Memoria Historica*), accessing the number of belic attacks between the government and the *FARC*; *IDEAM*= Institute of Hydrology, Meteorology and Environmental Studies (*Instituto de Hidrología, Meteorología y Estudios Ambientales*), accessing measures of daily rain for the available municipalities.

**Table A4:** Results from regressing the *LWC* family dictionary score in all *El Tiempo* news articles published on day  $t$  on binary indicators for holidays.

Dependent variable:	<i>LWC</i> family terminology in <i>El Tiempo</i> articles $_t$
All Saints' Day $_t$	-0.005 (0.019)
Ascension Day $_t$	0.017 (0.034)
Assumption of Mary $_t$	-0.010 (0.016)
Battle of Boyacá Day $_t$	0.024 (0.030)
Children's Day $_t$	0.010 (0.026)
Christmas Day $_t$	0.051 (0.062)
Christmas Eve $_t$	0.103*** (0.023)
Colombian Women's Day $_t$	-0.036 (0.026)
Columbus Day $_t$	0.015 (0.028)
Corpus Christi $_t$	0.016 (0.014)
Day of Trees $_t$	0.025 (0.024)
Easter Sunday $_t$	0.021 (0.034)
Epiphany $_t$	-0.012 (0.018)
Eve of the Feast of the Immaculate Conception $_t$	-0.006 (0.022)
Father's Day $_t$	0.089* (0.046)
Feast of Saint Peter and Saint Paul $_t$	-0.025 (0.015)
Feast of the Immaculate Conception $_t$	-0.007 (0.028)
Good Friday $_t$	0.061 (0.139)
Halloween $_t$	0.035 (0.038)
Independence Day $_t$	-0.024 (0.018)
Independence of Cartagena $_t$	-0.028 (0.019)
Labor Day / May Day $_t$	0.039 (0.030)
Language Day $_t$	-0.026 (0.023)
Maundy Thursday $_t$	0.101*** (0.031)
Mother's Day $_t$	0.170*** (0.039)
New Year's Day $_t$	-0.050 (0.053)
New Year's Eve $_t$	-0.032 (0.023)
Palm Sunday $_t$	0.065* (0.036)
Sacred Heart $_t$	-0.062** (0.024)
Saint Joseph's Day $_t$	0.018 (0.018)
Secretaries' Day $_t$	-0.027 (0.030)
Teacher's Day $_t$	-0.003 (0.022)
Valentine's Day $_t$	-0.017 (0.024)
Women's Day $_t$	0.122*** (0.030)
<i>N</i>	8,655

Notes: Robust standard errors are displayed in parentheses. \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ .

## Online Appendix B: Message Campaign Periods

### B1. Family-Themed Message Campaign

Administered and coordinated by Colombia's Ministry of Defense, the initial campaign period from 2005 to 2009 contrasted the rebel's life as a *guerrillero* against their family identity, associated with their life prior to joining the *FARC*. During that period, the most frequent television message aired 70 times in 23 games, reading

“¡Guerrillero, no se arriesgue más! Si va a apoyar, que sea a su selección, a su familia. ¡Inicie ya una nueva vida! ¡La desmovilización es la salida! Ministerio de Defensa Nacional.”

which translates to

“Guerrilla, take no more chances! If you are going to support [anyone], let it be your team, your family. Start a new life now! Demobilization is the way out! Ministry of National Defense.”

Another prominent message reads

“Guerrillero, desmovilizarse no es una decisión fácil, pero mientras usted se está quedando solo hay muchos beneficios esperándolo: Empezar una nueva vida junto a su familia...”

which translates to

“Guerrilla, demobilizing is not an easy decision, but while you are staying alone there are many benefits waiting for you: Starting a new life with your family...”

Yet another message, which aired on the radio reads

“Usted debería tener la libertad de estar con su verdadera familia en estas fechas – ¿no le parece? Recuperela mientras tenga la oportunidad. ¡Desmovilicese! Esa es la salida.”

which translates to

“You should have the freedom to be with your real family on these [special] dates [end of year holidays] – don’t you think so? Get it back while you have the chance. Demobilize! That is the way out.”

This fundamental emphasis on family as an alternative identity to the *FARC* also emerges when constructing simple word counts across the universe of messages aired on television. After removing prepositions, Table B1 shows how the words *life*, *new*, and *family* are among the most frequent entries with 216, 136, and 135 appearances. Considering bigrams, *new life* is most frequent with 136 occurrences, closely followed by *family begins* with 124 mentions.

**Table B1:** Words and bigrams for messages played during the family-themed campaign period.

Ranking	Word	Frequency	Bigram	Frequency
1	desmovilización (demobilization)	239	nueva vida (new life)	136
2	vida (life)	216	defensa nacional (national defense)	134
3	salida (exit)	204	familia inicie (family begins)	124
4	guerrillero (guerilla)	186	salida ministerio (exit Ministry)	124
5	nueva (new)	136	alcanza metas (reaches goals)	37
6	familia (family)	135	Andrés repara (Andrés repairs)	37
7	defensa (Defense)	134	Carlos entona (Carlos intonates)	37
8	ministerio (Ministry)	134	cosecha esperanzas (reaps hopes)	37
9	nacional (national)	134	Diana moldea (Diana shapes)	37
10	apoyar (to help)	125	entona sentimientos (intonates feelings)	37

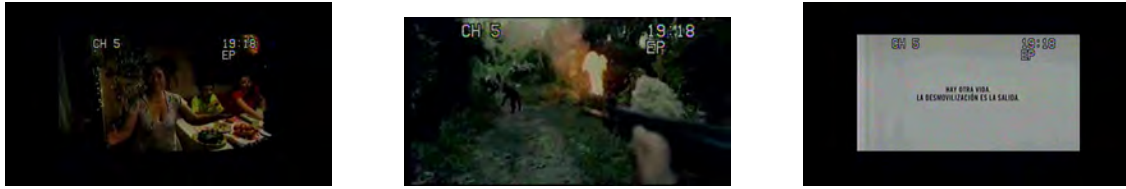
Messages during that time period also frequently portrayed how that alternative life outside the *FARC* would look like. For example, a message that aired 37 times describes how

“con sus manos, Pedro cosecha esperanzas, Diana moldea ilusiones, Andrés repara sueños, Carlos entona sentimientos, María consiente el futuro, Luis alcanza metas...”

which translates to

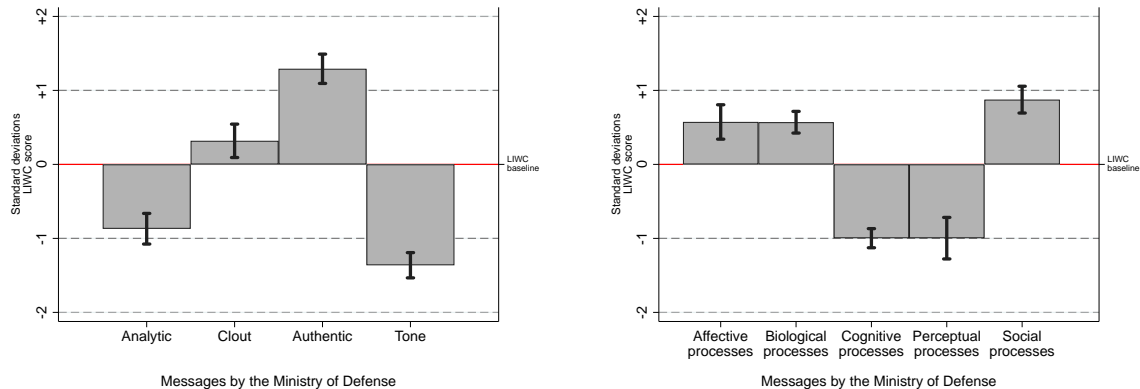
“with their hands, Pedro reaps hopes, Diana shapes illusions, Andrés repairs dreams, Carlos intonates feelings, María indulges the future, Luis reaches goals...”

Aside from these vocal primers of an alternative family life, the images played alongside these messages reinforced a dichotomy between the rebel’s current life as a guerrilla and their alternative family life (see Figure B1).



**Figure B1:** Frames from a message aired during the family-themed campaign period. The corresponding message states: “I’ll go. I’ll stay in the guerrilla. I’ll go. I’m staying. I’m going. I’ll stay in the guerrilla. In the decision lies your freedom, there is another life: Demobilization is the way out!”

To explore messages more formally, Figure B2 illustrates their main linguistic components, using the *Linguistic Inquiry and Word Count (LIWC)* program that is frequently used to convert text to quantitative data. As a reference point, the horizontal line indicates *LIWC* grand means that have emerged from studying over 57 million words, thereby capturing over 86% of the words people have used in writing and speech (Tausczik and Pennebaker, 2010; Pennebaker et al., 2015, p.10). Notably, messages are less analytic and more negative in tone but rank above average for clout and authenticity. Further, affective and biological processes are emphasized, while messages are appealing less to cognitive, rational processes that include the sub-categories *Insight*, *Causation*, and *Discrepancy*.



**Figure B2:** Results from *LIWC* sentiment analysis of all messages aired on television in the family-themed campaign period during games of the national team. Two-sided 95% confidence intervals are displayed.

## B2. National-Unity-Themed Message Campaign

At the beginning of 2010, the Ministry of Defense contracted the agency MullenLowe SSP3 to produce and air demobilization messages. While the general narrative of trying to convince *FARC* rebels to demobilize prevailed, the main focus shifted away from the family as the alternative identity. The message that aired most frequently (20 times) reads:

“En el futbol, como en la vida, siempre es importante apoyar, ser parte de un equipo, sentir unos colores, llevar con orgullo una camiseta, celebrar las victorias, sobreponerse a las derrotas y seguir alentando sin parar. ¡El apoyo incondicional es algo que todo Colombiano debe tener! Por eso, por eso, por eso: Si va a apoyar algo, que sea a su selección, *a su país* [emphasis added], a su familia – pero no a la guerrilla, miliciano. No se arriesgue más. Empiece ya su nueva vida. ¡Desmovilícese!”

which translates to

“In football, as in life, it is always important to support, to be part of a team, to feel the colors, to wear a shirt with pride, to celebrate victories, to overcome defeats, and to continue to encourage non-stop. Unconditional support is something that every Colombian should have! That’s why, that’s why, that’s why: If you’re going to support anything, let it be your national [football] team, *your country* [emphasis added], your family – but not the guerrilla. Take no more chances. Start your new life now. Demobilize!”

In this, several aspects stand out, particularly when contrasted with the family-themed campaign messages. First, the message heavily leans on football as a direct metaphor and reference point. Second, the message encourages identification with *all* Colombians, thereby explicitly contrasting the *FARC* with the entire country. This is further buttressed by images of ‘feeling the (national) colors’, ‘wearing the (national) shirt with pride’, as well as the reference to ‘every Colombian’. Third, the message suggests supporting the national football team first and the country second, while family comes in third on that list and is not mentioned otherwise.

Throughout the national-unity-themed messages, the words *futbol* (football), *equipo* (team), and *camiseta* (sports jersey) are among the most-frequent mentions (see Table B2). Notably, these three



words never appear in messages aired during the family-themed campaign period. This theme of projecting the national football team onto the Colombian nation stands in sharp contrast to the family-themed narrative of the initial campaign period.

**Table B2:** Words and bigrams for messages played during the national-unity-themed campaign period.

Ranking	Word	Frequency	Bigram	Frequency
1	desmovilícese (demobilize)	41	apoyar ser (to help to be)	20
2	apoyar (help)	40	apoyo incondicional (unconditional support)	20
3	vida (life)	40	camiseta celebrar (sports jersey celebrate)	20
4	futbol (football)	35	Colombiano debe (Colombian must)	20
5	familia (family)	32	colores llevar (wear colors)	20
6	equipo (team)	31	debe tener (must have)	20
7	Colombia	29	equipo sentir (team to feel)	20
8	apoyo (help)	20	guerrilla miliciano (guerrilla militant)	20
9	arriesgue (risk)	20	importante apoyar (important to help)	20
10	camiseta (sports jersey)	20	nueva vida (new life)	20

Finally, the visual imagery employed during the national-unity-themed campaign period further enhances this image of a country focused on national unity. Figure B3 shows a particularly prominent clip during that time period, in which a government soldier invites the *FARC* rebel to watch the match together, ‘saving them a spot’. Overall, especially when contrasted against the family-themed campaign messages presented above, we label this new narrative as one advancing national unity.



**Figure B3:** Frames from a message aired during the national-unity-themed campaign period. The corresponding message states: “This game has to be seen in freedom. Demobilize, I am saving you a spot. Guerrilla, Colombia is saving you a spot. Demobilize. Ministry of National Defence.”