How to Build a Criminal Empire from Behind Bars:

Prison Gangs and Projection of Power[*]

Benjamin Lessing[†]

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Abstract

Providing law and order is a core state function; the very attempt, however, can be counter-productive. Punishment incapacitates and deters individuals, presumably reducing crime, but can also empower destructive collective forces. Prison gangs, their ranks swelled by mass incarceration, transform the core of the coercive apparatus into a headquarters for organizing and taxing street-level criminal activity, supplanting state authority in communities, and orchestrating mass violence and protest. Drawing on a formal model, fieldwork, and case studies from the US and Latin America, I show how gangs use control over prison life, plus the state-provided threat of incarceration, to project power. The model predicts that common state responses—crackdowns and harsher sentencing—can strengthen prison gangs' leverage over outside actors, consistent with the observed expansion of prison gangs during mass-incarceration initiatives. These gang-strengthening effects of incarceration can have increasing returns, implying a point beyond which additional punishment erodes state authority.

[†]Assistant Professor of Political Science, University of Chicago. Pick Hall 401, 5828 S. University Ave. Chicago, IL 60637. Tel: +1 (510) 842-6595. E-Mail: blessing [at] uchicago [dot] edu.

Introduction

> Before [El Salvador's Mano Dura mass-incarceration policy] began it was different. We hadn't gotten to seeing things collectively. The system has united us… like it or not, we cannot look at things individually, because they haven't treated us individually, nor have they pursued or locked us up individually. — "El Viejo Lin," imprisoned *mara* gang leader. Quoted in Cruz (2010, 393).

Providing law and order is a core state function, and punishment is central to their provision. The threat of punishment, even if never acted on, undergirds the state's monopoly on the legitimate use of force at every turn. And while most submit willingly to the law (Tyler 2003, 2006), some do not; if crime is an affront to or violation of the state's authority, then punishment is what restores that authority. It does so, in part, by incapacitating captured lawbreakers and deterring potential ones, presumably reducing crime and reinforcing the rule of law. A vast literature has sought to accurately measure these individual-level effects (e.g. Levitt 1997; Liedka et al. 2006; Raphael and Stoll 2009), while important recent work in political science has revealed crimogenic and other negative effects of incarceration on inmates, their families, and communities (e.g. Gottschalk 2008; Lerman 2009; Weaver and Lerman 2010). Debates over carceral policy generally center on the marginal impact of incarceration on crime and whether it outweighs the attendant costs.

But incarceration, I claim, also has *collective* effects that can strengthen prison-based organizations at the expense of the state. Outnumbered prison managers have long ceded partial authority to inmate groups (e.g. Jacobs 1978; Sykes 1958; Venkatesh and Levitt 2000); overcrowding and larger recruitment pools can further consolidate gang control over aspects of prison life. Increasingly, though, sophisticated prison gangs are leveraging that control to project power onto the streets. From Los Angeles and El Paso to El Salvador and Brazil, they have established authority over local drug traffickers and street gangs, organizing them into extensive and lucrative prison-based criminal networks. The most powerful prison gangs have established non-state authority over vast tracts of urban periphery, and even orchestrated mass violence against state and society.

How do prison gangs control and coordinate outside criminal activity? In an important contri-

bution, Skarbek (2011), invoking Olson (1993), argues that prison gangs' long time horizons and 'encompassing interest' allows them to act as 'stationary' rather 'roving' bandits, providing disparate street-level groups with 'criminal governance' and taxing the resulting surplus.[1] Skarbek rightfully identifies outside affiliates' anticipation of future incarceration and prison gangs' ability to reward and punish inmates as necessary conditions for stationary banditry, and hence criminal governance. Yet his focus is on the latent demand for and the internal institutions of criminal governance, suggesting that prison gangs belong in the pantheon of self-organizing, surplus-maximizing, non-state sources of authority, along the lines of merchant guilds (Greif 1989; Milgrom et al. 1990, e.g.), pirate constitutions (Leeson 2012), and embryonic versions of the state itself (Bates et al. 2002; Skaperdas and Syropoulos 1997; Tilly 1985).

Unlike these now-familiar examples, however, prison gangs arise and operate not beyond the reach of the state's coercive apparatus, but at its very core. Their ability to project power depends not on state absence but *action*—arresting people and physically detaining them in facilities where prison gangs wield power. Bringing the state back into the 'criminal governance' framework, I uncover a fundamental paradox of state punitive power: the harsher, longer, and more likely a prison sentence, the more incentives outside affiliates have to stay on good terms with imprisoned leaders, and hence the greater prison gangs' coercive power over those who anticipate prison. This mechanism turns the logic of punishment on its head, and presents the state with a serious dilemma: how to punish gang members without strengthening the gang? As a soberingly candid FBI agent said of her 10-year investigation of a Texas prison gang that led to life sentences for three leaders, "I think I've made them stronger" (Sherman 2010).

Could the agent's intuition be correct? This paper argues it can, and draws a dire implication: state efforts to curb crime can inadvertently undermine state authority. The central finding, supported by a formal model, is that common anti-crime measures like mass arrests and harsher sentences will *increase* prison gangs' leverage on the street if (a) they can reward or punish inmates, and (b) street arrests are

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[1]Lessing (2010, 169) argues that a similar strategic shift drove the prior consolidation of prison-gang power *within* prison: "establishing a universal and rule-based social order that was less violent, arbitrary, and predatory than the *status quo ante*, simultaneously [made] both prisoners and administrators better off."

imperfectly targeted. I show how these predictions are consistent with, and indeed help make sense of, the empirical record: across a variety of cases, periods of rapid increases in incarceration rates, largely driven by untargeted gang sweeps, nonetheless saw extant prison gangs expand and increasingly project power onto the streets. Furthermore, the comparative evidence collected here shows that prison gangs use projection toward a variety of ends, including but not limited to criminal governance, that directly challenge and erode state authority. These challenges can take the form of organized violence and protest, but sometimes they involve intentionally *curtailing* violent crime to maximize criminal profits or gain bargaining leverage vis-à-vis the state. Taken together, these findings point to the implication above: mass incarceration policies, even *if* they reduce crime rates, can inadvertently undo state authority by empowering non-state actors.

The following section lays the conceptual groundwork for my overall argument. First, I distinguish three components of prison-gang growth: *consolidation* of control within prison, *propagation* through prison systems, and *projection* of power onto the streets; I also discuss three uses to which projection of power has been put: organization of local criminal activity, parallel power over peripheral areas, and orchestrated protest and violence as a bargaining chip. All of these activities can result in lower crime rates, yet surely constitute an erosion of state authority. Thus I propose a framework for thinking about the marginal effects of incarceration not on crime, as is common in criminological literature, but on state authority. This framework illuminates the contrast between the individual and collective effects of incarceration: at the individual level, increased incarceration probably has a positive (if decreasing) marginal effect on state authority, via incapacitation and deterrence. These benefits must be weighed not only against the administrative and social costs of a burgeoning prison system, but against the collective effects of increased punishment, via prison gangs, on state authority. My overarching claim is that these marginal effect are likely to be *negative*, because (1) increased incarceration strengthens prison gangs' ability to project power, which they (2) use in ways that erode state authority.

The third section develops a formal model to explore part (1) of this claim. I find that policies which increase incarceration rates indeed strength prison-gang coercive power unless they are sufficiently 'targeted' at precisely those outside actors who obey prison-gang demands. Typically, anti-gang sweeps do

not carefully distinguish non-criminals from street-gang members, let alone those street-gang members who obey vs. defy prison-gang orders; such indiscriminate crackdowns are predicted to facilitate prison-gang expansion. Moreover, if prison gangs can ameliorate the pain of imprisonment, then longer or harsher sentences also make membership more valuable. Thus even a well-targeted crackdown, if it inadvertently worsens conditions through overcrowding, can be gang-strengthening.

I first show these results for the intensive margin: gangs' ability to tax current members. I then turn to the extensive margin—gangs' ability to recruit new members—by incorporating elements of Becker's (1968) seminal model of crime and punishment. Though Becker's approach still undergirds much research, it takes no account of inmate groups' impact (for better or worse) on the experience of incarceration. Incorporating prison-gang dynamics both enriches the Beckerian framework and provides analytic purchase on the tension between individual and collective effects of incarceration: the same policies that aid prison-gang recruitment can reduce crime overall.

The fourth section examines the models' predictions in light of the empirical record. It is clear that in numerous cases in the Americas, the likelihood of incarceration rose in a largely untargeted fashion. The US has famously witnessed the rapid growth of the 'carceral state' (Gottschalk 2008)—but similarly unprecedented expansions in incarceration rates and inmate population have occurred in Central America and Brazil. In all three settings, mass incarceration, "the great public works project of our time" (Donohue 2007, 385), was driven in part by indiscriminate anti-gang policies like Honduras and El Salvador's Mano Dura, Guatemala's Plan Escoba, and California's STEP, which facilitated imprisonment of anyone with even tenuous gang links (e.g. Cruz 2011, 143; Gilmore 2007, 217; Ranum 2011, 79). Punishment also grew more severe, due to longer sentences, harsher custodial regimes, and acute overcrowding as prison booms failed to keep pace with "carceral hyperinflation" (Wacquant 2009, 120).

To check the model's other operative condition—presence of sufficiently consolidated prison gangs—as well as its predicted outcome—increased capacity to project power—I bolster original field work with a comparative review of extant ethnographic and official sources. I find that the mass incarceration policies identified above coincided with or immediately preceded important expansions in prison

gangs' projection of power. Indeed, these periods saw numerous prison gangs' transformation from consolidated but largely within-prison phenomena into what are more accurately termed 'prison-based criminal networks'. In São Paulo and El Salvador, prison-gang projection produced both severe orchestrated violence and macro-level reductions in crime rates that, together, have made prison gangs into major political protagonists. Some comparative leverage comes from the case of Nicaragua, which shared many antecedent conditions with its Central American neighbors, but saw only mild carceral expansion, and never developed powerful *mara* prison gangs. The comparative qualitative evidence thus broadly supports my argument, though measurement problems, especially distinguishing negative cases from missing data, make more rigorous testing difficult.

In the penultimate section, I return to the marginal-effect framework, in which the authority-restoring individual effects of punishment—incapacitation and deterrence—are weighed against the gang-strengthening, authority-eroding collective effects of punishment itself. The measurement problems just mentioned make collective effects less 'visible' than individual effects. At the same time, while incapacitation and deterrence are thought to have decreasing returns, collective effects are likely, I argue, to have increasing returns, due to positive feedback and the 'focal' nature of (gang) authority (Myerson 2009; Schelling 1960). These claims imply an inflection point beyond which additional punishment, even if it reduces crime, ultimately undermines state authority. Theoretically, such a point constitutes a fundamental limit to punitive power, even if the low visibility of collective effects makes it empirically difficult to detect. In the conclusion, I conjecture that this limit has shifted, due to both an accumulation of technologies of coordination, including cell phones and gang constitutions; and the expansion of drug trafficking and its prohibition, creating countless potential recruits and nearly limitless rents for groups able to control retail markets.

As my interviews and prison visits confirm, for officials and inmates, the phenomena I group under the term 'prison-gang projection of power' are a familiar fact of life. The major contribution here is the grouping itself: much prison- and street-gang research is ethnographic and hence case-specific, and the substantial linguistic, institutional, and geographic variation across cases further limit comparative analysis. Consequently, there has been virtually no recognition that similar dynamics of prison-gang

consolidation and projection of power could be at work, nor that these collective dynamics may undermine the logic of incarceration and pose a fundamental challenge to state authority.

This paper aims to fill these gaps, bringing disparate case evidence under a single analytic lens and specifying a causal mechanism linking state policy to prison-gang expansion. Such theory-building necessarily emphasizes similarities and risks losing sight of key differences. Prison gangs vary on important dimensions including origin; internal structure and rules; hegemony vs. rivalrly with other gangs; source of illicit income; whether racial cleavages define membership; and the social and institutional contexts they operate in. Yet in spite of these enormous differences, remarkably similar processes of consolidation, propagation and projection are at work. Precisely for this reason, distilling these similarities into a conceptual and theoretical framework can structure our thinking about how differences may affect outcomes, usefully guiding future empirical and theoretical scholarship.

Conceptual Framework

Elsewhere, I analyze the growth of prison-gang power as a sequence of mutually reinforcing dynamics: *consolidation* of control over prison life; *propagation* throughout a prison system; and *projection* of coercive power beyond the prison walls.[2] The focus of this paper is projection and the uses to which prison gangs put it, since this constitutes the graver threat to state authority. Nonetheless, I briefly discuss consolidation—in particular the common state response of segregating incoming prisoners by gang affiliation—and propagation because together they define what I term a prison gang's "coercive jurisdiction": the set of outside actors to whom it can credibly promise rewards and punishments. Such promises are key to the projection of power. Moreover, a key descriptive finding about projection—that prison-gang authority can result in both the orchestration and the strategic suppression of violence—applies within prison as well. Finally, I outline a conceptual framework for analyzing the effects of increasing incarceration not on crime per se but on state authority.

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[2]Citation suppressed.

Consolidation, Propagation, and Projection

Successful gangs consolidate power by eliminating or subjugating rivals, taking control of key aspects of prison life (including contraband flows), and winning the capacity to mete out rewards and punishments to other inmates. While the early stages may witness brutal violence among fledgling groups (e.g. Amorim 1993, 35; Andino Mencía 2006, 56; Blatchford 2008, 6; Salla 2007, 82) once a gang achieves primacy it can impose rules that reduce violence or make it more predictable, in ways that benefit members and non-members alike (Dias 2011). Welfare and public-good provision can further increase a gang's prestige and the loyalty it commands.[3] An inmate in a facility dominated by São Paulo's Primeiro Comando da Capital (PCC) explains:

> "Thanks to the PCC, the number of deaths fell.... Nobody kills anybody without authorization. […] There's a steady supply of cell phones and drugs, nobody has to get them from the outside… and the PCC helps the guys who are hard up. It hands out *cesta básica*,[4] sometimes there are buses for visitors coming from far away, they raffle bicycles on Children's Day… Who does all this? Just the PCC." (de Barros 2006, 8).

Like all aspects of prison-gang growth, consolidation does not occur in a vacuum, but in dynamic relationship with state actions. Clearly, corruption is critical to gang power (Hunt et al. 1993, 400), and guards on the take may well benefit from the stability of gang governance just as inmates do. But prison gangs' ability to maintain order wins them influence with non-corrupt administrators as well[5] (Biondi 2010, 74; DiIulio 1987, 134); Lessing 2010, 169; Venkatesh and Levitt 2000, 435). Conversely, organized violence against rivals has led administrators, in all the cases discussed here, to segregate inmates by gang affiliation.[6] While this may save lives (and officials' prestige)[7] it also solidifies gangs' control over their designated areas, facilitating consolidation (Knox 2012). Segregation also implies

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[3]Author interviews, four former CV and Terceiro Comando members, Rio de Janeiro, August 2009. All interviews and translations of source material are the author's.

[4]A standardized basket of food staples provided to the needy by charities or government agencies.

[5]Interviews, Directors of Guatemalan and Salvadoran penitentiary systems, San Salvador, May 21-22, 2013.

[6]In the U.S., and in larger prisons in Brazil, segregation generally occurs at the level of wings within units. In Central America, and in smaller prisons in Brazil, entire prison units are assigned to different gangs.

[7]Interview, former Director of Rio de Janeiro State's penitentiary system, July 8, 2009.

sorting incoming prisoners; since gang affiliation can be hard to observe, proxies like race, self-reports, and gang-turf geography are often used. This has the perverse effects of expanding gangs' 'coercive jurisdictions', and putting weakly or un-affiliated first-time offenders under gang custody and tutelage[8] (Skolnick et al. 1990, 24; Human Rights Watch 2004, 33; USAID 2006, 15).

Propagation—the spread of a gang to multiple facilities within a prison system—seems to occur mainly via the transfer of members to new facilities, often as part of a misguided "diesel therapy" strategy of breaking up the gang and isolating leaders (Boyd 2009, 997,Paixão 1987, 74). A distinct mechanism—deportation and subsequent incarceration—brought *maras* from the US where they were founded to Central America's prisons. In all cases, the reliance on norms, codes, and sometimes written statutes (Skarbek 2011, 712-714), permits a decentralized structure that is robust to the isolation or elimination of individual leaders (Biondi 2010; Lima 1991), one reason that gang-abatement policies have not had decisive impacts (Cáceres 2009; Fleisher and Decker 2001).

Related but distinct is the *replication* of tactics, norms, and organizational structure of extant groups by newly emergent prison gangs. The founders of the Comando Vermelho (CV), Brazil's ur-prison gang, gleaned techniques of collective action and protest—critical to victory over predatory rivals—from the leftist militants they were housed with during Brazil's military dictatorship (Lima 1991, 45-49).The PCC, whose founders had spent time in CV-controlled prisons, copied and improved upon these techniques (Amorim 2003; Jozino 2004, 31). Inmates from Santa Catarina state that had served with PCC leaders in a federal prison, in turn, founded the Primeiro Grupo Catarinense (PGC) prison gang that came to public attention in 2013 with a wave of bus-burnings reminiscent of the PCC's 2006 attacks (Puff et al. 2013). In California, early dominance and predation by the Mexican Mafia ('Eme') prison gang led victimized groups to create similar organizations like La Nuestra Familia and the Black Guerrilla Family. At the same time, many founding members of Central America's *maras* were deportees from Los Angeles, where they had been subjected to the Eme's prison-based governance before building a similar system in Salvadoran, Honduran and Guatemalan prisons. Across cases, organizational know-how seems to have catalytic effects on extant or nascent groups, suggesting a replicable

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[8]Author's visit to and interview with the director of Neves Jail, Rio de Janeiro, August 29, 2009.

but non-obvious technology. I return to this idea in the conclusion.

Once prison gangs can credibly promise rewards and punishments to inmates throughout a prison system, the state-provided threat of incarceration permits them to project power onto the streets. In the next section, I model this mechanism. Here, I illustrate three main uses to which projection of power has been put with the case of the CV, which took control of Rio de Janeiro's prisons in the 1970s, then expanded outward to physically dominate the city's *favelas* (slums) and organize the drug trade that operates out of them in the 1980s and 90s.[9]

Organization of local criminal activity   Local illicit markets, especially retail drug markets, tend to be fragmented and unstable. Street gangs and small operators rarely establish thoroughgoing control beyond small pieces of home turf (Dorn et al. 1992; Hagedorn 1994; Skolnick et al. 1990), despite significant investments in arms and soldiers (Levitt and Venkatesh 2000; ?). Yet as Skarbek (2011) has shown, there is a potential surplus to be extracted by any group capable of providing criminal governance. Rio de Janeiro's CV employed a code of mutual-aid among its members to systematically oust or subdue incumbent drug retailers from a majority of the city's favelas in the 1980s (Amorim 1993; Lima 1991), then hold that territory in the face of decades of extreme police repression.[10] Drawing on field visits in 2005 to retail drug markets in four Brazilian cities, I argued that the prison-based nature of Rio's criminal networks, then unique, counteracted the centrifugal forces that brought down larger drug operations in other cities.[11]

Parallel Power   Prison-gang authority can extend to entire peripheral regions and populations, providing order, justice, and other public goods, and effectively supplanting state authority. In Rio de Janeiro: an entire generation of favela residents has been born and raised under the armed dominion of prison-coordinated drug syndicates (e.g. Arias 2006; Dowdney 2003; Gay 1993; Leeds 1996), while the

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[9]This case is useful for theory-building and exposition, but cannot be used in testing because incarceration data is not available for the period in which it began to project power.

[10]Rio's police, by their own account, have killed over 10,000 alleged criminals in armed confrontations in the last decade alone; (ISP-RJ 2013).

[11]Citation surpressed.

state's presence was largely limited to intermittent, corrupt, and highly lethal police invasions (Alston 2007; Cano 1997). As a founding CV member explained,

> "We catechize the favela residents and show them that the government cannot help them or see their side of things. So we give food, medicine, clothes, textbooks.... We pay for doctors, funerals... We even resolve domestic disputes; there can't be trouble or else the police will enter" (Amorim 1993, 162).

Orchestrated Protest and Violence as a Bargaining Chip   These tactics work both inside and outside prison. The CV—whose founding members watched while the leftist militants they were housed with successfully protested their way to amnesty—regularly organized hunger strikes and petitions (Lima 1991), often coercing the larger inmate population into adherence.[12] The CV has also instigated prison riots, often in multiple prisons simultaneously, as a means of pressuring or punishing officials,[13] On the outside, the CV has frequently induced its foot soldiers in favelas to carry out city-wide shutdowns of businesses, burn busses, and machine-gun public buildings and police stations (e.g. Penglase 2005), usually to pressure officials to slacken carceral policies.

US prison gangs have rarely, if ever, engaged in such brazen defiance of state authority; understanding why is a critical avenue for further research. Nonetheless, a comparative perspective makes clear that criminal governance is but one use to which prison gangs may put their coercive power. These uses, I will argue, can have varying effects on crime, but always imply a counter-order, a non-state source of authority, which inevitably comes at the expense of the state's.

Authority, Crime, and Punishment

The foregoing claim requires some conceptual clarification. Canonical conceptualizations of authority center on the ability to lay down rules that 'subjects' ultimately submit to willingly. The idea that order produces a welcome social surplus goes back to Hobbes. Weber describes authority as involving, more

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[12]Interview, former Director of Rio de Janeiro State's penitentiary system, July 8 2009.
[13]Interviews, former imprisoned CV and Terceiro Comando leaders, August 2009.

than just physical or coercive force, a degree of "voluntary submission" (1947, 325) to and internalization of rulers' commands by subjects, due, in modern states, to the 'rationality' and efficiency of the rules chosen.[14] Myerson (2009) identifies authority with Schelling's (1960) notion of 'focality': the ability to get people to focus on and select one out of a multiplicity of potential equilibria.[15] For Levi (1989), submission may be "quasi-voluntary": acceptable as long as everyone does it, which requires the state to coerce potential defectors. Across conceptions, coercion may be necessary to establish authority, but order, once imposed, is self-reinforcing in part because of the surplus it produces.[16]

A distinction can now be drawn between individual and collective challenges to authority. Individuals may simply break rules or laws, defecting, in Myerson's terms, from the social equilibrium selected by the state. Atomistic property crime is a good example: that it is in some sense 'out of equilibrium' is evidenced by the fact that it often catches us unaware. Of course, as more individuals defect, new equilibria arise: we become suspicious, take additional precautions, avoid crime-ridden areas (making them more crime-prone), and thieves must take more drastic actions to surprise us. At the extreme—think of widespread looting—state-induced social order simply dissolves into an 'every-man-for-himself' logic that is nonetheless an equilibrium. In this view, catching and punishing thieves re-establishes a common expectation that others will follow the rules or pay the consequences, 'restoring state authority' by pushing citizens back toward the state-selected equilibrium of respect for private property,

Such individual affronts to state authority, even in aggregate, are conceptually different from collective threats. Of course, non-state actors may also engage in crime and chaos-causing. But they also lay down their own rules, impose social order, induce equilibria among their 'subjects'—in short, they establish their own form of authority, with the same self-reinforcing qualities. "Collaboration is voluntary," a Salvadoran *mara* leader explained, echoing Weber, when I asked how leaders got street

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[14]Tilly (1985) argues that protection rackets only obtained the legitimacy of states when they imposed non-rapacious social orders that produced enough surplus to leave subjects willing to cooperate. Similarly, Olson (1993) attributes most of human civilization to the surplus created by moving from anarchic 'roving' to autocratic 'stationary' banditry. Skarbek invokes this to explain criminal governance by prison gangs.

[15]It is the essence of Nash equilibria that once one is selected, i.e., once we all believe that everyone else will play according to it, nobody has an incentive to defect—an apt game-theoretic translation of Weber's 'voluntary submission.'

[16]Tyler (2003; 2006) agrees that subjects do not obey authorities solely out of fear of punishment, but emphasizes normative over instrumental explanations of compliance. These may be complementary: inhuman prison conditions can erode state authority by violating shared notions of justice *and* by facilitating prison gangs' establishment of non-state authority.

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members to observe the prison-negotiated truce: "Backed by discipline, but voluntary."[17] As violence recedes into off-the-equilibrium-path threats, a gang (or warlord, or insurgent group) can become a 'focal point' that subjects look toward to select equilibria in other domains (Schelling 1960). Focality, by establishing an authority figure, helps all players avoid costly conflict, coordinate strategies, and reap the gains of collective action (Myerson 2009, 103).

Focal-point effects help explain how prison-gangs expand their authority from core members to larger constituencies, particularly when they are able to do so quickly and bloodlessly (e.g. Amorim 1993; Cruz 2010; Hirata 2010). The resulting regions of intermittent state penetration and overlapping authority are surely detrimental to the rule of law (O'Donnell 1993, 2004).[18] Even if some forms of non-state authority—perhaps religion?—need not come at the expense of state authority, it is hard to see how this could be the case for *criminal* groups, particularly ones the state has previously demonized.

The individual / collective distinction carries over into the role of punishment in restoring state authority. The 'individual effects of punishment'—incapacitation and deterrence—are authority-restoring to the extent that people who might otherwise break the law no longer can or do. Estimating the size of these effects is subject to problems of identification, resulting in an ongoing empirical debate. But the very existence of this debate underlines the relative 'visibility' of individual effects: clear causal mechanisms point to observable effects, which, when plausible sources of exogenous variation in punishment crop up, can be estimated with publicly available data on arrests, inmate profiles, recidivism, and so on.

What are the collective effects of punishment on state authority? For groups like insurgencies, mafias, and street gangs, increases in punishment probably reduce the ability to impose non-state authority.[19] The model below shows how this logic is inverted when prison gangs are strong: crackdowns increase gangs' coercive power on the street, reinforcing criminal authority at the expense of the states', apart from any effect on crime rates.

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[17]Interview, Quetzaltepeque Prison, May 24, 2013.

[18]Feltran (2010) documents and analyzes the overlapping authority of the PCC in São Paulo's periphery.

[19]Below, I suggest defining 'street gang' as those whose leverage is reduced by untargeted crackdowns.

Modeling Projection of Power

Why do people on the streets obey the orders of prison-gang leaders who may spend the rest of their lives behind bars? Asked a similar question at an Eme murder trial, an LA Sheriff's Department sergeant explained that "the Eme controls the prisons and the [street] gangsters know that eventually they'll end up in prison and be subject to sanctions and retribution if they don't obey the Eme while they're on the street" (Rafael 2007, 326). A former drug boss I interviewed in Rio put it even more simply: "Whatever you do on the outside, on the inside you'll have to answer for it."[20]

To rigorously explore this logic, I introduce a framework for modeling projection of power. Like all models, it offers a highly stylized picture of a complex reality, focusing on specific aspects of the strategic interaction between gang activity and state enforcement to illuminate a few common mechanisms. While this formal approach necessarily oversimplifies, variation in parameter values and basic setup allows it to address multiple real-world situations. In particular, the model formalizes prison gangs' capacity to project coercive power onto the street—'coercive power' for short—as the largest burden that can be imposed on outside actors in exchange for good standing. Substantively, this burden may include both paying taxes and taking actions that increase the risk of incarceration; for clarity, I analyze these in separate iterations of the model. The first asks how large a tax can be imposed on established street gangs and/or drug retailers; since payment is difficult for authorities to observe, I assume it does not significantly increase risk of incarceration. The second focuses on recruitment of low-level criminals for risky actions that *do* increase the chance of incarceration; here I assume, conversely, that recruits are paid only with the promise of good standing, or "prison insurance" as were the youth who carried out the PCC's terror attacks in 2006[21] (Phillips 2006), and abstract away from gang payment / taxation and reprisals.

Both outcome variables capture a direct coercive capacity, but also—because prison gangs use such capacity to organize outside criminal activity—a broader ability to establish authority, induce cooperative criminal equilibria, and pursue ambitious strategies of expansion and negotiation with the state.

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[20]Author interview, August 17, 2009
[21]Interview, Head Researcher, São Paulo Office of the Public Prosecutor, August 2006.

Comparative statics thus offer insight into the 'collective effects' of punishment on prison gangs' coercive power. State policy is formalized in terms of two classic dimensions of punishment: 'severity' (length of sentences, prison conditions, etc.) and 'certainty' (likelihood of incarceration—essentially law enforcement). I first examine policies that affect these dimensions independently, then turn to more realistic scenarios where increases in certainty result, through overcrowding and related channels, in concomitant increases severity.

Summarizing the results, higher severity increases prison gangs' ability to tax whenever they can sufficiently mitigate the pain of incarceration. Crackdowns increase prison gangs' coercive power unless they are sufficiently 'targeted' at those who follow, as opposed to disobey, prison-gang edicts. If crackdowns lead to overcrowding and harsher prison conditions, an even higher level of targeting is needed to avoid inadvertently strengthening the gang. Finally, addressing the long-standing 'certainty vs. severity' debate (e.g. Beccaria 1819; Donohue 2007), the model supplements Kleiman's (2009) case for 'swift and certain' sentences by showing that the gang-strengthening effects of increased certainty can be offset by shorter sentences.
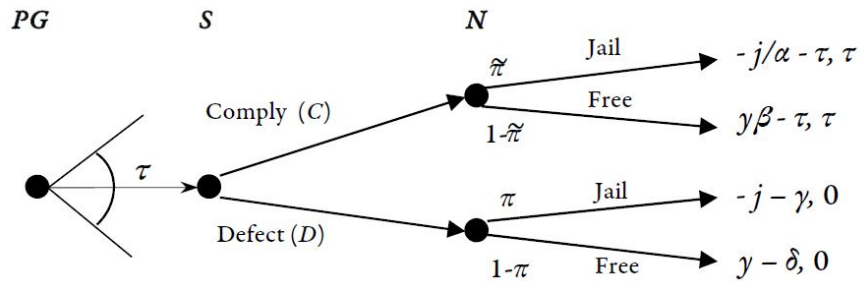
The recruitment extension incorporates Becker's classic model of crime by giving potential recruits a non-criminal outside option, since actors with little or no criminal history might realistically 'go straight.' This allows me to distinguish the individual effects of policies on the overall crime rate from the collective effects on prison-gang coercive power. Harsher punishment and insufficiently targeted crackdowns are found to simultaneously aid gang recruiting while lowering the expected utility of all criminals, thus reducing overall crime.

The model's aims are modest—making transparent and tractable the mechanism by which increased punishment strengthens projection of power—and thus leaves unanswered many interesting questions about the preferences and strategies of prison-gang leaders and state decision-makers. The goal here is to provide a firm basis for future exploration of these and related topics.

The players are the imprisoned gang leadership PG and an outside street-gang leader / drug dealer S. PG moves first, setting a membership tax of τ. Then, S chooses whether to comply (C) and pay τ or defect (D) and "go it alone". S's probability of imprisonment—'Certainty' of punishment in criminological terms—is π if he has defected and $\tilde{\pi}$ if he has cooperated. The model itself remains agnostic about the relative size of π and $\tilde{\pi}$, but the analysis focuses on parameter values relevant to each substantive situation. Here, since S is already a criminal actor (with a substantial π) and since payment of τ may not constitute an observable or actionable offense, the expectation is $\tilde{\pi} \simeq \pi$.[22] Finally, PG rewards or punishes S depending on whether he has cooperated or not, and payoffs are realized.

Figure 1. Game Tree: Taxation

Let $j > 0$ measure severity of punishment, including sentence length and prison conditions. If jailed, S forfeits his earnings and suffers $-j$ in full if he defected, but only $-\frac{j}{\alpha}$ if he complied, where $\alpha > 1$ measures PG's capacity to ameliorate the pain of imprisonment.[23] This formalization captures the idea that membership improves total welfare more when sentences are long and conditions harsh.[24]

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[22] It is possible that prison-gang membership *lowers* the risk of incarceration ($\tilde{\pi} < \pi$), perhaps by reducing gang violence. However, assuming so would 'stack the deck' in favor of prison-gang projection of power, making for a less compelling analysis. In the next section, compliance involves risky actions by recruits, so the natural expectation is $\tilde{\pi} \gg \pi$.

[23] Benefits include not only protection within prison, but support to family members while incarcerated. Interviews, four former CV and Terceiro Comando members, Rio de Janeiro, August 2009; Directors of Guatemalan and Salvadoran Penitentiary Systems, May 21-22, 2013.

[24] Modeling α as additive, so that jailed member suffer $-(j - \alpha)$, would imply, implausibly, that inmates serving get the same total relief from gang membership regardless of sentence length. Moreover, many gang services seem especially welfare-improving when conditions are bad, e.g., providing food and medicine when the administration does not, or passing messages to and from prisoners in solitary.

Let y represent the baseline level of profits from illicit activity that S can earn by "going it alone". Since membership may permit efficiency gains from criminal cooperation, a collaborator receives βy where $\beta \geq 1$. Finally, assume that the gang punishes defectors, and that it is capable of exacting a punishment of $\gamma \geq 0$ within prison and $\delta \geq 0$ on the outside. To simplify analysis, assume PG's costs from rewarding or punishing S are negligible, so that its utility is given by τ. Since, in this setting, S represents an experienced street-gang leader with an extant risk of incarceration, I do not model a non-criminal, "go straight" option here.[25]

ANALYSIS

The gang leadership (PG) will charge the highest positive tax rate that does not induce defection:[26]

Lemma 1. *There is a unique sub-game perfect equilibrium in which the gang demands, and S pays,*

$$\tau^* \equiv j\left(\pi - \widetilde{\pi}/\alpha\right) + y\left[\beta(1-\widetilde{\pi}) - (1-\pi)\right] + \gamma\pi + \delta(1-\pi) \tag{1}$$

whenever τ^* is positive. This is guaranteed whenever $\widetilde{\pi}$ is sufficiently close to π, and for all $\widetilde{\pi} < \pi$.[27]

Conversely, if $\widetilde{\pi}$ is high enough relative to π, τ^* is negative, PG can make any positive demand knowing that S will not pay, and no projection of power is possible. Given the expectation that $\widetilde{\pi} \simeq \pi$ and the fact that taxation occurs in real cases, I focus on parameter values such that τ^* is positive. Comparative statics on τ^* thus reveal how changes in aspects of gang strength as well as state policy affect gangs' coercive power over outside members.

Differentiating Equation 1, it is clear that increases in α, β, γ and δ will all raise τ^*. This is a source of positive feedback: if the gang uses τ^* to increase any of these parameters, its future coercive power will be even greater. Exogenous increases in outside profits (y) will also raise τ^* whenever there is sufficient

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[25] The case of low-level criminal recruitment into gangs, where going straight is a more realistic option, is considered below. Typically, experienced criminals only "go straight" when the state offers some combination of reduced sentences (lower j) or amnesty (lower π) and protection (lower γ and δ). Deriving the effects of prison-gang protection on such an optimal offer is an avenue for further research.

[26] Real-world gangs frequently punish defectors. An information asymmetry, say a distribution over types of S, can generate this kind of result, with the leadership choosing a τ^* which S rejects with positive probability. None of the substantive findings would be affected by such a modification.

[27] Proofs appear in the online Appendix.

surplus from collective criminal activity relative to the increase in the likelihood of imprisonment it entails ($\beta > \frac{1-\pi}{1-\widetilde{\pi}}$). If $\widetilde{\pi} \simeq \pi$, this is easily satisfied, since $\beta \geq 1$.

As for policy effects, it would be specious to assume that j, π, and $\widetilde{\pi}$ can be directly and independently set by the state. Rather, I conceive of policy choices as affecting these parameters, and through them, prison-gang coercive power. A given policy ρ is defined, for present purposes, by $j'(\rho)$, $\pi'(\rho)$, and $\widetilde{\pi}'(\rho)$. I examine four policy experiments; comparative statics for each are presented as parts of Proposition 1.

Table 1. Policy Experiments

Policy	Description	Effect on Severity: $j'(\rho)$	Effect on Certainty: $\pi'(\rho)$ and $\widetilde{\pi}'(\rho)$
ρ_S	Hardening	+	0
ρ_C	Pure Crackdown	0	+
ρ_C^O	Crackdown + Overcrowding	+	+
ρ_C^K	'Swift and Certain' Crackdown	−	+

'Hardenings' (ρ_S) are any policy changes—longer sentences, solitary confinement, reduced privileges, or simply neglect and overcrowding—that increase the pain of prison (j). but have no affect on S's chances of incarceration. Such increases in severity strengthen the gang as long as it is sufficiently strong within prison:

Proposition 1a (Severity strengthens gangs). *The effect of ρ_S on τ^* is positive whenever:*

$$\alpha > \frac{\widetilde{\pi}}{\pi} \qquad (C_S)$$

C_S has a natural interpretation. Complying makes an outside actor $\frac{\widetilde{\pi}}{\pi}$ times likelier to be imprisoned; call this the *risk differential.* Whenever *PG* can ameliorate the pain of prison by a factor larger than the risk differential, harsher punishment will increase its leverage over outside actors. Since we expect $\widetilde{\pi} \simeq \pi$ in this setting, $\frac{\widetilde{\pi}}{\pi} \approx 1$ and C_S is easily satisfied; I assume it holds throughout.

What about 'crackdowns' (ρ_C and variants)—policies like anti-gang laws, increased arrests and prosecutions, and mandatory sentencing that increase the likelihood of imprisonment? I first assume,

somewhat unrealistically, that crackdowns have no collateral effect on prison conditions (ρ_C); I then relax this assumption and allow crackdowns to result in harsher conditions, perhaps inadvertently, through overcrowding and related channels (ρ_C^O). Finally, I consider 'swift and certain' policies (ρ_C^K) that aim to increase certainty while reducing severity, usually through shorter sentences.

A critical issue for all crackdowns is how well they target those outside actors who comply with prison-gang edicts (in this case, paying τ) vs. those who defect. Formally, define ρ's *degree of targeting* as its effect on $\tilde{\pi}$ relative to π: $\varphi(\rho) \equiv \frac{\tilde{\pi}'(\rho)}{\pi'(\rho)}$. With the intuition that states cannot perfectly target repression (i.e. directly set $\tilde{\pi}$ and π), assume that any ρ with $\tilde{\pi}'(\rho) > 0$ must also have $\pi'(\rho) > 0$ and thus $\varphi(\rho) \in \mathbb{R}^+$.[28] Beyond this, the model remains agnostic as to the set of feasible policies, with their respective φ; the point is only to determine the effect a given policy will have on *PG*'s coercive power. That said, typical anti-gang sweeps that poorly discriminate street-gang membership, much less compliance with prison-gang edicts, would have $\varphi \approx 1$.[29] With that in mind, consider first the limiting case of a totally untargeted, 'pure' crackdown with no effect on severity (ρ_C):

Proposition 1b (Untargeted crackdowns strengthen consolidated gangs). *Any policy ρ_C with $\varphi(\rho_C) = 1$ increases τ^* whenever*

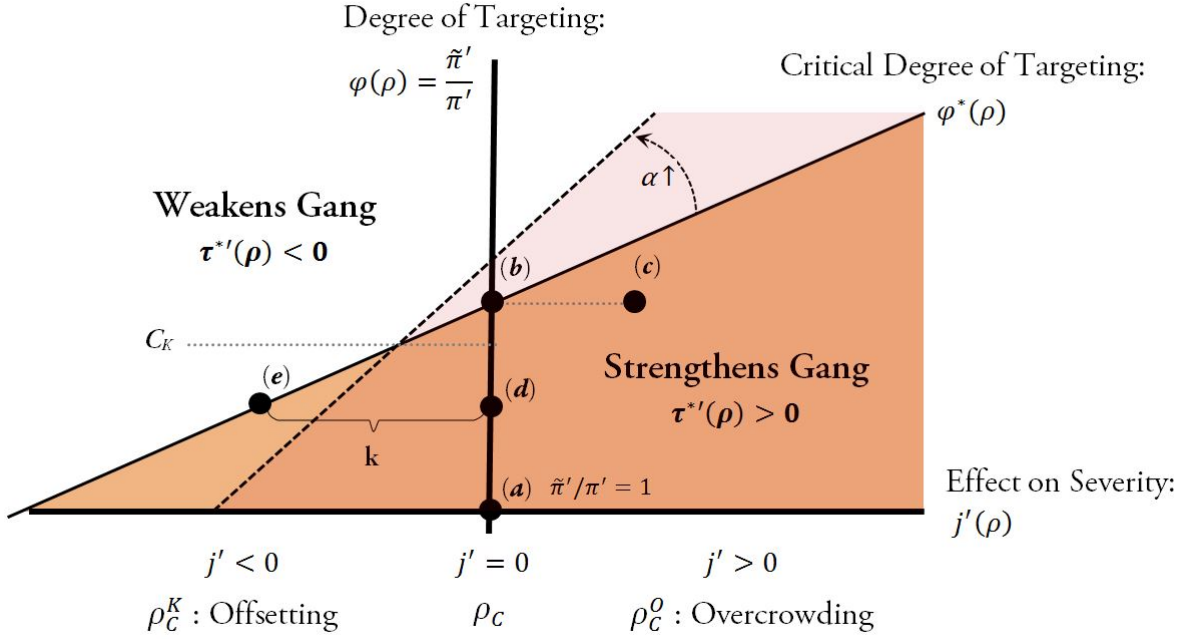$$j - \frac{j}{\alpha} - (\beta y - y) + \gamma - \delta > 0. \tag{2}$$

In words, untargeted crackdowns increase *PG*'s coercive power whenever it is stronger within prison than on the street. Intuitively, if the benefits of membership have more to do with 'prison insurance' ($j - \frac{j}{\alpha}$) than outside profits ($\beta y - y$), and if retribution is more likely inside prison than outside ($\gamma - \delta$), then a higher chance of incarceration makes membership more valuable.

Though gangs' self-identity tends to be defined by whether they originated in the street or in prison, the analytic line between the two can blur as members of the former are incarcerated and those of the latter are released but remain loyal (e.g. Hunt et al. 1993). Equation 2 suggests a useful criterion for differentiating gangs conceptually by whether their total power to punish and reward is greater inside than outside prison. In other words, a prison-based criminal network can be *defined* as a gang whose

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[28] Policies with no effect on severity have no degree of targeting: $\varphi(\rho_S)$ is undefined.

[29] $\varphi < 1$ is possible if a crackdown systematically targets non-members over members. Naturally, such crackdowns tend to strengthen incentives to join the gang.

Figure 2. Results of Policy Experiments

outside coercive power is increased by an untargeted crackdown, like point (*a*) in Figure 2. A street gang, even if its imprisoned leaders charge membership taxes, would be weakened by such a crackdown, and the shaded region would lie below point (*a*).

How targeted does a crackdown need to be in order to avoid increasing a prison gang's coercive power? We can derive a *critical level of targeting*; any crackdown whose level of targeting is below this threshold will strengthen *PG*. Formally, define $\varphi^*(\rho)$ such that $\varphi(\rho) < \varphi^*(\rho) \Rightarrow \frac{d\tau^*}{d\rho} > 0$.

Proposition 1c (Better-consolidated gangs require more targeting). *The critical level of targeting for crackdowns with no effect on severity is $\varphi^*(\rho_C) = \frac{j+y+\gamma-\delta}{j/\alpha+\beta y}$, which is increasing in the 'inside' parameters α and γ, and decreasing in the 'outside' parameters β, δ and y.*

The model's main finding is that insufficiently targeted crackdowns increase a gang's coercive power. Proposition 1c pins down "insufficiently targeted", and says that the larger a gang's capacity to reward and punish inside relative to outside prison, the more targeted crackdowns must be to avoid strengthening the gang.

Thus far, the analysis has assumed that crackdowns only increase certainty; ρ_C^O relaxes this assumption, allowing j to rise along with π and $\tilde{\tilde{\pi}}$. Concretely, say the state implements what it thinks is a 'just-sufficiently targeted' crackdown (with $\varphi = \varphi^*(\rho_C)$), not realizing that this will increase severity, because of overcrowding or by introducing violent individuals into the prison system. The total effect will be to increase *PG*'s coercive power, in spite of the targeted nature of the crackdown. Formally:

Proposition 1d (Overcrowding increases the critical level of targeting). *For any set of parameter values, $\varphi^*(\rho_C^O) > \varphi^*(\rho_C)$ and any ρ_C^O with the same degree of targeting as a just-sufficiently targeted ρ_C will increase τ^*.*

In terms of Figure 2, the state believes it is at point (b), but the overcrowding effect means it is at (c), below φ^* and inside the gang-strengthening region.

Finally, consider ρ_C^K, a deliberate policy of offsetting crackdowns with less severe punishments. Kleiman (2009) offers important behavioral and game-theoretic arguments why 'swift and certain' punishment is a better deterrent than the status quo of long sentences for a small fraction of offenders. The present model suggests another advantage: if C_S holds and the gang is strengthened by increases in j, then by the same token, a decrease in severity *weakens* the gang. For example, if outside actors face shorter sentences, the value of gang membership conditional on incarceration is lower.[30] This can be used to offset the gang-strengthening effects of an insufficiently targeted crackdown:

Proposition 1e (Offsetting more certainty with less severity). *For any set of parameter values, $\varphi^*\left(\rho_C^K\right) < \varphi^*(\rho_C)$. For any insufficiently targeted ρ_C, there exists $k \in \mathbb{R}^+$ such that any ρ_C^K with the same degree of targeting but $j'\left(\rho_C^K\right) < -k$ lowers τ^*.*

k is increasing in π', decreasing in $\tilde{\tilde{\pi}}'$, and decreasing in α whenever

$$\varphi\left(\rho_C^K\right) < \frac{j + y + \gamma - \delta}{j\frac{\pi}{\tilde{\tilde{\pi}}} + \beta y} \tag{C_K}$$

The term k indicates how large a reduction in severity is needed to offset an insufficiently targeted crackdown; in Figure 2, it is the distance from (d) to (e). Holding the impact on non-members

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(π') constant, better-targeted crackdowns require smaller offsets.[31] As for α, the more consolidated the gang, the larger the targeting gap, but, counterintuitively, the more efficacious any reduction in severity. Condition C_K holds whenever the latter effect predominates. Graphically, a rise in α increases the slope of φ^*, reducing k for points below C_K. Overall, the result suggests that Kleiman's approach is particularly apt when prison gangs are strong and targeting is difficult.

RECRUITMENT

I now turn to the question of recruiting outside actors to take risky actions. The players are the imprisoned gang leadership PG and a continuum of potential recruits, indexed by their expected income from 'go it alone' criminal activity $[\underline{y}, \bar{y}]$; assuming y measures 'criminal talent', PG is better off recruiting higher types. PG charges no tax, but requires recruits to carry out a risky action (C), raising their chances of imprisonment from π to $\tilde{\pi}$, where $\tilde{\pi} \gg \pi$. In exchange, PG gives collaborators in-prison benefits, captured by α. To focus on the prison-insurance channel, assume that non-imprisoned collaborators receive no cash or additional criminal rents: $\beta = 1$. Moreover, since there are many potential recruits, assume that the gang does not punish defection (D): $\gamma = \delta = 0$. Finally, since potential recruits have low criminal profiles, assume all y have an outside option to 'go straight' (O) worth y_o, with $\pi_o = 0$. The choice between non-gang crime (D) and legality (O) is thus equivalent to Glaeser's (1999) simplified version of Becker's model.[32]

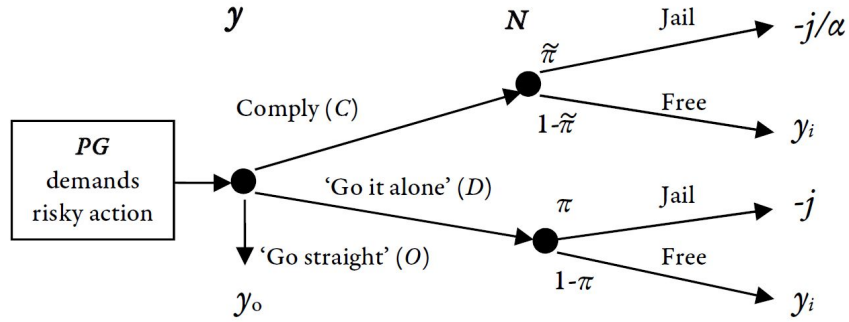An individual y_i is *recruitable* if he prefers C to both D and O; the relevant cutpoints are:

$$y^* = j\frac{\pi - \tilde{\pi}/\alpha}{\tilde{\pi} - \pi} \quad : \quad y_i < y^* \Leftrightarrow C \succ D$$

$$y^C = \frac{y_o + j\tilde{\pi}/\alpha}{1 - \tilde{\pi}} \quad : \quad y_i < y^C \Leftrightarrow O \succ C$$

$$y^D = \frac{y_o + j\pi}{1 - \pi} \quad : \quad y_i < y^D \Leftrightarrow O \succ D$$

For y^* to be positive, condition C_S must hold: $\alpha > \frac{\tilde{\pi}}{\pi}$. Since the risk differential $\frac{\tilde{\pi}}{\pi}$ is now substantial, C_S is now more restrictive: substantively, prison-insurance is only a viable recruitment strategy for

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[31] But note that two crackdowns with the same φ can have different values for k. The slope of φ^* in Figure 2 depends on $\pi'(\rho)$.

[32] Glaeser simplifies Becker's 'intensive' choice (how many crimes to commit) to a binary choice (crime or legal activity). Glaeser has a distribution over individuals' legal wages and a constant criminal wage; I reverse the formalization, allowing the model to say something about the quality of criminals the gang can recruit; comparative statics are unaffected.

Figure 3. Game Tree: Recruitment

well-consolidated gangs.

I make two further assumptions. First, since all three actions are observed empirically, I focus on regions of the parameter space where each is taken along some portion of the interval $[\underline{y}, \overline{y}]$. Algebra reveals that $y^* > y^C \Leftrightarrow y^C < y^D$, so a sufficient and necessary condition for all three actions being taken is $\underline{y} < y^D < y^* < \overline{y}$.[33] Thus all $y \in [y^C, y^*]$ are recruitable, and y^* represents the highest recruitable type. Second, I assume that the number of people PG seeks to recruit, N_R, is small compared to the total pool of recruitable actors:

$$N_R < \int_{y^D}^{y^*} F(\cdot) \, dy \qquad (C_R)$$

In words, PG does not recruit low types (below y^D) who would not otherwise be involved in crime.[34] This implies that y^D measures, inversely, overall participation in criminal activity (i.e. the crime rate), as in Becker/Glaeser,[35] while y^* measures PG's effective recruiting strength. Thus comparative statics on y^D and y^* capture, respectively and roughly, the individual vs. collective effects of carceral policy.

ANALYSIS

First note that gang control over prison life aids recruiting ($\frac{\partial y^*}{\partial \alpha} > 0$) but has no effect on overall crime ($\frac{\partial y^D}{\partial \alpha} = 0$), while increases in the outside option reduce the crime rate ($\frac{\partial y^D}{\partial y_o} > 0$) but have no effect on

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[33]This implies $\alpha > \frac{\tilde{\pi}}{\pi}$.

[34]This is more empirically and theoretically sound than the alternatives $C_R' : \int_{y^D}^{y^*} F(\cdot) dy < N_R < \int_{y^C}^{y^*} F(\cdot) dy$ or $C_R'' : \int_{y^C}^{y^*} F(\cdot) dy < N_R$: empirically, prison gangs generally only recruit actors with some criminal experience, while theoretically it is not clear how the gang could observe y_i for someone who, absent recruitment, would take the outside option. In any case, most results hold under these alternative assumptions, though their interpretation is less clear.

[35]An increase in y^D means a reduction in the crime rate.

recruiting strength ($\frac{\partial y^*}{\partial y_o} = 0$), a consequence of C_R. Turning to the effects of policy experiments listed in Table 1:

Proposition 2a (Severity reduce crime but aids recruitment). *All policies ρ_S increase y^D and, assuming C_S holds, raise y^*.*

Harsher sentences unambiguously make criminals worse off with respect to non-criminals, lowering the overall crime rate; at the same time, they increase the gang's ability to recruit as long as it is sufficiently consolidated to make prison-insurance recruitment viable.

Proposition 2b (Crackdowns reduce crime). *Any policy with $\pi'(\rho) > 0$ raises y^D.*

As long as crackdowns are not exclusively targeted at gang collaborators, they will always reduce overall crime. However, they also aid recruiting if not sufficiently targeted.

Proposition 2c (Untargeted crackdowns always aid gang recruitment). *For policies ρ_C with no effect on severity, the critical level of targeting is $\varphi^*(\rho_C) = \frac{\tilde{\pi}}{\pi}$.*

Since $\frac{\tilde{\pi}}{\pi} > 1$, it immediately follows that *any* untargeted policy aids recruiting. Moreover, a crackdown that affects the risk differential by a factor less than the differential itself will increase the gang's ability to recruit. This suggests rapidly diminishing returns to the targeting approach: the effect is to raise the risk differential, which in turn makes further crackdowns more likely to be counterproductive.

As for overcrowding, the result from Proposition 1d holds here as well: a seemingly sufficiently targeted policy, with $\varphi(\rho) = \varphi^*(\rho_C)$, will end up strengthening gangs if it leads inadvertently to a worsening of prison conditions. However, overcrowding will also intensify the policy's positive effect on deterrence, since $\frac{\partial y^D}{\partial j} > 0$.

As before, the gang-strengthening effect of an insufficiently targeted crackdown can be offset with a reduction in severity:

Proposition 2d (Offsetting 'more certainty' with 'less severity'). *For any set of parameter values, $\varphi^*\left(\rho_C^K\right) < \varphi^*(\rho_C)$. For any insufficiently targeted ρ_C, there exists $k \in \mathbb{R}^+$ such that any ρ_C^K with the same degree of targeting but $j'\left(\rho_C^K\right) < -k$ lowers y^*. k is increasing in π', decreasing in $\tilde{\pi}'$, and decreasing in α.*

Again, more targeted crackdowns generally require smaller reductions in severity.[36] In this case, increases in α do not affect the 'targeting gap', and so unambiguously reduce the size of the offset needed. Such an offset will necessarily produce less deterrence, but crime will still fall if the targeting gap is not too large:

Corollary (**Offsetting reduces deterrence**). *For any ρ_C^K such that $\varphi\left(\rho_C^K\right) = \varphi\left(\rho_C\right)$, $\frac{dy^D}{d\rho_C^K} < \frac{dy^D}{d\rho_C}$; however, $\frac{dy^D}{d\rho_C^K} > 0$ as long as $k < \pi'\left(\rho_C\right)\frac{y_o+j}{\pi(1-\pi)}$.*

This says that if the targeting gap is small enough, or, ironically, if α is high enough, the policy will still increase deterrence over the baseline. This suggests that when prison gangs are very strong, taking a 'swift and certain' approach to punishment is a particularly appropriate strategy.

EMPIRICAL EVIDENCE

The model predicts that untargeted increases in the likelihood of incarceration, as well as harsher sentences and conditions, should strengthen prison gangs' ability to project power as long as they are sufficiently consolidated within prison. Focusing on three case-episodes with solid data—California (roughly 1980-2002), São Paulo (1990-2012), and El Salvador (1990-2012)—I show that these operative conditions were met; I then show that these periods witnessed important expansions in prison-gang projection of power. The same general trends in incarceration policy hold for the US, Brazil, and Central America's Northern Triangle a whole.

Condition 1: Certainty and severity of punishment increased. In all three cases, mass incarceration policies produced a steady increase in incarceration rates from about 100 per 100,000 residents to over 400 in the span of about 20 years, as Figure 4 demonstrates. Over roughly the same periods, the prison population of El Salvador quintupled and those of California and São Paulo grew to more than seven times their original size. Recidivism rates indicate that outside criminal actors anticipate future incarceration (Table 2). Severity of punishment also increased, due to longer sentences (Zimring

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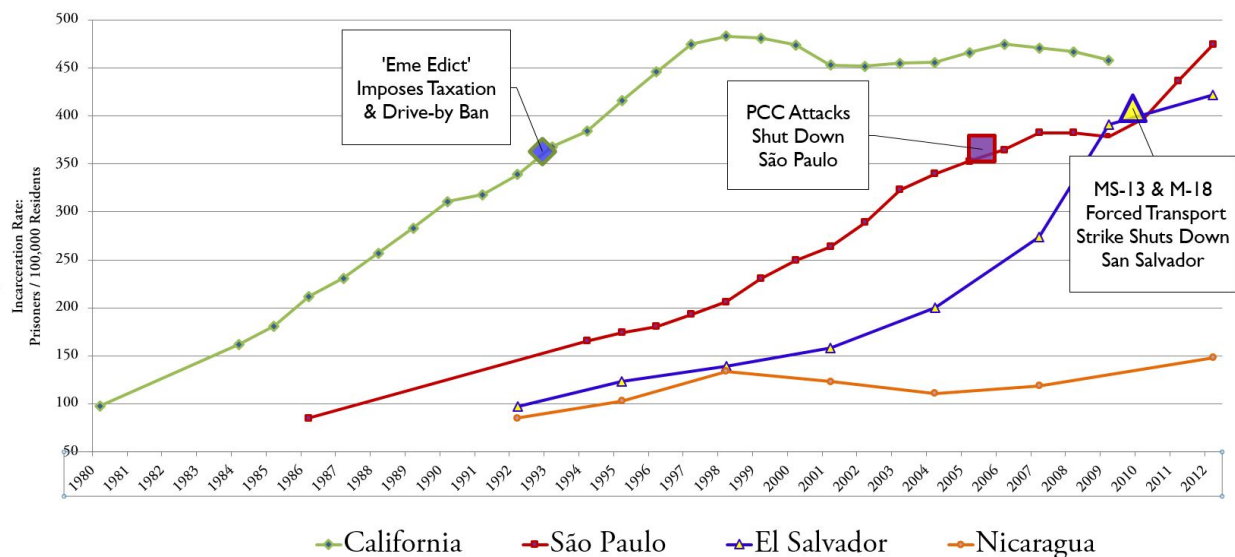[36]The caveat of note 31 still applies, however.

et al. 2001),[37] harsher custodial practices such as US Supermax prisons and Brazil's Special Disciplinary Regimes (Caldeira 2004; Salla 2007), and increasing levels of overcrowding (Occupancy Rate figures in Figure 4).

Table 2. Recidivism Rates

USA	California	Brazil	El Salvador	Guatemala
51.8%	67.5%	70%	> 50% > 90% (*mara* members)*	58.5%

Sources: Langan and Levin (2002); CDCR (2011); *Agência Brasil* (2011); Aguilar and Miranda (2006, 62); Ranum (2006, 9). *Author interview, Director General of Salvadoran penitentiary system, May 22, 2013.

Figure 4. Mass Incarceration and Projection of Power

Occupancy Rates (Inmates/Beds x100%)	196% (2007)	179% (2012)	299% (2012)	128% (2010)

Sources: BJS (2012); CDCR (1997); CDCR (2008); CDCR (2011); INFOPEN (2012); Cáceres (2009); DGCP (2013); Paredes (1997); ICPS (2013); OAS (2012). *Excludes local jails. †Data for 2007.

Condition 2: The degree of targeting was low. Crucially, much of this carceral growth was driven by anti-gang crackdowns that consistently failed to distinguish street-gang members from non-

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[37]Pfaff (2011) finds that median sentences did not increase in the 1990s, but notes that in California this is driven by incarceration of increasingly marginal criminals, and that his results "understate time served by the young and by the Hispanic" as well as violent offenders.

members, much less specifically target those street criminals who obey prison-gang dictates (**Brazil:** Arias (2006); Cano and Alvadia (2008); IBA (2010). **Central America:** Andino Mencía (2006, 13-14); Cruz (2010, 390-391); Mateo (2011, 97); Ranum (2011, 79-80); Wolf (2011, 59). **USA:** Bjerregaard (2003); Boyd (2009, 972-983); Curry (2000, 1270); Gilmore (2007, 214-225)).

Condition 3: Prison gangs can punish defection and reward loyalty within prison. In California, the Mexican Mafia, also known as the Eme, first consolidated control over life in southern California's prisons in the 1960s, and by the 1980s had significant ability to punish and reward inmates (Diaz 2009, 128-130; Skarbek 2011). São Paulo's PCC, founded in 1993, rapidly consolidated and propagated through the state prison system in the following years (Diaz 2009, 128-130; Feltran 2012, 237-240); by 2001 it was powerful enough to instigate simultaneous mutinies in 30 prisons, involving 28,000 prisoners, the first so-called 'mega-rebellion' (Dias and Salla 2013, 397). In Central America, the arrival in the 1990s of *mara* members deported mostly from California—where they were themselves taxed and governed by the Eme prison gang (Valdez 2011, 28-29)—turned a vast collection of local, turf-based youth gangs into *clikas* ('cliques') of the Mara Salvatrucha (MS) and 18th St. *mara* franchises (Cruz 2010). Region-wide anti-gang initiatives put thousands of gang members behind bars, and by the early 2000s officials in El Salvador were segregating prisons by gang affiliation (Cruz 2010, 391), giving each *mara* a safe base of operations (Fogelbach 2010, 430;USAID 2006).

Predicted Result: Prison Gangs' Ability to Project Power Increases. In line with the model's predictions, the periods of rapid expansion in incarceration rates and severity of punishment also witnessed, within a few years, qualitative leaps in prison-gang projection of power. While projection of power is often very difficult to measure, since prison gangs and street criminals go to lengths to hide their activities and contacts, key events—including changes in street-level criminal markets, control over peripheral areas, and orchestrated violence / protest—occurred in each case that revealed considerable accumulation of power over street-level agents. For clarity, Figure 4 shows only one early salient example from each case.

- September 1993: Mexican Mafia leaders convoke mass gatherings of southern California's Sureño

street gangs to announce the 'Eme Edict', a new system of "complete vertical integration": restrictions on inter-gang violence, loyalty to the Eme, and a tax on drug profits (Rafael 2007, 36-39).

- May 2006: São Paulo, the world's third-largest city, is held hostage when the PCC instigates synchronized riots in some 90 prisons and street-level attacks on hundreds of civilian and police targets, bringing the city to a standstill for days.

- September 2010: imprisoned leaders of El Salvador's MS-13 and M-18 *maras* joined forces to induce—via threats of mass violence by street-level affiliates against city busses—a transportation strike that shut down the capital for three days, demanding improved prison conditions and the veto of an anti-gang law (Wolf 2012, 86).

If nothing else, these events constitute "smoking-gun" tests (Collier 2011) of prison-gang projection of power: carrying them out required the coercive strength to induce outside affiliates to pay taxes, submit to rules and dictates, and even take highly risky actions at the command of imprisoned leaders.[38] It may be coincidence that such projection first became apparent in the wake of untargeted mass incarceration policies, or both phenomena may be effects of some omitted variable. But the evidence is certainly consistent with the theoretical model presented here.

These events, and others like them, also tell us about the strategic ends to which prison gangs can put their ability to project power. Like California's Eme and Rio's CV, São Paulo's PCC has used its coercive power to organize drug markets, operating as primary wholesaler, tax collector, and arbiter of disputes among myriad small-scale retailers throughout the urban periphery[39] (Feltran 2010; Hirata 2010, 289). It has imposed a violence-limiting '*lei do crime*' ('criminal code of behavior') (Telles and Hirata 2009, 53) through an astonishing system of trials, via cell-phone conferencing, before a jury of jailed PCC elders (Caramante 2008; Feltran 2010).[40] The organization of São Paulo's retail drug markets into a

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[38]It is the nature of such tests that we cannot infer, in the absence of such revelatory events, that prison gangs *lack* power on the streets.

[39]Interview, former São Paulo Special DA for Organized Crime, September 1, 2009.

[40]These "*debates*" began within prison; their democratic aspect seems central to the PCC's style of governance and, perhaps, its hegemony; see (Biondi 2010; Dias 2011; Marques 2010).

prison-based criminal network took place decades after Rio's, but at quite similar moments in 'analytic time' (Collier 1993, 3): about 12 years after the hegemonic gang's founding inside the respective prison systems.

In El Salvador, as well as Guatemala and Honduras, the *maras* professionalized: leaders introduced formal hierarchies, stricter and savvier codes of outside behavior (e.g. prohibiting gang tattoos that made members easy targets for anti-gang enforcement) (Cruz 2010, 390-392; Mateo 2011, 98; Ranum 2011, 81; Savenije 2009; Wolf 2012, 86-87) and a system of prison-coordinated and -taxed extortion (Fogelbach 2010, 439) of businesses and public transportation known as *la renta* (the rent) (Aguilar and Carranza 2008, 23). For Savenije (2009, 150-152), the organization of extortion rackets was both driven by increased demands for contributions by imprisoned *mara* leaders, and made possible by the hierarchical structure that prison-based control fomented.

In terms of parallel power, *maras* play a dominant role in neighborhoods throughout El Salvador, as well as Guatemala, and Honduras (e.g. Aguilar and Miranda 2006; Mateo 2011; Ranum 2006). In São Paulo's urban periphery the PCC's governance activities—particu- larly dispute-resolution and order-provision—have expanded from the hardcore criminal underworld to broader informal economic and social spheres poorly served by state institutions (Feltran2008,2010; Hirata 2010). As one detective noted: "[T]he PCC is now judging small-claims cases, even domestic disputes. It's clogging up our wiretaps, which capture fewer and fewer [serious crimes]" (Redação Terra 2008).

Finally, in their use of violence, and its strategic reduction, as a political bargaining chip, the PCC and the Salvadoran *maras* are unparalleled. The 2006 PCC attacks, more than just a destructive affront to state authority, proved an effective political cudgel: they not only forced concessions in carceral policy, but helped defeat PCC antagonist Gerardo Alckmin, then-governor of São Paulo and architect of its mass incarceration policies, in his 2006 bid to unseat President Lula da Silva. When I asked what the PCC ultimately gained with their attacks, São Paulo's former DA for Organized Crime told me, "Power, in the political arena. Now they must always be taken into consideration; everyone is afraid."[41]

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[41]Interview, September 1, 2009.

El Salvador's *maras* followed their 2010 show of force with a March 2012 prison-brokered truce that produced an immediate 60 percent drop in the national homicide rate—testifying to imprisoned leaders' control over street-level behavior. Though the government initially denied any role in the pact, top *mara* leaders were returned from isolation to low-security prisons and given access to cell phones, among other concessions (*Economist* 2012; Farah 2012). Once the homicide drop became undeniable, the government took partial credit for the truce, inviting security ministers from Guatemala and Honduras to discuss exporting the Salvadorean 'experiment' (Membreño 2012*a*).[42] The efficacy of the truce gives *maras* important political leverage, since relapsing into violence could be disastrous for incumbents. Such leverage may even outweigh short-term criminal rents: once the truce won public praise, *mara* leaders 'deepened' it with a temporary ban on *renta* extortion; the government later announced a reduction in police patrols (Membreño 2012*b*).[43]

My claim is that these transformations of 'mere' prison gangs into sophisticated prison-based criminal networks, with significant political leverage over state actors, were facilitated by mass incarceration policies. Critical comparative evidence comes from the case of Nicaragua, which shares with its neighbors many factors often blamed for the rise of the *maras*: a history of civil war, easy availability of firearms, widespread poverty and unemployment, and a long-standing presence of neighborhood street gangs (Rocha and Rodgers 2008). Yet the *maras* have made no inroads into Nicaragua, its native gangs never developed into prison-based criminal networks, and its homicide rate is far lower than its northern neighbors (Cruz 2011; Yashar 2012). One key reason may be officials choice of a "sociological" approach (Rocha 2010, 33) over criminalization of gang membership, thus avoiding large increases in incarceration rates (Figure 4). Cruz, comparing case studies of Nicaragua with El Salvador, Guatemala, and Honduras, finds such policy differences decisive, concluding that "the mechanism that perhaps most facilitated gang organization and recruitment" in the latter three cases "was the simultaneous incarceration of thousands of youth gang members and wannabes" (Cruz 2011, 155).

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[42]The truce's impact extends, ironically, to Brazil: Rossi (2012) asks whether an overt pact like El Salvador's with "its PCC" (i.e. the *maras*) would be worth trying with the actual PCC in São Paulo.

[43]Farah (2012) claims the truce is part of a larger transforation of the *maras* into political actors, reporting gang leaders' intention to broker votes to candidates in exchange for policy concessions.

Unfortunately, such comparative leverage is rare. There is little reliable information for high-incarceration authoritarian regimes like Russia and China, and in general negative cases cannot be distinguished from missing data: authorities have incentives to deny prison gangs' power, and even honest measurement is biased downward. Even in the US, prison-gang secrecy and official "gang denial" severely hamper detection and assessment (Fleisher and Decker 2001, 3; Fong and Buentello 1991, 66-7; Knox 2012); in Latin America production of reliable information is probably worse (Macaulay 2007, 630).

Under these conditions, naïve empirical testing can generate spurious results, as repeated intelligence failures surrounding the PCC illustrate. Officials denied the existence of the PCC prior to the 2001 'mega-rebelion' (Salla 2007, 81), then only a year later declared that crackdowns and harsher prison policies had rendered it "a failed and dismantled organization" (Simas Filho and Rodrigues 2003, 2). Even scholars and specialists that acknowledged the PCC's strength within prison vastly underestimated its power on the streets[44] (Adorno and Salla 2007, 9). In fact, from 2002-2006, while São Paulo's prison population doubled, the PCC was consolidating internal control (Dias 2009), and building a network of outside cells whose efficacy the 2006 attacks would soon make frighteningly evident. Yet just prior to those attacks, regressing the best available measures of prison-gang power projection on incarceration rates would have yielded powerful evidence *against* my theory.

In data-poor environments, models can help advance a 'modeling dialogue' (Myerson 1992, 64), clarifying concepts and focusing empirical research on relevant phenomena. In particular, crime rates, even when accurate, are no measure of prison-gang power: the same policies that incapacitate and deter individuals may simultaneously strengthen prison gangs by increasing their coercive power on the street. Moreover, prison gangs sometimes use this power to deliberately reduce criminal violence, as with the 1993 Eme ban on drive-by shootings (Parenti 2000, 198), the 2012 prison-brokered *mara* truce, or the PCC's prohibition of unauthorized homicide. Obviously, public attacks and protests reveal prison-gang strength, often intentionally, but in the interim, researchers can only triangulate among observations suggestive of prison-gang projection: changes in the structure of local criminal

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[44]Interview, Head Researcher, São Paulo Office of the Public Prosecutor, May 9, 2005.

markets, sudden decreases in street-gang violence (or its concentration into large-scale battles between consolidated networks), and targeted violence against officials in response to changes in carceral policy. Ethnographic work in marginalized and incarceration-affected communities has been critical in detecting parallel power and even criminal governance; moving forward, replicated ethnographies could help produce more systematic assessments.

Counterproductive Punishment

In any case, these collective, authority-eroding effects are far less visible than individual effects. The causal pathway is neither obvious—it is modeled here for the first time, to the best of my knowledge—nor immediate: both consolidation within prison and projection of power onto the street occur over years or decades. Moreover, the aforementioned obstacles to measurement may worsen as gangs grow powerful, accumulate corrupting illicit rents, and become an ever-greater motive for even honest officials to prevent accurate assessments.

Another asymmetry concerns 'returns to scale.' Theory predicts, and empirical results mostly confirm, that the marginal crime-reducing effect of punishment is decreasing (Kleiman 2009; Useem and Piehl 2008), and may even become negative beyond some point (Chen and Shapiro 2007; Gaes and Camp 2009; Liedka et al. 2006).[45] In contrast, the collective, authority-eroding effects of punishment may display increasing returns over the relevant range. For one thing, as prison becomes a common part of the life course for targeted demographic groups (Pettit and Western 2004), prison-gang initiation may become a rite of passage, and obtaining 'prison insurance' a widespread community norm. But the model suggests additional complementary dynamics: the strengthening effects of crackdowns on prison gangs' power outside prison are directly increasing in their power within prison; there will be positive feedback if gangs use the ensuing surpluses to further consolidate. Moreover, if prison-gang authority is focal, even modest increases in coercive power can have decisive effects on their outside authority. For example, in Los Angeles, the MS first brazenly opposed Eme taxation, then, as reprisals

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[45]Kleiman (2009) emphasizes, however, that well-planned 'dynamic concentration' policing may have tipping-point effects, and hence increasing returns.

escalated, not only relented but amended its name to proudly proclaim its Eme affiliation (Valdez 2011, 28-29), suggesting a tipping-point effect. Focality implies shared expectations of obedience, captured in this once-imprisoned Rio drug lord's explanation of loyalty to imprisoned leaders:

> [A rebellious lieutenant] could try a 'coup d'état'... but it's very rare. In an established CV drug operation with great firepower... out of 30 employees, half would kill [him], you can be sure... and you only need one.[46]

Figure 5. Individual and Collective Effects of Incarceration on State Authority

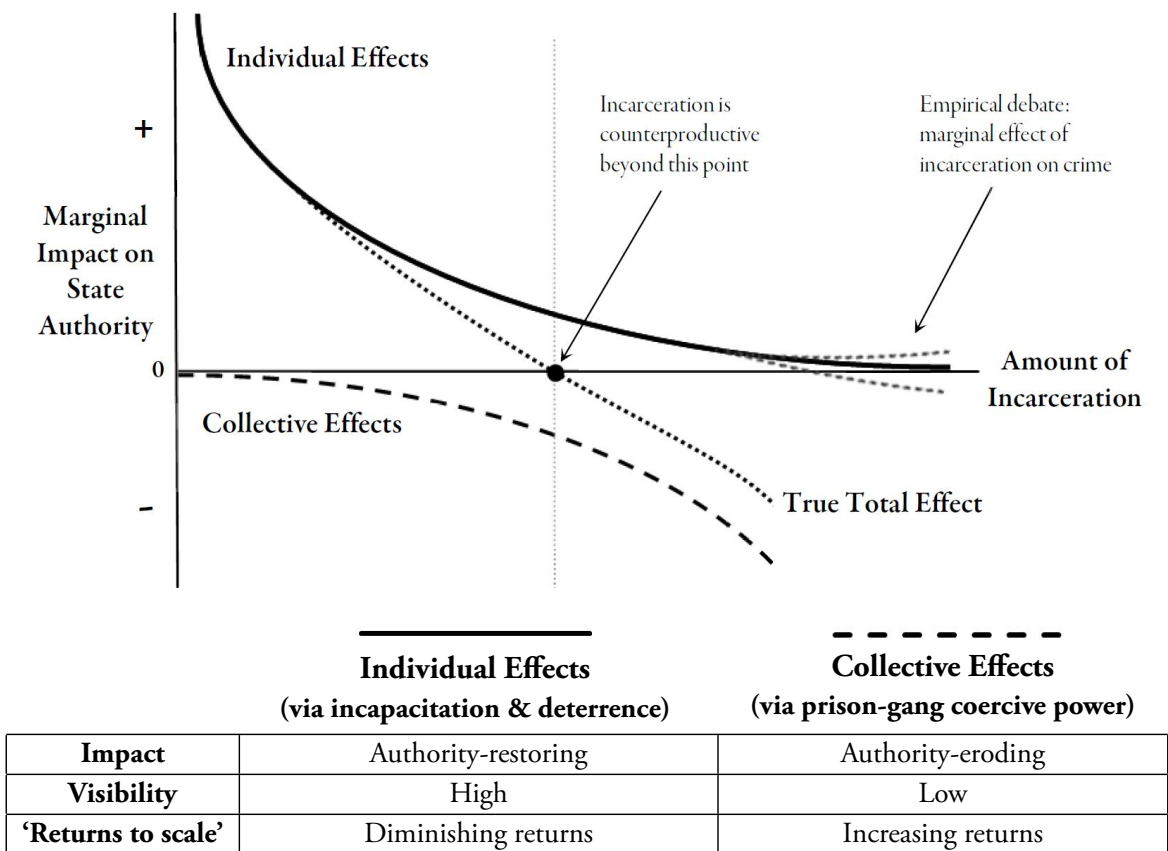|	Individual Effects (via incapacitation & deterrence)	Collective Effects (via prison-gang coercive power)
Impact	Authority-restoring	Authority-eroding
Visibility	High	Low
'Returns to scale'	Diminishing returns	Increasing returns

Figure 5 synthesizes the foregoing conjectures: the marginal, 'individual effects' of incapacitation and deterrence on state authority are positive and high at low levels of incarceration, where basic social order is established, but decreasing as the worst offenders are captured. These effects are (roughly) measurable via the crime rate, though debate exists as to whether and where they become negative.

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[46]Author interview, Rio de Janeiro, August 17, 2009.

The marginal effect of prison-gang growth on state authority is negative, small at low levels of incarceration, but larger at higher levels, once gangs have consolidated and begun to project power. The curve is downward-sloping to show these 'increasing returns' and dashed because the effects are not easily observed. The 'true' marginal effect of incarceration on state authority—the vertical sum of these two curves—becomes negative at some inflection point, beyond which additional incarceration may continue to visibly reduce crime, but in reality undermines overall state authority.

In this view, prison gangs do not merely produce hidden costs or externalities that lead policymakers to incarcerate more than socially optimal. Rather, they present a fundamental limit to the amount of 'restoration of authority' that states can accomplish *at any price*. This may sound fanciful, but consider the radical (and expensive) experiments in mass incarceration carried out in places like California, Texas, El Salvador, and São Paulo. How much legitimate authority have these experiments really produced? In Brazil and El Salvador, prison gangs use the threat of debilitating violence to force authorities into open negotiation, replacing insurgency as the direst threat to state authority. Even in the US, crime may be 'under control', but the drug trade abides, prison riots and protests are frequent, and in both prison and street-level criminal markets, if not the broader communities where many inmates come from, order is determined as much by prison-based criminal networks as by the state. For officials everywhere, these may be attractive trade-offs, in effect subcontracting the state function of establishing order to illegal groups, who work 'cheap.' Ultimately, though, such abdication by the state of its defining role must erode its legitimacy and constitute a net loss for society.

Conclusion: Punishment Technologies and Historical Change

Wherever our societies lie along Figure 5, it is surely due in part to unprecedented expansion in incarceration. But historical developments have likely exacerbated the collective effects of incarceration, in effect shifting the dashed line down and the inflection point, beyond which additional incarceration undoes state authority, leftward. Ironically, it was a similar shift that drove western societies to adopt incarceration as their primary form of punishment in the 18th century.

Foucault argues that public execution and torture, then the primary forms of punishment, became problematic for the state when they began to generate civic unrest and disorder. The underlying logic of punishment had not changed: bodily destruction still (literally) incapacitated culprits while terrifying onlookers. Nor had punishment become more expensive per se. Instead, contradictions latent in the punishment technology (e.g. public spectacles require crowds, which generate rowdiness) were amplified by changes in the wider social context (shifting class relations and ideological ferment) such that increased punishment eroded more than it restored the king's authority (Foucault 1977, 63). To modern leaders, publicly brutalizing citizens in the hopes of re-establishing state legitimacy might seem self-defeating. Yet this was far from obvious at the time, and in any case to *not* publicly torture law-breakers might well have seemed "soft on crime."[47]

Eventually, public torture gave way to incarceration—whose attractiveness to the modern state Foucault dissects. Yet incarceration has its own latent contradictions: by bringing criminals together, it aligns their interests and encourages criminal networking, makes the state responsible for their well-being (at significant expense), and leaves inevitably outnumbered guards dependent on the cooperation of inmates. Historically, these contradictions have been manageable as 'corrections' problems, never seriously threatening the efficacy of incarceration as a means of restoring state authority.

This has changed, as I have argued throughout. In 18th-century Europe, social agitation transformed rowdy public executions into dangerous citizen-state confrontations. In the contemporary globalized economy, prison gangs, once a mere headache for wardens, have been "potentialized" by two factors. First, technological advances have facilitated communication and cooperation. Cell phones have proven both transformational in impact—as with the PCC's synchronized attacks and multi-juror 'trials'—and impossible to control, even in maximum-security US prisons (California Department of Justice 2010). Equally important, however, is the accumulation and diffusion of organizational know-how, such as techniques of collective action and protest transmitted through personal contact (Amorim 2003; Jozino 2004, 31; Lima 1991, 45-49) or the rules and norms codified in statutes and constitutions that have facilitated the survival of Californian (Skarbek 2011), Texan (Fong 1990) and Brazilian

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[47]Prison was, at the time, understood not as punishment but rather a place to *await* punishment.

(Amorim 2003, 166-177, 388-390) prison gangs. The transformative effect that collectivization has had on extant prison gangs echoes a feature of many military technologies, fundamentally altering strategic interactions in an irreversible way.[48]

The other key factor is the illicit drug trade and states' repression of it, both of which have expanded rapidly over the last 40 years. Demand has proven extremely inelastic, giving states two bad options: turn a blind eye to the very activities they demonize, or fill their prisons with drug offenders. Choosing the latter has given prison gangs an enormous talent pool to recruit from, both among those already incarcerated and those who expect to be at some point. But prison gangs' capacity to project power is only as valuable as the uses to which it can be put. Prohibition's other effect is to generate immense illicit rents,[49] the vast majority of which accrue to the usually-fragmented retail segment Reuter and Greenfield (2001). Prohibition thus creates massive potential returns to precisely those criminal activities prison gangs are uniquely positioned to organize. The history of the CV illustrates the point: its first collective criminal actions were armed robberies, but profits were meager, and it stagnated. Only when leaders switched to a strategy of cornering retail drug markets did the CV grew into a citywide criminal network (Amorim 2003). The PCC also moved from property crime into the drug trade in the last decade (Christino et al. 2006), and it appears that the Central American *maras* are pursuing a similar strategy (Dudley 2011).

These changes have transformed the prison system—in theory the core of the coercive apparatus—into a space that can spawn, nurture, and serve as operational headquarters' for organized criminal defiance of state authority. The logic of incapacitation and deterrence has not changed. But when prison gangs largely control inmate life, incarceration, rather than restore the state's legitimate authority, merely draws attention to its absence (Dias 2011; Tyler 2003). And when prison gangs use that control to coordinate outside illicit activity, further increases in incarceration rates may only strengthen criminal authority at the expense of the state.

The problem is not principally one of low state capacity: US prison gangs, while subject to some of

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[48]The point was made eloquently by Mr. Dryden, speaking of nationalist insurgents, in *Lawrence of Arabia*: "You give them artillery and you've made them independent."

[49]Miron (2003) estimates, conservatively, that prohibition raises cocaine and heroin prices by 2-4 and 6-19 times. The US market for cocaine is about $50 billion/year; see (Reuter et al. 2009).

the strictest and costliest custodial regimes anywhere, have continued to administer extensive criminal networks with ties to international drug cartels. Perhaps a silver-bullet anti-gang program will come along; thus far they have had only marginal impact (e.g. Dias 2011, 173-174; Fleisher and Decker 2001; Knox 2012; Salla et al. 2012). Nor is the problem limited to prison gangs per se: groups like Peru's Shining Path, Colombia's paramilitaries, and the Irish Resistance Army have all used incarceration to their advantage, transforming prisons into organizational assets (Rénique 2003; *BBC* 2007; English 2005, 187-205). And since incarceration has become, in the modern era, the sole form of punishment upon which all state coercion ultimately rests, what these cases expose is a fundamental limit to state power.

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