

Criminal Organizations, Informal Governance, and Violence against the Press in Mexico

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Abstract

While attacks on journalists are regular occurrences in many areas where criminal organizations operate, other areas similarly populated by criminals do not exhibit such violence. Examining violence by drug-trafficking organizations in Mexico, we develop a theory of trafficker control of information to produce hypotheses for when and where traffickers are likely to attack journalists. We test these hypotheses on micro-level data on journalist homicides and the industrial organization of illegal markets. Contrary to popular belief, our evidence reveals that the presence of large, profitable criminal organizations does not necessarily lead to violence against the press. It is only when territories are inhabited by rival criminal groups that the probability of journalists being fatally injured increases. Rivalry inhibits criminal organizations' ability to control information leaks to the press, instead creating incentives for such leaks to be used as a weapon to intensify official enforcement operations against rivals. Without the capacity to informally govern press content, criminals affected by such press coverage are more likely to target journalists.

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In many areas of the world, armed non-state actors use their capacity for violence to govern flows of information. From civil war combatants to criminal organizations, non-state actors oftentimes have incentives to influence the publicizing and passing of information on the activities of themselves and rivals. In many cases, such efforts involve the use of violence to influence coverage by the press. Despite the fact in countries like Mexico, nearly three quarters of all murders committed against journalists can be attributed to non-state actors (CPJ 2010), existing work in the social sciences tells us very little about when and why non-state actors resort to the use of violence against the press.

Despite the vital role of the press in sustaining a healthy democracy (Dahl 1998), as well as persistent violence against journalists in many developing and consolidated democracies (CPJ 2010), to our knowledge there have been no rigorous studies of the conditions under which the assassination of journalists is more likely. Most work that examines attempts by armed groups to control flows of information focuses on their desire and relative ability to prevent “defectors” from directly sharing information with enemies and/or the government. For example, scholars studying civil war typically examine combatants’ use of violence to discourage citizens from providing information to rivals (Kalyvas 2006), while criminologists tend to focus on the relative ability of criminal organizations to prevent members from becoming governmental informants (Reuter 1983). However, such work has largely ignored the ways in which armed groups may also attempt to control information reaching the public through the press.

In this article, we address this gap by building and testing a theory for when and why non-state actors resort to violence against journalists in attempts to control the information flowing from the press. We focus our study on non-state actors working within large-scale criminal organizations (COs) in Mexico.

Focusing on the industrial organization of illicit markets, we first propose a theory of the supply of information to the press, deriving testable hypotheses for when and where non-state actors are likely to use violence against journalists. Because journalists typically rely on insider informants when reporting on illicit activities, we assume that criminal organizations have the ability to control at least a portion of the information on their own illegal activities and the activities of

their peers that reaches the press. They may thus have the capacity to peacefully govern the content of press by deciding what information to leak to journalists or by bribing and/or threatening them to withhold certain information. However, this capacity to peacefully govern information is more likely to break down when rival organizations operate in a single environment. Rivalry turns information leaks into effective weapons by drawing the attention of authorities to the activities of enemies. In such contexts, because information leaks are an effective way to increase the probability of authorities cracking down on rivals, journalists are more likely to be provided with and report on information that triggers violent repercussion.

Empirically, we examine our main hypotheses using micro-level data on the industrial organization of illegal business in Mexico, along with a data on events of violence against journalists obtained from files of journalist assassinations gathered, classified, and analyzed by the Committee to Protect Journalists (CPJ). The CPJ has gathered the most extensive and reliable dataset tracking journalists who have been assassinated as a result of their journalistic activities, classifying each of these cases according to the type of actor that committed the crime. Our findings are consistent with the proposed theory; territories inhabited by criminal organizations that are in conflict have been significantly more likely to experience violence against the press.

We focus our analysis on Mexico because it is a consolidated democracy that since 2004 has been among the most dangerous countries in the world to practice journalism (CPJ 2010); despite increasing media attention to violence against journalists in the country, the patterns of such violence have eluded rigorous empirical study. By examining Mexico's criminal organizations as armed groups informally governing flows of information, we clarify not only the patterns through which Mexican criminal organizations employ violence against the press, but also their varying ability to create informal institutions to peacefully govern the information that reaches the public. In doing so, we advance our understanding of the impact of drug trafficking on the quality of democracy in Mexico as well as our general knowledge on the ways in which powerful armed actors use their authority to impact flows of information.

Overall, the evidence presented in this article challenges existing

assumptions on the relationship between potentially violent criminal organizations and the press. Contrary to popular belief, which points to the increased strength of criminal organizations as the cause of violence toward journalists, we show that violence against the press is actually more likely when criminal organizations are weak relative to competitors. Powerful criminal organizations have the ability to maintain secure control of information and thus are less likely to employ violence against journalists. In contrast, organizations that are relatively weak locally are less able to establish such institutions of information control and are thus more likely resort to violence against the press. In this context, it is troubling to note that journalists are in the most danger when they face weak criminal organizations that provide a more robust and less biased supply of information on which to report.

The rest of the article is structured as follows. First, we briefly review relevant literature on armed groups' attempts to control flows of information. Second, we provide background information on Mexico's criminal organizations, pointing to their increased ability to govern local behavior as well as their increased propensity for violence against the press. In the third section, we develop a theory to explain differences the use of violence against the press by COs in Mexico, pointing to the relationship of mutual dependence that exists between criminals and journalists to derive testable hypotheses for when journalists are more likely to be violently targeted. The fourth section then outlines the data, methods, and results of our quantitative analysis. Finally, we briefly conclude by discussing the implications of our findings an academic and policy standpoints.

Armed groups, the press, and governing information

This article fits within a broader scholarly literature that addresses the ways in which armed non-state organizations govern the dissemination of information. We define governance in terms of the exercise of authority. The authority of an organized and armed non-state actor is at least partially backed by the capacity for violence; we are specifically interested in the ways in which such groups use their authority to in-

fluence the way in which information is spread, framed, or publicized through the press.

Given the critical role of the press in the provision of public information and the shaping of public opinion (Zaller 1992, Baum 2003), a number of studies have examined attempts by organizations, armed or otherwise, to influence press coverage. Many of these studies focus on efforts by actors operating under the world's preeminent armed organization—the state. For example, some scholars focus on the ability of state actors to put pressure on members of the press to influence coverage (Schudson 2003, Whitten-Woodring and James 2012). Other studies examine the ability of the government to influence information reported by the press through its ownership media outlets or providing incentives for certain types of coverage (Djankov et al. 2003). While work in this field has examined differences in the degree of hostility toward the press under different types of political regimes (Egorov, Guriev and Sonin 2009), as well as the type of public information that is likely to be censored (King, Pan and Roberts 2013), we know much less on what drives the different methods (violent or non-violent) that are employed to influence press reporting. Additionally, this literature focuses mainly on governance of public information by actors in a dominant state apparatus, ignoring the impact of lower-level armed organizations.

Ignoring non-state armed organizations leaves a significant gap in our understanding of the ways in which actors outside the state influence flows of information through the press. Even within relatively well-functioning states, there oftentimes remain powerful groups that, without being officially part of the state, hold the capacity to systematically influence the spread of information in order to impact social behavior and government policy. For example, in the context of civil war, armed state and non-state groups have been shown to place great importance on the spread of information on their own activities to rivals and vice versa; in this context, the ability of a combatant to govern the dissemination of information is crucial in determining the violence it employs against residents (Kalyvas 2006). Additionally, terrorist organizations attempt to govern information in a manner that facilitates communication between members while avoiding the flow of information authorities (Enders and Su 2007). Similarly, armed criminal groups

oftentimes have strong incentives to prevent the dissemination of information on their activities to police, using their capacity for violent retribution as a disincentive to potential informants (Reuter 1983).

This article makes three broad contributions to our understanding of the ways in which armed non-state actors govern flows of information. First, while work on insurgents and terrorist organizations has shown the importance of media coverage to such organizations, we show that criminal organizations also have strong incentives to govern information reaching the public through the press. Second, we provide a systematic analysis of the varying methods through which armed organizations attempt to govern information disseminated through the press. While armed groups by definition have the capacity for violence, we argue that there are also costs to employing violence. We build a theory of criminal groups' governance of information through the press and derive testable hypotheses regarding when criminal organizations are more and less likely employ violence. This provides insight not only into general processes of control of information, but also contributes to better a understanding of the dynamics of violence against journalists in Mexico, a country in which practicing journalism has become increasingly dangerous.

Criminal organizations, violence, and informal governance in Mexico

Criminal organizations (COs) in Mexico have received increased attention in the international media in recent years due to massive increases in violent competition for territory and the brutal methods they oftentimes employ against enemies. While Mexican COs coexisted relatively peacefully through the 1990s, since 2006, homicides linked to COs have increased by an average of 80.47% (Molzahn, Rios and Shirk 2012). While substantial increases in violence began in the mid-2000s, the process through which COs became heavily armed can be traced to changes in Mexico's political institutions beginning in the 1990s, when COs increasingly gained incentives to arm and protect themselves rather than outsourcing protection to corrupt state institutions (Rios forthcoming,

Snyder and Duran-Martinez 2009, Corchado 2013).¹These incentives, combined with an increased profit-share from cocaine trafficking for Mexican COs at the expense of weakened Colombian organizations, led Mexican COs to develop high capacities for violence, oftentimes adding distinct armed wings to their organizational structures (Rios forthcoming).

While most academic and popular literature focusing on these increasingly well-armed Mexican COs focuses on the tendency for groups to violently confront one another, it is also clear that COs have used their increased capacity for violence to exert oftentimes massive levels of authority over behavior in the territories in which they operate. We label the use of such authority as informal governance. Such governance is typically backed by the explicit or implicit threat of violence, and is used to shape behavior by attaching a cost to particular actions (Kalyvas 2006).

The exercise of this informal governance can take many forms. In some cases, COs have been shown to act as informal police of their territories, defining behavior they deem socially acceptable, and doling out punishment to those who violate these informal rules. For example, in Michoacán, COs have been shown to pursue and punish residents who rape, steal, engage in prostitution, or become addicted to drugs (Kostelnik and Skarbek 2013). Likewise, in Veracruz, a criminal group called “Mata-zetas” is well-known for torturing and beheading rapists, extortionists, and kidnapers, leaving messages next to their bodies; for example, a note left next to the body of a man killed in the state in 2010 warned, “this happened to me because I raped a 4-year-old girl” (*Al Calor Politico* 2010).² Throughout many areas of the country, from northern states bordering the US border like Nuevo Laredo (*Soy Periodista* 2010), to southern states bordering Belize like Quintana Roo (*El Universal* 2007), COs use oftentimes extremely violent methods to informally govern local behavior.

¹These incentives can be traced to decreased levels of coordination between different levels of Mexico’s government following democratization.

²It is important to note that the blurred line that exists between punishment of socially unacceptable behavior and the pursuit of enemies competing for territory. While COs do oftentimes punish deviant behavior, they also oftentimes rationalize the killing of enemies as punishment for such transgressions *ex post*.

Additionally, COs sometimes also use positive inducements to impact local behavior through the distribution of public goods and club goods to residents of the territories in which they operate (Diaz-Cayeros et al. 2011, Kostelnik and Skarbek 2013). The informal authority of drug traffickers is so strong in some areas that 40% of middle class survey respondents reported having turned to drug traffickers for help with an issue (Diaz-Cayeros et al. 2011).

The Mexican press is not immune to attempts by COs to informally govern local behavior. Such efforts have at times resulted in violence, with journalists oftentimes facing increasingly hostile and fearsome environments. On the whole, Mexico has become the most dangerous country in the Western Hemisphere to practice journalism, with various sources reporting between 85 and 100 journalists having been killed or disappeared since 2000 (Edmonds-Poli 2013). In many recent years, journalists in Mexico have faced levels of danger comparable to countries in war like Iraq and Pakistan (CPJ 2010). In fact, in 2010 and 2011, more journalists were assassinated in Mexico than in any other country in the world, except Pakistan (CPJ 2010). While incidences of violence toward the press account for only a small fraction of the total drug-related violence in the country, the specific context of the killings and the resulting fear that they spread are particularly concerning for the prospects of democracy in Mexico, and thus warrant specific attention.

The political economy of violence against the press in Mexico

While the high level of violence against press in Mexico is alarming, it is important to note that such violence is not uniformly distributed throughout the country. Even when limiting our attention to the areas of the country in which drug traffickers operate, it is clear that the likelihood of a journalist being the victim of violence is far greater in some areas of the country than others. Despite the increased strength of COs in nearly all areas of the country with high levels of drug trafficking, not a single journalist was killed in 61% of the municipalities in which the media regularly covered drug trafficking activity over the last 10 years.

This means that in places like Nogales, Mazatlán, and Agua Prieta, where there is significant coverage of strong COs, COs refrained from violent attacks against the press. Even when just considering municipalities where COs are generally violent, some municipalities have not experienced violence toward journalists. For example, journalists have not been victims of homicide in municipalities like Santiago Amoltepec and San Jacinto Tlacotepec, despite homicide rates comparable to municipalities like Juarez and El Oro, where journalists have been more frequently victimized.

To better understand this variation, in this section we develop a theory of CO informal governance of the press. We use this theory to develop key hypotheses regarding the contexts in which journalists are likely to be victims of violence.

The press in Mexico plays a critical role in providing information about illegal activity in the country. For this reason, organized criminals have enormous incentives to attempt to informally govern the information disseminated through the press. Drug trafficking in Mexico is a multi-billion dollar-per-year industry that relies on high levels of secrecy to secure profits; these profits are thus permanently susceptible to destruction by information leaks. Individual traffickers have strong incentives to not be publically identified, as such identification increases the chances of pursuit and prosecution by the federal government. Additionally, press coverage that provides specific names, photos, and/or hints on operational details can be used by both governmental enforcement agents and rivals to disrupt the business of a given CO. For example, COs oftentimes invest vast amounts of money to bribe local officials in order to prevent pursuit by local authorities and even provide information on and protection from potential rivals; press coverage on these corrupt ties has the potential to not only attract the attention of federal authorities, but also negates the investment of cultivating the reliable allies who are crucial to continued profits (Corchado 2013).

Even coverage that does not present specific identifying information has the potential to bring unwanted federal attention to local illicit drug markets. Traffickers refer to the increase in federal attention as “heating up the plaza [drug territory],” (Moore 2011). Agents at the federal level, who must strategically decide where to deploy resources

to combat criminals, may receive increased pressure to use these resources to combat crime in the areas where the press thoroughly covers criminal activity. Press coverage of general illicit activities alerts citizens of crime in their community, which in turn puts pressure on the federal government to attempt to intervene; a “hot” territory thus creates additional obstacles to running a successful enterprise and has the potential to disrupt the flow of illicit profits (CPJ 2010).

Press coverage thus plays a critical role both in how COs are publicly perceived and what specific information on illegal activity becomes available to the public and law enforcement. Given these dynamics, it perhaps not surprising that drug traffickers are responsible for the majority of cases of violence against journalists in Mexico (Edmonds-Poli 2013). Violence is indeed a quite powerful mechanism to silence the press. It does so directly by assassinating the journalist who had access to the most information, and/or indirectly by reducing incentives for other journalists to gather information about the subject. A brief survey of cases from various areas throughout the country demonstrates the potential effectiveness of violence in influencing press coverage. For example, after the killing of a journalist in the state of Durango, local in-depth reporting on crime essentially stopped (CPJ 2010). Similarly, after the killing of one journalist, the disappearance of another, and a threat on the life of its director, in 2013 the editorial board of one of the most important newspapers in the state of Coahuila proclaimed that the paper would stop publishing information related to organized crime (*El Pais* 2011). Such examples of self-censorship in the face of violence are far from uncommon. In Ciudad Juarez, a major city across the border from El Paso, Texas, violence against the press became so pervasive that the city’s main newspaper published an editorial titled, “What do you want from us?” asking the various COs operating in the city what they expected out of a news outlet in order to avoid future violence (*El Diario de Juarez* 2010).

However, while such informal governance of the press through violence and fear may be effective in impacting the content and/or amount of press coverage, it is also likely to have costs for traffickers. One potential cost to violence against the press is that it may lead to increased federal attention and enforcement on local illicit activity. In other words, while COs may have incentives to govern the information

presented in the press in order to prevent the, “heating up of the plaza,” violence against the press itself can potentially lead to a “hotter” territory. While acts of violence against the press may make local press and residents fear pointing out the specific perpetrators, such events have the potential to receive high levels of national attention; indeed, cases of violence against journalists have oftentimes led to protests imploring the federal government to take action. However, to date, such costs have rarely materialized. NGOs and the press itself note the environment of near impunity for acts of violence against the press in Mexico, where over 90% of cases go unsolved and oftentimes uninvestigated (CPJ 2010).³

Rather than repercussions from the federal government for violence against journalists, the most acute cost to COs for violence against journalists have stemmed from opportunity costs. While killing a journalist permanently silences the particular journalist and is likely to lead her organization to self-censor and/or remain silent on issues pertaining to drug trafficking, the CO also forgoes a potentially valuable opportunity to build relationships with and use the press as a de facto mouthpiece. As further elaborated below, given the ever-present threat of competitor encroachment, maintaining this resource can be very valuable in future territorial disputes. COs are thus likely to prefer to informally govern press coverage peacefully, rather than resorting to violence.

The potential for traffickers to peacefully govern press information is buoyed by the fact that in many ways the two worlds are codependent. While traffickers are strongly impacted by press coverage, journalists obtain a good share of the information on which they report through the use of informants who have access to prime knowledge through their direct or indirect involvement in the criminal world.⁴ There are several types of such informants, from criminals inside an organization who de-

³However, as Corchado (2013) points out, traffickers are likely to clearly perceive costs related to increased enforcement in the event of violence against foreign and particularly American journalists. The case of Gilberto Ontiveros Lucero, aka *El Greñas* is well known in Mexico's criminal underworld. Lucero ruled over Juarez drug trafficking for years in the 1980s with impunity, until he tortured and killed an American photojournalist, after which the federal government quickly apprehended the kingpin (*El Pais* 1986).

⁴(Corchado 2013) provides an excellent account of the use of criminal informants in providing information directly to the press about drug traffickers strategies.

cide to leak information as a form of revenge or sabotage, to contractors of criminal organizations who want to inhibit some operations in order to increase costs or create scarcity. Thus, journalists oftentimes navigate between the legal and illegal worlds. While in some circumstances this entails journalists wittingly taking bribes to report, not report, or slant their coverage of certain events, in other cases journalists are unaware that the information provided by informants is being dictated directly by CO leadership (Balderrama 2009, CPJ 2010). Whether or not they are aware that their informants are criminals may be ethically relevant, but is ultimately irrelevant for the outcomes that such relationships represent for the illegal businesses.

Given this dynamic of codependency, the ability of a CO to peacefully govern information disseminated through the press is dependent on its ability to control informants and dictate the content of potential leaks to journalists. In circumstances in which a CO is able to do so, it restricts the market for information supplied to the press, helping to ensure that press coverage does not harm its interests. In such circumstances, Mexican COs oftentimes even utilize public relations liaisons to more explicitly dictate press coverage.⁵ For example, in the state of Tamaulipas, the Zetas organization uses an “official” spokeswoman who communicates to newspapers which stories about crime can run in the next morning’s newspapers (Corchado 2013). The Gulf Cartel even sponsors a website that relays which stories on crime it approves for press coverage (CPJ 2010). When a CO is able to control the insider information that reaches the press while clearly setting and enforcing the bounds for what it deems appropriate to report, it can forgo violence against the press, since coverage is unlikely to be detrimental to its profits or longevity.

In contrast, when a given CO is unable to control leaks to the press, the supply of information to journalists may no longer be restricted to content that innocuous to its illicit business interests. Press coverage in this context is more likely to adversely affect illicit operations, making COs more likely to resort to violence. While they may prefer peaceful governance of information over violence *ceteris paribus*, if COs are unable to control information leaks and subsequent harmful press cov-

⁵For a firsthand account of one journalist’s interactions with a cartel press liaison, see Balderrama (2009).

erage, they are more likely to resort to violence against journalists to prevent and/or discourage such coverage in the future.

We thus expect the decision to informally govern the press peacefully or through violence to be a function of the ability of COs to control the information that reaches journalists through informants. COs are more likely to opt to peacefully govern the press when they are able to control information flowing to the press or by enforcing censorship, with a mixture of threats and bribery, and more likely to resort to violence when they are unable to do so. We use this logic to develop testable hypotheses for the contexts in which journalists are most likely to be violently targeted.

Given the logic developed above, our key hypotheses posit a relationship between the local industrial organization of illicit markets and the type (violent versus peaceful) of governance employed by COs to govern information disseminated through the press. More specifically, all else equal, we expect the ability of a CO to control press leaks to be a function of illicit market coordination. By illicit market coordination, we refer specifically to the extent to which the incentives of actors operating in illegal markets in a given locality are aligned such that they cooperate toward shared goals. Coordinated illicit markets are typically characterized by high levels of organization, oftentimes under a monopolistic CO. In contrast, uncoordinated markets are inhabited by dispersed and competing actors and organizations, and are oftentimes characterized by high levels of conflict.

We expect higher levels of market coordination to lead to an increased ability to control the supply of information to the press, and thus be less likely to result in violence against journalists. In environments in which illicit markets are coordinated under a monopolistic criminal organization, COs are better able to control informants and leaks through a mixture of loyalty and fear. In such contexts, criminals within a given CO are more likely to be loyal and less likely to leak detrimental information, given the dearth of other options for operating in criminal markets. Additionally, criminals, contractors, and even normal citizens who happen to observe illegal operations will be deterred from leaking detrimental information out of increased fear of repercussions; indeed, it is quite common for Mexican criminal organizations to assassinate leakers publicly, leaving messages next to their

tortured bodies directing others not to keep sensitive information to themselves. For example, one such message in Michoacán was directed at, “those who are thinking on opening your mouths,” while in the state of Colima in 2009, a message next to corpses exclaimed that, “this happened to us for being gossipers and calling 911 [066]” (*El Heraldillo de Chihuahua* 2011). When traffickers operate in a coordinated market, they can devote fewer resources to fighting local territorial disputes, thus making their commitments to punish leakers more credible. Thus, in the context of illicit market coordination, a CO can maintain a firm grip on the information that reaches the press both from insiders and outsiders.

In contrast, in environments in which COs are in direct competition with rival organizations, they are likely to be less able to control the content that flows to the press through informants and leaks. When rival organizations operate in a local territory, disgruntled members of a given CO may leak detrimental information to the press and turn to rival COs for protection and/or employment. Additionally, rival organizations typically hold intelligence on the operations of local competitors, and can utilize the press to leverage this information as a weapon. Leaking information on the activities of a competitor through the press can trigger targeted enforcement operations against that competitor, thus debilitating it in battles to control the territory. Traffickers refer to this tactic as “burning” an enemy in the press, and believe it plays an important role in advantaging or disadvantaging COs competing to control a given territory (Balderrama 2009). Such “burning” in the press has oftentimes involved leaking information on corrupt links between a rival CO and local governing officials, thus forcing the rival to invest in new corrupt links (CPJ 2010). Competing COs may also bribe and/or threaten members of the local press into serving as an unofficial mouthpiece for a given CO, pressuring members of the press to ignore the COs’ own violence while focusing coverage on the violence perpetrated by competing COs (Balderrama 2009). In this context, the CO that is being debilitated by press coverage, unable to peacefully govern such information, has incentive to resort to violence against the press to discourage such coverage.

On the whole, we thus expect violence against the press in Mexico to be driven by the local industrial organization of illicit markets. When

traffickers cooperate under a cohesive and monopolistic organization, they have incentives to peacefully govern information disseminated by the press. However, when traffickers compete for local dominance, they are less likely to be able to peacefully govern the flow of information to and from the press; in this context, they are more likely to resort to violence to discourage unfavorable coverage. Our theory challenges popular belief on the causes of violence toward the press in Mexico, which typically points to the increased strength of drug traffickers. In contrast, we argue that it is when COs fail to maintain market dominance, and are thus weak relative to competitors, that journalists are likely to be violently targeted. In contrast to competing theories, our theory can account for the puzzling time and geographical variation in cases of journalist assassinations in Mexico. While a small number of recent studies have posited potential explanations for such variation (for example, see (Edmonds-Poli 2013)), these explanations have yet to be rigorously tested. In the next section, we discuss the data, methods, and results to our empirical analysis on the drivers of violence toward the press in Mexico, specifically focusing on whether violence against the press is linked to the general strength of criminal organizations, as most traditional narratives argue, or to the existence of illicit market competition. We find strong evidence supporting our theory; violence against the press increases when rival criminal organizations compete locally.

Empirical strategy and results

To better understand the drivers of violence against the press in Mexico, we utilize municipality-year level data between 2007 and 2010. We use data collected by the Committee to Protect Journalists (CPJ) on homicides committed against journalists to measure our main dependent variable. Besides counting cases of fatal attacks to journalists, CPJ keeps record of additional variables that occur in each case, such as the full name of the journalist, the municipality where she was victimized, and the outcome of judicial investigations. While there are alternative sources that collect data on violence against the press, we work with CPJ data because it uses the strictest coding mechanism to identify press attacks and because it is the largest world-wide time-

series of cases of journalists assassinations available. Some have argued that the CPJ’s figures underestimate the number of cases of violence against the press because they only account for cases in which the victim was formally a journalist (not accounting for instances in which victims were working “as journalists” even if they were doing so in an informal way), and because they do not account for instances in which journalists were non-fatally victimized (i.e. injured, threatened, kidnapped, extorted, etc.). We consider CPJ to be the best source available for academic purposes precisely because by being so restrictive, it is less prone to coding errors, making its data more accurate and comparable over time and space.

Table 1: Descriptive Statistics of Municipalities

	Median	Sd	Min	Max
Population	0.12	1.31	0	18.6
Poverty	-0.04	0.99	-2.37	4.5
Inequality	0.41	0.04	0	0.69
Homicide Rate (Per 100 000 people)				
Total Homicide	11.0	27.0	0	869
Rivalry Homicide	2.80	14.8	0	800
Other Homicide	8.2	20.6	0	610

Note: 2457 municipalities data (2007-2010)

We use a dichotomous measure of homicides against journalists based on the CPJ data, with municipality-years that experienced a homicide of a journalist in a given year assigned one, and municipality-years in which no journalists were killed assigned a zero. Because of both the restrictive coding scheme employed in CPJ data collection and the general rarity of journalist homicides relative to general homicides, we are left with 30 municipality-years experiencing journalist homicides between 2007-2010. Despite its relative rarity, from a theoretical standpoint, this outcome is still worth examining for a number of reasons. First, homicides against journalists typically result in fear that specifically hinders future freedom of expression; the killing of even one journalist in an area can have a widespread and long-lasting impact on the likelihood of others practicing journalism, thus having a disproportionately large impact on the quality of democracy. Second, while homicides against journalists represent the extreme end of violence against the press, they are also likely to be indicative of wider-spread patterns of violence against the press in a given locality. Homicides against jour-

nalists are typically preceded by threats and/or non-lethal violence, and can thus serve as a measurement of the general climate of violence toward journalists in a municipality.

While homicides against members of the press remains an outcome worth analyzing from a theoretical standpoint, the rarity of the event presents challenges from a practical and analytical standpoint. As King and Zeng (2001) point out, typical logistic regression using data with far fewer ones than zeros oftentimes produces biased results underestimating the probability of the event. To correct for this potential bias in our data, we use the rare events logistic regression (relogit) strategy developed in King and Zeng (2001), combined with robust standard errors to control for the excess of zeros in our data.

Our theory points to the industrial organization of illicit markets as a key factor in explaining violence against journalists, expecting lower levels of coordination between traffickers to increase the probability of homicide against a journalist. Measuring this explanatory variable can be difficult. Criminal operations are generally conducted with high levels of secrecy, without public records on who operates in a particular area. Even less is known about whether those criminals who operate in an area cooperate or compete for profits. As a result, we typically only get to know about criminal rivalries when localized ethnographic studies have been conducted, or when rivalry is strong enough as to affect general rates of violence. Both cases are problematic. On one hand, local ethnographic studies are difficult to systematize and cannot be coded into a reliable data series for quantitative testing. On the other, even if we have access to murder statistics at the local level, we generally lack information on whether a victim was killed due to criminal rivalry or due to many other circumstances that may trigger retaliation or violence but are not specifically related to criminal organizations.

To overcome these challenges, we first we exploit a particularity of Mexico's criminal statistics to specifically identify areas in which COs are competing locally. More specifically, we use data on violence specifically tied to criminal *rivalry*. Unlike most other countries, Mexico's Ministry of the Interior keeps a database (fed monthly by criminal investigations conducted at each of 32 state-level prosecutors' offices), of murders that were specifically caused by "criminal rivalry."⁶ The

⁶For a detailed description as to how this classification is made by Mexico's

dataset is far from perfect and is only publicly available for December of 2006 to September of 2011. However, it is only this rare opportunity to glance at criminal contention that has allowed us to identify geographical areas in which we can determine with a high degree of certainty that illicit markets are marred by competitive rivalry; we expect journalists to be more likely to be victims of homicide in such municipalities.

While data on the level of violence tied to criminal rivalry is a good place to start in capturing the varying industrial organization of criminal markets between municipalities, it provides us with an incomplete picture of such variation. While measures of homicides tied to criminal rivalry can show us where COs are in conflict, it cannot show us where traffickers cooperate rather than violently compete. Without data on where traffickers operate without conflict, we are unable to analyze if differences are driven by criminal rivalry or simply the presence of COs. We thus use a new dataset compiled using methods first developed in Coscia and Rios (2012). The data collection strategy exploits reliable online sources such as newspapers and blogs, using unambiguous query terms to identify the different COs operating in a municipality in a given year.⁷ With this data, we have measures not only for the municipalities in which drug traffickers operate, but also which and how many COs are operating in a specific municipality in a specific year.

If our theory is correct, we would expect municipalities with higher

government see Molzahn, Rios and Shirk (2012)

⁷For more details on this data collection process, labeled MOGO, or Making Order using Google as an Oracle, see Coscia and Rios (2012). Given our theory, one potential concern for using data based at least partially on newspaper reports is that the data will be biased, underestimating the COs operating peacefully in municipalities. If traffickers in coordinated markets are able to govern what the press reports on them, then they are less likely to be identified in local media. While this is a valid concern, we believe this data is still useful for two reasons. First, while local traffickers may be able to prevent coverage by local media, their ability to influence national media, which is also included in the data, is less apparent. Second, MOGO also utilizes blog posts in identifying where traffickers operate. While there is evidence that traffickers have begun attempting to punish people who spread information through blogs and social media, censorship of this forum is less effective to this point. Finally, while there may be potential for issues of data bias, this is the only measure we currently have for a complex and intentionally opaque phenomenon, and this data gives us a rough estimate off which to work.

levels of conflict between drug traffickers to be more likely to experience violence against journalists. Table 1 presents the results for three relogit model specifications, which test the factors that are correlated with a journalist being assassinated in a particular municipality in a particular year. Each model contains variables controlling for the population, poverty, and inequality in a given municipality, as well as fixed effects for the presence of each of Mexico’s major COs. The logic for including a control for population is fairly self-evident—municipalities with more people are likely to have a more expanded press industry with a higher rate of journalist per population. It is also reasonable to suppose that bigger municipalities are likely to have more diverse news organizations competing that could make controlling information through bribery harder or more expensive for the COs. We include the poverty variable because it might effect the outcome in different ways: poorer municipalities may have fewer resources with which to protect journalists, but they may also have fewer resources that attract operators in illicit markets who may use violence toward journalists. We include a measure of inequality because more unequal municipalities are known to have stronger local demand for drugs; because the operations necessary for distributing drugs locally differ greatly from operations geared at export abroad, it is possible that illicit market operators in more unequal municipalities have a different relationship with the local press. Additionally, we include dummy variables for the presence of each major CO in order to both understand the specific impact of drug rivalry (rather than simply the presence of drug traffickers) as well as to see whether the presence of specific COs is more likely to lead to violence against journalists. In the last model of the table, we change this to include dummy variables for key rivalries between COs to analyze whether certain rivalries are more likely to lead to violence against the press.

Model 1 simply tests the effect of the overall homicide rate on journalist assassinations, finding a statistically significant positive relationship. However, this model tells us less about the the specific impact of rivalry between COs, since this coefficient could be driven either by homicides stemming from drug trafficking or general disorder. Model 2 thus disaggregates homicides into cases that are specifically tied to drug trafficking and cases that are not. If the relationship between

Table 2: Rare Events Logistic Regression

	<i>Dependent variable:</i>		
	Journalist Assassination		
	(1)	(2)	(3)
Total Homicide rate	0.005*** (0.002)		
Rivalry Homicide Rate		0.006*** (0.002)	0.007*** (0.002)
Non-Rivalry Homicide Rate		0.002 (0.005)	0.003 (0.004)
Population	0.131** (0.060)	0.131** (0.060)	0.150*** (0.052)
Poverty	-0.399 (0.297)	-0.398 (0.296)	-0.664** (0.283)
Inequality	14.084*** (5.061)	14.102*** (5.069)	15.803*** (4.483)
Sinaloa	0.669 (0.495)	0.648 (0.495)	
Sinaloa faction	1.764*** (0.491)	1.752*** (0.490)	
Familia	0.896** (0.424)	0.879** (0.424)	
Beltran faction	0.475 (0.596)	0.501 (0.597)	
Beltran	-0.375 (0.543)	-0.413 (0.544)	
Tijuana	-0.923 (0.839)	-0.947 (0.837)	
Juarez	1.044* (0.589)	0.960 (0.598)	
Golfo	1.124** (0.449)	1.140** (0.449)	
Zetas	0.968** (0.464)	0.924** (0.468)	
Other CO	-0.148 (1.079)	-0.122 (1.079)	
Golfo-Zetas			0.887** (0.445)
Familia-Zetas			1.748*** (0.466)
Sinaloa-Juarez			1.974*** (0.636)
Tiajuana-Sinaloa			-0.132 (0.868)
Beltran-Sinaloa			-0.873 (0.909)
Beltran-Beltran faction			1.754** (0.817)
Constant	-13.395*** (2.286)	-13.343*** (2.288)	-13.697*** (2.037)
Observations	9,809	9,809	9,809
Akaike Inf. Crit.	306.658	308.677	321.852

Note:

*p<0.1; **p<0.05; ***p<0.01

homicide rates and violence against journalists is being driven by drug homicides, we would expect the rivalry variable to be positive and significant. We find rivalry between COs to be positively correlated with violence against journalists at the .01 p-level, while homicide related to general disorder is not statistically significant. Substantively, while the effect is relatively small, we can interpret this coefficient as telling us that the probability of a journalist being assassinated in a municipality with 500 rivalry-homicides in a given year (at the high end of the spectrum) is 0.23 higher than a municipality with only one rivalry-homicide. The significance of these results hold in Model 3, where we control for specific rivalries between COs.

The rates of both general homicide and homicides related to drug

Table 3: Rare Events Logistic Regression, Robust to Outliers

	<i>Dependent variable:</i>		
		Jour	
	(4)	(5)	(6)
Rivalry Homicide Rate	0.006*** (0.002)	0.008** (0.004)	
Non-Rivalry Homicide Rate	0.005 (0.005)	-0.008 (0.009)	
Log Rivalry Homicide Rate			1.723*** (0.310)
Log Non-Rivalry Homicide Rate			0.940*** (0.351)
Population	0.130** (0.060)	0.177 (0.109)	0.193*** (0.065)
Poverty	-0.396 (0.297)	-0.015 (0.525)	-0.544* (0.305)
Inequality	13.886*** (5.071)	12.408 (10.663)	15.138*** (5.299)
Sinaloa	0.673 (0.496)	0.505 (0.915)	0.347 (0.495)
Sinaloa faction	1.757*** (0.491)	1.576* (0.874)	1.522*** (0.511)
Familia	0.894** (0.424)	0.619 (0.775)	0.685 (0.432)
Beltran faction	0.471 (0.598)	0.492 (1.085)	0.197 (0.626)
Beltran	-0.381 (0.545)	-0.336 (0.979)	-0.779 (0.584)
Tijuana	-0.927 (0.838)	-0.551 (1.477)	-1.888** (0.957)
Juarez	1.036* (0.601)	0.782 (1.076)	0.503 (0.607)
Golfo	1.128** (0.449)	1.093 (0.829)	1.283*** (0.449)
Zetas	0.958** (0.469)	0.393 (0.862)	0.621 (0.470)
Other CO	-0.146 (1.080)	1.039 (2.055)	-0.072 (1.083)
Constant	-13.280*** (2.288)	-12.156** (4.890)	-15.675*** (2.548)
Observations	9,806	2,597	9,809
Akaike Inf. Crit.	308.664	47.612	277.492

Note:

*p<0.1; **p<0.05; ***p<0.01

trafficking is skewed between municipalities, with most municipalities experiencing very low rates, and a relatively small amount of municipalities experiencing very high rates. Models 4-6 use different strategies to test the robustness of the relationship between CO rivalry and the assassination of journalists. The results hold in Model 4, which removes outliers with rates of rivalry-homicide higher than 1000. The results also hold in Model 5, in which we remove the same outliers and test the relationship only on municipalities that experienced at least one rivalry-homicide in a given year. In Model 6, we use the logged values of both rivalry and non-rivalry homicide rates; rivalry remains a significant indicator of journalist assassination at the 0.01 level, and while non-rivalry homicide also becomes significant, its impact is smaller.

Finally, the models in Table 3 check the robustness of the results from Table 1 using nonparametric nearest neighbor matching as a preprocessing tool to check for possible model dependence. The goal of this preprocessing technique is to adjust the data prior to analysis so that

Table 4: Rare Events Logistic Regression, Matched Dataset

	<i>Dependent variable:</i>		
	Journalist Assassination		
	(7)	(8)	(9)
Total Homicide rate	0.004 (0.003)		
Rivalry Homicide Rate		0.005* (0.003)	0.006* (0.003)
Non-Rivalry Homicide Rate		-0.002 (0.004)	-0.001 (0.004)
Population	0.124 (0.077)	0.125 (0.077)	0.107 (0.069)
Poverty	0.096 (0.407)	0.165 (0.410)	0.102 (0.392)
Inequality	7.338 (7.449)	7.023 (7.461)	8.475 (6.899)
Sinaloa	0.342 (0.631)	0.251 (0.633)	
Sinaloa faction	1.461** (0.626)	1.431** (0.627)	
Familia	0.443 (0.564)	0.370 (0.565)	
Beltran faction	0.406 (0.762)	0.426 (0.761)	
Beltran	-0.509 (0.697)	-0.609 (0.699)	
Tijuana	-0.628 (1.019)	-0.631 (1.020)	
Juarez	0.848 (0.748)	0.641 (0.756)	
Golfo	0.818 (0.579)	0.802 (0.580)	
Zetas	0.469 (0.611)	0.340 (0.615)	
Other CO	0.185 (1.435)	0.231 (1.434)	
Golfo-Zetas			0.461 (0.564)
Familia-Zetas			1.013* (0.600)
Sinaloa-Juarez			1.138 (0.807)
Tiajuana-Sinaloa			0.254 (1.013)
Beltran-Sinaloa			-0.495 (1.048)
Beltran-Beltran faction			1.032 (1.011)
distance	3.241* (1.894)	3.648* (1.926)	4.205** (1.809)
Constant	-11.938*** (3.332)	-11.869*** (3.337)	-12.689*** (3.197)
Observations	5,264	5,264	5,264
Akaike Inf. Crit.	307.513	309.449	314.005

Note:

*p<0.1; **p<0.05; ***p<0.01

the relationship between the treatment (in this case whether a municipality exhibits CO rivalry) and other measurable factors that might impact the assassination of journalists is close to zero (see Ho et al. (2007)). In other words, we trim the data prior to analysis so that it is more balanced, thus allowing for the analysis to compare units that are alike on other variables but differ in their presence of criminal rivalry. Models 8 and 9 show that when running the analysis with a matched data set, criminal rivalry remains a significant indicator of violence against journalists at the 0.1 p-level.

On the whole, the analysis presented here strongly supports our theory. In all of the models, criminal rivalry remains a significant predictor of violence against the press.

Conclusion

This paper presented a theory of information control in criminal environments. In our model, COs may have the ability to control information leaks to the press, but such ability erodes when the same territory is inhabited by rival organizations. Rivalry creates incentives for information leaks to be used as a weapons to intensify official enforcement operations against competitors. When COs in conflict, journalists are left in the middle, receiving information from one group to affect another and thus becoming potential targets.

The findings from this paper have significant implications both in terms of academic literature and public policy.

From an academic standpoint, previous work has highlighted efforts by state actors and actors vying for state power to attempt to govern information disseminated through the press; we demonstrate that non-state actors—in this case criminal organizations in Mexico—may engage in similar efforts. We also provide a counter-argument to the common perception that journalists are more likely to be victimized as criminal organizations in a given region become stronger. In contrast, violence only becomes more likely when comparatively weak and rival COs cohabit a given area. Stronger COs, while certainly having a capacity for violence, tend to prefer non-violent informal governance of the press.

With this in mind, policy aimed at preventing violence against the press should focus more on areas where COs are in direct competition. This leaves difficult questions in terms of strategies for combatting COs. On the one hand, pursuing the leaders of powerful local criminal monopolies may successfully disrupt illicit markets. But on the other hand, if such activity leads to greater levels of competition between criminals, then it may also indirectly put journalists at risk.

References

- Al Calor Politico*. 2010. “Violenta venganza: por violar a una menor lo castraron y le cosieron la boca.” <http://www.alcalorpolitico.com/informacion/violenta-venganza->

por-violar-a-una-menor-lo-castraron-y-le-cosieron-la-boca-56023.html#.UzRyTRzco30; accessed January 5, 2014.

- Balderrama, David Pinon. 2009. "Mi vida con el narco." <http://www.nexos.com.mx/?p=13407>; accessed January 5, 2014.
- Baum, Matthew A. 2003. *Soft News Goes to War: Public Opinion and American Foreign Policy in the New Media Age*. Princeton, NJ: Princeton University Press.
- Corchado, Alfredo. 2013. *Midnight in Mexico: A Reporter's Journey Through a Country's Descent into Darkness*. New York: Penguin.
- Coscia, Michele and Viridiana Rios. 2012. "Knowing where and how criminal organizations operate using web content." Conference on Information and Knowledge Management.
- CPJ. 2010. "Silence or Death in Mexico's Press." Special report of the Committee to Protect Journalists.
- Dahl, Robert. 1998. *On democracy*. New Haven, CT: Yale University Press.
- Diaz-Cayeros, Alberto, Beatriz Magaloni, Aila Matanock and Vidal Romero. 2011. "Living in fear: social penetration of criminal organizations in Mexico." Paper presented at Violence, Drugs and Governance: Mexican Security in Comparative Perspective Conference.
- Djankov, Simeon, Caralee McLiesh, Tatiana Nenova and Andrei Shleifer. 2003. "Who owns the media." *Journal of Law and Economics* 46(2):341–382.
- Edmonds-Poli, Emily. 2013. "The Effects of Drug-War Related Violence on Mexico's Press and Democracy." Working Paper Series on Civic Engagement and Public Security in Mexico, Woodrow Wilson International Center.
- Egorov, Georgy, Sergei Guriev and Konstantin Sonin. 2009. "Why Resource-poor Dictators Allow Freer Media: A Theory and Evidence

- from Panel Data.” *American Political Science Review* 103(4):645–668.
- El Diario de Juarez*. 2010. “Que quieren de nosotros.” September 18, 2010.
- El Heraldo de Chihuahua*. 2011. “Sicario pone a víctima agonizante en cajuela y choca contra un árbol.” <http://www.oem.com.mx/elheraldodechihuahua/notas/n1179999.htm>. Accessed January 5, 2014.
- El Pais*. 1986. “Detenido el “zar del narcotráfico” del norte de México.” http://elpais.com/diario/1986/04/30/internacional/515196027_850215.html; accessed January 5, 2014.
- El Pais*. 2011. “Nueva victoria del narco contra el libre ejercicio del periodismo en México.” http://internacional.elpais.com/internacional/2013/03/11/mexico/1363020884_828926.html; accessed January 5, 2014.
- El Universal*. 2007. “Aparecen narcomensajes en Cancún y Mexicali.” <http://www.eluniversal.com.mx/estados/64185.html>; accessed January 5, 2014.
- Enders, Walter and Xuejuan Su. 2007. “Rational Terrorists and Optimal Network Structures.” *Journal of Conflict Resolution* 51(1):33–57.
- Ho, Daniel E., Kosuke Imai, Gary King and Elizabeth A. Stuart. 2007. “Matching as Nonparametric Preprocessing for Reducing Model Dependence in Parametric Causal Inference.” *Political Analysis* 15(2):199–236.
- Kalyvas, Stathis N. 2006. *The logic of violence in civil war*. New York: Cambridge University Press.
- King, Gary, Jennifer Pan and Margaret Roberts. 2013. “How Censorship in China Allows Government Criticism but Silences Collective Expression.” *American Political Science Review* 107(2):326–343.
- King, Gary and Langche Zeng. 2001. “Logistic Regression in Rare Events Data.” *Political Analysis* 9(2):137–163.

- Kostelnik, James and David Skarbek. 2013. "The governance institutions of a drug trafficking organization." *Public Choice* 156(1-2):95–103.
- Molzahn, Cory, Viridiana Rios and David A. Shirk. 2012. "Drug Violence in Mexico: Data and Analysis through 2011.". Special report of the Trans-Border Institute.
- Moore, Gary. 2011. "Heating up the plaza: how Mexico's gangs use scorched earth tactics." <http://www.insightcrime.org/news-analysis/heating-up-the-plaza-how-mexicos-gangs-use-scorched-earth-tactics>; accessed January 5, 2014.
- Reuter, Peter. 1983. *Disorganized Crime: The Economics of the Visible Hand*. Cambridge, MA: M.I.T. Press.
- Rios, Viridiana. forthcoming. "The role of government coordination in crime deterrence and citizen security." *Journal of Conflict Resolution*.
- Schudson, Michael. 2003. *The sociology of the news*. New York: Norton.
- Snyder, Richard and Angelica Duran-Martinez. 2009. "Does illegality breed violence? Drug trafficking and state-sponsored protection rackets." *Crime, Law, and Social Change* 52(3):253–273.
- Soy Periodista*. 2010. "Ejecutan a 4 y dejan narco mensaje." <http://www.soyperiodista.com/noticias/nota2334-ejecutan-a-4-y-dejan-narco-mensaje>; accessed January 5, 2014.
- Whitten-Woodring, Jenifer and Patrick James. 2012. "Fourth Estate or Mouthpiece? A Formal Model of Media, Protest, and Government Repression." *Political Communication* 29(2):113–136.
- Zaller, John R. 1992. *The Nature and Origin of Public Opinion*. New York: Cambridge University Press.