Peacefully demobilizing rebels: Identities, emotional cues and the *FARC*[*]

Juan P. Aparicio[†] Michael Jetter[‡] Christopher Parsons[§]

Job Market Paper

Revised July 2026

Abstract

In 2005, the Colombian government started airing messages during games of the national football (soccer) 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 after games that aired *family*-themed (but not *national-unity*-themed) demobilization messages. Demobilizations spiked particularly after the Colombian team lost unexpectedly (i.e., when Colombians experienced negative emotional cues). Results prevail when accounting for municipality-sample-week-fixed effects and municipality-weekday-fixed effects, with numerous 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 outside of football games by examining demobilizations after family-specific holidays (as a primer for family identity) and unusually cold weather at the local level (to proxy sadness).

[*]We are grateful for comments from conference and seminar participants at the 2021 HiCN Workshop, 2021 (French) International Conference in Development Economics, Auckland U, Curtin U, EEA-ESEM 2021, ESSEC, German Development Economics Conference 2021, Higher School of Economics (Moscow), IMT Lucca, Kobe University, LACEA Annual Meetings 2021, Monash U, the Reading Online Sport Economics Seminar (*ROSES*), the Research in Terrorism Seminar (*RITES*), Simon Fraser U, The Workshop on Behavioral Insights in Development and Peace Building, U de la Sabana, U de los Andes, U del Rosario, U Innsbruck, U Luxembourg, U Melbourne, UNSW, U Vienna, U Western Australia, and the Vancouver School of Economics. We are especially thankful to Ana Arjona, Alex Armand, Tushar Bharati, Christopher Blattman, Vincenzo Bove, Juan Camilo Chaparro, Joanna Clifton-Sprigg, Clay Collins, Fanny Dellinger, José Gómez, Marcela Ibañez, David Kreitmeir, Tim Krieger, Alex Krumer, Rafat Mahmood, Daniele Paserman, María del Pilar López, Paul Raschky, James Reade, Heiner Schumacher, Marco Schwarz, David Stadelmann, Andreas Steinmayr, Riko Stevens, Santiago Tobón, Jorge A. Tovar, Maarten Voors, and Andrés Zambrano for stimulating discussions.

[†]Institute for Replication (I4R), Canada; corresponding author; email: juposada93@gmail.com.

[‡]University of Western Australia; IZA; CESifo; email: mjetter7@gmail.com.

[§]University of Western Australia; email: christopher.parsons@uwa.edu.au.

JEL Classifications: D74, D91, H56, L82, N46, O54
Keywords: Civil war, conflict resolution, demobilization, hearts-and-minds, information campaigns

1 Introduction

Purely force-based counter-insurgencies often exacerbate civil wars, escalate casualty counts, and deepen conflict lines (Dixon, 2009). Unfortunately, *peaceful*, as opposed to *force-based*, strategies of civil conflict resolution 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, the government predominantly applied force-based strategies, as the Colombian society mourned over 200,000 casualties (Centro Nacional de Memoria Histórica, 2020). In 2003, however, the Ministry of Defense introduced a demobilization program, promising defectors peaceful reintegration into civil society (Congreso de Colombia, 2002). A *FARC* rebel could enter any local government building to initiate their demobilization process and would immediately be provided with "protection, medical care, food, and new clothes" (Rosenau et al., 2014). 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 losing experienced fighters and sensitive intelligence (Nussio, 2013, 2018, 2020; McLauchlin, 2015; Oppenheim and Söderström, 2018; Richards, 2018; Hafez, 2020).

The program initially suffered low take-up rates however. Two years in, the government began broadcasting short messages during games of the national football team (nicknamed *Los Cafeteros*, due to the country's coffee production), both on radio and television.[1] 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 team around which all Colombians, including *FARC* members, rally.[2] These demobilization messages reminded guer-

[1] Throughout the paper, we employ the term "football" to mean association football ("soccer" in the United States).

[2] 94% of respondents to a 2014 government survey believed football was *important* for Colombia. The most popular television show ever aired would not enter the top ten list of the most-watched football games in the last

rillas of their family identity, i.e., the life they forewent as a *FARC* rebel (Caracol Radio, 2015; Fattal, 2018). One frequently aired message simply stated, for example: "Rebel! Your mom is telling you that she is waiting at home for you during this *Month of the Mother*. Demobilize!"[3] After five years, the campaign messages switched focus, instead emphasizing *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. Demobilize!"[4]

This paper makes four distinct contributions. First, we explore the messages' effects. We introduce a database that comprises municipality-day-level information on demobilizations for all 1,122 Colombian municipalities between 2003 and 2016 – a period during which *Los Cafeteros* contested 176 games. Second, we focus on the mechanisms at play. Third, inspired by our findings, we introduce a theoretical framework that is able to explain these empirical patterns. Fourth and finally, we step outside the context of football games and demobilization messages to test the model's propositions.

To begin, we compare post-match *FARC* demobilization numbers before and during the messaging period. Estimates reveal significant post-match day spikes – but only during the messaging periods. Results are robust to the inclusion of granular (i) municipality-sample-week-fixed-effects and (ii) municipality-weekday-fixed-effects. The former feature one binary indicator for each municipality in each week of the 12-year period. The latter constitute binary indicators for each weekday and municipality (e.g., Tuesdays in the municipality of *Envigado*). On average, eleven additional *FARC* rebels demobilized nationwide on the day after national team games that featured demobilization messages, beyond the sample average of 3.25.

Results are robust to a range of alternative specifications: (i) controlling for contemporane-

ten years (Rating Colombia, 2020).

[3]Original Spanish: "¡Guerrillero! Su mama le manda decir que este mes de la madre lo espera en casa. ¡Desmovilícese!"

[4]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!"

ous *FARC* and government attacks; (ii) employing negative binomial or Poisson regressions to account for the discrete nature of the dependent variable; (iii) calculating standard errors based on alternative assumptions; (iv) incorporating the lagged dependent variable; (v) excluding one game at a time; and (vi) predicting a binary outcome variable denoting any demobilizations (i.e., exploring the extensive, rather than the intensive margin). Event studies highlight the extraordinary importance of the first post-game day that featured messages, while we document precisely estimated null coefficients on the days prior.

We subsequently combine the exogenous scheduling of within-day kickoff *times* with the documented observation that *FARC* rebels typically enjoy leisure time (i.e., when they are most free to closely follow games and receive the messages) during evening hours (Lowe SSP3, 2014; LA FM Noticias, 2016; Fattal, 2018).[5] Indeed, demobilization estimates increase, by an additional 27%, after games played during dusk hours but, again, only during the messaging period.

Our third identification strategy leverages municipality-day variation resulting from local 'rain scattering' (Lin, 1973) since rain disturbs radio and television signals, thereby reducing message exposure. Indeed, municipality-level rain during dusk games negatively predicts 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.

In practice, how could these messages have convinced a guerrilla to demobilize? We first focus on the abrupt change in messaging narrative in 2010, away from highlighting *family identity* to emphasizing *national unity*, while still communicating the same informational content of urging rebels to demobilize. Notably, demobilization numbers spiked *exclusively* after family-

[5]For example, 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).

themed messages, while we observe a precisely estimated null coefficient after games featuring national-unity-themed messages. These results connect well with descriptive evidence from numerous post-demobilization interviews highlighting rebels' strong family identity as a primary factor for leaving the *FARC* (Rosenau et al., 2014; Gluecker et al., 2022). Since we measure demobilizations at the municipality-day level, our empirical specifications are also able to hold constant broader political developments, such as the change in presidency from Uribe to Santos.

Motivated by these findings, we construct a model that combines two independent strains of research from social psychology, First, *social identity theory* posits an individual's perception of who they are as a function of the group they belong to (Tajfel and Turner, 2004; Hogg, 2016). 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., 2022). For example, interviewing former *FARC* rebels after the 2016 peace deal, Gluecker et al. (2022, p.361) state: "They [*FARC* rebels] might thus have multiple social identities, seeing themselves, for example, as both former combatants and community or family members (Wessells, 2016)." This comparison between salient personal identities would be able to explain the persuasive power of *family-themed* messages (as opposed to *national-unity-themed* messages).

Second, notably, we find 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 influence *how* actions are valued temporarily and 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, such as drug consumption or engaging in domestic violence (Baumeister and Heatherton, 1996; Loewenstein, 2000; Laibson, 2001; Bernheim and Rangel, 2004; Card and Dahl, 2011). In our case, emotional factors may contribute

towards a rebel's decision to leave the *FARC*.

In the context of persuasion, one emotion that has received substantial scholarly attention is sadness (Petty et al., 2003; Petty and Cacioppo, 1986; DellaVigna and Gentzkow, 2010; Marquart and Naderer, 2016). Exploring that avenue, we take inspiration from Card and Dahl (2011) and focus on unexpected losses of *Los Cafeteros* as a powerful barometer of a rebel's emotional state of mind during the delivery of demobilization messages. Given Colombians' (and *FARC* rebels') passionate and 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, daily demobilization numbers surged by another 35 guerrillas country-wide (beyond the daily mean of 3.25) after family-themed-messages *that aired during unexpected losses*. Importantly, we do not identify *any* meaningful spikes after victories, whether expected or not.

With these empirical patterns in mind, we introduce a basic theoretical framework modelling a rebel's demobilization decision. We posit a guerrilla decides between remaining in their social group (i.e., the *FARC*) and returning to their alternative group (i.e., their pre-*FARC* family). The model predicts a positive priming of the alternative identity should increase the demobilization messages' persuasive effects – and particularly so if these messages reach the individual in a sad emotional state. Thus, combining (i) social identity theory with (ii) the importance of emotional cues in decision-making yields a powerful, testable proposition.

Our final contribution ventures beyond football games and the government's demobilization messages to test this proposition. As an alternative salient primer for family identity, we first identify family 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 that could elicit sadness, we focus on unusually cold temperatures at the local level, as a long-standing line of research shows people more likely to be sad on unusually cold days (Cunningham, 1979; Sanders and Brizzolara, 1982; Hirshleifer and Shumway, 2003; Keller et al., 2005; Guven and Hoxha, 2015). To corroborate

that assumption, we study department-month-level *Google* searches for *Depression*-related topics and find strong empirical evidence that unusually cold days are explicitly associated with sadness among the local population.

In accordance with our predictions, we observe a substantial spike in demobilizations (by an additional seven guerrillas) immediately following family holidays – but only when local temperatures are unusually cold for that particular municipality. These results are consistent for alternative definitions of family holidays and unusually cold days. In contrast, we do not observe any such dynamics after *non*-family-themed holidays or after unusually *hot* local temperatures.

While our study touches on several branches of literature, our core contribution relates to the role of persuasion in conflict settings. The closest predecessor of our work comes from Armand et al. (2020), who find evidence of demobilization messages successfully targeting members of the Lord's Resistance Army (LRA). Our study provides two main contributions beyond Armand et al. (2020), aside from studying an entirely different conflict theater, country, and rebel group. First, our rich data structure at the municipality-day-level allow us to pursue three distinct (and partly novel) identification strategies while imposing granular fixed effects, sharpening the case for a causal interpretation. Second, we propose and successfully test a novel theoretical framework to suggest *why* one demobilization message might work, while another may not.

Our study also shares core elements with Depetris-Chauvin et al. (2020) in that national football team games can serve as a powerful vehicle to surmount conflict lines. Depetris-Chauvin et al. (2020) find Africans' 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, while also addressing identity as a core mechanism. Our work contrasts with Depetris-Chauvin et al.'s (2020), however, since we (i) study demobilization messages communicated during games, (ii) directly observe rebels' demobilization decisions, (iii) are able to identify immediate day-to-

day data in each municipality, and (iv) propose family as a powerful alternative identity through which combatants can potentially be persuaded to lay down arms.

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; Oppenheim et al., 2015; Fergusson et al., 2016, 2020; Blair et al., 2022; Barceló and Baron, 2024; Vásquez-Cortés, 2025) by providing evidence of preference-based models of persuasive communication that affect conflict-related behavior.

2 The Colombian Demobilization Program

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, police, or civil authority, which includes virtually all government buildings (ARN, 2021).[6] The program offered protection from the *FARC*, tertiary education, and generous financial incentives (Nussio, 2013). Complementing conventional warfare efforts, this hearts-and-minds-type strategy marked a fundamental shift in government policy (Fattal, 2018).

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

[6]The official formulation is "[u]na persona que abandona un grupo armado debe dirigirse a cualquier autoridad militar, policial o civil" (ARN, 2021).

(Fattal, 2018). One frequently aired message, for example, stated: "If you are going to support someone, let it be your team: your family!"[7] 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. The first message aired during a game against Paraguay on January 15, 2005. These family-themed messages subsequently aired in every game of the national football team until the end of 2009 (Sokoloff, 2014; Fattal, 2018; Bonnet Tello, 2020).

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, 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*.[8] Thus, while

[7] Original Spanish: "Si va a apoyar que sea a su selección, a su familia!"

[8] 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".

the informational content remained unchanged, the framing of the demobilization messages changed.

3 Data

Data for our main analyses 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 A5 reports all additional variables introduced at later stages.

3.1 Data on Demobilizations

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 pertain to individuals. The *ARN* delineates *collective* demobilization events (usually a whole squadron negotiating collective surrendering) from *individual* demobilizations, in which single rebels decide to surrender without any type of previous negotiation with a governmental entity (ARN, 2018, 2019). As Rosenau et al. (2014, p.285) summarize: "Collective demobilization, as the term is used in Colombia, refers to one which results from a process of negotiation, such as that which took place between the paramilitary leaderships of the AUC and the government in 2003–2004. An 'individual' demobilization occurs in the absence of a negotiation between the government and the insurgent." Our focus lies on these individual demobilizations, since they constituted the target audience of the government's messaging 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 3.25 demobilizations at the na-

tional level per day. Over the entire 2003-2016 time period, 708 of the 1,122 municipalities witnessed to at least one demobilization.

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[a]	Description
Demobilized *FARC* $\text{rebels}_{i,t}$	0.0029 (0.1221)	0 (50)	*ARN*	# of demobilized *FARC* members
Campaign period_t	0.8543 (0.3528)	0 (1)	*SECOP 2*	$= 1$ if campaign period is active
Game day_t	0.0353 (0.1845)	0 (1)	*FCF*	$= 1$ if a game by the national football team is contested
Dusk game_t	0.0100 (0.0993)	0 (1)	*FCF*	$= 1$ if a game begins between 4pm and 6pm
$\text{Rain}_{i,t}$	0.3259 (1.0586)	0 (67)	*NASA*	Rainfall rate (mm/h) 4-7pm
Family-themed campaign period_t	0.3640 (0.4811)	0 (1)	*SECOP 2*	$= 1$ if family-themed campaign period is active
National-unity-themed campaign period_t	0.4901 (0.4999)	0 (1)	*SECOP 2*	$= 1$ if national-unity-themed campaign period is active

Notes:[a]*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 Futbol (Colombian Football Federation); *NASA* = *National Aeronautics and Space Administration* and *Tropical Rainfall Measuring Mission*.

3.2 Data on Demobilization Campaigns

To track the demobilization campaigns, we access 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 messages aired

(El Comercio, 2014; Corona, 2017; Samper, 2017).

3.3 Data on Football Games

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 (2013, 2019; *Fédération Internationale de Football Association*). For Colombia, *FIFA* assigns five to seven international time windows every year. The South American football association *CONMEBOL* (*Confederacón 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). 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.

3.4 Data on Precipitation Levels

Turning to our third identification strategy, Table 1 reports average rainfall data at the municipality level, derived from *NASA*'s *Tropical Rainfall Measuring Mission* (*TRMM*; NASA,

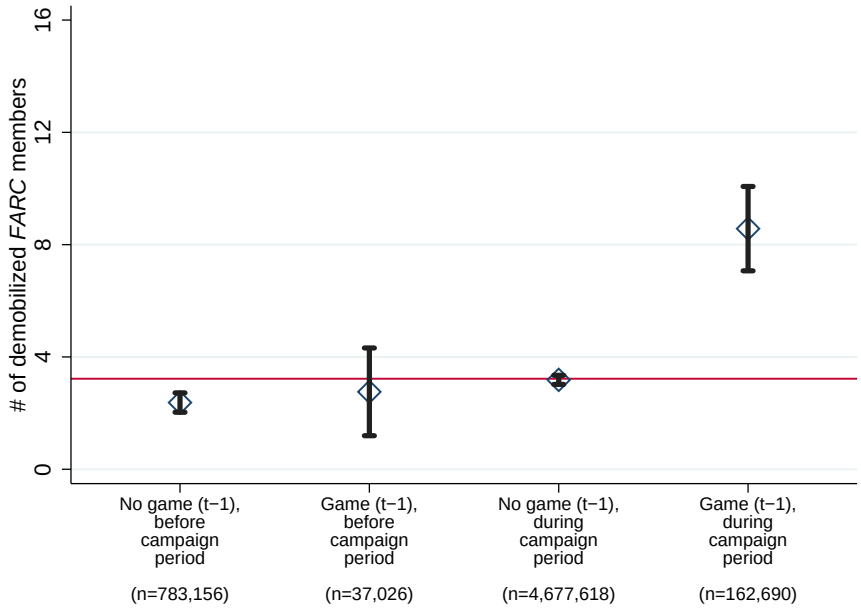
2020). We employ the highest resolution data available (0.25 latitude $\times$ 0.25 longitude degrees; $\approx 27km^2$ at the equator). These data, expressed in average mm/h, are recorded at three-hour intervals. For Colombia, these intervals are 4-7pm, 7-10pm, and so on (NASA, 2020). Since we are particularly 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.

3.5 Descriptive Statistics

Figure 1*(a)* 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 return to Colombian society on these days – a rate that is 165% higher than the overall average of 3.25.

Figure 1*(b)* visualizes demobilization means on the day after dusk versus non-dusk games, again distinguishing within versus before 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).

(a) Mean demobilization numbers



(b) Mean demobilization numbers (dusk vs. non-dusk games)

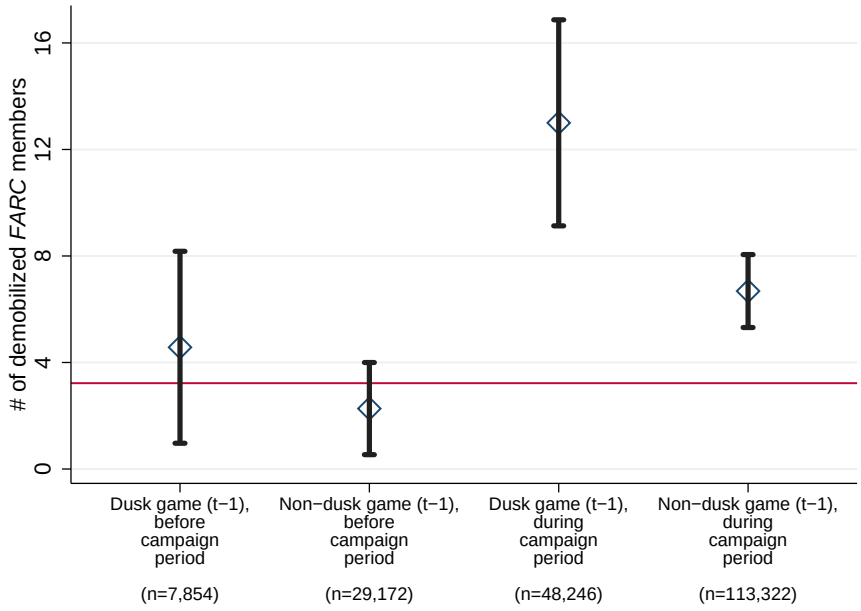


Figure 1: *Top*: National demobilization averages outside and during the campaign periods. *Bottom*: National demobilization averages after dusk and non-dusk games outside and during the campaign periods. The red horizontal line marks the overall average. Two-sided 99% confidence intervals are displayed.

4 Main Empirical Strategies

4.1 Overview and Covariates

We pursue three identification strategies to isolate causal estimates of the government's messaging campaigns as precisely as possible. First, we predict the number of demobilized *FARC* rebels at the municipality-day level, focusing on days immediately following game days. In alternative specifications, we also explore demobilizations in the immediately preceding and following days. Second, we distinguish dusk from non-dusk games. Third, we leverage the disruptive effects of rain on electromagnetic waves, exploiting the geographical and temporal variation in 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 $\boldsymbol{X_{i,t}}$ 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 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*. Allowing these fixed effects to vary by sample week for each municipality accounts for such influences changing over time. For example, one binary variable captures the municipality of *Envigado* in the week from Jan 1, 2003 to Jan 7, 2003; another codes *Envigado* from Jan 8, 2003 to Jan 14, 2003; and so on. These fixed effects also ensure the availability of radio and television signals (to follow the games and receive the messages) are held constant. In sum, we compare demobilizations *within the same municipality and week* to one another. These fixed effects also account for country-wide political developments, such

as those associated with the presidency.

Further, $\boldsymbol{X}_{i,t}$ incorporates municipality-weekday-fixed effects, ensuring municipality-specific weekly schedules do not confound our estimates. For example, we impose a binary indicator for the municipality of *Envigado* on Monday, another for *Envigado* on Tuesday, and so on. 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 Monday in some localities and on Tuesday 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.

Next, $\boldsymbol{X}_{i,t}$ 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 demobilization patterns (Congreso Visible, 2022).

Finally, $\boldsymbol{X}_{i,t}$ 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.[9] 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 (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). The corresponding binary indicators ensure we account for the potential demobilization-related consequences of these extraordinary announcements.

[9] Gilbert (2022) and Aparicio and Jetter (2022) provide empirical analyses pertaining to kidnapping activities by the *FARC*.

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 *Los Cafeteros* contest a game. In addition, we incorporate an interaction term between that variable and the corresponding date falling within the campaign window. In our basic specifications, when municipality-sample-week-fixed effects are unaccounted for, we also include a binary indicator capturing whether $t-1$ falls into the campaign periods.[10] For now, we group the family- and national-unity-themed message periods together. Specifically, we estimate the following equation in a standard OLS format – although employing negative binomial or Poisson regressions to explicitly recognize the count nature of the dependent variable yields consistent findings (see Table A1):

$$Demob_{i,t} = \beta_1(Game_{t-1}) + \beta_2(Game_{t-1} \times Campaign_{t-1}) + \boldsymbol{X_{i,t-1}} + \epsilon_{i,t}. \quad (1)$$

If the messaging campaigns were successful, we should expect a positive coefficient β_2 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 campaign periods. Our second identification strategy therefore

[10] Municipality-sample-week-fixed effects nest the binary indicator for the campaign period, i.e., their inclusion renders that binary indicator obsolete.

exploits kickoff times. Specifically, we estimate:

$$\begin{aligned} Demob_{i,t} = \gamma_1(Dusk\ game_{t-1}) + \gamma_2(Non-dusk\ game_{t-1}) \\ + \gamma_3(Dusk\ game_{t-1} \times Campaign_{t-1}) \\ + \gamma_4(Non-dusk\ game_{t-1} \times Campaign_{t-1}) + \boldsymbol{X_{i,t-1}} + \delta_{i,t}. \end{aligned} \tag{2}$$

Our main coefficient of interest is now γ_3. If *FARC* rebels are more likely to follow games during dusk hours, then demobilizations should spike particularly after such games – but only during the campaign period. Nevertheless, we would still expect a positive coefficient γ_4, i.e., increased demobilizations on days after non-dusk games during the campaign period.

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 transmissions (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 demobilization messages relative to rebels located in municipalities that experienced less or no rain. We focus on the campaign periods only to estimate:

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

If *rain scattering* occurred, we would expect positive and statistically significant coefficients

for π_1 and π_2, but a negative and statistically significant coefficient for π_4. As before, we would expect π_1 to exhibit a coefficient that is larger in magnitude than π_2. Further, π_3 informs us whether dusk rain alone predicts demobilizations the following day, for example by complicating travel conditions. Finally, π_5 should remain statistically and quantitatively 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 fixed effects.

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 more than five additional demobilizations at the national level ($0.0045 \times 1,122$ municipalities). This constitutes more than a 150% increase beyond the mean of 3.25. Accounting for the full set of regressors in column (2) raises that magnitude to 0.0067, which translates to 7.5 national demobilizations – an increase of 2.3 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.[11]

Delineating kickoff times in columns (3) and (4), we find demobilizations to be particularly elevated the day after dusk games during the campaign period, i.e., when *FARC* rebels are more likely to follow games. In reality, while we cannot observe an individual rebel's exposure to

[11] Calculation: 0.0353 (mean for the variable $game_{t-1}$) multiplied with 0.8543 (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.

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

Dependent variable: Demobilized FARC rebels$_{i,t}$ (mean=0.0028)						
Time period:	Full (2003-2016)				Campaign periods (2005-2016)	
	(1)	(2)	(3)	(4)	(5)	(6)
Game$_{t-1}$ × Campaign$_{t-1}$	0.0045***	0.0067***				
	(0.0010)	(0.0013)				
Dusk game$_{t-1}$ × Campaign$_{t-1}$			0.0068**	0.0074**		
			(0.0025)	(0.0022)		
Dusk game$_{t-1}$ × Dusk rain$_{i,t-1}$					-0.0019***	-0.0015***
					(0.0004)	(0.0004)
Game$_{t-1}$	0.0003	-0.0023*				
	(0.0006)	(0.0009)				
Campaign$_{t-1}$	0.0007		0.0007			
	(0.0006)		(0.0006)			
Non-dusk game $_{t-1}$ × Campaign$_{t-1}$			0.0032***	0.0058***		
			(0.0007)	(0.0012)		
Dusk game$_{t-1}$			0.0020	0.0015	0.0094***	0.0091***
			(0.0014)	(0.0011)	(0.0022)	(0.0020)
Non-dusk game$_{t-1}$			-0.0001	-0.0033***	0.0032***	0.0024***
			(0.0005)	(0.0011)	(0.0005)	(0.0005)
Non-dusk game$_{t-1}$ × Dusk rain$_{i,t-1}$					-0.0002	-0.0002
					(0.0003)	(0.0003)
Dusk rain$_{i,t-1}$					0.0000	0.0001*
					(0.0000)	(0.0000)
Fixed effects[a]		✓		✓		✓
N	5,629,074	5,629,074	5,629,074	5,629,074	4,799,200	4,799,200

Notes: Standard errors clustered at the municipality-year level are displayed in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. [a]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).

messages, this empirical design constitutes an *intent-to-treat* study, wherein any increase in focalization should result in quantitatively larger estimates. Indeed, this is what we observe in column (4) with 8.3 additional demobilizations occurring after dusk games during the campaign periods ($0.0074 \times 1,122$ municipalities; $p = 0.001$) compared to 6.5 additional demobilizations after *non*-dusk games during the campaign periods ($0.0058 \times 1,122$; $p < 0.001$).

Columns (5) and (6) present results from incorporating local precipitation levels. We now focus on the campaign periods only to facilitate the interpretation of coefficients. Nevertheless, results are fully 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; $p < 0.001$). In contrast, dusk games trigger larger demobilization responses in municipalities that did not experience any rain during dusk hours. The relevant coefficient (0.0091; $p < 0.001$) translates to 10.2 additional demobilizations at the national level, which constitutes more than a fourfold increase relative to the daily average.

5.2 Robustness Checks

These results from Table 2 remain consistent in a range of alternative specifications (see Tables A1, A2, A3, and A4, as well as Figure A1). These robustness checks include (i) controlling for contemporaneous *FARC* attacks against the government and government attacks against the *FARC*; (ii) employing negative binomial and Poisson regressions; (iii) expanding the 4-7pm rain window; (iv) using an alternative rain measure at the local level, collected from the *Institute of Hydrology, Meteorology and Environmental Studies* (*IDEAM*); (v) calculating robust standard errors or clustering at the municipality (as opposed to the municipality-year) level; (vi) incorporating the lagged dependent variable to account for short-term demobilization dynamics; (vii) dropping one game at a time to ensure individual games are not driving our estimates; and

$(viii)$ predicting a binary outcome variable of *any* demobilizations (i.e., exploring the extensive, rather than the intensive, margin).

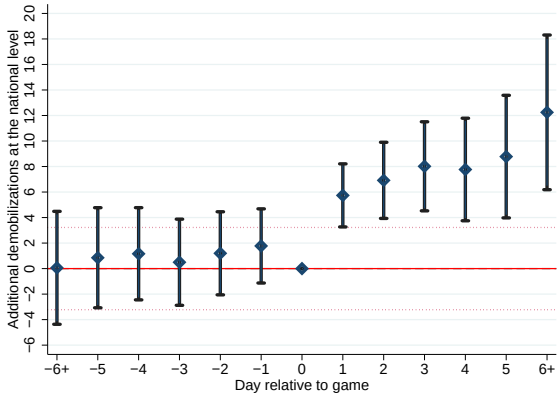
5.3 Timing of Effects and Event Studies

Next, we explore the timing of potential effects. Demobilizations could fluctuate around game days for various reasons, e.g., rebels could use some pre-game developments to demobilize. In addition, potential game day and message 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 more than a day to safely reach the nearest government building.

Figure 2*(a)* visualizes coefficients of the respective interaction terms from an event study specification akin to the format of column (2) in Table 2. In our case, the treatment constitutes a game during the messaging period, suggesting treatment effects that are homogeneous and simultaneous (since all municipalities are treated on the same day).[12] Consequently, we implement a two-way fixed effects approach that allows for a clear interpretation of temporal dynamics (Carreto et al., 2024; Freyaldenhoven et al., 2024). Figure 2*(a)* shows well-identified null coefficients before a game during the campaign periods, suggesting no anticipatory demobilization effects. On the day after, however, we record a significant jump. Since the subsequent coefficients of $t + 2$, $t + 3$, and so on, capture *cumulative* effects (i.e., taking into account the full post-event period), as is common in the respective event-study literature (Schmidheiny and Siegloch, 2023; Carreto et al., 2024; Freyaldenhoven et al., 2024), Figure 2*(a)* firmly suggests the vast majority of post-game demobilizations occur on the first day after a game that features messages.

[12]Recently developed event study methods aimed at addressing *hetero*geneity in treatment timing, such as those developed by Callaway and Sant'Anna (2021) or De Chaisemartin and d'Haultfoeuille (2024), are not appropriate in our setting because our treatment is simultaneous (i.e., it affects all municipalities at the same time), and, a priori, there is no reason to suspect heterogeneity in treatment intensity.

(a) Event study assuming cumulative post-treatment effects



(b) Event study assuming non-cumulative post-treatment effects

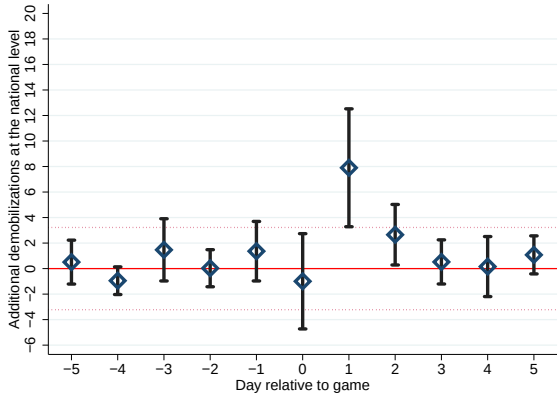


Figure 2: In *(a)*, pre-, as well as post-event coefficients are cumulative, i.e., $t+2$ indicates the cumulative number of demobilizations for $t+1$ and $t+2$, for example. In *(b)*, coefficients are non-cumulative, i.e., they only identify effects on the corresponding day. The full set of fixed effects and control variables is included in both specifications (see equation 1), and two-sided 99% 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).

Figure 2*(b)* presents estimates from a more traditional event study approach, as per equation (1) of Carreto et al. (2024), reporting individual post-event coefficients that are *not* cumulative.[13] Column (1) of Appendix Table A1 reports the corresponding estimates. Formally, we estimate:

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

The results indeed suggest demobilizations spike notably on the day after game days during the campaign period (coefficient of 0.007 that translates to 7.9 demobilizations at the national level; $p < 0.001$). On the second day, we still observe a statistically significant increase but its

[13] Selecting additional or fewer days before $t = -5$ and after $t = 5$ does not change the qualitative conclusions derived from these specifications. As per equation (2) of Carreto et al. (2024), Figure 2*(a)* also calculates cumulative effects for *pre*-event effects. Thus, the corresponding pre-event coefficients differ between Figure 2*(a)* and 2*(b)*. In addition, by construction, Figure 2*(a)* incorporates days $t-6$ and earlier, as well as $t+6$ and thereafter, while Figure 2*(b)* does not, further explaining minor quantitative differences in pre-event coefficients between the two figures.

magnitude decreases by two thirds (coefficient of 0.0024 that translates to 2.7 demobilizations at the national level; $p = 0.004$). After that, from $t + 3$ onwards, estimates return to statistical and quantitative insignificance. Before game days, coefficient sizes also remain well below one fifth of the magnitude reached by the $t + 1$ estimate, with largely irrelevant levels of statistical significance. In sum, potential effects last for up to two days, but the first day after a game is of primary importance. How and why this effect operates are the topics to which we now turn.

5.4 Mechanism Component I: Family- vs. National-Unity-Themed Campaigns

Our main results imply the messaging campaign, overall, was 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) with 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 timeline of post-game-day demobilizations after each of the 176 games. The two red vertical lines delineate the pre-campaign period (left), the family-themed campaign period (middle), and the national-unity-themed campaign period (right). Although of a descriptive nature, and ignoring control variables, Figure 3 implies the main post-game-day demobilization surges occurred when family-themed messages were played.

To test this more rigorously, Figure 4 visualizes results from two regressions, focusing on the campaign periods. The left graph plots coefficients when incorporating binary indicators for a game at $t - 1$ and the corresponding interaction term of that game occurring in the family-

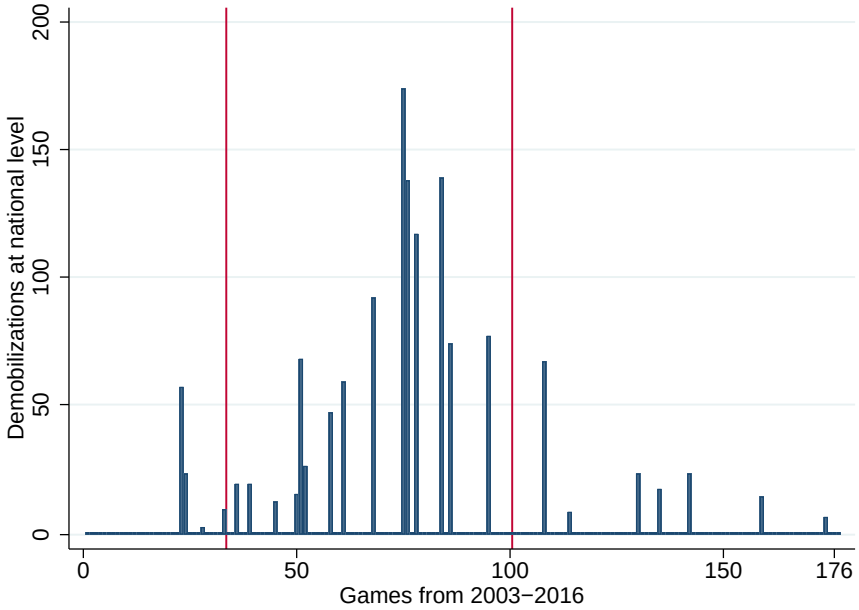


Figure 3: Timeline of post-game-day demobilizations for all 176 games. The red vertical line on the left identifies the shift from the no-message period to the family-themed message period. The red vertical line on the right marks the change from the family- to the national-unity-themed message period.

themed campaign period. The results suggest demobilizations *only* spiked after games featuring family-themed messages, inducing nine additional guerrillas to lay down 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.

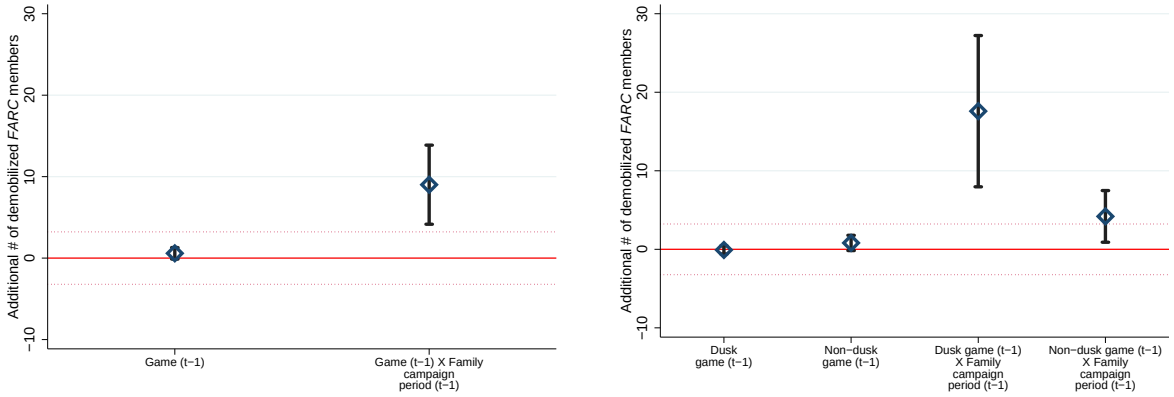


Figure 4: Results from OLS regressions, predicting *FARC* demobilizations in municipality i on day t, first in general (*left graph*) and then delineating dusk from non-dusk games (*right graph*). The full set of fixed effects and control variables is included (see equation 1), and two-sided 99% confidence 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.

These results are buttressed when delineating dusk from non-dusk games in the right graph of Figure 4. 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 and non-dusk) during the national-unity-themed campaign period.

Thus, explanations emphasizing the informational content of the messages appear less plausible. Rather, the differing narratives portrayed by demobilization messages may be able to explain these patterns. Specifically, these results are consistent with the idea that priming a rebel with their alternative family identity (but not with a message advancing national unity)

can elicit demobilization.

5.5 Mechanism Component II: Game Results and Expectations

Figure 2 highlights how additional 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 explore this transitory nature of findings by first examining game results and then delineating (un)expected wins and losses. The top graph of Figure 5 visualizes estimates from the following regression, again focusing on the time period of the two messaging periods:

$$\begin{aligned} Demob_{i,t} = \beta_1(Win_{t-1}) + \beta_2(Loss_{t-1}) \\ + \beta_3(Win_{t-1} \times Family-themed\,campaign_{t-1}) \\ + \beta_4(Loss_{t-1} \times Family-themed\,campaign_{t-1}) + \boldsymbol{X_{i,t-1}} + \epsilon_{i,t}. \end{aligned} \tag{5}$$

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 ($\boldsymbol{X_{i,t}}$). Without considering any confounders, demobilizations on the day after losses during the family campaign period average 23 – far higher than the average day (3.25) or days after losses during the national-unity-themed campaign period (0.29). Days after wins average 6.4 demobilizations when family-themed messages aired and 2.6 demobilizations when national-unity-themed messages aired.

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

The bottom graph of Figure 5 introduces pre-match expectations of game outcomes by ac-

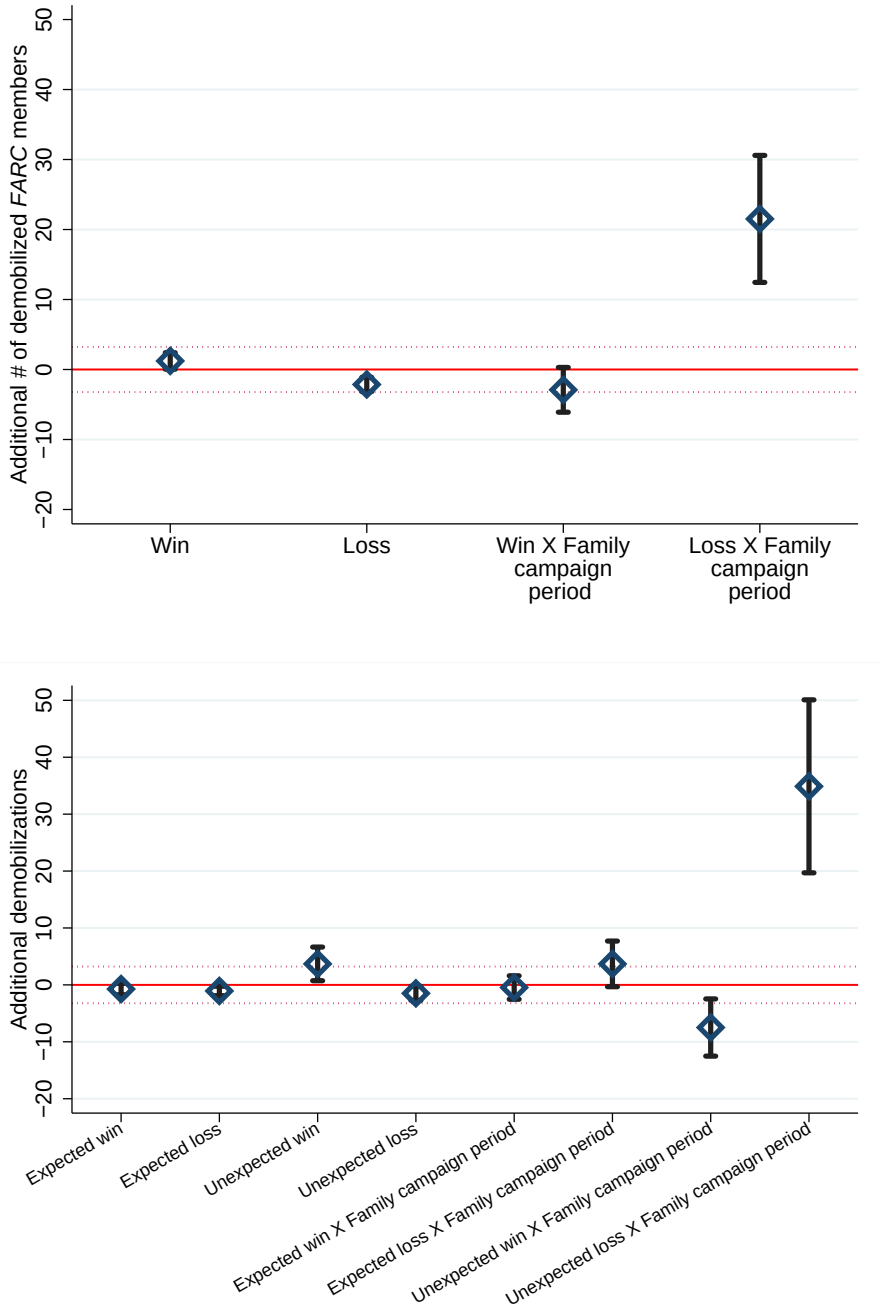


Figure 5: Results from OLS regressions, predicting *FARC* demobilizations in municipality i on day t by game outcome of day $t-1$ (*top graph*) and by game outcome relative to expectations of day $t-1$ (*bottom graph*). The full set of fixed effects and control variables is included (see equation 1) and two-sided 99% 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.

cessing betting data and, where such betting data are unavailable, contemporaneous *FIFA* rankings (OddsPortal.com, 2021; FIFA, 2022). We code a game as an (un)expected loss if betting odds to lose are more (less) favorable than the odds to win, and *Los Cafeteros* end up losing. When betting data are unavailable, we alternatively code an (un)expected loss as a loss in which the Colombian team was ranked worse (better) than their opponent on the contemporaneous *FIFA* rankings. Expected and unexpected wins 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 overall occurred on the first day after unexpected losses with 139, 138, 117, 77, and 47 demobilizations nation-wide. Incorporating the associated interaction terms in our familiar regression format, the bottom graph of Figure 5 illustrates how virtually 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.

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 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 necessarily forewent as a member of the *FARC* (Rodríguez López et al., 2015; Wessells, 2016; Kaplan and Nussio, 2018; González and Clémence, 2019; Gluecker et al., 2022). Social identity theory suggests 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.

The second component of our theoretical framework derives from the power of negative emotional cues, such as unexpected losses of the national football team. We therefore 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

contact with their family members (Ministerio de Defensa Nacional, 2012, 2013; La Campana, 2015). Staying yields utility:

$$U_{stay} = I_{rebel}, \tag{6}$$

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:

$$U_{leave} = \beta_t I_{family} - L, \tag{7}$$

where β_t denotes the value the rebel currently (on day t) attaches to living their family identity I_{family} (with $\beta \geq 0$). We assume β_t to be distributed normally with mean $\overline{\beta}$ and variance σ^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, and extended family. Put differently, I_{family} captures *what* family life would be like, while β_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

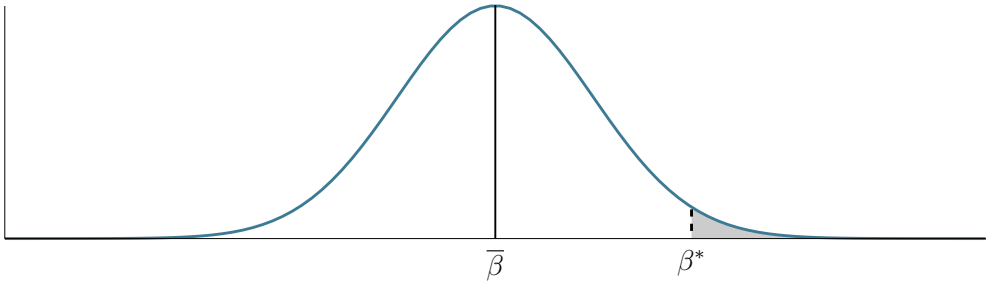
On a given day t, nature draws β from the suggested distribution with mean $\overline{\beta}$ and variance σ^2. The rebel leaves the group if $U_{leave} > U_{stay}$, which, following equations (6) and (7), holds if:

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

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

Figure 6(a) plots the distribution of β with its associated cutoff β^*. If β_t falls to the right of β^*, the rebel demobilizes. If β_t falls to the left of β^*, they do not. Note that Figure 6(a) assumes $\beta^* > \overline{\beta}$ to capture rebel groups that enjoy sustained group membership. If $\beta^* < \overline{\beta}$, then group members would demobilize frequently, and the group would not be sustainable.

(a) Baseline distribution of β



(b) Sad emotional state

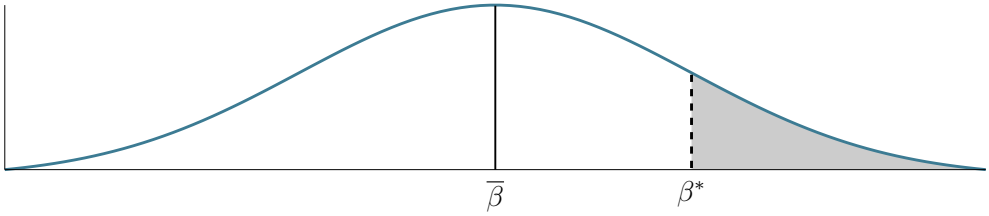


Figure 6: Distribution of β under regular conditions (*top graph*) and in an emotional state of sadness (*bottom graph*). The gray-shaded area to the right of β^* captures the decision to demobilize.

6.4 Theory Component I: Intergroup Comparison

What influences the realization of β? We first consider how making a rebel's alternative identity salient could affect Figure 6(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 on day t (π_t) shifts the realization of β_t to the right ($\frac{\partial \beta_t}{\partial \pi_t} > 0$). 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. As Petty and Briñol (2008, p. 141) write "People 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 time 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).

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 an individual acting on impulse to take extreme actions – in our case, risking their life 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 β distribution, shifting Figure 6(a) to Figure 6(b). This elevated readiness to reconsider one's primary identity is reflected by a flatter β distribution and fatter tails, while leaving $\overline{\beta}$ unchanged. As a consequence, any random draw from the β distribution in Figure 6(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 well-grounded theoretical foundation to the empirical results we observe in Figure 5. It is consistent with the stark, and immediate, 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 general hypothesis that should, if valid, apply to other combinations of priming a rebel with their family identity during emotional states of sadness. We now turn to one such example.

7 Family Holidays, Unusually Cold Days, and Demobilizations

7.1 Family Holidays as a Primer of Family Identity

Testing *Proposition 1* requires (i) an objective, measurable primer of a rebel's family identity and (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 Colombian holidays are marked by significant increases in family-specific terminology (as captured by the family dictionary of the *L*anguage *I*nquiry and *W*ord *C*ount 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 A6, 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 7).

7.2 Unusually Cold Days as a Proxy for Sadness

Next, to proxy sadness, we build on scholarship that firmly connects local temperature anomalies to people's emotional states. 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.

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 sample period. This provides baseline temperature expectations for each municipality and month. For example, we derive one measure for the *Envigado* municipality in January, another for *Envigado* in February, 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).

It is important to test whether this measure of *unusual cold* indeed predicts sadness among the Colombian populace. To explore this assumption, we access detailed data on *Google* searches for the topic *Depression* for every Colombian department from 2004-2016.[14] This strategy produces monthly data for 26 of the 33 Colombian departments (the remaining seven do not show sufficient search frequencies for the *Depression* topic; Table A7 reports summary statistics). We then calculate the average share of unusually cold days in the municipalities pertaining to each department and month. If a larger frequency of unusually cold days indeed yields higher levels of sadness and depression, we may be able to detect a correlation between these department-month-level measures of depression and unusually cold temperatures.

Table 3 presents the respective estimates, where columns (1) and (2) use our baseline measure of unusually cold days (based on municipality-month-specific means), while columns (3)

[14]Data on *Google* searches first become available in 2004 via *Google Trends*. A range of recent studies have used *Google Trends* to track societal attitudes and emotions across space and time (Stephens-Davidowitz, 2014; Djourelova and Durante, 2022; Jetter and Molina, 2022).

and (4) turn to our alternative measure (based on municipality-*week-of-year*-specific means). In columns (1) and (3), we account for department- and year-fixed effects, while columns (2) and (4) also control for month-fixed effects. Throughout, we observe positive, statistically significant coefficients, which suggests depression-related online searches indeed spike substantially when local temperatures become unusually cold. These results suggest sadness indeed spikes among Colombians when temperatures are unusually cold.

Table 3: Results from OLS regressions, predicting the frequency of depression-related *Google* searches at the department-month level with the share of unusually cold days in the same department and month.

Dependent variable: Frequency index for depression-specific Google searches (mean=4.47)				
	(1)	(2)	(3)	(4)
Share of unusually cold weather days	4.147**	4.054**		
	(1.181)	(1.133)		
Share of unusually cold weather days (alternative calculation)			3.824**	3.735**
			(1.171)	(1.129)
Fixed effects I[a]	✓	✓	✓	✓
Fixed effects II[b]		✓		✓
N	3,978	3,978	3,978	3,978

Notes: Standard errors clustered at the department level are displayed in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. [a]Includes fixed effects at the department and year level. [b]Includes fixed effects at the month level.

7.3 Empirical Strategy: Family Holidays and Unusually Cold Days

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

$$\begin{aligned} Demob_{i,t} = \beta_1(Family\ holiday)_{t-1} + \beta_2(Unusually\ cold\ day)_{i,t-1} \\ + \beta_3(Family\ holiday_{t-1} \times Unusually\ cold\ day_{i,t-1}) + \boldsymbol{X_{i,t-1}} + \epsilon_{i,t}. \end{aligned} \tag{9}$$

From *Proposition 1*, we would expect a positive and statistically significant coefficient β_3. Importantly, this specification provides municipality-day-level variation across the 1,122 Colombian municipalities. Thus, time-specific national developments are unable to explain the coefficient β_3.

As our first 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. For our second placebo exercise, we turn to the second core element of equation (9) and code unusually *hot* temperatures, following a methodology analogous to that detailed in Section 7.2 above.[15] If *Proposition 1* is of substance, we should not expect statistically or quantitatively significant coefficients of the interaction terms in these specifications.

7.4 Empirical Findings: Family Holidays and Unusually Cold Days

Figure 7 visualizes estimates from six specifications. First, we employ our benchmark measures of family holidays and unusually cold days, with the results displayed in Figure 7*(a)*. The results indicate a positive, statistically significant, and quantitatively sizeable coefficient of the interaction term, suggesting 7 additional demobilizations in a municipality that experienced an unusually cold day on a family holiday the day before ($p = 0.002$).

Figure 7*(b)* shows this result prevails when employing the alternative definition of an unusually cold day (using municipality-*week-of-year*-specific means; $p = 0.009$). Notably, both graphs illustrate that 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 di-

[15] Indeed, studying depression-related *Google* searches at the department-month level, we find no statistically or quantitatively significant relationship with the share of unusually *hot* days (see Table A8; p-values ranging from 0.346 to 0.542).

minished demobilization numbers, although the corresponding magnitude remains negligible (with 0.6 and 0.7 fewer demobilizations).

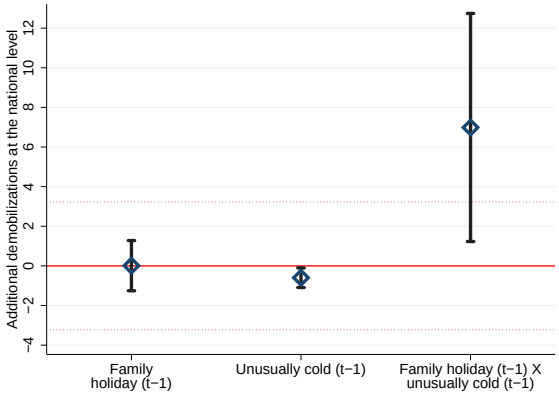
Figures 7*(c)* and 7*(d)* re-estimate both specifications when also coding Father's Day and Palm Sunday as family holidays, i.e., those holidays for which we find modest statistical evidence of rising family terminology in *El Tiempo* (see Table A6). Again, we identify powerful spikes for the interaction term, now implying 3.8-4.3 additional demobilizations ($p = 0.004$ and $p = 0.015$, respectively). As in the top graphs, the magnitudes of the interaction terms dwarf those of the individual variables.

7.5 Empirical Findings: Placebo Specifications

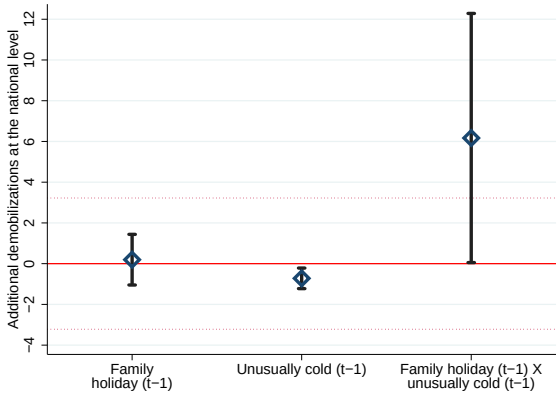
Figures 7*(e)* and 7*(f)* present estimates from two placebo specifications in which we interact *non*-family holidays with unusually cold days in municipality i. For those, we should not observe uncommon demobilization patterns, as a specific family primer remains absent. Indeed, we identify precisely estimated and quantitatively negligible null relationships for the respective interaction terms when employing either definition of unusually cold days ($p = 0.153$ and $p = 0.361$, respectively).

Finally, we conduct placebo specifications when modifying the second component of these specifications pertaining to local temperature anomalies. Specifically, we code unusually *hot* days, following a methodology analogous to identifying unusually cold days. Notably, we are not aware of any theoretical or empirical evidence that links unusually hot temperatures with sadness. As expected, we find no statistically or quantitatively meaningful coefficients for the corresponding interaction terms when re-estimating all graphs from Figure 7 in that case (see Figure A2).

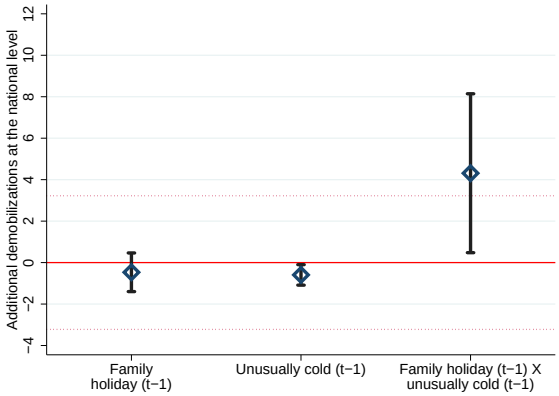
(a) Family holidays and unusually cold weather



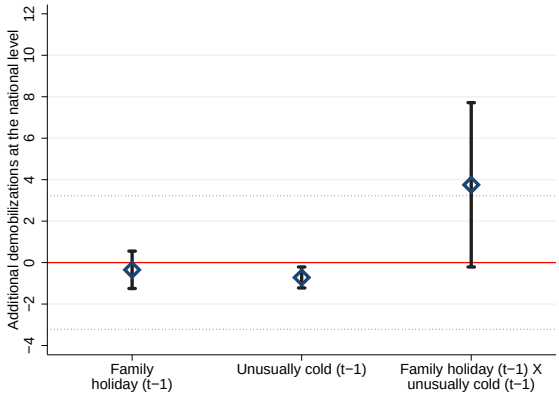
(b) Family holidays and unusually cold weather (alternative)



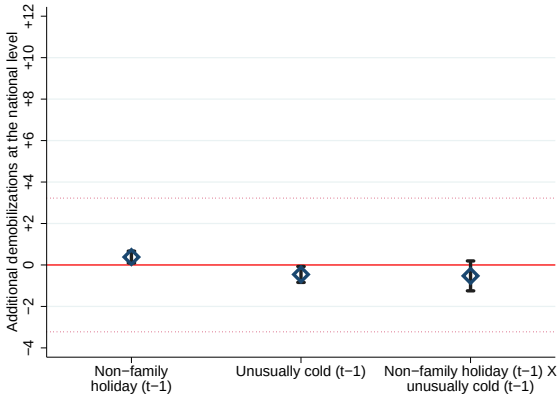
(c) Family holidays (alternative) and unusually cold weather



(d) Family holidays (alternative) and unusually cold weather (alternative)



(e) Non-family holidays and unusually cold weather



(f) Non-family holidays and unusually cold weather (alternative)

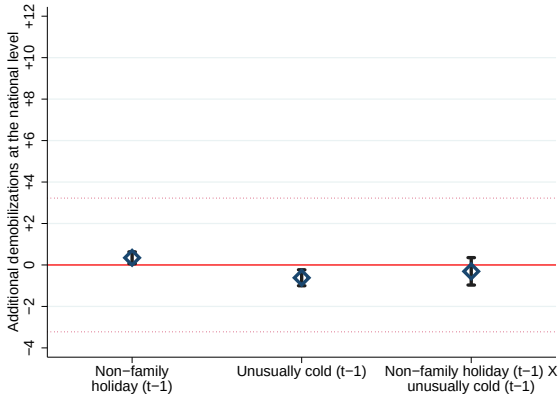


Figure 7: Results from OLS regressions, predicting *FARC* demobilizations in municipality i on day t. The full set of fixed effects and control variables is included (see equation 1) and two-sided 99% confidence intervals are displayed. The y-axis is scaled to capture demobilizations at the national level. The dotted horizontal lines denote the overall average number of demobilizations as a reference.

8 Conclusion

Can insurgents be returned peacefully to civil society and, if so, how? This paper first presents empirical evidence suggesting 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 messaging campaign period), (ii) the quasi-exogenous within-day scheduling of game times, and (iii) local rain conditions. All results produce large and statistically significant estimates.

To explore mechanisms, we first distinguish the family- from the national-unity-themed message campaign. Our analyses show only family-themed messages were followed by substantial spikes in demobilizations. Further, demobilizations increased significantly following *unexpected losses* of the national team but not after wins, whether expected or not. Overall, the combination of (i) family-themed messages (ii) aired during unexpected losses explains virtually the entirety of our findings.

These empirical patterns motivate our introduction of a simple theoretical framework, combining social identity theory with the emotional state during which a demobilization message finds a rebel. The model predicts the chance of demobilization to rise 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.

Moving beyond demobilization messages aired during football games, we then test these predictions by combining occurrences of family holidays (e.g., Mother's Day) with exceptionally cold local temperatures (as a proxy for sadness). Consistent with our theoretical proposition, we 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 or unusually *hot* days produce estimates that remain statistically indistinguishable from zero and irrelevant in magnitude.

While our results imply targeted messaging campaigns can constitute an effective counter-insurgency strategy, the true value of any such campaign can nevertheless be measured in human lives. Each demobilized rebel represents not only one fewer adversary on the battlefield but also a reintegrated member of society. Our results therefore accord with 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 a salient alternative identity (ii) during an emotional state of sadness that, we hope, can provide a constructive starting point to explore settings beyond the *FARC*, such as ideologically motivated terror or rebel groups, cults, or other extremist organizations.

References

Akerlof, G. A. and Kranton, R. E. (2000). Economics and Identity. *The Quarterly Journal of Economics*, 115(3):715–753.

Aparicio, J. P. and Jetter, M. (2022). Captivating news: Media attention and FARC kidnappings. *Journal of Economic Behavior & Organization*, 202:69–81.

Arjona, A. (2014). Wartime institutions: A research agenda. *Journal of Conflict Resolution*, 58(8):1360–1389.

Armand, A., Atwell, P., and Gomes, J. F. (2020). The reach of radio: Ending civil conflict through rebel demobilization. *American Economic Review*, 110(5):1395–1429.

ARN (2018). Una oportunidad lo cambia todo anuario 2018. (Accessed: November 7, 2020).

ARN (2019). Agencia para la reincorporación y la normalización glosario. (Accessed: November 7, 2020).

ARN (2020). Historico de personas desmovilizadas. (Accessed: November 7, 2020).

ARN (2021). Preguntas frecuentes. (Accessed: October 28, 2021).

Barceló, J. and Baron, M. V. (2024). Political responsiveness to conflict victims: Evidence from a countrywide audit experiment in Colombia. *American Political Science Review*, 118(1):21–37.

Baumeister, R. F. and Heatherton, T. F. (1996). Self-regulation failure: An overview. *Psychological Inquiry*, 7(1):1–15.

Bernheim, B. D. and Rangel, A. (2004). Addiction and cue-triggered decision processes. *American Economic Review*, 94(5):1558–1590.

Blair, R. A., Moscoso-Rojas, M., Castillo, A. V., and Weintraub, M. (2022). Preventing rebel resurgence after civil war: A field experiment in security and justice provision in rural Colombia. *American Political Science Review*, 116(4):1258–1277.

Bonnet Tello, N. M. (2020). La publicidad que redujo al enemigo: las campañas de desmovilización individual en los gobiernos Uribe (2006-2010) y Santos (2010-2014). (Bachelor's thesis, Universidad Javeriana).

Callaway, B. and Sant'Anna, P. H. (2021). Difference-in-differences with multiple time periods. *Journal of Econometrics*, 225(2):200–230.

Caracol Radio (2015). Gobierno suspendió campañas de desmovilización. (Accessed: November 7, 2020).

Card, D. and Dahl, G. B. (2011). Family violence and football: The effect of unexpected emotional cues on violent behavior. *The Quarterly Journal of Economics*, 126(1):103–143.

Carreto, C., Freyaldenhoven, S., Hansen, C., Perez, J. P., and Shapiro, J. (2024). *xtevent*: estimation and visualization in the linear panel event-study design. *The Stata Journal (forthcoming)*.

Centro Nacional de Memoria Histórica (2020). 262.197 muertos dejó el conflicto armado.

Cohn, A., Fehr, E., and Maréchal, M. A. (2014). Business culture and dishonesty in the banking industry. *Nature*, 516(7529):86–89.

Cohn, A., Maréchal, M. A., and Noll, T. (2015). Bad boys: How criminal identity salience affects rule violation. *The Review of Economic Studies*, 82(4):1289–1308.

Congreso de Colombia (2002). Ley 782. *Diario Oficial*, (No. 45.043).

Congreso Visible (2022). Por la cual se decreta el Pres... | Proyectos de Ley. (Accessed: November 29, 2022).

Corona, L. (2017). El publicista que ayudó a desmovilizar a las FARC. (Accessed: November 7, 2020).

Crane, R. (1975). Attenuation due to rain. A mini-review. *IEEE Transactions on Antennas and Propagation*, 23(5):750–752.

Cunningham, M. R. (1979). Weather, mood, and helping behavior: Quasi experiments with the sunshine samaritan. *Journal of Personality and Social Psychology*, 37(11):1947.

Dal Bó, E., Dal Bó, P., and Di Tella, R. (2006). "Plata o Plomo?": Bribe and Punishment in a Theory of Political Influence. *The American Political Science Review*, 100(1):41.

De Chaisemartin, C. and d'Haultfoeuille, X. (2024). Difference-in-differences estimators of intertemporal treatment effects. *Review of Economics and Statistics*, pages 1–45.

DellaVigna, S. and Gentzkow, M. (2010). Persuasion: empirical evidence. *Annu. Rev. Econ.*, 2(1):643–669.

Depetris-Chauvin, E., Durante, R., and Campante, F. (2020). Building nations through shared experiences: Evidence from African football. *American Economic Review*, 110(5):1572–1602.

Dinero (2018). Las estaciones de radio que más están escuchando los colombianos.

Dixon, P. (2009). 'Hearts and minds'? British counter-insurgency from Malaya to Iraq. *Journal of Strategic Studies*, 32(3):353–381.

Djourelova, M. and Durante, R. (2022). Media attention and strategic timing in politics: Evidence from US presidential executive orders. *American Journal of Political Science*, 66(4):813–834.

Dube, O. and Vargas, J. F. (2013). Commodity Price Shocks and Civil Conflict: Evidence from Colombia. *The Review of Economic Studies*, 80(4):1384–1421.

El Comercio (2014). La exitosa campaña para desmovilizar guerrilleros en Colombia. (Accessed: November 7, 2020).

El Tiempo (2003a). Sí ha habido contactos con sector de FARC. (Accessed: July 15, 2020).

El Tiempo (2003b). Gobierno insiste en contactos con FARC. Section: archivo. (Accessed: July 15, 2020).

El Tiempo (2018). Exguerrilleros de las Farc vivieron el primer partido de Colombia. (Accessed: September 26, 2023).

FARC-EP (2004). Reafirmamos nuestra disposición para pactar el Canje de prisioneros. (Accessed: July 15, 2020).

Fattal, A. L. (2018). *Guerrilla Marketing: Counterinsurgency and Capitalism in Colombia*. University of Chicago Press. Google-Books-ID: fuF0DwAAQBAJ.

Fergusson, L., Querubin, P., Ruiz, N. A., and Vargas, J. F. (2020). The Real Winner's Curse. *American Journal of Political Science*.

Fergusson, L., Robinson, J. A., Torvik, R., and Vargas, J. F. (2016). The Need for Enemies. *The Economic Journal*, 126(593):1018–1054.

FIFA (2013). Regulations Governing International Matches. (Accessed: November 7, 2020).

FIFA (2019). The FIFA Calendar. (Accessed: November 7, 2020).

FIFA (2022). Men's Ranking. (Accessed: November 29, 2022).

Freyaldenhoven, S., Hansen, C. B., Pérez Pérez, J., Shapiro, J. M., and Carreto, C. (2024). Policy effect estimation and visualization in linear panel event-study designs: Introducing the xtevent package. Technical report, Working Papers.

Gallo, C. (2019). The art of persuasion hasn't changed in 2000 years. *Harvard Business Review*.

Gilbert, D. (2022). The logic of kidnapping in civil war: Evidence from Colombia. *American Political Science Review*, 116(4):1226–1241.

Gluecker, A., Correa-Chica, A., and López-López, W. (2022). The FARC in Colombia: Collective reintegration and social identity transformation. *Political Psychology*, 43(2):359–374.

González, O. C. and Clémence, A. (2019). Concealing former identity to be accepted after the demobilization process in Colombia: A real reintegration in a post conflict scenario? *Journal of Social and Political Psychology*, 7(2):941–958.

Guven, C. and Hoxha, I. (2015). Rain or shine: Happiness and risk-taking. *The Quarterly Review of Economics and Finance*, 57:1–10.

Hafez, M. M. (2020). Fratricidal rebels: Ideological extremity and warring factionalism in civil wars. *Terrorism and Political Violence*, 32(3):604–629.

Hirshleifer, D. and Shumway, T. (2003). Good day sunshine: Stock returns and the weather. *The Journal of Finance*, 58(3):1009–1032.

Hogg, M. A. (2016). Social identity theory. In *Understanding peace and conflict through social identity theory*, pages 3–17. Springer.

Hogg, M. A., Abrams, D., and Brewer, M. B. (2017). Social identity: The role of self in group processes and intergroup relations. *Group Processes & Intergroup Relations*, 20(5):570–581.

Ippolito, L. J. (1981). Radio propagation for space communications systems. *Proceedings of the IEEE*, 69(6):697–727.

Ishimaru, A., Woo, R., Armstrong, J. W., and Blackman, D. C. (1982). Multiple scattering calculations of rain effects. *Radio Science*, 17(6):1425–1433.

Jetter, M. and Molina, T. (2022). Persuasive agenda-setting: Rodrigo Duterte's inauguration speech and drugs in the Philippines. *Journal of Development Economics*, 156:102843.

Kaplan, O. and Nussio, E. (2018). Community counts: The social reintegration of ex-combatants in Colombia. *Conflict Management and Peace Science*, 35(2):132–153.

Keller, M. C., Fredrickson, B. L., Ybarra, O., Côté, S., Johnson, K., Mikels, J., Conway, A., and Wager, T. (2005). A warm heart and a clear head: The contingent effects of weather on mood and cognition. *Psychological Science*, 16(9):724–731.

La Campana (2015). Tres desmovilizados de la guerrilla en el Cauca narran su dura historia.

LA FM Noticias (2016). Así es el día de un guerrillero. (Accessed: November 7, 2020).

La Haine (2003). "El objetivo de la lucha revolucionaria de las Farc-Ep es conquistar el poder político para gobernar a Colombia con el pueblo, para beneficio de sus intereses de clase". (Accessed: October 28, 2021).

Laibson, D. (2001). A cue-theory of consumption. *The Quarterly Journal of Economics*, 116(1):81–119.

Lerner, J. S., Li, Y., Valdesolo, P., and Kassam, K. S. (2015). Emotion and decision making. *Annual Review of Psychology*, 66(1).

Lin, S. H. (1973). Statistical Behavior of Rain Attenuation. *Bell System Technical Journal*, 52(4):557–581.

Loewenstein, G. (1996). Out of control: Visceral influences on behavior. *Organizational Behavior and Human Decision Processes*, 65(3):272–292.

Loewenstein, G. (2000). Emotions in economic theory and economic behavior. *American Economic Review*, 90(2):426–432.

Lowe SSP3 (2014). Creativity in the pursuit of peace. (Internal document, not publicly available).

Marquart, F. and Naderer, B. (2016). Communication and persuasion: Central and peripheral routes to attitude change. In *Schlüsselwerke der Medienwirkungsforschung*, pages 231–242. Springer.

McLauchlin, T. (2015). Desertion and Collective Action in Civil Wars. *International Studies Quarterly*, pages n/a–n/a.

Metcalfe, J. and Mischel, W. (1999). A hot/cool-system analysis of delay of gratification: dynamics of willpower. *Psychological Review*, 106(1):3.

Ministerio de Defensa Nacional (2012). Voces en la selva. (Accessed: November 29, 2022).

Ministerio de Defensa Nacional (2013). Éres mi hijo. (Accessed: November 29, 2022).

NASA (2020). The Tropical Rainfall Measuring Mission (TRMM). (Accessed: November 7, 2020).

NASA (2022). MERRA-2 statD˙2d˙slv˙Nx: 2d,Daily,Aggregated Statistics,Single-Level,Assimilation,Single-Level Diagnostics V5.12.4. (Accessed: November 7, 2020).

Nussio, E. (2013). Desarme, desmovilización y reintegración de excombatientes: políticas y actores del postconflicto. *Colombia Internacional*, (77):8–16.

Nussio, E. (2018). Ex-combatants and violence in Colombia: Are yesterday's villains today's principal threat? *Third World Thematics: A TWQ Journal*, 3(1):135–152.

Nussio, E. (2020). The role of sensation seeking in violent armed group participation. *Terrorism and Political Violence*, 32(1):1–19.

OddsPortal.com (2021). OddsPortal.com.

Oppenheim, B. and Söderström, J. (2018). Citizens by Design? Explaining Ex-Combatant Satisfaction with Reintegration Programming. *The Journal of Development Studies*, 54(1):133–152.

Oppenheim, B., Steele, A., Vargas, J. F., and Weintraub, M. (2015). True believers, deserters, and traitors: Who leaves insurgent groups and why. *Journal of Conflict Resolution*, 59(5):794–823.

Pennebaker, J. W., Boyd, R. L., Jordan, K., and Blackburn, K. (2015). The development and psychometric properties of LIWC2015. Technical report, The University of Texas at Austin.

Petty, R. E. and Briñol, P. (2008). Persuasion: From Single to Multiple to Metacognitive Processes. *Perspectives on Psychological Science*, 3(2):137–147.

Petty, R. E. and Cacioppo, J. T. (1986). The elaboration likelihood model of persuasion. In *Communication and Persuasion*, pages 1–24. Springer.

Petty, R. E., Fabrigar, L. R., and Wegener, D. T. (2003). Emotional factors in attitudes and persuasion. *Series in Affective Science. Handbook of Affective Sciences*.

Qingling, Z. and Li, J. (2006). Rain Attenuation in Millimeter Wave Ranges. In *2006 7th International Symposium on Antennas, Propagation EM Theory*, pages 1–4.

Rating Colombia (2020). Records de Sintonía En La Televisión Colombiana. (Accessed: November 7, 2020).

Richards, J. (2018). Troop Retention in Civil Wars: Desertion, Denunciation, and Military Organization in the Democratic Republic of Congo. *Journal of Global Security Studies*, 3(1):38–55.

Rodríguez López, M., Andreouli, E., and Howarth, C. (2015). From ex-combatants to citizens: Connecting everyday citizenship and social reintegration in Colombia. *Journal of Social and Political Psychology*, 3(2):171–191.

Rosenau, W., Espach, R., Ortiz, R. D., and Herrera, N. (2014). Why they join, why they fight, and why they leave: Learning from Colombia's database of demobilized militants. *Terrorism and Political Violence*, 26(2):277–285.

Samper, F. (2017). El marketing para terminar guerras. (Accessed: November 7, 2020).

Sanders, J. L. and Brizzolara, M. S. (1982). Relationships between weather and mood. *The Journal of General Psychology*, 107(1):155–156.

Schmidheiny, K. and Siegloch, S. (2023). On event studies and distributed-lags in two-way fixed effects models: Identification, equivalence, and generalization. *Journal of Applied Econometrics*, 38(5):695–713.

Schwarz, N., Bless, H., and Bohner, G. (1991). Mood and persuasion: Affective states influence the processing of persuasive communications. In *Advances in experimental social psychology*, volume 24, pages 161–199. Elsevier.

SECOP II (2020). ¿Qué es el SECOP II? (Accessed: November 7, 2020).

Sokoloff, J. M. (2014). How we used Christmas lights to fight a war. (Accessed: November 7, 2020).

Stephens-Davidowitz, S. (2014). The cost of racial animus on a black candidate: Evidence using Google search data. *Journal of Public Economics*, 118:26–40.

Tajfel, H. and Turner, J. C. (2004). The social identity theory of intergroup behavior. In *Political Psychology*, pages 276–293. Psychology Press.

Tajfel, H. and Turner, J. C. (2010). *An integrative theory of intergroup conflict*. Rediscovering social identity. Psychology Press, New York, NY, US.

Tausczik, Y. R. and Pennebaker, J. W. (2010). The psychological meaning of words: LIWC and computerized text analysis methods. *Journal of Language and Social Psychology*, 29(1):24–54.

Tewari, R. K., Swarup, S., and Roy, M. N. (1990). Radio wave propagation through rain forests of India. *IEEE Transactions on Antennas and Propagation*, 38(4):433–449.

Tiedens, L. Z. and Linton, S. (2001). Judgment under emotional certainty and uncertainty: The effects of specific emotions on information processing. *Journal of Personality and Social Psychology*, 81(6):973.

timeanddate.com (2022). Holidays and Observances in Colombia. (Accessed: November 29, 2022).

Turner, J. C., Hogg, M. A., Oakes, P. J., Reicher, S. D., and Wetherell, M. S. (1987). *Rediscovering the social group: A self-categorization theory.* Basil Blackwell.

Vásquez-Cortés, M. (2025). Peer effects and recidivism: wartime connections and criminality among Colombian ex-combatants. *American Political Science Review*, 119(2):637–652.

Watson, P. J. (2022). Football and Nation Building in Colombia (2010-2018): The Only Thing That Unites Us.

Wessells, M. G. (2016). Reintegration of child soldiers: The role of social identity in the recruitment and reintegration of child soldiers. In *Understanding Peace and Conflict through Social Identity Theory*, pages 105–120. Springer.

Online Appendix A: Additional Empirical Results

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

Dependent variable: Demobilized FARC rebels$_{i,t}$ (mean=0.0028)

Time period:	Full (2003-2016)					Campaign periods (2005-2016)				
Estimation method:	(1) (OLS)	(2) (OLS)	(3) (Poisson) [NBREG]	(4) (OLS)	(5) (Poisson) [NBREG]	(6) (OLS)	(7) (NBREG)	(8) (Poisson)	(9) (OLS)	(10)[c] (OLS)
Game$_{t+5}$ × Campaign period$_{t+5}$	0.0005 (0.0006)									
Game$_{t+4}$ × Campaign period$_{t+4}$	-0.0008 (0.0004)*									
Game$_{t+3}$ × Campaign period$_{t+3}$	0.0013 (0.0008)									
Game$_{t+2}$ × Campaign period$_{t+2}$	0.0000 (0.0005)									
Game$_{t+1}$ × Campaign period$_{t+1}$	0.0012 (0.0008)									
Game$_{t}$ × Campaign period$_{t}$	-0.0009 (0.0013)									
Game$_{t-1}$ × Campaign period$_{t-1}$	0.0070 (0.0016)***	0.0067 (0.0013)***	0.8391 (0.1167)*** [0.1796]***							
Game$_{t-2}$ × Campaign period$_{t-2}$	0.0024 (0.0008)**									
Game$_{t-3}$ × Campaign period$_{t-3}$	0.0005 (0.0006)									
Game$_{t-4}$ × Campaign period$_{t-4}$	0.0001 (0.0008)									
Game$_{t-5}$ × Campaign period$_{t-5}$	0.0010 (0.0005)									
Dusk game$_{t-1}$ × Campaign period$_{t-1}$				0.0074 (0.0022)***	0.7504 (0.3445)*** [0.3445]*					
Dusk game$_{t-1}$ × Dusk rain$_{i,t-1}$						-0.0015 (0.0004)***	-0.3975 (0.1543)*	-0.4555 (0.1803)*		
Game (kickoff 4-5.40pm)$_{t-1}$ × Rain (4-7pm)$_{i,t-1}$									-0.0016 (0.0004)***	
Game (kickoff 7-8.40pm)$_{t-1}$ × Rain (7-10pm)$_{i,t-1}$										-0.0009 (0.0004)*
Fixed effects[a]	✓	✓		✓		✓			✓	✓
Additional control variables[b]		✓		✓		✓				
N	5,622,342	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. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. [a]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). [b]Includes two variables measuring *FARC* and government attacks on day $t-1$. [c]Employs alternative rain data from the Institute of Hydrology, Meteorology and Environmental Studies (*Instituto de Hidrología, Meteorología y Estudios Ambientales*; *IDEAM*).

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

Dependent variable: Demobilized FARC rebels$_{i,t}$ (mean=0.0028)						
Sample:	Full (2003-2016)				Campaign period (2005-2016)	
	(1)	(2)	(3)	(4)	(5)	(6)
Game$_{t-1}$ × Campaign period$_{t-1}$	0.0045 (0.0008)*** [0.0010]***	0.0067 (0.0009)*** [0.0015]***				
Dusk game$_{t-1}$ × Campaign period$_{t-1}$			0.0068 (0.0018)*** [0.0016]***	0.0074 (0.0017)*** [0.0017]***		
Dusk game$_{t-1}$ × Dusk rain$_{i,t-1}$					-0.0019 (0.0004)*** [0.0005]***	-0.0015 (0.0004)*** [0.0004]***
Game$_{t-1}$	0.0003 (0.0006) [0.0002]	-0.0023 (0.0007)** [0.0006]***				
Campaign period$_{t-1}$	0.0007 (0.0001)*** [0.0003]*		0.0007 (0.0001)*** [0.0003]*			
Non-dusk game $_{t-1}$ × Campaign period$_{t-1}$			0.0032 (0.0008)*** [0.0008]***	0.0058 (0.0009)*** [0.0015]***		
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]***
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]***
Non-dusk game$_{t-1}$ × Dusk rain$_{i,t-1}$					-0.0002 (0.0003) [0.0002]	-0.0002 (0.0003) [0.0003]
Dusk rain$_{i,t-1}$					0.0000 (0.0000) [0.0001]	0.0001 (0.0000)* [0.0001]
Fixed effects[a]		✓		✓		✓
N	5,629,074	5,629,074	5,629,074	5,629,074	4,799,200	4,799,200

Notes: Robust standard errors are displayed in parentheses, while standard errors clustered at the municipality level are displayed in brackets. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. [a]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: Results from OLS regressions, predicting *FARC* demobilizations in municipality i on day t and including the lagged dependent variable.

Dependent variable: Demobilized FARC rebels$_{i,t}$ (mean=0.0028)						
Time period:	Full (2003-2016)				Campaign periods (2005-2016)	
	(1)	(2)	(3)	(4)	(5)	(6)
Game$_{t-1}$ × Campaign$_{t-1}$	0.0045***	0.0061***				
	(0.0010)	(0.0013)				
Dusk game$_{t-1}$ × Campaign$_{t-1}$			0.0068**	0.0065**		
			(0.0025)	(0.0022)		
Dusk game$_{t-1}$ × Dusk rain$_{i,t-1}$					-0.0019***	-0.0015***
					(0.0004)	(0.0004)
Demobilized *FARC* rebels$_{i,t-1}$	0.0023*	-0.1685***	0.0023*	-0.1685***	0.0013*	-0.1652***
	(0.0011)	(0.0100)	(0.0011)	(0.0100)	(0.0005)	(0.0110)
Game$_{t-1}$	0.0003	-0.0020				
	(0.0006)	(0.0010)				
Campaign$_{t-1}$	0.0007		0.0007			
	(0.0006)		(0.0006)			
Non-dusk game $_{t-1}$ × Campaign$_{t-1}$			0.0032***	0.0053***		
			(0.0007)	(0.0013)		
Dusk game$_{t-1}$			0.0020	0.0019	0.0094***	0.0088***
			(0.0014)	(0.0012)	(0.0022)	(0.0019)
Non-dusk game$_{t-1}$			-0.0001	-0.0030*	0.0032***	0.0022***
			(0.0005)	(0.0012)	(0.0005)	(0.0005)
Non-dusk game$_{t-1}$ × Dusk rain$_{i,t-1}$					-0.0002	-0.0002
					(0.0003)	(0.0003)
Dusk rain$_{i,t-1}$					0.0000	0.0001*
					(0.0000)	(0.0000)
Fixed effects[a]		✓		✓		✓
N	5,629,074	5,629,074	5,629,074	5,629,074	4,799,200	4,799,200

Notes: Standard errors clustered at the municipality-year level are displayed in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. [a]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 A4: Results from OLS regressions, predicting whether any *FARC* demobilizations occurred in municipality i on day t.

Dependent variable: Demobilized FARC rebels$_{i,t}$ (mean=0.0028)						
Time period:	Full (2003-2016)				Campaign periods (2005-2016)	
	(1)	(2)	(3)	(4)	(5)	(6)
Game$_{t-1}$ × Campaign$_{t-1}$	0.0024***	0.0036***				
	(0.0003)	(0.0013)				
Dusk game$_{t-1}$ × Campaign$_{t-1}$			0.0022**	0.0025***		
			(0.0007)	(0.0007)		
Dusk game$_{t-1}$ × Dusk rain$_{i,t-1}$					-0.0009***	-0.0007***
					(0.0002)	(0.0002)
Game$_{t-1}$	0.0002	-0.0014***				
	(0.0002)	(0.0003)				
Campaign$_{t-1}$	0.0005***		0.0005***			
	(0.0001)		(0.0001)			
Non-dusk game $_{t-1}$ × Campaign$_{t-1}$			-0.0002	-0.0021***		
			(0.0002)	(0.0003)		
Dusk game$_{t-1}$			0.0015*	0.0010	0.0040***	0.0036***
			(0.0006)	(0.0006)	(0.0004)	(0.0004)
Non-dusk game$_{t-1}$			-0.0002	-0.0021***	0.0022***	0.0016***
			(0.0002)	(0.0003)	(0.0002)	(0.0002)
Non-dusk game$_{t-1}$ × Dusk rain$_{i,t-1}$					-0.0003*	-0.0003*
					(0.0001)	(0.0001)
Dusk rain$_{i,t-1}$					0.0000	0.0001**
					(0.0000)	(0.0000)
Fixed effects[a]		✓		✓		✓
N	5,629,074	5,629,074	5,629,074	5,629,074	4,799,200	4,799,200

Notes: Standard errors clustered at the municipality-year level are displayed in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. [a]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 A5: 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[a]	Description
Expected win$_t$	0.0140 (0.1173)	0 (1)	OddsPortal.com (2021) & FIFA (2022)	$= 1$ if Colombian team wins as expected
Expected loss$_t$	0.0078 (0.0878)	0 (1)	OddsPortal.com (2021) & FIFA (2022)	$= 1$ if Colombian team loses as expected
Unexpected win$_t$	0.0068 (0.082)	0 (1)	OddsPortal.com (2021) & FIFA (2022)	$= 1$ if Colombian team wins unexpectedly
Unexpected loss$_t$	0.0052 (0.0718)	0 (1)	OddsPortal.com (2021) & FIFA (2022)	$= 1$ if Colombian team loses unexpectedly
Family holiday$_t$	0.0110 (0.1041)	0 (1)	timeanddate.com (2022)	$= 1$ if family holiday (see Section 7 and Table A6)
Non-family holiday$_t$	0.0991 (0.2987)	0 (1)	timeanddate.com (2022)	$= 1$ if non-family holiday (see Section 7 and Table A6)
Unusually cold day$_{i,t}$	0.1533 (0.3603)	0 (1)	NASA (2022)	$= 1$ if minimum temperature more than one standard deviation below municipality-month-specific sample mean
Unusually cold day$_{i,t}$ (alternative calculation)	0.1558 (0.3627)	0 (1)	NASA (2022)	$= 1$ if minimum temperature more than one standard deviation below municipality-week-of-year-specific sample mean
Unusually hot day$_{i,t}$	0.1621 (0.3685)	0 (1)	NASA (2022)	$= 1$ if maximum temperature more than one standard deviation above municipality-month-specific sample mean
Unusually hot day$_{i,t}$ (alternative calculation)	0.1613 (0.3678)	0 (1)	NASA (2022)	$= 1$ if maximum temperature more than one standard deviation above municipality-week-of-year-specific sample mean
# of government attacks on *FARC*$_{i,t}$	0.0005 (0.0226)	0 (3)	*CNMH*	# of military clashes between the Colombian state and the *FARC*, allegedly initiated by the government
# of *FARC* attacks on government$_{i,t}$	0.0005 (0.0240)	0 (3)	*CNMH*	# of military clashes between the Colombian state and the *FARC*, allegedly initiated by the *FARC*
Rain$_{i,t}$ (7-10pm) ($n = 5,619,034$)	0.357 (1.1212)	0 (46)	*NASA*	Average rain rate (mm/h) in a municipality between 7pm and 10pm
Rain$_{i,t}$ (alternative source; $n = 4,035,363$)	5.6966 (12.0082)	0 (586)	*IDEAM*	Total daily precipitation in a municipality (mm)

Notes:[a] *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 A6: Results from regressing the *LIWC* familiy dictionary score in all *El Tiempo* news articles published on day t on binary indicators for holidays.

Dependent variable:	*LIWC* family terminology in *El Tiempo* 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)
N	8,655

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

Table A7: Additional summary statistics for data from *Google Trends* and the share of unusually cold days at the department-month level from 2004-2016. The data include information for 26 of the 33 departments – the remaining 7 departments do not feature sufficient numbers of *Google* searches to produce data ($n = 3,978$).

Variable	Mean (Std. Dev.)	Min. (Max.)	Source[a]	Description
Depression-related search index	4.469 (9.147)	0 (100)	*Google Trends*	
Share of unusually cold days	0.154 (0.106)	0 (0.691)	NASA (2022)	See Table A5; averaging the share of unusually cold days in all municipalities within a department
Share of unusually cold days (alternative calculation)	0.156 (0.109)	0 (0.727)	NASA (2022)	See Table A5; averaging the share of unusually cold days in all municipalities within a department
Share of unusually hot days	0.161 (0.170)	0 (0.994)	NASA (2022)	See Table A5; averaging the share of unusually hot days in all municipalities within a department
Share of unusually hot days (alternative calculation)	0.159 (0.173)	0 (1)	NASA (2022)	See Table A5; averaging the share of unusually hot days in all municipalities within a department

Table A8: Results from OLS regressions, predicting the frequency of *Google* searches at the department-month level with the share of unusually hot days in the same department and month.

Dependent variable: Google search frequency index (mean=4.47)				
	(1)	(2)	(3)	(4)
Share of unusually hot weather days	0.667	0.496		
	(0.808)	(0.801)		
Share of unusually hot weather days (alternative calculation)			0.753	0.564
			(0.784)	(0.782)
Fixed effects I[a]	✓	✓	✓	✓
Fixed effects II[b]		✓		✓
N	3,978	3,978	3,978	3,978

Notes: Standard errors clustered at the department level are displayed in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. [a]Includes fixed effects at the department and year level. [b]Includes fixed effects at the month level.

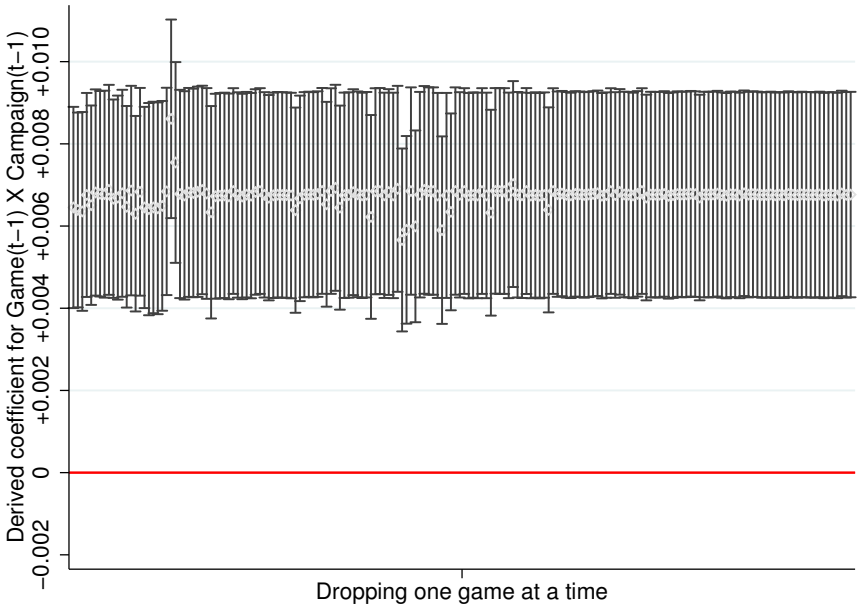
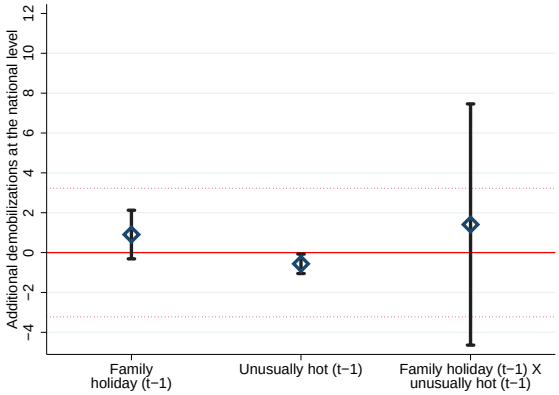
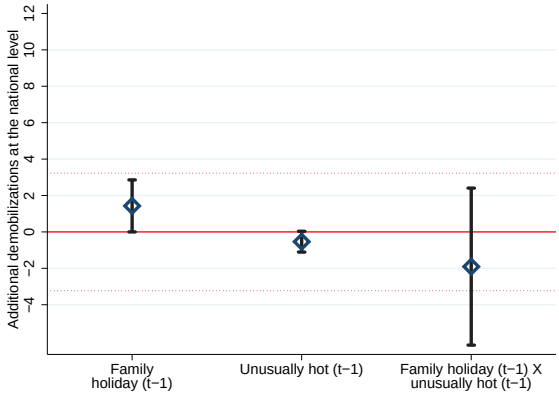


Figure A1: Re-estimating the main specification of column (2) in Table 2 but dropping one of the 176 games at a time.

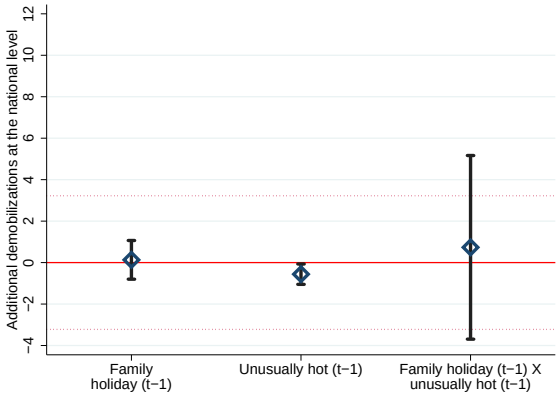
(a) Family holidays and unusually hot weather



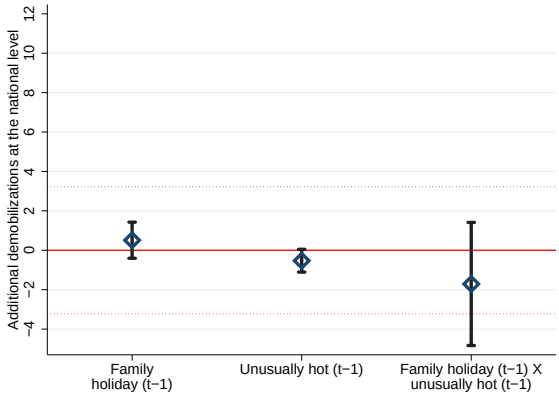
(b) Family holidays and unusually hot weather (alternative)



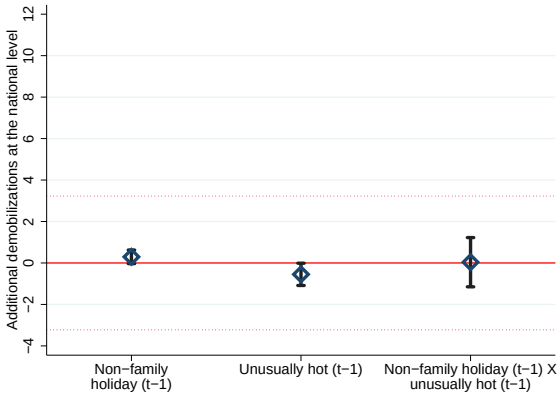
(c) Family holidays (alternative) and unusually hot weather



(d) Family holidays (alternative) and unusually hot weather (alternative)



(e) Non-family holidays and unusually hot weather



(f) Non-family holidays and unusually hot weather (alternative)

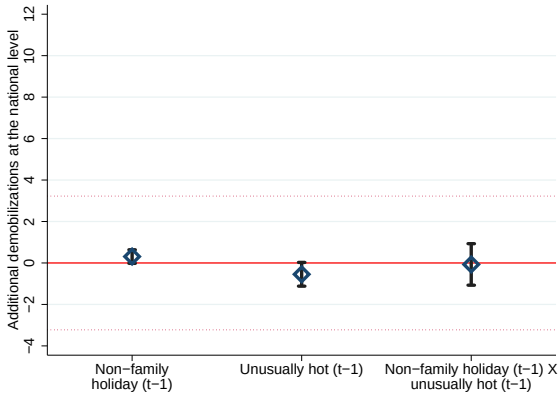


Figure A2: *Placebo*: Results from OLS regressions, predicting *FARC* demobilizations in municipality i on day t. The full set of fixed effects and control variables is included (see equation 1) and two-sided 95% confidence intervals are displayed. The y-axis is scaled to capture demobilizations at the national level. The dotted horizontal lines denote the overall average number of demobilizations as a reference.

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 deberia 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).

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

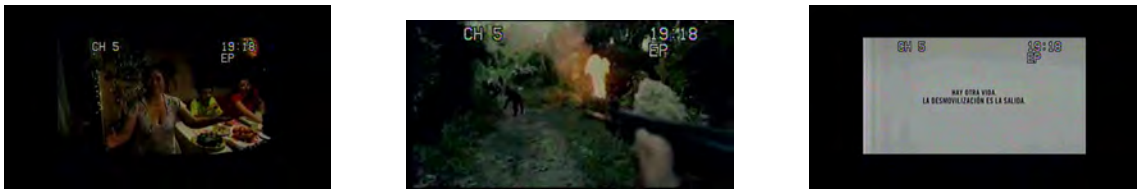


Figure B1: Frames from a message aired during the family-themed campaign period. The corresponding message states: "I'll go. I'll stay in the guerrilla. I'll go. I'm staying. I'm going. I'll stay in the guerrilla. In the decision lies your freedom, there is another life: Demobilization is the way out!"

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*.

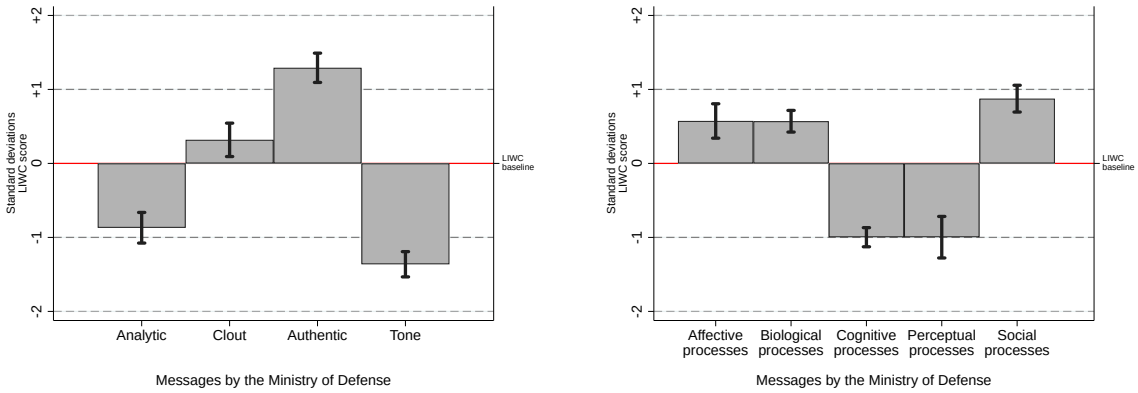


Figure B2: Results from *LIWC* sentiment analysis of all messages aired on television in the family-themed campaign period during games of the national team. Two-sided 95% confidence intervals are displayed.

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.

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.

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

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."