

# The Logic of Violence in Drug Wars

## Dissertation Project

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### Abstract

In all Mexico, Colombia and Brazil, drug trafficking organizations' (DTOs) brazen attacks on the state contribute to social disruption on par with that of civil wars. Yet these groups have no revolutionary, separatist, or ideological agenda. This poses a puzzle: what do DTOs gain from anti-state violence? Do drug cartels attack because they are *desperate*, as Mexico's President Calderón would have it, or because they are *strong*, and know they can intimidate state actors? Does corruption make violence less attractive (by facilitating bribes) or more so (since a corrupt state cannot strike back forcefully)? This study seeks to explain anti-state violence as an equilibrium outcome in an ongoing strategic interaction between the state and criminal groups – i.e. it asks under what conditions it *makes sense* for DTOs to attack, and why. In particular, it focuses on the structure of state security institutions and how they condition the policy responses that ultimately shape the incentives of DTOs. As part of this research project, I will create and disseminate the first quantitative datasets on violent confrontations between DTOs and state forces in Colombia, Mexico and Brazil. This “article” presents an outline of the project's design and potential contributions, and offers a very preliminary model that suggests the direction in which the analysis will go.

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## I. Introduction

Since 2006, when President Felipe Calderón brought in the army to combat drug trafficking in Mexico, more than 10,000 people have died in a wave of armed violence. Beyond the sheer scale of brutality, the most chilling aspect has been the drug cartels' willingness to go on the offensive against the Mexican state -- assassinating Federal Police chiefs in their homes, enticing army officers to desert their posts, and establishing de facto control over wide swathes of border territory – coupled with the state's conspicuous inability to rein them in.

In general, sustained attacks on state forces by drug trafficking organizations (DTOs) are rare. Unlike revolutionary insurgencies and other radical groups, DTOs do not seek to overthrow the state, drive an overt political agenda, or stake secessionist claims. Rather, they seek to maximize profit, and their *modus operandi*, even in Mexico until recently, is to use anonymity, bribes, threats, and other types of leverage to minimize confrontations with state forces. The abrupt switch by Mexico's cartels to a strategy of violence leads naturally to a comparison with Colombia: it was precisely Pablo Escobar's attacks on and attempts to intimidate the Colombian state in the early 1990s that made his reign of 'narcoterror' infamous. A less obvious but equally important case for comparison is the ongoing drug war in Rio de Janeiro, Brazil. There the *Comando Vermelho* and its rivals have controlled the city's *favelas* for more than two decades and frequently attacked state forces despite (or because of?) a policy of militarized police repression that kills thousands of civilians every year.

In all three cases, DTOs' brazen attacks on the state contribute to social disruption on par with that of civil wars. This poses a puzzle: what do DTOs gain from anti-state violence? Do drug cartels attack because they are *desperate*, as President Calderón would have it, or because they are *strong*, and know they can intimidate state actors? Does corruption make violence less attractive (by facilitating bribes) or more so (since a corrupt state cannot strike back forcefully)? This study seeks to explain anti-state violence as an equilibrium outcome in an ongoing strategic interaction between the state and criminal groups – i.e. it asks under what conditions it *makes sense* for DTOs to attack, and why. In particular, it focuses on the structure of state security institutions and how they condition the policy responses that ultimately shape the incentives of DTOs. The key questions I hope to address are:

- 1. What calculus of choice leads drug syndicates to attack the state? Do attacks effectively intimidate the state (i.e. lead to weaker enforcement efforts in the long run)?**
- 2. How are states able to avoid or effectively curtail anti-state violence by drug syndicates? When and why do such efforts fail?**

### **3. How does the institutional arrangement of state actors shape state response? Do some institutions deliver better outcomes than others?**

Based on qualitative field interviews, archival research, and official sources, I develop game theoretic models of state-DTO interaction and derive empirical implications. To test these, and to operationalize the dependent variable – armed attacks on the state – I will create and disseminate the first quantitative datasets on violent confrontations between DTOs and state forces in Colombia, Mexico and Brazil, modeled after an existing dataset for political conflict in Colombia. Data will be collected from newspaper reports covering a 5-10 year period (depending on available funding), and will include anti-state attacks by DTOs, attacks by state forces on DTOs, and clashes among DTOs. Independent variables of interest (some readily available, others to be collected and coded) can be grouped into political variables (e.g. electoral cycles, institutional and jurisdictional reforms, and changes in key personnel within government and state force hierarchies); economic variables (e.g. income, inequality, employment, and drug and other commodity prices) and “tactical” variables (e.g. introduction of new fighting technologies, foreign interventions, and the breakup of large cartels and/or capture or killing of DTO leaders). This data plays a key role in my research design, permitting me to test hypotheses generated through interviews with police, army and government officials; archival research; and formal modeling of the syndicate/state interaction.

This project responds, first and foremost, to the normative urgency of studying a form of organized armed violence that has wreaked havoc three major Latin American nations. In doing so, it engages two broad lines of academic research. First, a growing literature on non-state armed actors and civil war has used a rational-choice approach to explain both the onset of conflict (e.g. P. Collier 2000) and the dynamics of violence amidst war (e.g. Kalyvas 2006), while recent micro-level empirical work has produced compelling evidence some causal factors affecting levels of armed violence (e.g. Miguel et al. 2004). This project extends this research by generating new data and theory on a type of armed conflict – involving drug syndicates – that is too often subsumed within overstretched conceptualizations of civil war or insurgency, or simply ignored altogether. Second, a long tradition of research on state formation and consolidation points to the importance of establishing the rule of law (Tilly 1985; Weber 1946) and the centrality of institutions in doing so (e.g. O'Donnell 2004). This project brings to the debate new comparative evidence about *which* institutional structures help or hinder the establishment of rule of law and the curtailment of armed violence.

This “article” presents an outline of the project’s design and potential contributions, and offers a very preliminary model that suggest the direction in which the analysis will go.

## II. Contributions to the Literature

### Non-state Actors, Armed Violence, and Civil War

This project stands to make a contribution to a growing empirical literature on organized armed violence (Blattman and Miguel 2009). My cases of violence, though equal in severity to many civil wars<sup>2</sup>, are generally not included in the cross-national conflict datasets used in quantitative analyses (e.g., Collier and Hoeffler 2002; Fearon 2004). In addition, they present a potentially different internal logic than the insurgencies and nationalist civil wars analyzed in recent small-n studies (Kalyvas 2006; Wood 2001; Weinstein 2006). On its own terms, anti-state violence by drug organizations is a promising dependent variable for my purposes because it is likely to be highly sensitive to fluctuations in state policy and actions, where insurgent groups are thought to be motivated by more stable factors like state capacity and geography (Fearon and Laitin, 2003). More broadly, the waning importance of classic leftist insurgency and the increasing involvement of rebel groups of all stripes in the drug trade (Cornell 2005; Labrousse 2005) suggest that focusing on non-revolutionary armed groups like drug syndicates could yield important intellectual returns. By putting organizations driven purely by drug profits at the center of my analysis, I hope to generate insights that may travel to mixed cases, such as the Taliban and Colombia's FARC rebels (who are not included in my study, since they have the nominal goal of toppling the state), and speak to the broader questions of this vigorous research agenda.

### State Formation, Rule of Law, Democratic Consolidation

This project speaks to the fundamental issue of how states establish and maintain a monopoly on the use of force. It is thus grounded in Max Weber's formulation (1946) and related theories linking the strength of states with the kinds of threats they have historically faced (Ertmann 1997; Tilly 1985), and it addresses regional extensions of this approach that tie state weakness in Latin America to the preponderance of internal over external threats (Centeno 2002). It also draws on recent work on failed states, which posits public security as the premier political good all states must provide (Ghani et al. 2005; Rotberg 2002). Finally, my project speaks to important issues in democratic theory. I follow Guillermo O'Donnell (1996) in insisting that democratic consolidation means more than a set of democratic procedural rules becoming "the only game in town" (Linz and Stepan 1996; Przeworski 1991); it requires an effective and truly democratic rule of law. This line of thought focuses attention on the institutions of public security provision, and reminds us that widespread crime, violence and corruption must be seen, ultimately, as threats to democracy (Pinheiro 1997).

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<sup>2</sup>The most common criterion of lethality used to code for 'civil war' in conflict datasets is "The conflict killed at least 1,000 people over its course, with a yearly average of at least 100" (Fearon 2004; see also Singer et al. 1994). Mexican news organizations estimate an average annual drug-war related death toll of 2,200 from 2005-2007, surging to 5,600 in 2008. Precise data on drug-war deaths in Rio de Janeiro are lacking, but police alone have killed an average of 1,000 civilians per year in "self-defense" since 2001 (Lessing 2005). Dowdney (2003) uses total firearm death statistics to plausibly argue that the drug war in Rio has produced as many or more fatalities than several infamous civil wars and armed conflicts.

Indeed, my project seeks to help bridge the gulf between our theoretical understanding of what democratic rule of law *ought to* look like and how to actually *achieve* it. Normative arguments about how institutions of security provision should be restructured (O'Donnell 2004) or historical accounts of their resistance to reform (Pereira 2001; Zaverucha 1998) have been based more on democratic convictions than empirical assessment of how different institutional arrangements actually *perform*. At the same time, a proliferation of detailed, single-country scholarship offers accounts of how healthy or pathological institutional structures, arising out of unique political and social histories, delivered good or bad security outcomes in Colombia (Bejarano and Leóngomez 2005; Restrepo 2006; Thoumi 2002), Mexico (Astorga 2007; Chabat 2001; Rubio et al. 1993), and Brazil (Bretas 1997; Muniz 2001; Soares 2000) without producing generalizable, testable hypotheses.

My project will build on these scholars' contributions by distilling hypotheses about the relevant dimensions of institutional arrangements and testing them in a systematic way over a series of cases. To give an example, Astorga's (2007) intriguing claim that the collapse of the PRI in Mexico is the main causal factor behind the explosion of drug related violence in Mexico cannot really be tested, since no other country in Latin America has had anything like Mexico's pattern of one-party pseudo-democratic rule (Magaloni 2006). However, we can test whether increases in electoral competition in general are associated with more outbreaks of violence.

### III. Research Design

#### A Meso-Level Approach

Reviewing advances in scholarship on civil war and armed violence Blattman and Miguel (2009) note that a first wave of empirical work looked at broad cross-national patterns and correlates of conflict, while a more recent trend has been the use of quantitative micro-level evidence and techniques such as instrumental variables and natural experiments to establish econometric identification of causal drivers of violence. While the latter approach is a crucial step forward, it is important to note its limitations. To take a pertinent example, Vargas and Dube (2006) take advantage of the geographic coverage of the CERAC Colombian conflict dataset (Restrepo et al. 2006) to test the effects of price shifts on levels of conflict. Their clever use of instruments and careful quantitative analysis allow them to show not only that economic factors can affect violence, but to distinguish between different channels: income shocks to labor-intensive industries have strong effects, while shocks to capital-intensive industries do not.

These findings speak to a long-running debate in the literature about the underlying causes of rebellion and insurgency, and have justifiably attracted the attention of leading scholars. However, we cannot lose sight of the fact that these findings represent marginal changes in local levels of violence in a much wider conflict.

We do not know if these shocks alter the *total* level of violence or merely its geographical or temporal distribution. In fact, these results tell us little about what is driving the incredibly protracted Colombian conflict, nor the strategic considerations that lead the combatants to engage in violence. This is no fault of the authors'; these are simply not the kind of questions their research design can address. Ultimately, findings of this sort must be integrated with what Kalyvas (2006) and others have called “meso-level” theories: ones that distill from the empirical dynamics of an ongoing historical episode hypotheses about the underlying logic that drives armed violence.

While the quantitative datasets this project will produce will certainly facilitate micro-level econometric analysis, it is my hope to produce meso-level theory and evidence about the nature of the interaction between drug trafficking organizations and the state. That is, I plan to use the quantitative data not only to – where possible – establish local average treatment effects, but to explore and test more complex theories about the course of the larger conflict and the role of state policy and action in it. Though this kind of scholarship is less likely to produce the kind of clean identification and robust results that micro-level work can, it is of great substantive importance, particularly given the immense amount of resources that states put into combating the drug trade, and the scale of violence that can result.

### Theory and Models

Whereas toppling the state may be the *raison d'être* of non-state actors such as separatists or insurgencies, I hypothesize that drug firms employ anti-state violence *instrumentally* – as part of an overall profit-maximizing strategy. My working hypothesis is that they use such violence to influence what I call *effective security policy*: the actual, on-the-ground actions taken by state forces when implementing (but almost never entirely in line with) the *de jure* policy formulated by decision-makers within the state. If the reason drug organizations attack the state is, even in part, in the belief that it will change the state's future behavior<sup>3</sup>, and if we can reasonably assume that drug syndicates make relatively good guesses about how the state is likely to respond, then understanding the complex process by which security policy is formulated and executed is central to explaining anti-state attacks.

I further hypothesize that institutional structure – the formal and informal rules governing state agencies and organs – shapes the policy formation process by organizing the interests of and relationships among the political actors who jointly decide policy. If this is true, then institutional structure drives both policy itself and, crucially, armed actors' *expectations* about how the state will respond to their own potential use of

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<sup>3</sup> Game theoretic models of costly conflict sometimes explain acts of violence as costly signals (Powell 2004a); one potential benefit to a drug firm of attacking the state might be to signal its strength (or resolve, or brazenness) to *other firms* with which it competes. Of course, an attack would presumably signal a firm's type to the state at the same time – indeed, this is the mechanism by which attacks might influence future state behavior. My approach is valid as long as *some* of drug firms' motivation for attacking the state derives from the latter channel. *Ex ante*, this seems at least as plausible as any story in which Firm A attacks the state *strictly* to influence Firm B's beliefs.

violence. This argument underlies one of my primary analytic objectives: exploring how institutional structure affects a state's ability to respond to and contain armed threats.

I plan to use small, simple models of interactions as building blocks toward a more complex model of conflict as a whole. An example of a preliminary 'building block' model appears in the final section of this paper. In general, I will treat drug syndicates as unitary-actor, profit-maximizing firms, operating in oligopolistic markets with increasing returns to scale over a relevant range of production, so that market share and barriers to entry are important considerations.<sup>4</sup> The state, on the other hand, cannot be treated as a unitary actor. Rather, I will model state actions – i.e. 'effective security policy' – as emerging from a subgame (viz. the policy formation process) involving state actors of different types. Crucially, this subgame will capture principal-agent and commitment problems among state actors, 'fitted' to the stylized facts arising from my qualitative research.<sup>5</sup> In solving this subgame, I will explore a structure-induced equilibrium approach (Shepsle and Weingast 1981) that could help to generate coherent theories and hypotheses about how institutional structure shapes the policy formation process;

I will embed the policy-formation subgame in a dynamic game played between drug firms and state actors. State actors decide the degree of repression, and drug firms choose between a "hide and bribe" strategy that minimizes conflict and maximizes short-run profit, or "attack", which imposes immediate costs on all players but may increase future profits. I make the critical assumption that drug firms understand the policy formulation subgame and hence have rational expectations about how the state will respond to their actions.<sup>6</sup> While it might seem natural to assume incomplete information, it is important to explore equilibria under complete information as well, given that these conflicts have gone on for years, giving drug lords time to learn (Powell 2004b), and that competition in the drug market should weed out those who did not. Ultimately, this will produce a model of 'bargaining over things that influence future bargaining power' (Fearon 1996) within the 'war as costly-process' approach that models fighting as an "inside option" (Powell 2002). I am convinced that this modeling effort will produce insights into the nature of state-syndicate interactions and improve the coherence of my overall causal argument.

### **Dependent and Independent Variables**

The fundamental challenge of my research is overcoming the simultaneous causation between state security policy and armed attacks by drug syndicates. I propose an iterative, multi-methods approach that

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<sup>4</sup> For tractability, it may be necessary to abstract away from firms' competition with one another and assume a monopoly with threat of entry. Similarly, I would ideally treat 'armed force' as an investment good which drug firms accumulate and can employ in attacks on rivals or the state, and which may act as a deterrent to attacks by others. However, tractability concerns may require abstracting away from firms' allocation decision and simply assume that armed force in period  $t$  is a function of drug profits in period  $t - 1$ .

<sup>5</sup> This will obviously require specifying preferences for different types of state actor; hence the importance of my qualitative interviews of politicians, bureaucrats, police, and army officials involved in setting security policy.

<sup>6</sup> Note that this does not rule out the possibility that the state responds in a stochastic manner. Indeed, drug enforcement is almost always some form of mixed strategy, since the element of surprise is crucial.

brings game-theoretic modeling and quantitative tools within a qualitative, small-*n* framework to generate and test hypotheses. My overall dependent variables are the onset and duration of anti-state violence, operationalized by the anti-state attack events in the conflict datasets I will construct. The main independent variables are the political process that generates state security policy and the institutional arrangements that shapes this process. To operationalize these variables, I will bring together (1) “institutional mappings” of the security-related components of the state, including both formal and informal institutional aspects; (2) histories of changes in both *de jure* and effective policy and the interactions among state actors that produce them; (3) data on the partisan affiliation and career trajectory of state actors involved in those histories.

I conceptualize the joint behavior of state agents as it actually implemented as *effective security policy*. It is an important intervening variable, driven by the policy formation process, and a proximate cause of armed confrontation. Effective policy will be operationalized through a policy histories, qualitative data and observations of state attacks on drug syndicates from the conflict datasets.

### **Data Analysis and Hypothesis Testing**

The quantitative datasets I plan to construct play a crucial role in my overall research strategy. They will provide a panel of fine-grained data that includes my dependant variable, the intensity of syndicate attacks on state forces. More broadly, they capture the dynamics of the strategic interaction as a whole, since they include instances of state-initiated “attacks” as well as infighting among syndicates. They will thus allow me to systematically test the hypotheses generated by my qualitative fieldwork and subsequent formal modeling.

My analysis plan proceeds in steps. Using the qualitative data and institutional mappings I will have collected, I will (1) generate stylized facts about the security policy formation process; and (2) build formal models of the strategic interaction between drug syndicates and the state that incorporates these stylized facts in modeling the policy formation subgame.<sup>7</sup> These models will (3) produce comparative statics and other empirical implications, which I will (4) test against the conflict event datasets I will construct. This will be an iterative process, using the empirical results of hypothesis tests to refine modeling assumptions and stylized facts, while also bringing qualitative case knowledge to bear as a check on the plausibility of causal theories supported by econometric analysis.

### **Hypotheses**

As noted, I will use the qualitative case knowledge generated by my fieldwork and the subsequent formal modeling stage to generate hypotheses and comparative statics. Potential hypotheses include:

**H1a:** Political competition among state actors reduces introduces principal-agent problems that reduce the credibility of state policy, and increasing the likelihood of state attacks.

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<sup>7</sup> In this setting, I will treat state actions as emerging from a strategic subgame (viz. the policy formation process) involving state actors of different types.

**H1b:** Political competition among state actors increases efficiency and reduces corruption, making state policy *more* credible and leading to a lower likelihood of anti-state attacks.

**H2a:** Institutional structures that concentrate decision-making power at the local level produce more effective security forces and thereby result in more effective curtailment of anti-state violence.

**H2b:** Decentralized security institutions are more susceptible to corruption and intimidation, and lead to less effective curtailment.

H1 could be tested by using the data I will collect on partisan affiliation of state actors involved in security policy to produce a score for level of political competition within and among state agencies. Modeling might suggest interesting nuances (e.g. maybe only intermediate levels of competition induce principal-agent problems) and generate further testable predictions. These could then be tested econometrically against the conflict data.

For H2, it is not possible to generate a time-series of within-case observations of ‘centralization’, making regression analysis inappropriate. Here, the iterative, multi-methods approach provides traction: a formal model that predicts, say, H2a, will generate additional empirical implications. These can then be tested against both qualitative case knowledge and the empirical record of conflict in the datasets. As the process is repeated, the overall evidence in favor of one causal theory over another accumulates.

Obviously, this approach is more complicated, with less “clean” econometric identification, than designs based on field experiments, instrumental variables, or non-parametric matching. These designs are, however, usually better suited for making incremental progress on well-defined questions of the type “what is the effect of cause X?” The topic at hand requires finding the cause of an effect, a much more difficult task. Moreover, the effect arises out of a complex strategic interaction between actors whose preferences are not directly observable.

Nonetheless, though the mutual causation between state policy and anti-state attacks is a formidable obstacle to causal inference, it is not insurmountable. Fine-grained ‘process tracing’ (Brady and Collier 2004) can provide a substantial basis for parsing out causal pathways, producing stylized facts, and generating hypotheses. The multi-method approach is particularly appropriate for research on armed conflict. Nicholas Sambanis (2004) has argued that “comparative case study design can be combined with a formal-quantitative approach to build a better-specified theory of civil war,” and that one can “use cases to develop—not test—theory and to qualify the causal inferences that we can draw from a quantitative model of civil war.” When the explanandum is a type of armed violence about which even less is known than civil war, case studies can have an even higher value added. Essential to this approach, however, is the hypothesis testing that large-*n* datasets on conflict events in all three of my country cases will permit.

### **Case Selection**

My principal cases are historical episodes involving anti-state attacks by drug syndicates. They were selected to maximize variation on institutional structure while ensuring feasibility, taking into account existing data in Colombia and my comparative advantage – due to past field research – in Brazil.<sup>8</sup> Methodological considerations aside, these cases – Pablo Escobar’s reign of “narcoterror” in Colombia; the prison gang cum drug syndicate Comando Vermelho’s 25-year armed occupation of Rio de Janeiro’s urban periphery; and the recent explosion of anti-state violence by drug syndicates in Mexico after decades of relative peace – involve degrees of human loss, social upheaval and political crisis that demand scholarly attention on normative and substantive grounds alone.

Each country has faced these attacks with a very different *security-force configuration*<sup>9</sup>, by which I mean the set of state actors who jointly determine on-the-ground security policy, and the formal and informal rules that establish lines of authority, responsibility and influence among them. In Brazil, municipal police forces are tiny or non-existent, and nearly all *de jure* power over policing decisions lies in the hands of state governors (Bicudo 2000). By contrast, in Colombia, police are part of a national force, though mayors have differing degrees of *de facto* authority depending on their political ties to commanders and popularity among the rank and file.<sup>10</sup> Mexico’s force configuration is more varied and unstable, with over 2,000 municipal, state, federal and specialized police corps, often overlapping in jurisdiction and undergoing frequent reorganization and reform (Oppenheimer 1996).

My four principal cases, located in three countries, consist of two types: (1) episodes in which new, rising drug syndicates unleashed attacks on an unprepared state, and (2) cases where states launched militarized campaigns to curtail attacks by established syndicates, but, at least provisionally, failed. To increase comparative leverage, each principal case is paired with a contrasting episode, found along the rows in Table 1, in which (1b) syndicates formed but did not attack the state, or (2b) were successfully curtailed.

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<sup>8</sup> In a preliminary phase of my research, I considered a larger pool of historical episodes and countries, including Peru and Bolivia. In my dissertation, I will discuss the larger universe of cases, relying on secondary sources, in light of my principal findings.

<sup>9</sup> I borrow this term from Chris Cardona’s analysis of the structure of Colombia’s state forces during *La Violencia*.

<sup>10</sup> Author’s interview with former Mayor of Bogotá Enrique Peñalosa, October 4, 2008.

Table 1: Historical Episodes of Anti-State Violence and Paired Contrasting Cases

Principal Cases: Anti-State Violence	Contrasting Cases: No Anti-State Violence
<b>1. Drug syndicates arise and attack state</b>	<b>1a. Syndicates arise but do not attack state</b>
Colombia, 1984-1993: “Pablo Escobar” Rio, 1990-1994: “Rise of Comando Vermelho”	Mexico, 1990-1994: “Cartels at Peace” São Paulo, 1982-1992: “Fractured Markets”
<b>2. Failure to curtail attacks by established syndicate</b>	<b>2b. Relative success curtailing attacks</b>
Mexico, 2000-Present: “Cartels at War” Rio, 2000-Present: “Comando Vermelho Persists”	Colombia, 1993-1998: “Cali Cartel” Medellín, 2000-2005 “Retaking the <i>Comunas</i> ”

For example, I compare the Pablo Escobar ascendancy, when his Medellín cartel struck out with extreme violence against both its rivals and the Colombian state, with the contemporaneous period (1988-1992) in Mexico, during which large and growing cartels co-existed in relative peace without confronting the state. Similarly, I compare the failed attempts to regain control of Rio de Janeiro’s slums, beginning with the 1994 military occupation *Operação Rio* (Cerqueira 1996; Coimbra 2001), to the startling transformation of Medellín’s urban periphery since the joint military-police *Operación Orión* in 2000 (Ardila 2005; Rozema 2008).

### Quantitative Dataset Methodology and Construction

The construction of drug-related conflict datasets for Colombia, Mexico and Brazil, constitute an important contribution in their own right. Presently, only unreliable estimates and summary statistics are available for these ongoing conflict episodes, making even purely *descriptive* assessments difficult. Do confrontations between police and drug groups follow a seasonal pattern, or track the electoral cycle? Has the lethality of confrontations increased or decreased over time? Astonishingly, given the severity and length of these conflicts, researchers have no way to reliably answer these basic questions. My datasets will help address this gap in our empirical knowledge.

Following the general consensus that has emerged on building event datasets from media sources (Koopmans and Rucht 2002), and adopting the general methodology of CERAC’s Colombian conflict dataset (Restrepo et al. 2004), I will create event datasets for each of the principal case-episodes.<sup>11</sup> The unit of observation will be incidents of armed confrontation among drug syndicates and between syndicates and state

<sup>11</sup> For logistical reasons, it will not be possible at this time to extend the quantitative dataset coverage to the contrasting cases (with the exception of Mexico 1990-1994). However, aggregate data is available.

forces. Each observation will be coded by date, geographic location, severity (measured along several dimensions), type and number of actors involved, who initiated the confrontation, and outcome. I will supervise and check all coding and oversee the validation process. The primary sources for the datasets will be media reports, starting with the relevant newspapers of record for each case.

### Coverage

For both datasets, I will aim for complete coverage, i.e. to include the entire population of relevant media reports (for a given set of sources), rather than a randomized sample. I also hope to include at least two national newspapers (*El Tiempo* and *La Republica* in Colombia, *Folha de S. Paulo* and *O Globo* for Brazil; *El Universal* and *Reforma* for Mexico), and possibly local, “popular” papers in my set of sources.<sup>12</sup> Complete coverage has numerous advantages: first it guarantees the maximum density of observations, which will increase inferential leverage when analyzing specific political events such as elections, personnel changes, and key public declarations. Second, in this context, distinct conflict events might be part of a single ‘sub-episode’ linked by a common causal factor (e.g. event A may occur in retaliation for event B). While I do not expect to be able to accurately interpret all such sub-episodes, random sampling would make them significantly more difficult to detect and could distort my findings. Finally, full coverage offers the most complete descriptive picture of the episodes in question. While my project’s objectives involve causal hypothesis formation and testing, one important broader impact of this project is to provide investigators and policymakers with a strong empirical basis for research and debate.

### Validation

In order to ensure the reliability of my data collection and coding processes, I will perform a series of validation checks. First, where digital media archives are available, the search strategy must be refined by manually checking randomly sampled complete editions for relevant articles against those picked out by keyword search. Given differences in house styles, this must be done for each media source. A similar process will be carried out with regard to coding: once RAs have been trained and initial coding has begun, I will manually recode a random sample of media reports and compare them with those coded by RAs. This process will be iterated until valid coding protocols have been defined. As an additional validity test, an outside expert, preferably a university professor with both case knowledge and methods training, will replicate coding of a randomize subsample of coded articles as a final check on validity.

A second dimension of validation includes triangulation using alternative sources; the most important of these are police records and reports by human rights watchdog groups. For example, for Rio, I have obtained official crime data that includes dates, locations and circumstances of every police death and police

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<sup>12</sup> While national papers’ reports are the most trustworthy, the somewhat sensationalistic “popular” papers often cover more events in greater detail. In Rio, for example, the daily *O Povo* regularly covers multiple incidents of armed violence per issue, while *O Globo* usually covers only the single largest incident, if any. Including popular papers will also improve validation.

killing of a civilian from 2002 to present. Following Beissinger's (1998) example, this data can be used to test the coverage and accuracy of media reports.

Seeking out other sources, including local community organizations, churches, and even eyewitnesses, provides a powerful basis for validating both my coding scheme and the overall validity of the media report approach itself. In addition, as my analysis phase gets underway, certain subgroups of conflict events may turn out to be of particular importance. Follow-up visits can clarify crucial aspects of the sequence of events that may help distinguish between competing interpretations and explanations.

#### IV. An Example from Rio de Janeiro

In this section I present a very preliminary and simplified model of an interaction between drug firms and state forces that generates violence in equilibrium. It is intended as both an introduction to one of my country cases and an example of my analytic approach, although in its present form, it abstracts from many of the institutional and political issues I have discussed above.

Although not commonly considered an example of civil conflict, and frequently overlooked even by scholars of drug-related violence, the case of Rio de Janeiro's ongoing drug war (*guerra do tráfico*) merits inclusion for both the scale and intractability of confrontation between armed drug groups and the state. 25 years of militarized police action against the Comando Vermelho (CV) and its rival drug syndicates has had virtually no effect on their hold over most of the city's *favelas*. These homegrown, apolitical armed groups have not only resisted the state's efforts to re-establish control, they have gone on the offensive, attacking police stations and government buildings and provoking city-wide "shutdowns", all in territory far beyond their *favela* strongholds (Penglase 2005). Meanwhile, instead of a monopoly on the use of legitimate force, the state wields a police force that is at once criminally violent, killing an average of 1100 citizens per year; and deeply corrupt, likely supplying arms and ammunition to the drug syndicates they battle (Bevan and Dreyfus 2007).

While it is impossible to generalize about the entire force, it is generally accepted that a large number of officers, particularly those with regular, close contact with the *favelas*, are on the take. Indeed, this helps explain one of the mysteries of the drug war. There are hundreds of *favelas* in Rio, the military police have thousands of active-duty soldiers bristling with military equipment, and it is no secret where the *traficantes* are. Yet we do not see continuous, all-out warfare. On the contrary, the drug war in Rio is fought in sporadic bursts of violent conflict followed by long stretches of relative "peace" or only limited, low intensity engagement. The following explanation of the slang term *arregar* (to pay off the police), from an interview with an anonymous *traficante*, provides insight into how day-to-day peace is maintained.

[Q:] What does it mean to “*arregar* the *boca*<sup>13</sup>”?

There’s the police post in the *favela*, right? So the *gerente*<sup>14</sup> will send R\$5,000 [US\$2,500] to the post. He sends R\$5,000 every day. Some people don’t believe that. Every day, R\$5,000 for the post. They sit there at the post... just getting fat. The day the money isn’t sent, they’ll want to come in and make arrests. They want to *arregar*. They want the R\$5,000. If there is no R\$5,000, the *boca* is shut down. (Soares et al. 2005)

Another interview with a *traficante* corroborates this, and illustrates that the amount of a bribe is subject to negotiation:

We can only go outside when we’re protected, when we give money to the police, understand? The police, they want money, they call us, they ask if there will be an *arrego*. ‘*Arrego*’ is a payment to them.

[Q:] How is the negotiation?

It’s like this: either we call them or they call us. They ask if we’re sending them money. They say: I want R\$1,500 to *arregar*. But we don’t do it, “1,500 no, we’re sending 1,000”. (Bill and Athayde 2006)

Such bargaining is not hard to understand from a theoretical perspective: clearly, an *arrego* is pareto improving for both parties (if not to society as a whole), while violent conflict can literally be seen as a failure to reach a bargaining solution. What might explain such a breakdown? Ironically, efforts to reduce corruption by rotating police patrols may be partially responsible. Say a stationary drug lord  $D$  faces a different police commander  $P_t$  in each period  $t$ , and  $D$  doesn’t know the type of commander he is facing in any period (though he has a prior distribution over types). Even if  $D$  prefers to pay large bribes to avoid fighting strong types, he may find it advantageous to occasionally fight them as a way to deter weak types from making high demands (i.e. bluffing). The intuition is related to an argument made recently by Snyder and Duran-Martinez (2009) that violence-reducing state-sponsored protection rackets require long time horizons for corrupt state agents, otherwise criminal groups cannot trust that they will continue to receive protection, and so must resort to violence. However, in this model, violence does not arise as an exogenous substitute for protection but as an endogenous means of lowering the market price of protection.

### Setup

A drug dealer  $D$  can earn a per-period profit of  $y$  from  $A$ s above, in each period  $D$  faces a police commander whose type he does not know. The sequence of play is:

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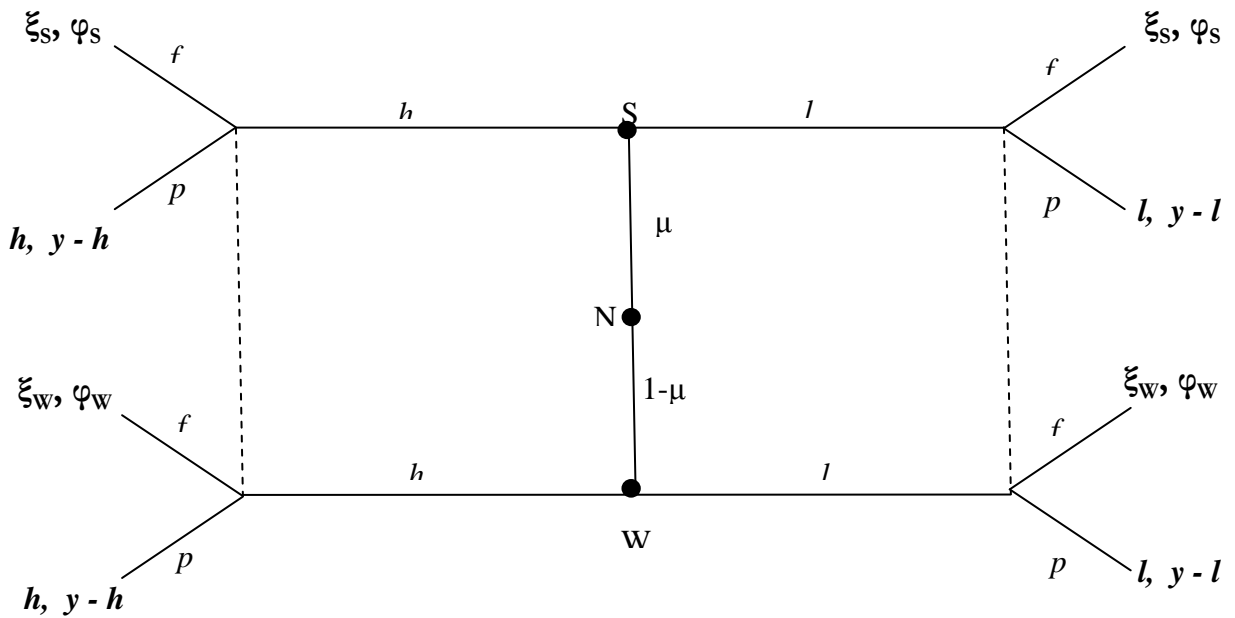
<sup>13</sup> A *boca* is a drug point-of-sale; it can also refer to the business operation that operates out of the locale.

<sup>14</sup> “Manager”, the chief of day-to-day operations at a particular *boca*. Larger operations will have separate managers for cocaine, marijuana, and security or “containment”, overseen by a general manager.

1. Nature chooses a new  $P_i$  chosen by nature from type space  $\{S, W\}$  with distribution  $\{\mu, 1 - \mu\}$  over types.
2.  $P_i$  demands a bribe  $b$  from the action space  $\{b, l\}$ <sup>15</sup>
3.  $D$  either pays the bribe  $\{P\}$  or refuses, leading to a fight  $\{F\}$ .
4. Per-period payoffs are distributed and the next round begins.

**Payoffs**

If  $D$  pays the demanded bribe, he receives  $y - b$  and  $P_i$  receives  $b$ , independent of type. If  $D$  refuses and fighting ensues, then given type  $\theta$  in  $\{S, W\}$ ,  $P_i$  receives  $\xi_\theta$  and  $D$  receives  $\varphi_\theta$ . The game tree with payoffs thus looks like this:



We make the following assumptions:

- A1.  $b > \xi_S > l > \xi_W$
- A2.  $y - l > \varphi_W > y - b > \varphi_S$

<sup>15</sup> The possibility of a non-corrupt cop can be represented in this model by an option to make no demand and leave  $D$  with no option but to fight. However, given the simplicity of the model, this does not add any interesting dynamics.

A1 says that strong police prefer to fight than to accept a low bribe. A2 says that  $D$  prefers to fight a weak type rather than pay him a high bribe, but that when faced with a strong type, he would prefer to pay a high bribe than fight.

### Equilibrium

First note that each  $P_i$  plays for only one round, and faces a binary choice, so we can directly calculate his best response. Since  $D$  faces a new player in every round, he cannot use any kind of trigger or punishment strategy – he is essentially reduced to a stationary, behavioral strategy mapping that round's demand to an action.

For strong police, demanding  $l$  is weakly dominated, so we can assume that strong types always demand  $h$ . Also, since  $D$  can do no better than  $y - l$ , if he ever sees a demand of  $l$ , he will pay it. So we can specify  $D$ 's strategy by what he does when he sees  $h$ .

$S_P$ : Always pay. Under this strategy, weak types will always demand  $h$ , and  $D$  gets  $y - h$  in every period.

$S_F$ : Always fight. Under this strategy, weak types always demand  $l$  (since  $l > \xi_w$ ), and  $D$  gets:

$$\mu\varphi_S + (1 - \mu)(y - l)$$

If  $D$  is not allowed to mix, then he will choose  $S_2$  whenever  $\mu\varphi_S + (1 - \mu)(y - l) > y - h$  or whenever

$$\mu < \bar{\mu} \equiv \frac{h - l}{y - l - \varphi_S}$$

Note that always fighting is more than enough to deter weak types from bluffing. If  $D$  can mix, he can play  $S_M$  in which he fights with probability  $\pi^*$  such that weak types are just indifferent:

$$\begin{aligned} \pi^* \xi_w + (1 - \pi)h &= l \\ \pi^* &= \frac{h - l}{h - \xi_w} \end{aligned}$$

Note that under both  $S_F$  and  $S_M$ ,  $D$  only ever fights strong types. Since he prefers to pay strong types, and since he fights less often under  $S_M$ , it must dominate  $S_F$ . Furthermore, it dominates  $S_P$  whenever

$$\mu[\pi^* \varphi_S + (1 - \pi^*)(y - h)] + (1 - \mu)(y - l) > y - h$$

Subbing in for  $\pi^*$  and solving for  $\mu$ , we find that  $S_M$  is the best strategy whenever

$$\mu < \mu^* \equiv \frac{h - \xi_w}{y - \xi_w - \varphi_S} > \bar{\mu} \equiv \frac{h - l}{y - l - \varphi_S}, \text{ since } l > \xi_w.^{16}$$

<sup>16</sup> It is also easy to show that both of these cutpoints are in (0,1).

When this holds,  $D$  occasionally fights upon seeing  $b$  even though he knows that in equilibrium he must be facing a strong type. He must fight occasionally to keep the weak type from demanding a high bribe. Thus fighting serves as a means to keep the average bribe price low.

The cutpoint  $\mu^*$  represents the highest probability of a strong type such that  $D$  is willing to play the mixing strategy. A higher  $\mu^*$  thus corresponds roughly to a lower threshold for a fighting equilibrium. So, since  $\mu^*$  is decreasing in  $y$ , a more lucrative drug trade corresponds to less fighting. This is because the relative difference between a high and a low bribe, which drives the fighting result, is decreasing in the size of  $y$ . If  $b$  and  $l$  are proportional to  $y$ , say because the police know that  $y$  has grown and adjust their demands, this result disappears. But if the police have imperfect information about  $y$ , or for other reasons  $b$  and  $l$  are sticky, the result should hold.

It's also interesting to consider a shock to the players' fighting capabilities. Naturally, if  $D$  becomes stronger in military terms such that  $\varphi_0$  decreases, then  $\mu^*$  also decreases and fighting becomes more likely. But if the police become stronger such that  $\xi_0$  increases,  $\mu^*$  increases (so that the likelihood of a fighting equilibrium goes down) but  $\pi^*$  also increases. Conditional on  $\mu < \mu^*$ , the probability of fighting in any round is  $\mu \pi^*$ , so that if there is a fighting equilibrium, fighting occurs more of the time.

## Discussion

Though the model as presented is too simple to make bold empirical predictions, it does illustrate the intuition that anti-state violence can be an optimal response to a bargaining situation with corrupt state agents, as a means of preventing those agents from extracting exorbitant rents. It predicts that rapid positive shocks to illicit income likely to lead to reductions in this particular use of violence, and highlights countervailing forces at play when the costs of armed engagement to the police go down. One obvious extension is to endogenize  $b$  and  $l$ . This will help generate more realistic testable predictions about the relationship between illicit profits, relative military strength, the degree of corrupt extraction of rents, and levels of violence. Once fine-grained event-level data becomes available, it will be possible to “take this model to the data”, compare its predictions to patterns and stylized facts, and then, in a process that Roger Myerson calls the “modeling dialogue”, further refine the model (Myerson 1992; quoted in Powell 1999).

## V. Conclusion: Potential Impacts

The broader impacts of this project are numerous. Above all, the insights from this project may help states reduce violence, improve the rule of law, and ultimately save lives. I will draw on my extensive ties to Latin American NGOs and public security actors to help disseminate my results and get feedback from

policymakers, leaders and civil society. In addition, studying anti-state violence by drug syndicates with “pure” profit motives will help us understand important ‘mixed’ cases: terrorist and insurgent groups like Colombia’s FARC and the Taliban that increasingly rely on drug profits to fund their actions. The project will also have broad academic impacts: It will (1) provide researchers in Colombia, Mexico and Brazil with reliable data on understudied episodes of armed violence, addressing a major gap in our empirical knowledge; (2) permit new cross-national comparisons of conflict events in three countries; (3) contribute to the game theory literature on conflict and negotiation; and (4) produce hypotheses about the role of institutional structure in public security provision and rule of law that will travel to other regions and contexts. Finally, (5) through my continuing collaboration with Latin American NGOs and publication in Portuguese and Spanish journals, as well as my participation in international professional meetings, it will increase cooperation and the flow of information between Latin American researchers and the U.S. scholarly community.

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