Overview

Drug trafficking organizations existed in Mexico long before President Nixon’s declaration of the “War on Drugs” in Congress in 1971. In fact, they appeared in Mexico as early as the 1930s after the Partido Revolucionario Institucional (PRI) took power. However, Mexican cartels did not gain prominence until the late 1980s and early 1990s, in response to American drug policy in Central America.1 Around the same time that the Reagan Administration passed various anti-drug laws in the 1980s, the United States began providing Colombia with military support and training to eliminate the main source of illicit drug production in the hemisphere. As a result, drug production and transportation moved from Colombia to Mexico during the 1990s.

In the twenty-first century, the United States and Mexico have continued working together in a variety of ways to reverse the rising levels of cultivation, production and trade of illegal substances as well as the violence associated with this illegal market. Under the visage of national (and regional) security, President Felipe Calderón (2006-2012) began to deploy tens of thousands of troops across the country upon entering office.2 He sent some 4,000 troops to his home state of Michoacán ten days after assuming office in December 2006 in response to the increase in drug-related violence in the state and the perception that cartels posed a serious national security threat to the Mexican pueblo.3

Using this la mano dura (iron fist) approach against the network of cartels, President Calderón and the Mexican military targeted four primary groups: the Gulf Cartel, the Juárez Cartel, the Sinaloa Cartel, and the Tijuana Cartel.4 In 2008 the U.S. government, motivated by Mexico’s strong position against these organizations, entered into a security cooperation agreement known as the Mérida Initiative, in which Mexico received federal aid from the U.S. to train soldiers against drug trafficking organizations, access U.S. intelligence capabilities, and eventually provide educational assistance and other programs to rectify Mexico’s broken judicial system.5 The Mérida Initiative was largely a military partnership; the $116.5 million in military assistance accounted for nearly 30% of the funding allowed for the first year ($400 million).6

Our research employs a network analysis approach to analyze levels of criminal violence in Mexico from 2005 to 2013—the year before President Calderón became president, and the year after he left office. In addition to revealing trends in violence as it relates to the criminal conflict, our findings test the effectiveness of Calderón’s military strategy and the Mérida Initiative. Our results confirm other analyses that suggest Calderón’s deployment of 10,000 soldiers and nationwide employment of federal police did not eliminate the four primary cartels, but instead caused them to fracture into more volatile organizations, increasing competition between armed groups and elevating violence against civilians. There are more cartels now than there were in 2006, and the number of homicides doubled between the end of President Vicente Fox’s term in office (2000-2006) and that of President Calderón’s (2006-2012).7

Our research confirms other findings that a militarized approach led to increased intensity and complexity of violence in the Mexican criminal conflict.
Methodology

Our study leverages machine-coded reports to construct a network of armed actors, including drug trafficking organizations (DTOs), that represents the ebb and flow of violence during the Mexican Criminal Conflict. This network enables us to not only map the evolution of the conflict, but to assess the ways in which different policies have influenced the rise and fall of violence between DTOs over time. Our research identifies actor-coded conflictual event data that occurred in Mexico from 2005-2013. A “conflictual” event is any violent event, such as an assault, kidnapping, or shooting involving two or more actors. This analysis accounts for which actors—government groups such as the military or Special Forces and DTOs—were involved in each conflictual event. To code these events and actors, we analyzed the Integrated Crisis Early Warning System (ICEWS) data and, when possible, expanded on the original data using newspaper articles, magazines and other open source documents (further coding information and definitions can be found in the materials for the ICEWS data and CAMEO ontology).

Network analysis is an important tool for capturing the way in which social actors interact over time. In political science, network analysis has now been utilized to study a diverse range of topics: trade, intergovernmental disputes, internal conflict, and political behavior. To understand the rise and fall of internal conflicts and global crises, such as the Mexican Criminal Conflict, it is useful to utilize a research design that captures the interactions between actors, rather than ignore these interactions by relying on standard approaches such as static count data. Rich, complex network data is often beyond the scope of social scientists’ resources. However, combining new efforts in machine learning with the structural insights gained through network approaches could move research beyond the barriers of these limitations. Our current project utilizes a combination of machine-coded and human-coded data to map the networked evolution of violence in the Mexican Criminal Conflict.

The quality of data on the Mexican criminal conflict remains mixed and suffers from underreporting. It is now evident that there have been several key actors in this conflict over the years, including the Gulf Cartel, Juárez Cartel, La Familia Michoacana, Los Zetas, Sinaloa Cartel, and the Tijuana Cartel. However, because Mexican drug cartels are often in conflict with one another and infiltrated by government officials, it is often difficult to attribute responsibility for homicides or other violent events to one cartel or actor versus another. Although the noisiness of this data might seem daunting, it presents an opportunity for researchers to explore how they may improve data and knowledge about violent situations in contexts where it is often dangerous to do the costly on-the-ground “legwork” that is generally necessary to accrue such information.

At present, the majority of data on violence in Mexico is based primarily on homicide rates. Homicide data is produced from four main sources: Mexico’s National Institute of Statistics and Geography (INEGI), the National System of Public Security (SNSP), the Mexican Federal Government, and La Reforma, a prominent newspaper in Mexico. La Reforma’s methodology in maintaining drug-related homicide data is not transparent. It is not known, for example, how the newspaper decides whether a homicide is drug-related or not. Mexico’s INEGI has data based on death certificates, which include the manner of death (such as bullet wound). This data set, however, is unable to attribute which homicides are linked to crime and which are unrelated. The National System of Public Security also has crime data based on local prosecutor reports, but its reliability is questionable due to the mixed incentives for governments to accurately report information. Finally, the federal government has released data known as the “Database of Alleged Homicides Related to Organized Crime.” This database has information on executions and violence against authorities. Altogether, these data present several difficulties. First, they are not updated in real-time. To better understand the heterogeneous evolution of civil conflict, researchers need to be able to describe conflict dynamics as they unfold. A further, major criticism is that these data do not further our understanding about who is directly or indirectly responsible for these crimes. Rather than rely on these data, therefore, we utilized the Integrated Crisis Early Warning System (ICEWS) actor-coded event data.

The ICEWS event data is part of a larger project designed to operate as a crisis warning system for policymakers. This database has enabled policymakers and researchers to forecast conflictual events around the world.
machine-coded event data are gleaned from natural language processing of a continuously updated harvest of news stories, primarily taken from Factiva, an open source archive of news stories from over 200 sources around the world. The baseline event coder is called JABARI, a java variant of TABARI (Text Analysis By Augmented Replacement Instructions), which has been developed by Philip Schrodt and colleagues. This approach combines a “shallow parsing” technology of prior coding efforts with a richer exploitation of syntactic structure.

The algorithms create each data point by obtaining three components of the news story: the sender of the event (i.e., who initiated the action), the receiver or target of this action, and then the event type itself. We subset this data according to relevant “violent” events, including any events which included armed actors such as rebels, insurgents, government, and the police. In sum, these events capture any type of violent conflict between different actors. The event type itself is coded according to the Conflict and Mediation Event Observation (CAMEO) ontology. The main distinguishing feature of CAMEO is its use of mediation related event codes. CAMEO does not assume that a meeting is a peaceful interaction, for example, but is able to decipher whether meetings between actors are related to mediation or negotiation. CAMEO also includes four categories for violence (structural violence, unconventional violence, conventional force, and massive unconventional force) as well as a system of sub-categories.

To leverage the ICEWS data for analysis on the Mexican Criminal Conflict, we created a subset from the larger global corpus to assess only data from Mexico from 2005 - 2013. We then analyzed the violent events from this data to create a new event database on the Mexican case. Using the ICEWS data as our starting point, we then read through each case to trace the event back to the original stories. We first located other stories that corroborate the event to assess whether the event was a duplicate and remove it if necessary. We also created new actor dictionaries; drawing on preexisting data on DTO operation areas to label which events involved which DTO actors. The result is an event database of roughly 1,000 actor-coded events from 2005-2013. Overall, our data underreport the number of cartel-related conflictual events.

**Analytic Insights from New Event Data & Network Analysis (2005-2013)**

Our analysis confirms similar findings of existing data collection efforts: which DTOs were most prevalent at a given time, the emergence and disintegration of DTOs, the role of the Mexican military, and the negative consequences of the ‘War on Drugs’ on the lives of Mexican civilians.

When President Felipe Calderón took office in 2006, he pledged to crackdown on organized violence within Mexico’s borders. He deployed the Mexican Armed Forces to combat cartel influence and violence. However, this campaign quickly backfired as homicide rates rose, cartels became more violent and, in some cases, even fractured to form smaller DTOs. Figure 1 illustrates the beginning of this backfire with rise in violence between 2006 and 2007,

![Figure 1](image-url)
and shows an almost 50% rise in violent events for the following year. Though our data is focused on capturing violent events, events that may or may not result in a loss of life, it echoes similar trends found in data on homicide rates and civilians deaths. During this time period, the homicide rate jumped from 300 reported murders in 2007 to 1,068 murders in 2008, then eventually rising to 3,111 reported murders in 2011.

This overall rise in violence can be directly tied to the heightened military presence across the country. As military outfits began policing cities and targeting DTO leaders, DTOs responded by retaliating with even more severe violence or by competing against one another in order to assume stronger control over communities and resources. Flannery (2013) states that Calderón’s military deployment was the direct cause of the Sinaloa Cartel moving into Juárez Cartel territory in order to take what business the Juárez Cartel had left, thus explaining a portion of the rise in crime between 2007 and 2008. In sum, the two DTOs engaged in a turf war while also attempting to defend themselves against the military.

Furthermore, our analysis reveals the ways in which the Mexican government’s response to drug trafficking organizations increased the complexity and intensity of the conflict. This is evident in the fact that new cartels formed as the Mexican military’s eradication campaign grew across the country. Also, it is important to note that alongside the rise in violence, our data also capture the downfall of a specific cartel: the Beltran Leyva Cartel. Police officers killed the head of the organization, Arturo Beltran Leyva, in December 2009, which led to the end of brutal violence led by that group in 2011. However, former members of the Beltran Leyva Cartel soon found new life under another name, the South Pacific Cartel.

While the number of conflictual incidents involving the military rose, the same cannot be said for the three branches of the Mexican police, whose conflict incident counts remained rather low. Our data suggests that the military may have assumed many of the duties that police officers would normally undertake during this time period, such as patrolling neighborhoods and investigating crimes. Lee (2014) supports these findings, stating that Calderón essentially gave full authority and responsibility to the military to attack cartels, leaving federal, state, and local police forces powerless and uninvolved.

Policy Implications

Our research confirms other findings that a militarized approach led to increased intensity and complexity of violence in the Mexican Criminal Conflict. Military takeover of local, state and federal law enforcement was not an effective policy to rid the country of DTO violence. Calderón’s strategy was a failure in that it placed all the resources against the cartels in the hands of the military rather than addressing civilian needs, such as local institutions that fostered justice and security. Even though Calderón implemented social and development programs such those promoted under his Todos Somos Juárez (“We Are All Juárez”) initiative, his continued use of the military to combat DTOs led to more instability in Mexico. In light of this, we find that it is necessary for policymakers to shift away from a militarized solution to a civil-society building approach that focuses on building social programs across the country to provide safe spaces for citizens to thrive within their local communities.

In place of a military approach, we recommend three main actionable policy recommendations to help curb future criminal violence in Mexico, increase human security, and guide the United States into a more effective position as a Mexican ally.
**Community Engagement.** Our research demonstrates a solely military approach makes regions more prone to violence, not less. Yet programs that focus on community awareness, education, and social inclusion prepare citizens against extortion by DTOs. For example, intermittently through his massive military campaign, President Calderón implemented Todos Somos Juárez, which included social and education reforms that some researchers attribute to Juárez’s seventy percent decrease in homicides. President Peña Nieto elected to continue community-level investment and reform by enacting Plan Michoacán in February 2014. If Ciudad Juárez – a city that had 3,111 reported murders in the 2011– can successfully implement a program that utilizes development strategy to curb homicides, then there might be opportunities for similar successes in other cities that suffer from high levels of violence, such as Acapulco, Guerrero, Michoacán, and Morelia.

**Transparent Institutions.** Strong, transparent judicial systems hold both judges and defendants accountable for systemic impunity. At present, the judicial system in Mexico is opaque and corrupt. Compared to open-door procedures across much of the developing world, parts of the Mexican judicial branch continue to operate under the pretense of closed-door trials, written arguments and long pre-detention times. Judges and other members of the judicial system are routinely threatened or paid off by DTOs. President Calderón began an initiative to reform the judicial system in 2008 in conjunction with the Mérida Initiative, but not all states have accepted reforms that include a public trial system with oral arguments. Some of the most volatile states have yet to fully implement the new reforms, including Guerrero, Michoacán and Tamaulipas. As of 2015, judicial reforms have started in all but two states, yet outlying municipalities still lack the necessary changes. For example, rural parts of Michoacán and Guerrero have not begun reforming their judicial institutions while Sinaloa and Nuevo León are completely reformed; these historically contentious states require more federal level assistance in order to meet the 2016 deadline.

**Strategic Dialogue about Human Security across Borders.** Military intervention against the Mexican drug cartels between 2006-2013 negatively impacted neighboring countries’ political and economic stability. Future diplomatic discussions between the United States, Mexico and Central American countries affected by illicit drug trafficking would encourage collective strategic planning for an alternative way to mitigate the diffusion of criminal violence across regions approximate to Mexico such as El Salvador, Guatemala and Honduras. While the Mexican military eliminated smaller cartels during President Calderón’s term, much of the violence migrated across the southern border threatening human security and political and economic development for these three countries. The United States and Mexico can aid these three countries in reforming their own institutions, as they face similar constraints that Mexico has had in terms of violence and institutionalized corruption.

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**Endnotes**


7. Flannery, “Calderón’s War.”


14 For example, see Diego Valle’s work comparison of INEGI and SNSP data, available at https://blog.diegovalle.net/2010/06/statistical-analysis-and-visualization.html.

15 Flannery, “Calderon’s War.”

16 Ibid.


18 Lee, “Mexico’s Drug War.”


20 Our data findings support analysis of the relationship between an increase in military force and the rise in drug related violence in Mexico during President Calderon’s tenure. Writers and scholars that we reviewed include Luis Astorga, Cassy Dorff, Nathaniel Parrish Flannery, Brianna Lee, and Lisa Sacco.


22 Ibid, 23.

23 Flannery, “Calderon’s War.”


### About This Series

The series is produced by the Sié Chéou-Kang Center for International Security and Diplomacy, a center of excellence within the Josef Korbel School of International Studies, University of Denver, with support from the Carnegie Corporation of New York. The views expressed are those of the authors.

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