

Criminal Fragmentation: The Logic of Splintering in Organized Crime

Marco Alcocer^{*†}

Lucía Hesles Toscana[‡]

Abstract

Criminal organizations often fragment, triggering criminal wars that are frequently deadlier than civil conflicts, but the fragmentation process itself remains poorly understood. This article theorizes that potential defectors, differing in strength relative to their parent organization, strategically weigh two concerns during moments of organizational uncertainty that shape whether they fragment: economic viability, which depends on illicit market structure, and survival viability, which depends on geography and alliances. Leveraging an original dataset tracing Mexico’s drug cartels and all observed fragments from 2000 to 2018, we show that fragmentation is rare even after leadership decapitation. Stronger fragments can operate near their parent cartel, compete in similar markets, and rely on alliances to withstand retaliation, while weaker fragments survive by operating in distant areas and localized markets. The article opens the black box of criminal fragmentation and advances a strategic theory of organizational fragmentation among armed non-state actors.

^{*}We thank Hannah Baron, David Smilde, Guillermo Trejo, David Skarbek, Steve Levitsky, Alisha Holland, Jessica Zarkin, Kaitlyn Chriswell, Julian E. Gerez, and participants of the speaker series at The Center for Inter-American Policy and Research (CIPR) at Tulane University, the 2024 Studies of Organized Crime and Politics MPSA Mini-Conference, the 2025 Crime and Politics MPSA Mini-Conference, and the Latin American Discussion Group (LADG) at Harvard University. We also thank Patrick Signoret for inspiring the data collection process and the research assistance of Fernanda Quinatilla Domínguez, Valeria Gonzalez Guerra, Renatta Salinas Delgado, Karina Velázquez Villatoro, and Isaac Del Río Castro.

[†]University of California, Merced

[‡]ITAM

1 Introduction

The fragmentation of armed non-state actors—the splintering of unified organizations into competing factions—presents major security challenges across the world. In civil conflicts, rebel fragmentation is a key driver of violence and a major challenge to conflict termination (e.g. [Ari and Gizelis 2020](#); [Cunningham, Bakke and Seymour 2012](#); [Perkoski 2019](#); [Rudloff and Findley 2016](#); [Faulkner and Doctor 2021](#)). Like rebel groups, criminal organizations (COs) frequently fragment across the developing and developed world, from drug cartels in Mexico and Colombia, to prison gangs in Brazil and Ecuador, to street gangs in the U.S. and El Salvador, to mafias in Italy and the U.S., to yakuza groups in Japan. The fragmentation of COs, often triggered by government kingpin strategies, is also a major driver of violence because it generates both inter- and intra-CO conflict ([Ríos 2013](#); [Phillips 2015](#); [Calderón et al. 2015](#); [Trejo and Ley 2016](#); [Atuesta and Pérez-Dávila 2018](#); [Contreras Velasco 2023](#); [Esberg 2025](#)). Understanding criminal fragmentation is imperative given its increasing prevalence ([Bagley 2013](#)) and the fact that violence perpetrated by COs now often surpasses that produced by traditional civil conflicts ([UNODC 2023](#)). Yet, unlike the extensive literature examining rebel group splintering as a strategic decision, research on COs has focused primarily on the violent consequences rather than the fragmentation process itself.

Surprisingly, we know remarkably little about when opportunities for fragmentation lead members to defect, who chooses to splinter, or why. To our knowledge, only two existing studies directly examine criminal fragmentation.¹ [Esberg \(2025\)](#) provides quantitative evidence from Mexico that kingpin removals, but not increasing territorial value, are associated with the emergence of new cartels. By contrast, [Varese \(2020\)](#) argues that mafia fragmentation is rare, occurring only when mafia outposts become sufficiently powerful to withstand retaliation from the parent mafia, particularly when they operate in the same illicit markets.

Building on these findings and drawing on insights from rebel and firm fragmentation,

¹[Atuesta and Pérez-Dávila \(2018\)](#) also examine fragmentation but define it as the number of groups in a conflict and the alliances among them rather than splintering.

this article opens the “black box” of criminal fragmentation by developing a theory of splintering in organized crime centered on the strategic decisions of potential defectors—those considering leading a new CO by splintering. We argue that CO members are opportunistic and strategically weigh the option of remaining within their CO or fragmenting and leading their own CO. These potential defectors vary in their strength relative to the CO they consider betraying. Moments of uncertainty provide windows of opportunity for fragmentation by temporarily weakening mechanisms of internal cohesion. In these moments, those considering fragmenting strategically weigh two concerns that jointly determine their decision to stay or fragment: (1) is fragmenting economically viable? And, (2) is surviving retaliation by their parent CO viable? We contend that economic viability depends on illicit market structure and that the viability of surviving retaliation is conditioned by geography and alliances. From this logic, we derive key observable implications. We expect weaker fragments to be involved in more localized illicit activities since they cannot compete with their parent CO and operate further from their originating CO to safeguard themselves from retaliation, while stronger splinters are able to fragment near or away from their parent CO, compete in similar markets, and survive through alliances with other COs when operating near their parent CO.

We test our theory in Mexico, where large COs experienced significant fragmentation starting in the mid-2000s. A central challenge is that systematic data on *independent* COs, their genealogy, and key traits does not exist. We overcome this limitation by creating a dataset on the nine major drug cartels operating in Mexico at the turn of the century and all their observed fragments between January 2000 and December 2018 through extensive qualitative research. To the best of our knowledge, this is the first data of its kind.

First, we descriptively examine those leading fragmentation and the reasons behind their decision. We find that high-, mid-, and low-ranking cartel leaders all spearhead defections at about the same rate. We further find that only 13.14% of leadership turnovers—most due to government leadership decapitation strategies—prompt fragmentation, suggesting cartels

are far more resilient than currently recognized. Looking at fragmentation events, we find that 61.4% were prompted by leadership turnover, with the rest resulting from internal disputes. Our findings underscore the need to refine future work: most existing studies proxy fragmentation with leadership decapitation or interpret the violent consequences of leadership decapitation as a result of fragmentation.

Second, we analytically examine predictions of our theory. We find that market access, geography, and military alliances are fundamental in the calculus of fragmentation and explain observable patterns. Weaker splinters have to exploit more localized markets, often further from their parent cartel where competition with the parent cartel is limited, while stronger fragments can compete in similar markets with their parent cartel. Moreover, geography allows slightly and much weaker potential defectors to fragment when operating far from their originating cartel's stronghold, while military alliances allow strong and moderately strong defectors to fragment near their parent cartel. These findings support a strategic selection logic and counter displacement arguments about fragments seeking new markets and territories *after* fragmenting.

We highlight three additional findings relating to cartel strength and their fragmentation propensity, the successful dismantling of cartels through government kingpin strategies, and the rise of predatory and bellicose fragments. Lastly, to illustrate the broader applicability of our theory, we present brief case studies of criminal fragmentation across diverse contexts and organizational types.

This article makes several important contributions to the study of political violence, organized crime, and armed non-state actors. Theoretically, by modeling fragmentation as a tradeoff between economic opportunity and physical survival, the theory provides micro-foundations for organizational change and generates new predictions about the geography, alliances, and market strategies of splinter groups. Through these predictions, we advance our understanding of when and where violence should erupt following criminal fragmentation, pushing future research to generate and test more precise hypotheses about its violent

consequences. Empirically, we introduce the first systematic dataset tracing the genealogy of Mexico’s main drug cartels and their fragments, allowing us to move beyond leadership decapitation as a proxy for fragmentation and document patterns that support and challenge conventional wisdom about fragmentation, leadership decapitation, and the resilience of criminal organizations. More broadly, the article demonstrates how insights from rebel and firm fragmentation must be adapted to account for the distinct incentives created by illicit markets. In an era of proliferating non-state armed actors, understanding these processes is essential for effective security policy and the study of governance beyond the state.

2 Insights From Rebel and Firm Fragmentation

Both rebel groups and firms provide useful points of comparison for understanding CO fragmentation. COs resemble rebel groups because they are armed non-state actors that rely on coercion and territorial control (e.g. [Kalyvas 2015](#)), and they resemble firms because they are economically motivated organizations competing in illicit markets (e.g. [Correa-Cabrera 2017](#)). Given the limited scholarship on criminal fragmentation, these literatures offer useful starting points but do not fully explain fragmentation among COs.

Research on rebel fragmentation emphasizes that splinter groups face immediate survival challenges, particularly retaliation from the parent organization and competition from rivals (e.g. [Woldemariam 2018](#); [Robinson and Malone 2024](#)), and that the importance of relative strength between parent and splinter organization ([Mahoney 2020](#)).² It also highlights the importance of geography ([Gates 2002](#); [Wyer 2024](#)) and access to resources ([Lidow 2016](#)) or decentralized funding ([Kenny 2010](#); [Wyer 2024](#)) in shaping where fragments emerge and whether they survive. We extend these insights to criminal fragmentation by placing immediate survival concerns as well as geography, access to markets, and market structure as central factors underlying fragmentation dynamics.

The firm literature similarly views fragmentation as a strategic decision, emphasizing how

²A broader literature examines the political or ideological triggers of fragmentation and its violent consequences, which we do not review here.

organizational knowledge, market opportunities and performance, and expected financial returns can encourage employees to establish competing enterprises (e.g. Chemmanur and Yan 1983; Agarwal et al. 2004; Campbell et al. 2012; Klepper and Sleeper 2005; Klepper and Thompson 2010; Ganco 2013; Gambardella, Ganco and Honoré 2015; Shekhar 2018).³ These insights suggest that fragmentation is shaped not only by internal organizational dynamics but also by the opportunities and constraints facing potential defectors. We extend these insights to criminal fragmentation by noting organizational and market factors as central for fragmentation.

However, both literatures have important limitations when applied to COs. Rebel groups fragment primarily over political or ideological disagreements, peace processes, or relations with external sponsors, while firms operate under legal institutions that allow employees to leave and establish competing businesses with state protection. COs operate under fundamentally different conditions given that they do not seek state power, are not typically partisan or ideological actors, and that they are illegal organizations that operate in illicit markets outside of government regulatory policies. Therefore, potential defectors must simultaneously secure economic viability and survive violent retaliation from their former organization outside of legal regulatory environments and third party enforcement mechanisms and under *violent* threats from competitors and the state.

These differences suggest that existing rebel and firm fragmentation theories identify important pieces of the puzzle but are limited in their explanatory power when applied to CO fragmentation. Building on the shared insights regarding organizational survival, geography, and economic incentives, the following section develops a theory tailored to the distinct strategic environment faced by COs.

3 A Theory of Criminal Fragmentation

We contend that potential defectors—those considering defection and leading a fragment—vary in their strength relative to their CO. Moments of uncertainty provide windows of op-

³The literature is too vast to cite here.

3.1 Potential Defectors and their Strategic Environment

Potential defectors: We assume CO members who hold some form of power or leadership position are opportunistic (Wyer 2024) and weigh the benefits and costs of staying in their CO versus fragmenting and becoming leaders of their own CO. We focus on those with the capacity to mobilize other CO members and potentially leading a splinter group, which usually entails members with some type of internal leadership position. We call these CO members *potential defectors*. We do not examine members who simply consider individual exit or defection nor those without the potential to mobilize other members and lead a splinter group.

Defectors are often assumed to be aspiring high-level leaders who break from their CO due to leadership struggles to lead their own organization. For example, Kostelnik and Skarbek (2013) argue that CO members face stronger incentives to defect as they get promoted since they gain more knowledge and responsibilities that they can exploit against their bosses. Likewise, Varese (2020) argues that fragmentation is possible when a faction becomes larger and more powerful than the CO they belong to. However, following insights from rebel and firm fragmentation, we contend that high-ranking members are not the only ones with incentives to fragment. Mid- and low-level leaders (e.g., regional or local bosses) that do not aspire to take over and cannot compete against the CO they belong to but do seek autonomy can also choose to fragment. This, in turn, has implications for the strength of fragments relative to the CO they break from.

Strategic Environment: Under business as usual, there are few incentives to break the status quo and fragment given that COs are very effective at creating a wide arrange of internal governance mechanisms to promote organizational cohesion despite the absence of third-party enforcement (Lessing and Denyer Willis 2019; Lessing 2021; Pereda 2021, 2024; Leeson and Skarbek 2010; Skarbek 2012, 2014, 2024), including specific “mechanisms to promote loyalty and discourage defection” (Kostelnik and Skarbek 2013, 101), which make them highly resilient to internal and external threats (Ayling 2009; Agreste et al. 2016;

Cavallaro et al. 2020; Berlusconi 2022; Pereda and Décary-Hetu 2024).

Underlying many of these mechanisms is the threat of violence, with violators being punished harshly (e.g. Reuter 1983). This is perhaps especially true for defectors, as COs face deep losses if members fragment, for example, losing members, assets, territories, and profits. Thus, COs offer potential defectors protection by staying and violent punishment, if not death, for defecting. Moreover, using visible violence against defectors allows COs to credibly threaten other potential defectors and dissuade them from fragmenting (Kostelnik and Skarbek 2013).

Windows of opportunity: Studies on the violent consequences of government leadership decapitation policies emphasize that leadership removals can create power vacuums that allow potential defectors to fragment (Ríos 2013; Phillips 2015; Trejo and Ley 2016; Atuesta and Pérez-Dávila 2018; Contreras Velasco 2023), hence why the conventional wisdom—especially in the Mexican case—is that government kingpin strategies are solely responsible for fragmentation. We instead contend that, more generally, shocks, moments of uncertainty, or instances of intense internal disputes likely create windows of opportunities that temporarily disrupt or weaken internal criminal governance mechanisms and that can be exploited by opportunistic potential defectors to fragment.

Types of fragmentation: Given the potential fragmentation of leaders of varying strength relative to the parent CO, we draw on the discussion of the organizational structure of drug cartels by Trejo and Ley (2020, 134-137) to categorize fragmentation into four stylized potential types: high-level defection where the originating CO and its fragment have relatively equal strength, mid-level defection where the fragment is moderately weaker than the parent CO, low-level defection where the fragment is much weaker than its originating CO, and dissolution where the parent CO ceases to operate and fragments are either relatively equal in strength or moderately weaker than other fragments. Figure 2 illustrates stylized examples of these four types of fragmentation. We note that COs vary in their internal structure, with Figure 2 overrepresenting how structured and hierarchical many COs

are. We also acknowledge that relative strength is continuous and this illustration simplifies to strength categories. Nevertheless, it provides an analytically useful model to illustrate different types of fragmentation.

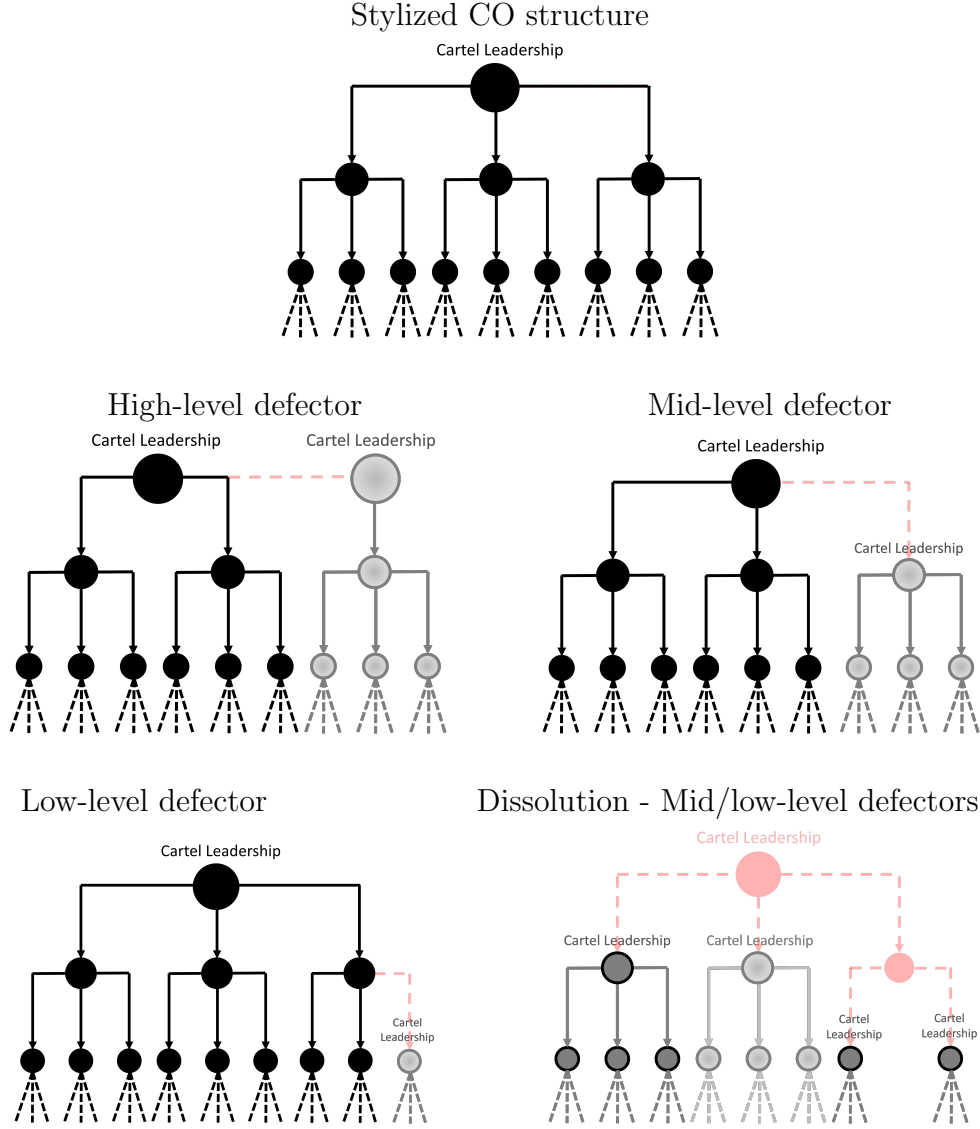


Figure 2: Stylized CO structure and types of fragmentation by leader of defection. Black structures denote CO of origin, red dotted line denotes fragmentation, red nodes denote leadership vacuum, gray structures denote fragmenting COs.

3.2 Strategic Logic of Fragmentation

We argue that potential defectors consider the costs and benefits of staying and those of fragmenting when deciding to splinter. Central to this decision, we argue, are two fundamen-

tal first order concerns: profits and survival. Potential defectors thus strategically consider two key questions: (1) Will they be economically viable if they fragment? (2) Will they survive retaliation if they fragment? Because potential defectors vary in strength relative to their originating CO, we argue that their own relative strength shapes how potential defectors answer these questions and thus whether they fragment. We see the structure of illicit markets shaping economic viability, and geography and military alliances with other COs as shaping survival viability, which jointly shape the strategic decision of potential defectors and tells us which *actually* fragment and thus the patterns of fragmentation we observe.

3.2.1 Economic Viability

We contend that potential defectors need access to sources of income *prior to* or *at the time of* defection that they will continue to have access to after fragmentation, and that the structure of illicit markets conditions the decision of potential defectors to fragment. As profit-maximizing economic actors, unless they are facing credible lethal threats, potential defectors have no incentives to defect if they are not at least as well off when fragmenting, which requires access to illicit markets. Moreover, COs require illicit profits to operate, so defectors need to secure their source(s) of income when defecting to establish their autonomous CO. Most importantly, potential defectors need to convince potential followers that they will be at least as well off financially if they follow the defecting leader. Promises of future riches without the leader of the defectors having a secure revenue stream are unlikely to be credible, and thus potential followers will choose not to defect. Additionally, foreseeing that the CO the defectors betray will retaliate against them and that criminal wars are very costly (financially and otherwise), defectors need to have a secure source of revenue to assure their survival. Delays in acquiring revenue streams could prove fatal.

Illicit market structure and defection viability: Central to economic viability is the structure of illicit markets. Strong fragments may be able to compete in illicit markets against their CO of origin upon fragmenting. Yet, depending on the illicit market, weaker fragments may not be able to compete with their CO of origin. For example, large drug

trafficking organizations typically oversee drug production, transportation, and smuggling across borders, which mid- and low-ranking potential defectors may be unable to undertake or compete in. However, these potential defectors can either control more localized subsets of those activities (e.g., controlling drug production in a region) or engage in alternative illicit activities (e.g., extortion). For strong fragments, our argument aligns with Varese (2020), who argues that fragmentation is most likely when the parent CO and the fragment operate in the same markets. For weak fragments, however, our argument diverges: we expect small fragments to operate in more localized or alternative markets than the parent CO.

3.2.2 Surviving Retaliation

Potential defectors know that if they fragment there is a high probability that they will face retaliation by the CO they betray. Potential defectors will only fragment if they expect to survive and absorb the costs of retaliation. We argue that this is where the strength of the fragment plays a central role. If a CO leader fragments and creates a new CO with relatively equal strength, they are better able to deal with retaliation, whereas a low-level boss that fragments and creates a new CO that is much weaker than the parent CO will bear a much higher retaliation cost—perhaps even death. This is consistent with Varese (2020), who argues that defectors must accumulate enough wealth and influence to not fear retaliation from the CO they leave. Various factors likely influence a fragment’s “strength,” including the number of members, coercive capacity, degree of government protection, and financial strength. This means potential defectors need to secure sufficient strength *before* or *at the moment of* fragmentation to assure that they can defend themselves from retaliation as soon as they break away.

We argue that two factors can mitigate retaliation costs, impacting relative strength and conditioning the fragmentation calculus: geography and alliances.

Geography as protection from retaliation: In most cases, COs have a center of operations, or stronghold. This is typically where they have historically operated, where they have built the strongest ties with political, economic, and social actors, and thus where

their leaders tend to live. However, COs also often operate in territories outside of their strongholds. Following the literature from civil and international conflict, we argue that geography is a key variable that can counterbalance relative strength because projecting military power across geographic distance is difficult and costly. Therefore, for defectors that fragment, distance can make up for some organizational strength by reducing the strength with which a parent CO can retaliate against the defectors. This implies that weaker defectors can fragment and survive if they operate far from their originating CO’s stronghold *at the moment of fragmentation*. This argument adds nuance to Varese (2020) by looking beyond powerful distant outposts and incorporating potential defectors both close to and far from their parent CO’s stronghold of differing relative strength.

Defensive alliances to survive fragmentation: While the literature has largely focused on wars between COs, they also frequently create alliances (Atuesta and Pérez-Dávila 2018). We further argue that potential defectors can countervail an unbalanced strength differential vis-à-vis the originating CO—to some degree—by strategically forming military alliances with other COs when they fragment. These alliances can take different forms, but most likely entail defectors receiving support from a rival of the originating CO. This support can include money, weapons, logistics, soldiers, or related aid. These alliances are likely most valuable when the fragment operates geographically close to the originating CO since this is where they can retaliate with full force.

This argument contrasts that of Atuesta and Pérez-Dávila (2018), who argue that alliances are “an altruistic measure” and that fragments “cannot survive without the creation of an alliance” (238-239). We see alliances stemming from fragmentation as instrumental and we do not claim alliances always form or are necessary for survival, but that they are strategically formed given geographic and relative strength considerations.

3.3 Observable Implications

Our theory yields some central predictions. The first set are descriptive and pertain to the CO member leading defection and the timing of fragmentation: Fragmentation (1) may

be led by high-, mid-, and low-level CO members and (2) should occur during moments of uncertainty that potential defectors can exploit. The second set are analytic and stem from the patterns we should observe from *realized* fragmentation: (3) The weaker the fragment relative to their originating CO, the more likely it is that they are involved in more localized illicit activities, either by controlling a subset of their originating CO's activities or by engaging in different illicit markets; (4) the weaker the fragment relative to their originating CO, the more likely they are to operate far from their originating CO; and (5) fragments operating close to their originating CO are most likely to form military alliances with other COs to help withstand retaliation.

4 Mexico's Criminal Landscape

The article tests the theoretical expectations in Mexico. Since the late 1980s, Mexico's criminal underworld was dominated by a handful of powerful COs, or cartels, that specialized in trafficking drugs to the U.S. and operated in regions key to the drug trade. Through the 1990s and early 2000s, these cartels began a series of deadly wars against each other. In response, the newly elected president Calderón declared war against drug trafficking in December of 2006. As part of a broader strategy to combat drug trafficking and drug cartels, the federal government adopted a strategy of leadership decapitation. Through this strategy, the government sought to weaken or dismantle powerful cartels. Instead, cartel fragmentation increased dramatically starting in 2010 and resulted in an ever increasing number of COs operating across the country. Not surprisingly, experts and scholars alike have attributed this fragmentation to the government policy of leadership decapitation ([Ríos 2013](#); [Phillips 2015](#); [Trejo and Ley 2016](#); [Atuesta and Pérez-Dávila 2018](#); [Contreras Velasco 2023](#)), which has become the conventional wisdom.

Beyond the government crackdown, two other emerging dynamics created conditions conducive for fragmentation. First, the diversification of cartels beyond drug trafficking and into markets such as extortion of local businesses, drug dealing to local consumers, property theft, and stealing oil from pipelines, among other activities ([Herrera and Martinez-](#)

Alvarez 2022) gave potential defectors access to new markets that were more local. Second, cartels expanding geographically created potential defectors in territories far from the cartel’s strongholds.

4.1 Data on Criminal Fragmentation

As illegal organizations, COs operate in secrecy, making data collection particularly challenging. Not surprisingly, a central reason for a lack of research on criminal fragmentation is the dearth of high-quality systematic data with information on each CO, including their origin, leaders, strongholds, alliances, and activities. Currently, even the number of COs operating in Mexico remains highly contested. Depending on the source and coding rules, estimates range from roughly 20 to more than 450 organizations over similar periods (Esberg 2021; Atuesta and Pérez-Dávila 2021; Raleigh, Kishi and Linke 2023; Sundberg, Eck and Kreutz 2012). Moreover, these sources do not include detailed information on the COs they identify that would allow further analysis. These measurement differences and issues underscore the conceptual and measurement challenges involved in studying criminal fragmentation and highlights the importance of transparent, theoretically grounded data collection.

To overcome this data limitation, we create a novel dataset of Mexico’s main drug cartels and their fragmentation between January 2000 and December 2018 through extensive qualitative research. See Online Appendix for details. In short, we first identify Mexico’s main drug cartels at the turn of the century (Cártel del Milenio, Cártel de Juárez, Cártel de Tijuana, Cártel de Sinaloa, Cártel del Golfo, Los Cuinis, Cártel de Oaxaca, Cártel de Colima, and Cártel de Sonora),⁴ and all cartels included in existing publicly available lists, and then systematically research each one to identify which operated as *independent* COs during our time period and collected key information on them. We define an independent

⁴While drug trafficking was dominated in the 1990s and 2000s by these groups, many smaller networks existed alongside small but important COs that were not drug cartels. These are excluded from the analysis.

CO as an organization that operates autonomously without answering to another CO, which entails them having their own leadership, structures, and illicit activities. We identify but do not track cells, factions, or armed wings that operate for or under a larger CO. This implies considering conflicts between factions as internal disputes unless there is evidence of a definitive and permanent split.

Rather than the hundreds of COs in other sources, we find that the country’s nine main drug cartels gave rise to 57 fragments between January 2000 and December 2018, for a total of 66 cartels.⁵ Figure 3 visualizes the fragmentation chronology of Mexico’s main drug cartels (see Online Appendix for list of names and abbreviations). Our extensive qualitative research identified and resolved three key systematic issues present in existing lists that inflate the number of cartels in Mexico: (1) some cartels use or are referred to by different names and each is counted separately, (2) structures within cartels that have names but are not independent are counted as independent cartels, and (3) some cartels cease to operate but continue to be counted in later years.⁶ If seeking to identify *independent* COs in Mexico, these issues have resulted in drastically inflated counts of cartels. These findings are consistent with (anonymized), whose external data sources identified 290 cartels operating in Mexico between 2006 and 2016, but whose qualitative research concluded that only 38 were autonomous cartels.

We create brief substantive descriptions of each fragmentation including information on the defector, reason for defecting, and geographic presence and main illicit activities vis-à-vis the originating cartel and include these in the Online Appendix.

4.2 Fragmentation Descriptions

To illustrate some of the key data, we present brief descriptions of three fragmentation events, focusing on the key variables of interest. We include descriptions for all fragmentation

⁵This excludes hyper-localized fragments that we are unable to identify or observe and measure.

⁶See Online Appendix for details and examples of these issues.

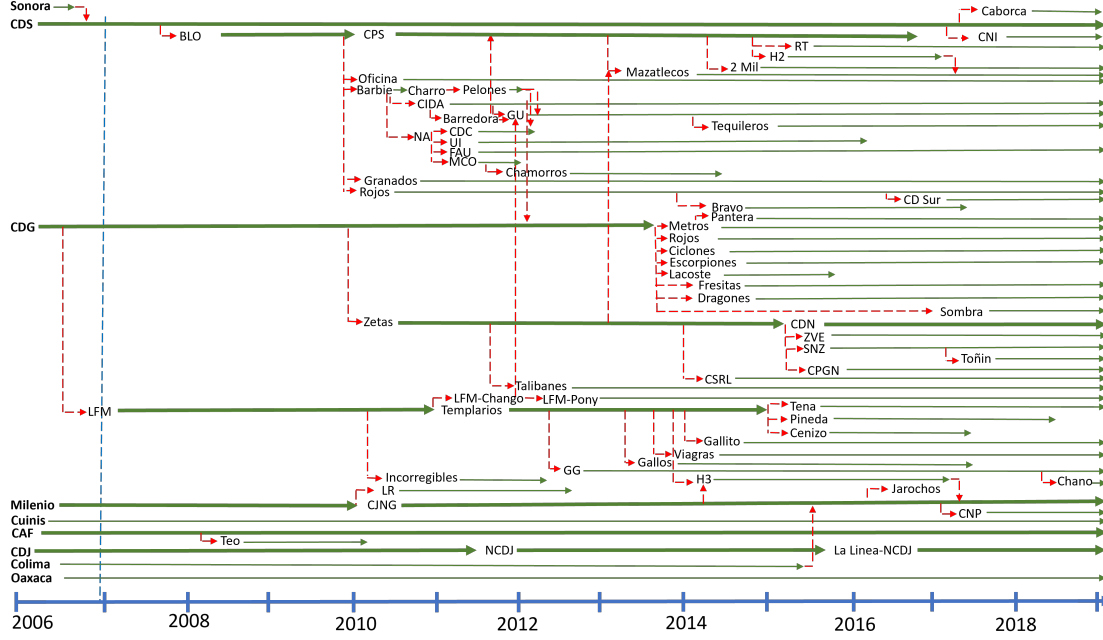


Figure 3: Temporal fragmentation of Mexico's main drug cartels between 2006 and 2018. Initials correspond to individual cartels. Solid green arrows represent years of operation. Dotted red arrows represent fragmentation. Vertical dotted line represents the beginning of the government war against drug trafficking. Original data by authors. See Online Appendix for list of names and abbreviations.

events in the Online Appendix.

Cartel Nueva Plaza (CNP): In March 2017, high-ranking members of Cartel Jalisco Nueve Generacion (CJNG) established a new CO under the leadership of Carlos Enrique Sánchez Martínez, the right-hand man of CJNG's leader Nemesio Oseguera Cervantes, and Erick Valencia Salazar, a high-ranking member of the Valencia family that makes up the core of CJNG. The split occurred after Sánchez Martínez ordered the assassination of a financial operator, which triggering a rupture with Nemesio Oseguera. At the time of the fragmentation, CNP maintained a stronghold in the Metropolitan Area of Guadalajara, Jalisco, just like the CJNG, and focused on drug trafficking, an activity they had previously carried out under the CJNG. During the split, CNP formed an alliance with the Sinaloa Cartel to challenge the CJNG. This fragmentation is coded as a high-ranking leader leading defection due to internal disputes, and a fragment of relatively similar strength as the originating cartel that formed a defensive alliance and with overlapping stronghold and competing in the same

market.

El Teo: Following the arrest of the Tijuana Cartel's leader Eduardo Arellano Félix in April 2008, an important lieutenant named Teodoro García Simental (known as "El Teo") broke from the organization due to disagreements over leadership succession. Refusing to accept Fernando Sánchez Arellano as the new leader, García Simental severed ties with the Tijuana Cartel, triggering a conflict that made Tijuana one of the most violent cities in the world. When the fragmentation occurred, both "El Teo" and the Tijuana Cartel maintained their strongholds in Tijuana, Baja California. However, their criminal operations diverged: while the Tijuana Cartel focused primarily on drug trafficking from Mexico to the United States, García Simental was heavily involved in drug dealing, extortion, and kidnapping for ransom. To strengthen his position and counter the Tijuana Cartel, García Simental forged an alliance with the Sinaloa Cartel. This event is coded as a mid-level leader fragmenting due to the leader's arrest, with the fragment being moderately weaker than the originating CO, sharing strongholds but involved in different activities, and forming a defensive alliance.

Cartel Independiente de Acapulco (CIDA): Following the arrest of CO leader Edgar Valdez Villareal in August 2010, local leaders in the coastal city of Acapulco decided not to follow the leadership of Valdez Villareal's successor and form CIDA. They allegedly also recruited former members of the Michoacan Family Cartel, local criminals, and a faction called Los Negros. CIDA operated out of the city of Acapulco in the state of Guerrero, while the successor of Valdez Villareal continued operating out of the neighboring state of Morelos. When they fragmented, CIDA was involved in drug dealing and other localized predatory crimes as opposed to large scale drug trafficking undertaken by Valdez Villareal and his successor. This event is coded as fragmentation by low-level leaders due to leadership arrest, with the fragment being weaker than the originating CO, operating in a subset of the illicit market and neighboring state, and without defensive alliances.

4.3 Measuring Fragments

First, to identify the defectors, we collect information on the individual(s) leading each fragment. While Mexican COs vary in structure and how hierarchical and centralized they are, they generally include various levels of leadership and operational roles. We consider three types of defectors, high-, medium-, and low-ranking defectors. We classify individuals leading defection as high-ranking defectors if they are part of the central decision-making structure of the CO they fragment from, including leaders and those immediately around them, and leaders of powerful armed wings (*brazos armados*). We define mid-ranking defectors as those that hold intermediate positions within their COs, which we measure as regional leaders (*jefes regionales*). Finally, low-ranking defectors operate under regional leaders, and include local leaders (*jefes de plaza*) and leaders of smaller enforcement units (*jefe de sicarios*).

To measure the relative strength of a fragment vis-à-vis its CO of origin, we would ideally observe various aspects of each CO, for example, the number of members, economic resources, coercive capacity, and degree of protection from the state, among others. Unfortunately, this information is neither observable nor measurable. Instead, we use the rank of the individual defecting within the CO they defect from as a proxy of their strength. Our categorization therefore includes three categories: (1) “Balanced” when a high-ranking member leads fragmentation, (2) “Moderately uneven” when a mid-ranking member leads fragmentation, and (3) “Significantly uneven” when a low-ranking member leads fragmentation. While imperfect, rank provides a theoretically grounded and observable proxy for relative strength because higher-ranking members generally command greater organizational resources, authority, personnel, and territorial control. Given the absence of systematic measures of CO strength, we believe it is the best available proxy.

To investigate the moment of fragmentation, we collect data on leadership turnover and factors prompting fragmentation. Because the literature emphasizes the role of leadership turnover in fragmentation, especially those caused by government leadership decapitation

policies, we create a list of all leaders across time for each cartel, along with the reason there was leadership turnover. Alternatively, we also collect information on the factors that prompted each fragmentation. We note that determining the precise motivations for each individual to fragment is difficult given that these are private decisions from individuals operating in the underworld. Rather than speculating *why* individuals leading defection decided to fragment, which is unfeasible for most fragments, we focus on identifying the factor that prompted fragmentation. Thus, for each instance of fragmentation, we collect information on the stated circumstance that precipitated fragmentation.

4.4 Measuring Fragmentation Patterns

To investigate the implications of the strategic logic underlying fragmentation, we collect data on the key factors emphasized by the theory.

First, to measure which activities fragments were involved relative to their parent CO, we collect information on the *main* activities⁷ of each cartel at the time of fragmentation. Most activities are self-contained, but we break down drug trafficking to its components given that it encompasses various activities. Specifically, for cartels involved in drug trafficking, we identify whether they were involved in drug production, drug transportation, drug smuggling across the US border, or all of them. We consider these specific activities as subsets of drug trafficking. We also include drug dealing, or selling small amounts to local consumers, as a subset of drug trafficking. We then create three categories to measure the activities each fragment is involved in relative to the main activities of the CO they fragment from: (1) fragments are involved in the same activities, (2) fragments are involved in a subset of the activities, and (3) fragments are involved in different activities. We illustrate the second category through this example: if a CO that specializes in drug trafficking experiences fragmentation and its fragment specializes in drug production, we consider this a subset of

⁷Mexican cartels have diversified and are involved in a host of activities. Identifying them all is challenging, but most specialize in a few activities, which we identify in our data collection.

the activities of the CO of origin.

To test whether geography shapes fragmentation, we identify the strongholds of each cartel at the moment of fragmentation. For larger COs this can entail an entire state, while for smaller COs this can be a region within a state, a few municipalities, or even a single city. We underscore that this measure should not be taken as a definite measure of exact boundaries, but rough geographic regions. From this information, we create a measure with four values to estimate geographic distance between the parent CO and its fragment, ranging from near to faraway: (1) same state and strongholds overlap, (2) same state but strongholds do not overlap, (3) strongholds are in contiguous states, and (4) strongholds are in different states that are not contiguous.

Finally, to test whether defectors strategically form alliances that allow them to fragment, we identify whether each fragment created an alliance at the time of fragmentation for the explicit purpose of fighting the CO they fragment from. Accordingly, this measure excludes pre-existing alliances, alliances formed after fragmenting that are not directly related to their defection, and alliances formed for reasons other than fighting the CO they defect from.

5 Descriptive Evidence: Fragmentation Leaders and Triggers of Fragmentation

We first empirically assess the first set of theoretical predictions: Fragmentation (1) may be led by high-, mid-, and low-level CO members and (2) should occur during moments of uncertainty that potential defectors can exploit.

First, we find that those leading fragments come from all ranks and thus find support for the four types of fragmentation depicted in Figure 2. Figure 4 shows the distribution of fragmentation types categorized by who leads the fragment and their relative strength vis-à-vis their parent CO. We find that fragmentations are relatively evenly distributed between the types we measure, with only 23% of defections being led by high-level members. This means that that fragmentation is primarily driven by mid- and low-level leaders. Moreover, when

then categorizing fragmentation types by the relative strength vis-à-vis their parent CO or other fragments under dissolution, we see that only 38.6% are of relatively similar strengths, meaning that most fragments need to seriously consider their survival given retaliation from their originating CO when they fragment.

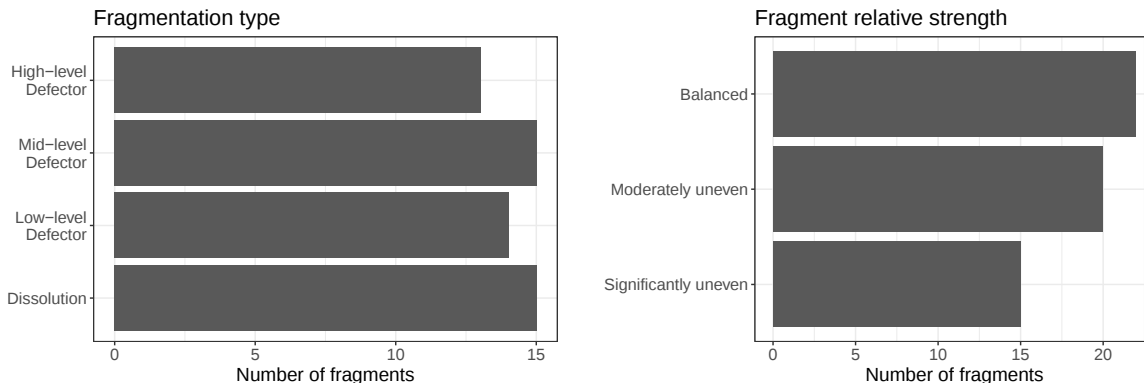


Figure 4: Number of fragments by type of fragmentation (left) and relative strength of fragment vis-à-vis CO of origin or other fragments under dissolution (right).

Second, we first examine whether leadership decapitation explains fragmentation as is regularly assumed in existing literature. Figure 5 shows the number of leadership turnovers by reason for turnover and whether it prompted fragmentation. The results are surprising: *Only 13.14% of leadership turnovers resulted in fragmentation* with 15 of these 18 turnovers being caused by government kingpin actions. These results underscore that fragmentation following leadership turnover is actually very rare and that government policies are neither necessary nor sufficient to explain fragmentation.

Beyond leadership turnover, we analyze each fragmentation event to identify the postulated reason behind the defection, with results shown in Figure 5. We find that 61.4% of fragmentations were prompted by government leadership decapitation policies, meaning that the conventional wisdom that government kingpin strategies explain fragmentation in Mexico is not fully supported by the evidence, though it is the main contributor.

In the 38.6% of cases where leadership decapitation strategies were not directly responsible for fragmentation, we find a wide variety of circumstances prompting fragmentation:

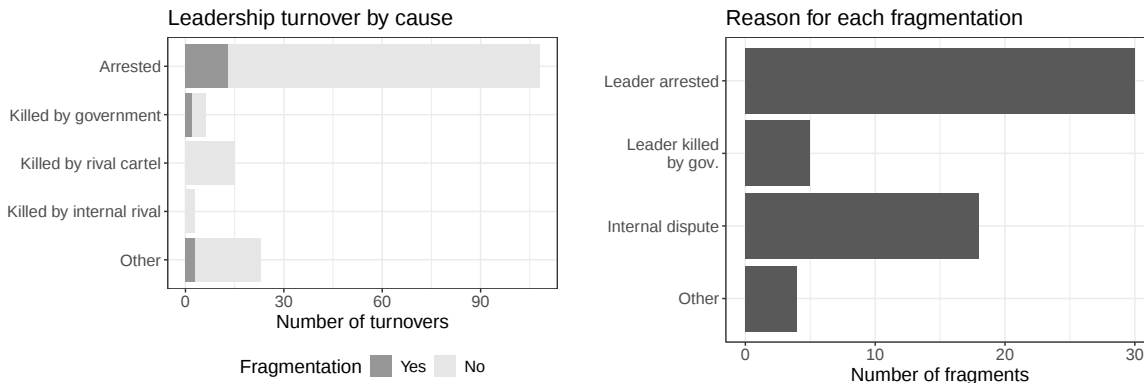


Figure 5: Leadership turnover and whether it resulted in fragmentation (left) and reasons for each fragmentation (right).

internal betrayals (five instances), the death of a leader by natural causes (one instance), intense moments of internal disagreements (five instances), internal disagreements that do not initially appear as severe (seven instances), financial disagreements (two instances), the killing of a defector’s brother resulted (one instance), and opportunism due to intense government pressure targeting CO leaders (one instance).

The findings have three key implications for reinterpreting existing research and for future research on fragmentation and kingpin strategies: i) assuming that leadership removal leads to fragmentation is misleading, ii) leadership decapitation cannot be used as a proxy for fragmentation, and iii) the removal of mid- and low-level leaders is not a proxy for fragmentation. Moreover, our qualitative research finds repeated allegations for a significant number of arrests and killings of leaders by government forces that internal or external cartel rivals provide information to government agencies on the location of these leaders. If these allegations are accurate, they mean that many leadership decapitations are endogenous to inter and intra-cartel dynamics and cartel-government relations and are thus not exogenous shocks and cannot be used as such.

6 Analytical Evidence: Logic of Fragmentation

We now turn to analyzing the second set of theoretical predictions regarding the observable patterns of realized fragmentation by evaluating how the relative strength of fragments

interacts with the illicit markets they operate in, their geography, and their alliances. Our empirical strategy is designed to assess whether the factors highlighted by the model help explain the realized pattern of fragmentation. Thus, we do not take a counterfactual approach of comparing actual defectors to an observed population of potential defectors that did not splinter. Because we do not observe the full population of potential defectors, our aim is not to estimate the causal effect of particular factors on fragmenting. Instead, we follow a theory-guided congruence test by examining whether the theory’s observable implications align with the empirical patterns of fragments—which markets they operate in, where their strongholds are, and whether they form alliances when fragmenting.

6.1 Economic Viability

Figure 6 shows the activities relative to their originating CO for different fragment types and stronghold location. Two descriptive results are worth highlighting. First, we find that fragments do control specific illicit markets *before or at the moment of* fragmentation rather than seeking markets *after* fragmenting. Second, most fragments are involved in either a subset of (40.35%) or different activities (17.54%) than their CO of origin, with the rest (42.11%) being involved in the same activities. This indicates that in most instances, defectors choose not to or are unable to directly compete against their originating CO over entire illicit markets.

Analytically, we find that illicit markets and geography shape the decision of potential defectors to fragment by structuring profit opportunities. We find a clear pattern wherein weaker fragments are more likely to be involved in subsets or different activities than their originating CO, with this market structure and geographic distance allowing (weaker) defectors to fragment in a viable manner (seen more clearly in Online Appendix Figure A1). The weakest fragments, in particular, specialize in a subset of or different illicit activities than the originating CO, clearly demonstrating how illicit markets and geography shape financial viability, allowing only certain potential defectors in certain places to defect depending on who they are and their relative strength. These other activities tend to be more local than

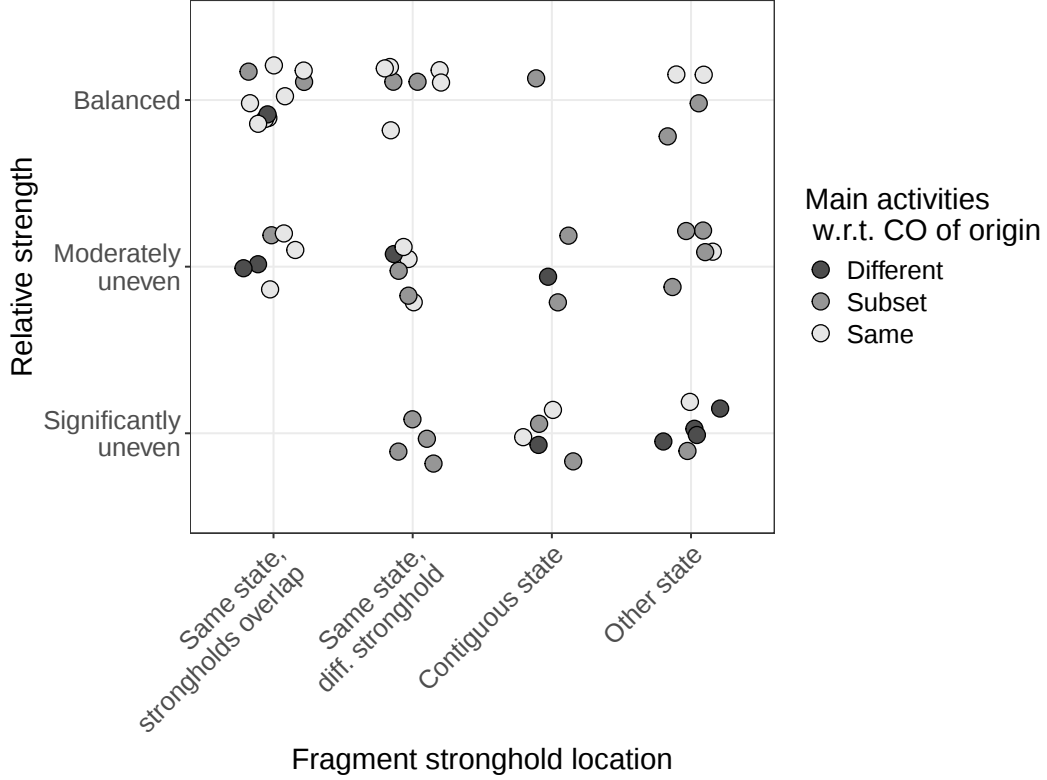


Figure 6: Fragment types by relative strength of defector and their main activities relative to CO of origin at moment of fragmentation by location of stronghold.

drug trafficking, with some of the most prevalent being drug dealing to local consumers, extortion of local businesses, oil theft, property theft, and kidnapping for ransom.

These results also highlight two key corollaries of illicit markets in Mexico: (1) the extensiveness of drug trafficking allows fragments, particularly weaker ones, to fragment when involved in a subset of the larger market, and (2) large drug cartels diversifying their activities during the late 2000s facilitated fragmentation by giving mid- and low-level potential defectors access to alternative local illicit activities they could exploit to fragment.

6.2 Surviving Retaliation

Figure 7 shows different fragment types by the geographic location of their strongholds relative to their parent CO and whether they formed alliances when they fragmented to fight their parent CO. The results are stark and clearly demonstrate that potential defectors strategically consider their strength relative to the CO they seek to betray given survival

concerns, and that geography and military alliances shape this calculus. Geography can make up for weaker strength differentials and allow mid- and low-level members to defect when further from their originating COs' stronghold, while alliances can reinforce high- and mid-level fragments whose strongholds are in the same state as the CO they betray.

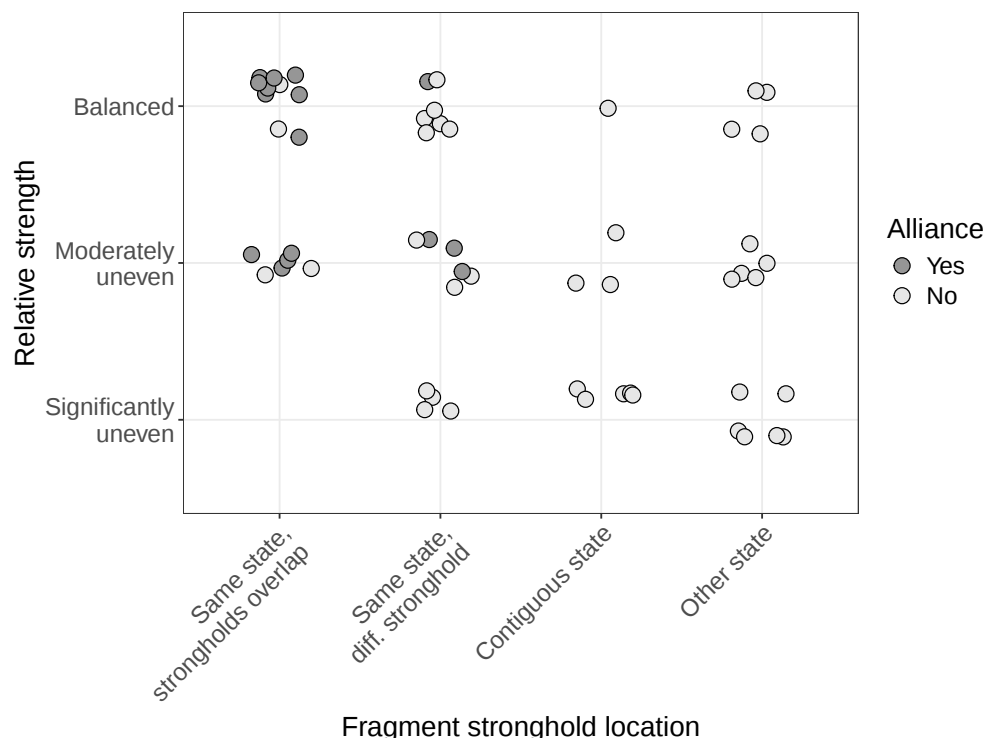


Figure 7: Fragment types by relative strength of defector and their stronghold location and alliances with rivals at moment of fragmentation.

Along one dimension, the weaker the fragments, the further their strongholds are relative to the CO they betray. While 45.45% of fragments with similar strength share strongholds with their CO of origin, only 30% of medium fragments do, and *no* weak fragment do. This result would not be captured by a regression or correlation coefficient, but is key: geography plays a key role in the strategic self-selection of potential defectors into fragmentation, with lower-level potential defectors discounting the possibility of fragmenting the closer they operate to their CO's stronghold due to the inherent risk. This further indicates that the geographic expansion of drug cartels that began in 2007 created conditions that facilitated fragmentation, as it created more regional and local bosses controlling territories beyond the

stronghold of their cartel.

Moreover, only fragments whose strongholds are in the same state as the CO they defect from form military alliances to survive fragmentation. Specifically, 8 of the 10 large fragments that share strongholds with their CO of origin form military alliances when they fragment, while 4 of the 6 medium fragments do. That means 12 of the 16 (75%) fragments who share a stronghold with their CO of origin form alliances to survive fragmentation. Moreover, 23.53% (4 of 17) of those in the same state but without overlapping strongholds also form alliances to fight their CO of origin when they fragment. No fragment with strongholds in states outside the state where their CO of origin has its stronghold creates these alliances. This provides very strong evidence that these military alliances are key when fragmenting near the CO of origin for both high- and medium-level defectors leading fragmentation.

6.3 Alternative Explanations

Methodologically, a potential concern is measurement error favoring large and violent defectors, biasing against smaller fragments. This could distort the empirical patterns if visibility correlates with factors such as geography, alliances, or market access. We mitigate this concern by triangulating across hundreds of sources, many based on extensive investigation rather than violent reporting, and systematically coding the universe of known fragments rather than a sample. Even more, we find almost the same number of low-ranking defectors as medium- and high-ranking defectors, further minimizing this concern.

Substantively, fragmentation could reflect organizational weakness rather than a calculated decision by opportunistic defectors. Our framework incorporates shocks to organizational strength but conceptualizes fragmentation as a strategic exit by opportunistic defectors: weakness may enable defection, but the decision to fragment depends on economic viability and survival logics. Moreover, if weakness was driving fragmentation, we would observe small fragments defecting in their parent CO's strongholds as these would pose little threat, which is not consistent with our data.

Likewise, fragmentation could instead be driven by exogenous market shocks (e.g., new

market opportunities or positive price shocks) that make defecting more attractive than remaining. First, [Esberg \(2025\)](#) finds no correlation between market shocks and new cartels in Mexico. Moreover, our framework is agnostic to the source of opportunity, but focuses on how these opportunities differentially shape whether potential defectors of different strengths choose to fragment given that they face threats from the CO they betray regardless of market shocks. We also believe that our empirical patterns (e.g., weaker fragments having to rely on more localized markets) hold in such shocks.

Finally, one alternative explanation is that of displacement: fragments splinter first and later relocate as they search for new markets after failing to compete with their parent organization (e.g. [Esberg 2025](#)). This displacement account differs from our self-selection argument, which predicts that fragments emerge where they already possess local advantages. To distinguish between these explanations, we measure fragments’ geography and market involvement as close to the moment of splintering as possible, and in many cases before formal separation, allowing us to observe whether they subsequently relocate. We find only a handful of instances of post-fragmentation relocation, with all occurring only after defeat in retaliation wars. These cases therefore reflect the consequences of losing inter-cartel wars rather than the fragmentation process itself.

7 Further Findings

Our data reveals further insights worth noting that we briefly introduce here while providing further details in the Online Appendix.

Propensity to fragment: We find an inverted “U” pattern where large drug cartels experience few fragmentations, fragments of large drug cartels experience many fragmentations, and fragments of fragments experience few fragmentations. This pattern suggests that large drug cartels are especially effective at enforcing cohesion and dissuading splintering, possibly because of their superior coercive capacity and ability of credibly threaten potential defectors. Fragments of fragments may also see fewer fragmentations as they become too small and localized to fragment further.

Successful dismantling: We find 18 instances of cartels ceasing to operate—17 of these as a direct result of government leadership decapitation—and 5 of cartels being absorbed by larger cartels. Against the widely held belief that kingpin strategies are ineffective, we find that government kingpin strategies *can* successfully disband COs, which has received virtually no scholarly or media attention due to its failure in the vast majority of cases. Yet, this by no means outweighs the costs and negative consequences of these policies.

From drug lords to warlords: We find that fragmentation has contributed to the evolution of cartel leadership from traditional drug traffickers to militarized leaders: 18 of the 57 defecting leaders (31.57%) led armed wings before or at the moment of defection. By militarized leaders, we do not mean street soldiers or low-level hitmen, but individuals who led militarized armed wings (*jefe de sicarios* or *jefe de brazo armado*). Given their coercive expertise, these leaders likely significantly impact their fragment’s propensity to use violence.

From drug cartels to predatory cartels: At the turn of the century, Mexican drug cartels specialized in transporting drugs to the U.S. We find that 18 of 57 fragments specialize in activities that are far more predatory towards citizens (e.g., extortion, theft, local drug dealing, kidnapping for ransom).

8 Generalizability

Much of existing literature on the violent consequences of criminal fragmentation focuses on the Mexican case. Yet, criminal fragmentation is more widespread than currently recognized and we believe that our theory generalizes beyond Mexico, Latin America, and drug cartels. To illustrate this plausible generalizability, we provide two short case studies of criminal fragmentation in Ecuador and Italy while highlighting the importance of relative strength, illicit markets, geography, and alliances. Additional case studies from El Salvador, Brazil, Colombia, the U.S., Japan, and Australia are provided in the Online Appendix.

Ecuador is currently experiencing an acute security crisis stemming from criminal fragmentation and criminal wars. In the late 1990s, a drug cartel called Los Choneros emerged in the city of Chone. Los Choneros subsequently grew and expanded to prisons and new

territories, becoming one of the dominant COs in Ecuador. Following the assassination of their leader in 2020, various internal factions of varying strength broke ranks and became independent, including Los Lobos, Los Tiguerones, and Los Chone Killers (an armed wing). To combat Los Choneros—the strong parent CO—the three fragments formed an alliance called “Nueva Generación.” Los Chone Killers and the Tiguerones, weaker COs that could not compete in drug trafficking with Los Choneros, focused on local markets including extortion, robbery, kidnapping, and drug dealing. Los Lobos, a stronger fragment, was able to compete in drug trafficking with Los Choneros. Geographically, Los Choneros had extensive operations in the western provinces of Manabí and Guayas, while Los Lobos initially operated out of the eastern province of Pastaza and subsequently competed with Los Choneros over territory. The weaker Los Tiguerones and Chone Killers had some geographic protection by operating out of the northwestern city of Esmeraldas and the city of Durán, respectively. Criminal fragmentation triggered violence: the national homicide rate went down from 8 per 100,000 in 2020 to 46 per 100,000 in 2023 ([GK 2022](#); [Newton 2023](#); [Insight Crime 2022, 2023](#)).

Violence waves in Italy are generally attributed to mafia wars, with three main mafias receiving most attention, Cosa Nostra, 'Ndrangheta, and the Camorra. Yet, some violent waves are due to fragmentation creating lesser known mafias. For instance, in the early 1970s in the province of Caltanissetta in Sicily, Italy, two Cosa Nostra (Sicilian mafia) clans operated in the town of Riesi, one led by the Corleonesi family and the other by Di Cristina. Following the killing of Di Cristina by the Corleonesi clan in 1978, followers of Di Cristina were kicked out of the Cosa Nostra. Soon thereafter, they formed Stidda (a weaker mafia) by uniting and allying with other expelled Cosa Nostra members, which triggered a war between the two mafias. Geography has protected the weaker Stidda. As [Varese \(2020, 321\)](#) notes, Stidda “has been active in southern and eastern Sicily, away from the Sicilian mafia strongholds in the northwestern part of the island... [so their] territory does not overlap with that of the Sicilian mafia.” Moreover, with the rise to power of the Corleonesi in the 1970s

and 1980s, the Cosa Nostra reduced their involvement in drug trafficking and increasingly focused on public procurement and protection rackets. This allowed Stidda—who could not compete with Cosa Nostra—to pursue drug trafficking and, importantly, other niches ignored by Cosa Nostra at that time like prostitution and gambling. The fragmentation of the Stidda was one driver of violence during the Second Mafia War in the 1980s and subsequent conflicts with other mafias led to hundreds of murders.

9 Conclusion

Criminal fragmentation has long been recognized as a major driver of violence, yet the fragmentation process itself has remained largely unexplained. This article opens that black box by theorizing fragmentation as a strategic decision made by potential defectors facing moments of organizational uncertainty. We argue that members considering defection weigh two fundamental concerns: whether they can survive economically when splintering and whether they can survive retaliation from the parent organization. Using an original dataset tracing the genealogy of Mexico’s major drug cartels and their fragments between 2000 and 2018, we show that these calculations shape who fragments, where fragments emerge, the illicit markets they enter, and the alliances they form. Rather than treating fragmentation as a simple consequence of kingpin strategies, the findings demonstrate that fragmentation reflects strategic selection among potential defectors facing different opportunities and constraints.

These findings also have important implications for policy. Much of the debate surrounding leadership decapitation has focused on whether removing criminal leaders increases violence by triggering fragmentation. Our results suggest a more nuanced perspective. Leadership removals create opportunities for fragmentation, but fragmentation itself depends on the incentives and capabilities of potential defectors. Consequently, the effects of enforcement strategies are conditional rather than automatic. More broadly, the findings suggest that interventions against armed organizations should account not only for whether they weaken existing organizations but also for how they reshape the strategic environment facing po-

tential challengers. Policies that ignore these organizational incentives may unintentionally encourage the emergence of new armed actors even when they successfully disrupt existing ones.

More broadly, this article contributes to a growing literature on the organization and evolution of armed non-state actors. Whether studying rebel movements, militias, terrorist organizations, or criminal groups, scholars increasingly recognize that organizational change shapes patterns of violence, governance, and state authority. Understanding when organizations fragment is therefore essential for explaining how conflicts involving armed non-state actors emerge, evolve, and persist. By identifying the conditions under which members choose to defect and establish new organizations, this article provides a foundation for explaining not only when fragmentation occurs, but also how it transforms political order in areas where armed organizations compete to govern, extract resources, and exercise violence.

References

- Agarwal, Rajshree, Raj Echambadi, April M. Franco and MB Sarkar. 2004. "Knowledge Transfer Through Inheritance: Spin-Out Generation, Development, and Survival." *Academy of Management Journal* 47(4):501–522.
- Agreste, Santa, Salvatore Catanese, Pasquale De Meo, Emilio Ferrara and Giacomo Fiumara. 2016. "Network structure and resilience of Mafia syndicates." *Information Sciences* 351:30–47.
- Ari, Barış and Theodora-Ismene Gizelis. 2020. "Civil conflict fragmentation and the effectiveness of UN peacekeeping operations." *International Peacekeeping* 27(4):617–644.
- Atuesta, Laura H. and Yocelyn Samantha Pérez-Dávila. 2018. "Fragmentation and cooperation: the evolution of organized crime in Mexico." *Trends in Organized Crime* 21(3):235–261.
- Atuesta, Laura H. and Yocelyn Samantha Pérez-Dávila. 2021. *Presencia de los grupos criminales y de las fuerzas de seguridad en el contexto de la pandemia por COVID-19*. CIDE PPD.
- Ayling, Julie. 2009. "Criminal organizations and resilience." *International Journal of Law, Crime and Justice* 37(4):182–196.
- Bagley, Bruce. 2013. "The evolution of drug trafficking and organized crime in Latin America." *Sociologia, problemas e prácticas* (71):99–123.
- Berlusconi, Giulia. 2022. "Come at the king, you best not miss: criminal network adaptation after law enforcement targeting of key players." *Global crime* 23(1):44–64.
- Calderón, Gabriela, Gustavo Robles, Alberto Díaz-Cayeros and Beatriz Magaloni. 2015. "The beheading of criminal organizations and the dynamics of violence in Mexico." *Journal of Conflict Resolution* 59(8):1455–1485.
- Campbell, Benjamin A., Martin Ganco, April M. Franco and Rajshree Agarwal. 2012. "Who leaves, where to, and why worry? Employee mobility, entrepreneurship and effects on source firm performance." *Industrial and Labor Relations Review* 65(1):65–87.
- Cavallaro, Lucia, Annamaria Ficara, Pasquale De Meo, Giacomo Fiumara, Salvatore Catanese, Ovidiu Bagdasar, Wei Song and Antonio Liotta. 2020. "Disrupting resilient criminal networks through data analysis: The case of Sicilian Mafia." *Plos one* 15(8):e0236476.
- Chemmanur, Thomas J. and An Yan. 1983. "Spin-offs and the new firm formation process." *California Management Review* 25(2):3–16.
- Contreras Velasco, Oscar. 2023. "Unintended consequences of state action: how the kingpin strategy transformed the structure of violence in Mexico's organized crime." *Trends in organized crime* pp. 1–25.

- Correa-Cabrera, Guadalupe. 2017. *Los Zetas Inc. criminal corporations, energy, and civil war in Mexico*. University of Texas Press.
- Cunningham, Kathleen Gallagher, Kristin M. Bakke and Lee J.M. Seymour. 2012. “Shirts today, skins tomorrow: Dual contests and the effects of fragmentation in self-determination disputes.” *Journal of Conflict Resolution* 56(1):67–93.
- Esberg, Jane. 2021. “More than cartels: Counting Mexico’s crime rings.” <https://www.crisisgroup.org/latin-america-caribbean/mexico/more-cartels-counting-mexicos-crime-rings>.
- Esberg, Jane. 2025. “Criminal fragmentation in Mexico.” *Political Science Research and Methods* p. 1–8.
- Faulkner, Christopher M and Austin C Doctor. 2021. “Rebel fragmentation and the recruitment of child soldiers.” *International Studies Quarterly* 65(3):647–659.
- Gambardella, Alfonso, Martin Ganco and Florence Honoré. 2015. “Using what you know: Patented knowledge in incumbent firms and employee entrepreneurship.” *Organization Science* 26(2):456–474.
- Ganco, Martin. 2013. “Cutting the Gordian knot: The effect of knowledge complexity on employee mobility and entrepreneurship.” *Strategic Management Journal* 34(6):666–686.
- Gates, Scott. 2002. “Recruitment and allegiance: The microfoundations of rebellion.” *Journal of Conflict resolution* 46(1):111–130.
- GK. 2022. “¿Quiénes son los Chone Killers?” <https://gk.city/2021/10/21/quienes-son-los-chone-killers/>.
- Herrera, Joel Salvador and Cesar B Martinez-Alvarez. 2022. “Diversifying violence: Mining, export-agriculture, and criminal governance in Mexico.” *World Development* 151:105769.
- Insight Crime. 2022. “Lobos.” <https://insightcrime.org/ecuador-organized-crime-news/lobos-ecuador/>.
- Insight Crime. 2023. “Choneros.” <https://insightcrime.org/ecuador-organized-crime-news/los-choneros/>.
- Kalyvas, Stathis N. 2015. “How civil wars help explain organized crime—and how they do not.” *Journal of Conflict Resolution* 59(8):1517–1540.
- Kenny, Paul D. 2010. “Structural integrity and cohesion in insurgent organizations: Evidence from protracted conflicts in Ireland and Burma.” *International Studies Review* 12(4):533–555.
- Klepper, Steven and Peter Thompson. 2010. “Disagreements and intra-industry spinoffs.” *International Journal of Industrial Organization* 28(5):526–538.

- Klepper, Steven and Sally Sleeper. 2005. "Entry by spinoffs." *Management science* 51(8):1291–1306.
- Kostelnik, James and David Skarbek. 2013. "The governance institutions of a drug trafficking organization." *Public Choice* 156:95–103.
- Leeson, Peter T and David B Skarbek. 2010. "Criminal constitutions." *Global Crime* 11(3):279–297.
- Lessing, Benjamin. 2021. "Conceptualizing criminal governance." *Perspectives on politics* 19(3):854–873.
- Lessing, Benjamin and Graham Denyer Willis. 2019. "Legitimacy in criminal governance: Managing a drug empire from behind bars." *American Political Science Review* 113(2):584–606.
- Lidow, Nicholai Hart. 2016. *Violent order: Understanding rebel governance through Liberia's civil war*. Cambridge University Press.
- Mahoney, Charles W. 2020. "Splinters and schisms: Rebel group fragmentation and the durability of insurgencies." *Terrorism and Political Violence* 32(2):345–364.
- Newton, Christopher. 2023. "Ecuador Gang Massacre Highlights Intensified Fight for Drug Routes." <https://insightcrime.org/news/gang-massacres-nine-ecuador-fight-drug-routes-intensifies/>.
- Pereda, Valentin. 2021. "Macabre ceremonies: How Los Zetas produces extreme violence to promote organizational cohesion." *Violence: An International Journal* 2(2):278–296.
- Pereda, Valentin. 2024. "How organizational culture shapes criminal organizations' street-level territorial control capabilities: a study of Los Zetas." *Crime, Law and Social Change* 81(1):53–74.
- Pereda, Valentin and David Décary-Hetu. 2024. "Illegal Market Governance and Organized Crime Groups' Resilience: A Study of The Sinaloa Cartel." *The British Journal of Criminology* 64(2):326–342.
- Perkoski, Evan. 2019. "Internal politics and the fragmentation of armed groups." *International Studies Quarterly* 63(4):876–889.
- Phillips, Brian J. 2015. "How does leadership decapitation affect violence? The case of drug trafficking organizations in Mexico." *The Journal of Politics* 77(2):324–336.
- Raleigh, Clionadh, Roudabeh Kishi and Andrew Linke. 2023. "Political instability patterns are obscured by conflict dataset scope conditions, sources, and coding choices." *Humanities and Social Sciences Communications* 10(1):1–17.
- Reuter, Peter. 1983. *Disorganized crime: The economics of the visible hand*. MIT press Cambridge, MA.

- Robinson, Kaitlyn and Iris Malone. 2024. "Militant splinter groups and the use of violence." *Journal of conflict resolution* 68(2-3):404–430.
- Rudloff, Peter and Michael G Findley. 2016. "The downstream effects of combatant fragmentation on civil war recurrence." *Journal of Peace Research* 53(1):19–32.
- Ríos, Viridiana. 2013. "Why did Mexico become so violent? A self-reinforcing violent equilibrium caused by competition and enforcement." *Trends in organized crime* 16:138–155.
- Shekhar, Suraj. 2018. "Signaling, reputation and spinoffs." *Journal of Economic Behavior & Organization* 149:88–105.
- Skarbek, David. 2012. "Prison gangs, norms, and organizations." *Journal of Economic Behavior & Organization* 82(1):96–109.
- Skarbek, David. 2014. *The social order of the underworld: How prison gangs govern the American penal system*. Oxford University Press.
- Skarbek, David. 2024. "The political economy of criminal governance." *Public Choice* pp. 1–24.
- Sundberg, Ralph, Kristine Eck and Joakim Kreutz. 2012. "Introducing the UCDP non-state conflict dataset." *Journal of peace research* 49(2):351–362.
- Trejo, Guillermo and Sandra Ley. 2016. "Federalism, drugs, and violence. Why intergovernmental partisan conflict stimulated inter-cartel violence in Mexico." *Política y gobierno* 23(1):11–56.
- Trejo, Guillermo and Sandra Ley. 2020. *Votes, drugs, and violence: The political logic of criminal wars in Mexico*. Cambridge University Press.
- UNODC. 2023. *Global Study on Homicide 2023*. New York City, NY: United Nations.
- Varese, Federico. 2020. "How mafias migrate: transplantation, functional diversification, and separation." *Crime and Justice* 49(1):289–337.
- Woldemariam, Michael. 2018. *Insurgent fragmentation in the Horn of Africa: Rebellion and its discontents*. Cambridge University Press.
- Wyer, Frank. 2024. "Peace Versus Profit: Rebel Fragmentation and Conflict Resurgence in Colombia." *International Organization* 78(4):701–730.