A Model of Criminal Justice Discretion*

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Abstract

Criminal prosecutors wield tremendous power in the American legal system. However, their ability to direct prosecution against criminal suspects relies on coordination with the police who investigate crimes and make arrests. That relationship has been made more prominent in the context of reform prosecutors who propose to shift traditional law-enforcement priorities. I propose a model of police-prosecutor interactions that focuses on an informational asymmetry between police and prosecutors that has not been analyzed in past research. Police are endowed with private information about the culpability of an arrested suspect but also have biases about prosecution and charges. I evaluate how prosecutors' preferences over leniency affect credible communication between police and prosecutors. Analysis reveals that police and prosecutors may appear to cooperate even under conditions where they do not trust each other. Empirical evidence of alignment between police and prosecutors, for example, is consistent with a variety of different institutional relationships, which has implications for potential approaches to criminal justice reform.

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1 Introduction

In recent years, Americans have been engaged in an extended public debate about whether and how to reform our criminal justice system. The stakes are high. Criminal justice is in many ways central to democratic governance. It is the mechanism by which individual freedoms and rights are protected against unlawful incursion by other individuals. It is also a primary mechanism by which the government infringes on the rights and freedoms of individuals—either justly or unjustly. What is more, the criminal justice system is replete with government agents who are largely immune from meaningful checks on their discretion and have powers that can severely affect a citizen's well-being.

Partly recognizing the political significance of law enforcement for democratic society, political scientists have turned anew to police as a subject of study. Recent scholarship has examined both the patterns of police behavior and the ways in which political institutions shape the incentives police face when using their power. Related work has focused on the carceral state, examining the civic and political effects of American incarceration—both for the individuals held in custody and communities more broadly. That work has highlighted important tradeoffs in the practice of law enforcement and identified the most likely ways in which bias shapes discretion.

However, it is important to recognize that prosecutors are in many ways the linchpin in the politics of criminal justice. Prosecutors serve as the nexus between policing and judicial disposition. Often elected, though not always, prosecutors face complicated incentives that shape how they handle cases brought to them by the police.[1] Moreover, because of prosecutors' institutional role, they typically have strong influence over judicial proceedings, are endowed with resources that outweigh those of criminal defendants, and benefit from remarkable discretion about how to handle charges against criminal suspects.

[1]The model I develop is most directly applicable to the elected-prosecutor context that characterizes most state and local systems in the United States. Federal prosecutors and the smaller number of state prosecutors who are appointed rather than elected (for example, in Delaware and New Jersey) face different institutional pressures, though career concerns may generate similar dynamics. Comparative analysis across these institutional settings is a promising avenue for future research.

Indeed, the recent debate about criminal justice reform has involved discussion about so-called "reform" prosecutors. The debate is broad and touches on a variety of elements of criminal justice. But, a recurrent theme is that when prosecutors adopt law enforcement priorities at odds with police priorities, trust between the two institutions erodes. In the worst-case scenario, police have threatened to "stand down" in the face of prosecutors who decline to pursue crimes the police want to see punished. Cities ranging from San Francisco to Chicago to Burlington, Vermont, have reportedly experienced episodes where police and their unions cast local prosecutors as "soft on crime," in some cases reportedly reducing cooperation with victims in response to the district attorney's reform agenda (e.g., Thompson and Murphy 2024).

How does trust and cooperation between police and prosecutors affect the implementation of criminal law and justice? The answers to this question have direct implications for the study of American political institutions, because police and prosecutors are the key actors who implement the vast majority of American law at the individual level. They are, in many ways, the most omnipresent executive officials in American political life, and their power and discretion are vast. What is more, police and prosecutors represent the key point of contact between executive enforcement and judicial resolution of law.[2] To be sure, research on bureaucratic delegation and coordination between political actors offers ideas for how to approach these questions. In this paper, I develop a simple model of collaboration between police and prosecutors to illustrate how political priorities in criminal law affect law enforcement on the ground.

I show three findings that bear on empirical analysis of prosecutorial discretion and criminal justice reform. First, there are several empirically equivalent implications of very different types of relationships between police and prosecutors. For example, what appears to be cooperation between police and prosecutors can arise both when police and prosecutors credibly communicate information to coordinate on appropriate charges and when they do

[2]Prominent examples of prosecutorial power reveal that their reach is not limited to criminal power but also civil settings. For example, Donald Trump's civil fraud case was brought by prosecutors in New York.

not trust each other and undermine the quality of justice. Second, I show that the quality of the courts—especially the effectiveness of courts at avoiding over-convicting criminal defendants—can play a crucial role in inducing informative communication between police and prosecutors. Third, and related, I show that the formal analysis of police-prosecutor interaction reveals specific mechanisms by which changes to one part of the criminal justice system propagate through others. For example, debates about reforming criminal justice to avoid over-punishing criminal suspects will often need to examine the interaction not just between prosecutors and courts but among prosecutors, police, and courts, among others. The interactions among these actors can complicate the consequences of the goals of prosecutorial reform in meaningful ways.

2 The Law Enforcement Community

2.1 Prosecutors and their Incentives

While prosecutors play a significant role in the politics of crime and punishment—as well as the political system more generally—they have remained largely understudied in political science (Gordon and Huber 2009). Traditionally, scholars have approached prosecutors as relatively simple actors in a political-economic setting. They seek to maximize sentences (or convictions) and are faced with relatively simple incentives about how to allocate effort across cases (e.g., Bar-Gill and Gazal Ayal 2006, Landes 1971). In this sense, prosecutors are agents of social welfare, using discretion to maximize compliance with the law and ensure efficient deterrence through their law enforcement powers (e.g., Baker and Mezzetti 2001, Easterbrook 1983).

But that traditional approach to studying prosecutors overlooks political features of the criminal justice system that complicate the simple story. First, and most obviously, prosecutors are elected officials. While there are important questions about the extent to which electoral accountability works to effectively shape their behavior, it is quite obvious they

should be studied in the context of democratic politics (Gordon and Huber 2009). Prosecutors face strong incentives to secure convictions not just for social welfare reasons but because of the electoral benefits that come from convictions (e.g., Bresler 1993, Gordon and Huber 2002, Medwed 2004).

Second, prosecutors are part of an institutional matrix that characterizes the complete criminal justice system, including police, judges, prison systems, and law-makers. Assuming their objective functions boil down to simple social welfare maximization problems sets aside decades of political science research about the interaction of political institutions and their effects on the use of discretion by power-holders. And, in doing so it blinds us to the potentially cross-cutting pressures that prosecutors face when deciding how and when to enforce the law (e.g., Davis 2007, Romero 2019, Sloan 2020, Starr and Rehavi 2013).

Of course, some research has begun to explore prosecution as part of the broader political environment. Research suggests that presidential preferences shape priorities by US attorneys (e.g. Mattioli 2020). Other work has examined plea bargaining as a particularly salient setting in which prosecutorial discretion might be shaped by institutional structures. Much of that work emphasizes the informational asymmetry between prosecutors and defendants. One approach sees defendants as informationally advantaged, because they know their own true level of guilt. Another approach considers the prosecutor's advantage with respect to the likelihood the prosecutor will win a case at trial (e.g., Grossman and Katz 1983, Reinganum 1988). No matter the perspective, though, the key issue is that prosecutorial discretion is a tool for sorting the innocent from the guilty in a game between prosecutors and defendants (for a discussion, see Gordon and Huber 2009).

To the extent those incentives are couched in a broader political environment, research focuses on prosecutors' career incentives—especially electoral incentives—and their effect on efficient discretion (e.g., Gordon 2009, Gordon and Huber 2002, Little and Simpson 2024). But, prosecutors' relationships with other political actors can have cross-cutting effects. Most notable is the connection between prosecutors and police (e.g., Romero 2019), but of

course prosecutors also have working relationships with local elected officials, judges, lawyers from other jurisdictions, and state-level officials (e.g., Bellin 2019, Guerrieri 2000, Hoeffel and Singer 2015, Worden 1995). Despite these complex relationships, many legal scholars conclude that "prosecutors rule the criminal justice system" (Rakoff 2016).

Other research examines how prosecutorial discretion directly interacts with the broader carceral state. Several studies have sought to evaluate whether prosecutorial discretion affects, for example, patterns in charging decisions, incaceration, plea bargaining, and recidivism (e.g., Agan, Doleac and Harvey 2023, Ball 2011, Davis 2007, Hessick 2021, Jordan 2024, Little and Simpson 2024, Ouss 2020). An important insight from that work is that when prosecutorial incentives and goals shift, it can have a meaningful impact on the fate of individuals brought into contact with the criminal justice system.

The flip side of that observation is that prosecutorial discretion might directly affect the welfare of other important actors in law enforcement—the police. Because prosecutors rely on police officers to identify criminal suspects and bring compelling evidence and charges for prosecution, they must have a constructive relationship with them (for some discussion, see Garoupa 2012). Indeed, it is the public sense that police have responded to reform prosecutors by "standing down" that motivates much of the critique of those prosecutors in recent debate. Why, and under what conditions, might reform prosecutors undermine the effectiveness of policing itself? Recent research on policing helps identify some factors that we might consider.

2.2 Police and Justice

Recent attention from political scientists examines the function police play as part of the broader political environment. Some of that work focuses directly on documenting how individual biases shape the decisions officers make while exercising their discretion (e.g., Ba et al. 2021, Clark et al. 2023, Epp, Maynard-Moody and Haider-Markel 2014, Gelman, Fagan and Kiss 2007, Hübert and Little 2023, Knox, Lowe and Mummolo 2020). Some of it focuses

specifically on how police respond to policies, political incentives, and the broader political environment (e.g., Clark 2024, Mummolo 2018).

A key finding from the recent research is that while police may suffer from bias in their decision-making, they are also motivated by a desire to ensure justice. Police are trained—both formally and informally on the job—to prioritize which laws to enforce, and against whom. One approach, which Wilson calls the "Watchman" form to policing, is oriented around maintaining order, rather than strictly enforcing every possible legal infraction. For police operating in this way, the job involves "not simply emphasizing order over law enforcement but also judging the seriousness of infractions less by what the law says about them than by their immediate and personal consequences..." (Wilson 1968, 141). Of course, Wilson identifies ways in which officers' bias might influence that approach, but the core point is that police develop a sense of an individual criminal suspect's culpability—the degree to which that person is truly responsible for, and likely to persist in, criminal behavior—in a way that is detached, to some extent, from the specific legal implications of his or her actions. That is, police value matching their perception of a criminal suspect's underlying culpability with the way they are handled by the criminal justice system.

Because police are just one part of that system, though, they also value cooperation and trust among the relevant players. Most important, perhaps, is the office of the prosecutor. The close coordination between police and prosecutors has even been called an "unholy union," because of the way they jointly influence the larger criminal justice system and the politics of both oversight and reform (e.g., Romero 2019). Police value their ability to influence prosecutors' decisions by bringing cases to them and framing those cases in a particular way. In the model I develop below, police value cooperation with the prosecutor, and they particularly value cooperation with the prosecutor in a way that aligns charging decisions with the suspect's underlying culpability. That is, they value to some extent charging more culpable suspects with serious crimes and less culpable suspects with lesser crimes.

But to do that work, police need close, intimate knowledge of the people over whom they have jurisdiction. Criminal justice scholars point to co-production—the process by which police work with communities to provide public safety—as a mechanism by which police develop expertise and informational advantages that allow them to better assess the culpability of individuals they encounter. However, as some have pointed out, this process also endows police with the power to manipulate the criminal justice system and advance their own biases (e.g., Brewer and Grabosky 2014).

One of the significant challenges for institutional design of policing is how best to manage their discretion (e.g., Clark 2024, Mummolo 2018). What checks on how police use their advantages promote more fair, accountable, and equitable criminal justice? How, in turn, does policing shape the way other political actors deploy criminal justice? In this paper, I focus specifically on how prosecutors and police interact and the conditions under which their relationship can enhance or undermine criminal justice. The model I develop in this paper focuses attention on this particular informational asymmetry—one in which police officers have an informational advantage owing to their on-the-ground presence and deeper first-hand familiarity with the events that transpired during an alleged crime. Of course, prosecutors engage in investigation and research, but police officers nevertheless have a potential advantage by virtue of their position in the chain of events.

2.3 Street-Level Bureaucrats and City-Level Decision-Makers

The interaction between police and prosecutors entails, then, two actors with wide discretion. They individually have significant power, but the criminal justice system functions as a product of their joint efforts. Moreover, while they share some common goals, their objectives can diverge.

The recent experiences with conflict between police and reform prosecutors highlights the challenge that arises when those objectives do in fact diverge. In the face of prosecutors who have the intent to use discretion to de-prioritize certain criminal offenses, police in some

cities have threatened to "stand down." As more and more cities have witnessed campaigns between "reform" prosecutors and more traditional prosecutors, a pressing question has emerged. Can police and prosecutors cooperate when a prosecutor does not share the same law enforcement priorities as the officers themselves (or the police as an institution)?

There are reasons to suspect that how prosecutors exercise their discretion can undermine trust between police and prosecutors. Police and prosecutors alike value trust for multiple reasons. Prosecutors rely on police who have expertise and informational advantages when it comes to both crime taking place and the culpability of individual criminal suspects. For example, because police work daily in local communities, they often have developed relationships with individuals and understand important context about an arrest. In the event of an arrest, officers are more likely to know if the criminal suspect is in fact a highly culpable individual who warrants more serious prosecution or is instead someone whose culpability is relatively limited. Their informational advantage comes about from their on-the-ground, regular interaction with the people who live in their jurisdictions.

The key tension I analyze is a dynamic that practitioners of criminal justice understand but research on law enforcement has yet to fully integrate. By virtue of their day-to-day, street-level interactions with individuals, police officers can have relevant information about the true culpability of an individual arrested for a crime. It may be an individual who has committed a serious crime but is caught up in a series of unfortunate circumstances and might be considered to have "made a mistake" and be a good candidate for leniency. Or, it might be an individual whose crime might not appear that serious but is understood in the community to be a highly culpable individual meriting harsher treatment by police and prosecutors. Importantly, this kind of contextual information can be hard to document and objectively communicate. Prosecutors and police rely on trust in order to coordinate on how to handle individuals arrested—even individuals arrested under similar circumstances for similar crimes. This observation is critical for the results I present.

The model I develop in the next section focuses on how the informational asymmetry

between police and prosecutors interacts with their competing incentives. A key question is how a prosecutor's use of discretion about charging criminal suspects affects the ability to work cooperatively with police. The model sets aside relevant actors—most notably civilians themselves as well as judges. In typical local criminal courts, prosecutors play extremely influential roles, with repeated, regular appearances before judges. Those judges typically defer to a large extent to prosecutors, seemingly due to their greater resources and deep familiarity with the case. (Of course, that discretion is itself an equilibrium phenomenon, and future models may extend the logic here to incorporate their decision-making more directly. Indeed, an important question that the literature has yet to address is how judges incorporate into their deference to prosecutors any reliance prosecutors place on information from the police themselves.)

3 The Model

Players, actions, and sequence of play. There are two players: an Officer and a Prosecutor, denoted O and P, respectively. There is also a non-strategic player—the suspect—who makes no moves and has no decisions or payoffs.[3] The model revolves around how the Officer and the Prosecutor behave after the Officer has arrested the suspect. First, Nature selects a type for the suspect, $\theta \in \{L, H\}$, and an Officer type, $\beta \in \mathbf{R}$. Let θ correspond to the suspect's degree of culpability for the criminal behavior. (I will sometimes refer to $\theta = H$ as a "high type" suspect, and $\theta = L$ as a "low type" suspect.) The suspect's type does not necessarily correspond to the crime he is alleged to have committed. Rather, it captures the kind of contextual assessment of culpability that officers develop through their street-level interactions—whether the individual is a genuinely dangerous offender or someone whose circumstances warrant more lenient treatment. As I discuss below, an important feature of this interpretation is that culpability, so understood, is correlated with the likelihood of conviction on serious charges: the model assumes that the factors the officer privately observes

[3]Investigating incentives for that player is a valuable opportunity for future modeling.

tend to be correlated with the strength of the prosecution's case at trial. Let β correspond to the officer's bias towards (or against) punitiveness.

The Officer observes θ, but the Prosecutor does not. I assume that β is common knowledge. The Officer then decides what level of allegations to bring against the suspect, $a(\theta) \in \{L, H\}$. The Prosecutor receives the allegations from the Officer and decides how to charge the suspect in court, $c \in \{L, H\}$.

A disposition, $d \in \{0, 1\}$, is then probabilistically determined in court, which I assume is a function of the charges, c, and the suspect's type, θ. Specifically, I assume that the suspect will be convicted with certainty except in one situation. If the Prosecutor chooses $c = H$ but the suspect is a low type—i.e., $\theta = L$—then the suspect is found not guilty ($d = 0$) with probability $\pi \in (0, 1)$. Substantively, π measures the extent to which the courts are likely to acquit the suspect of serious charges when he is a low type. This is where the culpability interpretation of θ connects to the formal structure: a less culpable suspect charged with serious crimes is more likely to be acquitted because the facts uncovered at trial—including the suspect's history, the circumstances of the offense, and the availability of mitigating evidence—will tend to undermine the prosecution's case. More broadly, one might interpret π as capturing the quality of the adjudication process, including the effectiveness of defense counsel in surfacing these mitigating facts. While stark, this modeling choice focuses analytic attention on a particular kind of judicial error—the over-conviction of low-type defendants.[4]

Preferences. The player's utilities are summarized in Table 1. A number of the assumptions I make about players' preferences diverge from a standard set-up, and so I discuss those in more substantive terms. I assume the Officer has preferences over four elements. First, the Officer has a taste for justice. Specifically, he prefers that the Prosecutor file charges that match the suspect's true type and receives $\gamma > 0$ whenever his allegations match the

[4]Of course, courts make both kinds of errors—acquitting the guilty and convicting the innocent. The formalization here focuses analytic attention on the key tension in this model—the prosecutor's risk of acquittal if she overcharges a defendant. This is the source of conflict between the prosecutor and the police. Moreover, it is resonant with the notion that a prosecutor is more likely to secure convictions on "easier" charges and that "tougher" charges are hardest against the less culpable.

defendant's type and those allegations are adopted by the Prosecutor. That is, he receives positive utility from aligning Officer and Prosecutor choices with the defendant's type. Second, I assume that the Officer receives utility associated with his type, $\beta \in \mathbf{R}$, whenever $c = H$. Because β can be positive or negative, the Officer can have a preference either for more serious charges or more lenient charges for the suspect. Notably, this source of utility depends on the Prosecutor's choice, independent of the ultimate outcome for the defendant. I make this assumption to capture the political dynamic motivating the model—police have preferences about how prosecutors treat defendants. Third, I assume the Officer prefers convictions, independent of the charges. Specifically, the Officer pays a cost $\phi > 0$ whenever the suspect is not convicted. Finally, I assume the Officer pays a cost $\delta > 0$ whenever the Prosecutor reduces the Officer's allegations, which reflects a loss in trust between the Officer and the Prosecutor.

	$c = H$	$c = L$
$a = H$	$\gamma + \beta$, η	$-\delta$, $-\delta$
$a = L$	β, $\eta - \epsilon$	0, 0

(a) $\theta = H$

	H	L
H	$\beta - \pi\phi$, $(1-\pi)\eta$	$-\delta$, $\lambda - \delta$
L	$\beta - \pi\phi$, $(1-\pi)\eta - \epsilon$	γ, λ

(b) $\theta = L$

Table 1: Players' payoffs for each type of suspect, θ.

I also assume the Prosecutor's preferences capture four elements. First, the Prosecutor derives an electoral benefit from successful prosecutions. Let $\eta > 0$ denote the differential between securing a conviction on a "high type" charge (i.e., $c = H$) as opposed to a "low type" charge. Specifically, she receives η from a conviction of charges $c = H$. Convictions of more serious charges yield a stronger electoral benefit than do convictions of more lenient charges. Second, I assume the Prosecutor receives $\lambda \geq 0$ if she chooses $c = L$ when $\theta = L$. This parameter measures, then, the prosecutor's interest in avoiding over-charging a suspect. (One could also include a parallel parameter to measure the prosecutor's benefit from correctly charging a high-type suspect with high-type charges. As I show in the appendix, that parameter does not affect the analysis of the model.) As a result of these assumptions,

the penalty to the Prosecutor for acquittal—not convicting the defendant—is a function of the η and λ. The prosecutor does not receive η in the event of an acquittal, but that can be offset by a large enough λ. Third, the Prosecutor has a distaste for effort. If the Officer presents a less serious allegation ($a = L$), the Prosecutor pays a cost $\epsilon > 0$ if she wants to charge a more serious crime, $c = H$, representing the work she must do to enhance the charges and build a bigger case. Finally, like the Officer, the Prosecutor has a taste for trust between her office and the Officer and pays a cost $\delta > 0$ whenever she reduces the Officer's allegations—i.e., $a = H$ but $c = L$.[5]

As will become evident in the analysis below, Table 1 shows that the primary tension between the Officer and the Prosecutor occurs when the suspect is a low-type. It is under this condition that the Officer is most likely to want high-type charges under conditions where the Prosecutor wants low-type charges. That potential conflict of interests is at the heart of the model.

Information. There is one element of uncertainty in the model—the Prosecutor's uncertainty about the suspect's type, θ. I assume that the Prosecutor has a prior belief, $\Pr(\theta = H) = p \in (0, 1)$, and updates her belief according to Bayes' Rule where appropriate.

Notable modeling choices. The model involves several modeling choices that bear discussion. First, I assume that the outcome of any trial is an exogenous, probabilistic event. The players all know the probability distribution over outcomes (and thus, there is not the same kind of informational asymmetry as in the standard screening models of plea bargaining). Extant models of prosecutorial discretion often assume an informational asymmetry between a prosecutor and a defendant—either the prosecutor or the defendant has private information that might affect the outcome of a case (e.g., Grossman and Katz 1983, Reinganum 1988). I set that possibility aside, at least in part because this model focuses on

[5]The model could index the δ parameter so that the Prosecutor and Officer has distinct costs for losing trust, and all of the results here would hold.

two criminal justice "insiders"—the prosecutor and the officer. Informational asymmetry between adversaries (i.e., a defendant and prosecutor) is qualitatively different than between two partners in criminal justice who have institutional mechanisms for resolving informational disadvantages. What is more, I do model a related informational advantage for the Officer by assuming he knows the state of the world with certainty. That parameter itself does affect outcomes insofar as only over-charged suspects have some probability of being acquitted.

Second, the suspect's type, θ, is best understood as capturing the officer's contextual assessment of culpability—the kind of private knowledge that comes from street-level familiarity with a suspect and his circumstances, rather than from the formal evidentiary record. This is an important distinction. Much of the evidence that bears on a prosecution—police reports, witness statements, forensic results—is observable to the prosecutor as well. The officer's private information, by contrast, concerns the less documentable dimensions of culpability: whether a suspect is someone the community regards as genuinely dangerous, whether a crime reflects a pattern of behavior or an isolated lapse, and other contextual factors that are difficult to communicate through formal channels. It is precisely the soft, subjective nature of this information that makes credible communication between the officer and prosecutor a challenge and that motivates the signaling structure of the model. A natural alternative would be to model the officer as choosing how much evidence to generate or disclose, in the spirit of the Bayesian persuasion literature (e.g., Kamenica and Gentzkow 2011). That is a promising direction for future work, but the present model isolates a logically prior question: under what conditions can an officer credibly convey his private assessment of a suspect's culpability at all, even without endogenous evidence production?

In the model, the suspect's type also affects the probability of conviction: high-type suspects are convicted with certainty, while low-type suspects charged with serious crimes may be acquitted. I am assuming, in other words, that the officer's contextual assessment of culpability is correlated with the strength of the case at trial. This is a deliberate simpli-

fication. The intuition is that the same underlying factors the officer observes—whether the suspect has a history of similar behavior, whether the community views the crime as part of a pattern, whether mitigating circumstances exist—also tend to surface during adjudication through criminal history, witness testimony, and the overall coherence of the prosecution's case. It is this correlation that makes the officer's private information consequential: if the officer's assessment were unrelated to case outcomes, the prosecutor would have no reason to attend to the officer's signal, and the strategic interaction at the heart of the model would not arise.

Third, I assume that the suspect's type is exogenous. However, police themselves have wide discretion about which individuals to arrest. As I discuss in the conclusion, a promising avenue for future research involves endogenizing how police engage in law enforcement in light of their expectations about prosecutorial discretion.

Fourth, I assume that the parameter δ captures trust between the Officer and the Prosecutor. There are other potential interpretations of this parameter, such as a concern for public legitimacy that might be undermined by observed conflict between police and prosecutors. The critical point is that both the Officer and the Prosecutor perceive a benefit to coordination that is lost when the Prosecutor downgrades the Officer's allegations. Substantively, we might think of this concern as in the examples of the political turmoil that some cities experienced when police officers protested reform prosecutors who indicated they would shift priorities and decline to prosecute certain crimes. Cities ranging from San Francisco to Chicago to Burlington, Vermont, all have reportedly experienced episodes where police and their unions cast their local prosecutors as "soft on crime." Part of that strategy reportedly involved police having stopped helping people who had been victimized by crime, in response to the district attorney's reform agenda, ostensibly to create political pressure on the prosecutor (e.g., Thompson and Murphy 2024). These kinds of examples illustrate the tension and disutility that follows after prosecutors adopt a less aggressive approach to pursuing criminal suspects than do police and motivates the particular coordination mechanism

captured by this modeling choice.

4 Analysis

I analyze the model in four steps. First, I consider the Prosecutor's incentives. I focus on the tradeoff she confronts and the implications of the informational asymmetry I model. Second, I turn to the Officer. I focus on the constraints he faces in pursuing his goals. Third, I characterize equilibrium behavior. The analysis reveals three distinct types of behavior that can be supported. Finally, I present a variety of comparative statics that have implications for how we understand and evaluate patterns in prosecutorial choices.

4.1 The Prosecutor's Incentives

The Prosecutor faces two goals, which can potentially be in tension with each other. On one hand, the Prosecutor wants to secure convictions. The microfoundations for the Prosecutor's goals are both intrinsic and instrumental with respect to factors outside of the model, as described above. However, Prosecutors may also have an incentive to avoid over-convictions—that objective is at the heart of the model. Some prosecutors have a distaste for over-charging individuals whose culpability does not warrant serious charges or who would be better off with less severe treatment in the criminal justice system. This interest is measured by the parameter λ. Thus, even setting aside the Prosecutor's informational disadvantage, she does not have a generically strictly dominant strategy—her preferred strategy will depend on the relative weight of her electoral incentives for conviction relative to her taste for avoiding over-charging suspects.

That trade-off is compounded by the informational challenge the Prosecutor faces. The Prosecutor wants to know the suspect's type—because of λ—but anticipates that the Officer might want to mislead her. However, even if she believes that the Officer has not truthfully signaled the suspect's type, she still has some incentive to adopt the Officer's recommended

charges, in order to cooperate with the Officer. This tension is at the core of the model's motivation, which is to understand how a prosecutor's priorities can undermine her relationship with the police.

Thus, if the Prosecutor believes with certainty the suspect is a high type (i.e., $\theta = H$), her choice is relatively simple. She is strictly better off choosing high-type charges (i.e., $c = H$), assuming the Officer has made high-type allegations.[6] She cannot suffer a trust cost from downgrading charges, and she does not have to worry about over-charging the suspect. However, when she believes that the suspect is a low type (i.e., $\theta = L$), her calculus is complicated by her competing interests. Given a sufficient interest in matching low-type suspects to low-type charges, she will be willing to forego the (potential) electoral benefit of securing convictions on high-type charges.

Remark 1 *The Prosecutor's strategy will depend on both the value she places on matching low-type suspects to low-type charges and her belief about the suspect's type.*

When we turn to equilibrium analysis, the question will be how the Prosecutor and the Officer can cooperate and credibly communicate information about the suspect's type to coordinate charging decisions.

4.2 The Officer's Incentives

The Officer's latent incentives are somewhat simpler. The Officer values aggressive law enforcement and, to the extent measured by β, wants the Prosecutor to pursue high-type charges against suspects. But, that objective is complicated by three forces. First, the Officer does not like to see suspects acquitted (as measured by ϕ) and so has an incentive to avoid inducing the Prosecutor to pursue high-type charges if he thinks the suspect will not be convicted. That occurs with probability π when the suspect is a low-type. Thus, this consideration plays into the Officer's decision calculus most clearly when the suspect is

[6] As we will see in the equilibrium analysis, low-type allegations against a high-type defendant only occur in equilibria where the Prosecutor's strategy is non-responsive to the Officer's strategy.

a low-type, because high-types can be convicted of any type of charge.

Second, because the Officer values matching charges to the suspect's type, his bias in favor of high-type charges by the Prosecutor is potentially in tension with his interest in aligning his own allegations with the suspect's type—a comparison of the parameters β and γ. When $\beta < 0$, most of the Officer's decisions become trivial, as do most of the model's core tensions. The parameter γ measures how much the Officer cares about truthfully represents the suspect's type and the Prosecutor adopts that charge. Thus, the Officer faces a coordination problem with the Prosecutor. As we will see in the equilibrium analysis, their coordination dilemma is complicated by both their potentially conflicting biases and the informational asymmetry about the suspect's type.

The third complication for the Officer is that he (as the Prosecutor) values trust and wants the Prosecutor to believe the allegations the Officer makes. This complicates his incentive to pursue high-type charges, because he wants to make allegations that the Prosecutor will adopt.

Taken together, for any given suspect, the Officer knows which charges he would like to recommend. He always wants the Prosecutor to follow his recommendation. Note, these complications of the Officer's bias in favor of high-type charges all imply that he will prefer high-type charges for a weakly larger range of the parameter space than will the Prosecutor. However, there will be no cases in which the Officer prefers low-type charges but the Prosecutor does not. This is easy to verify via Table 1. There, we see that for an arbitrarily large β and an arbitrarily large λ, the Officer prefers high-type charges for a low-type suspect, whereas the Prosecutor would prefer low-type charges. However, under any condition where the Officer prefers high-type charges for a high-type suspect, so too would the Prosecutor. And, this is the source of the most significant challenge the Officer faces. If the suspect is a high-type, he may not share the Prosecutor's preference for which charges to pursue in the case.

Remark 2 *The Officer may disagree with the Prosecutor about which charges to pursue in*

the event of a high-type suspect.

Because his preferences for any given suspect might be in tension with those of the Prosecutor, he must contend with the possibility that the Prosecutor will not trust his allegations. This is the matter I study in the equilibrium analysis that follows.

4.3 Equilibrium

In characterizing equilibrium behavior, I focus on perfect Bayesian equilibria. It will be convenient to focus on two key parameters of substantive interest—the Prosecutor's interest in matching low-type suspects to low-type charges (λ) and the propensity of the courts to convict low-type suspects of high-type crimes (π). There are three kinds of behavior that can happen in equilibrium, which I characterize in turn. Figure 1 summarizes the kinds of equilibrium behavior relative to the two parameters of interest, λ and π. Table 2 summarizes the equilibria and the conditions under which each can be sustained. The key parameters are the Prosecutor's interest in matching low-type suspects to low-type charges (λ) and the accuracy of the courts (π). The Officer's bias (β) and taste for justice (γ) jointly determine the threshold $\bar{\pi}$ that separates the fully informative region of the parameter space from the rest. I characterize each equilibrium in turn.

The first thing to note is that a separating equilibrium requires that the courts be sufficiently accurate. It is the threat of a court failing to convict a low-type defendant that mitigates both the Officer's and Prosecutor's interest in securing a wrongful conviction of high-type charges against a low-type suspect. When such a wrongful conviction is sufficiently unlikely, then the Officer no longer has an incentive to try to mislead the Prosecutor. Moreover, not only is judicial accuracy a sufficient condition for separation, it is also necessary—under no conditions can separation be supported for a lower level of judicial accuracy. It will be useful to define that threshold, $\overline{\pi}$, which is increasing in the Officer's bias (β); as an Officer becomes more biased, a more accurate court system is necessary to make an Officer willing to honestly communicate the suspect's type.

Equilibrium	**Conditions**	**Officer's strategy**	**Prosecutor's strategy**	**Outcome for low-type suspect**
Separating (Prop. 1)	$\pi \geq \overline{\pi}$; $\lambda > \underline{\lambda}$	$a = H$ if $\theta = H$; $a = L$ if $\theta = L$	$c = a$ (follows Officer)	Charged L; always convicted
Pooling (Prop. 2)	$\pi < \overline{\pi}$; $\lambda < \underline{\lambda}$	$a = H$ always	$c = H$ always	Charged H; convicted w.p. $1-\pi$
Semi-separating (Prop. 3)	$\pi < \overline{\pi}$; $\lambda \in [\underline{\lambda}, \overline{\lambda}]$	$a = H$ if $\theta = H$; $a = H$ w.p. σ_O^* if $\theta = L$	$c = L$ if $a = L$; $c = H$ w.p. σ_P^* if $a = H$	If $a = L$: charged L, convicted. If $a = H$: charged H w.p. σ_P^*; convicted w.p. $1 - \pi$
Cut-point pooling (Prop. 4)	$\pi < \overline{\pi}$; $\lambda > \overline{\lambda}$	$a = H$ if $p \geq \overline{p}$; $a = L$ if $p < \overline{p}$	$c = H$ if $p \geq \overline{p}$; $c = L$ if $p < \overline{p}$	Charge depends on prior p, not on θ

Notes: $\overline{\pi} \equiv \frac{\beta-\gamma}{\phi}$; $\underline{\lambda} \equiv (1-\pi)\eta - \epsilon$; $\overline{\lambda} = \frac{\eta(1-p-\pi+p\pi)+\delta}{1-p}$; $\overline{p} = \frac{\lambda+(\pi-1)\eta-\delta}{\lambda+\pi\eta}$. In the semi-separating equilibrium, $\sigma_O^* = \frac{p(\lambda+\eta)}{(1-p)(\lambda+(\pi-1)\eta-\delta)}$ and $\sigma_P^* = \frac{\gamma+\delta}{\beta+\delta-\pi\phi}$. The separating equilibrium also requires $\lambda > \underline{\lambda}$ for low values of λ when π is near $\overline{\pi}$; see the triangular region in Figure 1. The semi-separating equilibrium requires $\underline{\lambda} < \overline{\lambda}$, which holds when δ is sufficiently large. For $\lambda \in (\underline{\lambda}, \overline{\lambda})$, both the semi-separating and cut-point pooling equilibria can be sustained, but only the semi-separating equilibrium survives the Intuitive Criterion (Remark 4).

Table 2: Summary of equilibrium behavior.

Definition 1 *Define $\overline{\pi} \equiv \frac{\beta-\gamma}{\phi}$. This is the critical value of π, such that separation is never possible when $\pi < \overline{\pi}$.*

The first result is thus that for a sufficiently accurate court system—that is, not too likely to convict a low-type suspect of high-type charges—and a prosecutor who sufficiently values not overcharging low-type suspects—that is, λ sufficiently large—then equilibrium behavior entails perfect separation. The Officer always matches the allegations to the suspect's type. Because the Officer plays a separating strategy, the Prosecutor's posterior belief identifies the suspect's type with certainty. Her optimal choice is always to match her charges to the suspect's type—which is to say, adopting the Officer's allegations.

Proposition 1 *If the courts are sufficiently accurate, there exists a perfect Bayesian equilibrium with pure separation. The Officer matches his allegations to the suspect's true type, and the Prosecutor matches her charges to the Officer's allegations. Because only high-types face*

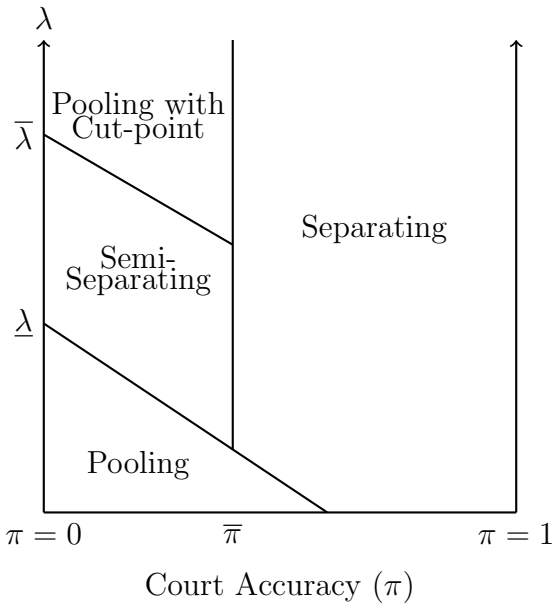

Figure 1: *Equilibrium space in baseline model, assuming parameter values that make semi-separation possible.* Note: the figure shows the maximally rich equilibrium space. Depending on parameter values, the semi-separating space can collapse, as can the lower pooling region. The points marked as $\overline{\lambda}$ and $\underline{\lambda}$ show those values evaluated given $\pi = 0$, for a given set of model parameters.

high-type charges, and all low-types face low-type charges, the suspect is always convicted.

Importantly, though, for a sufficiently low λ, separation requires an event higher degree of judicial accuracy. As we can see in the triangular area to the right of $\overline{\pi}$ at the bottom of Figure 1, separation also requires that the Prosecutor be sufficiently interested in ensuring that a low-type suspect is charged with low-type charges (λ). The level of the court's accuracy that is necessary to support separation is higher for lower values of λ. That is, increasing the extent to which the Prosecutor values matching low-type suspects to low-type charges decreases the level of judicial accuracy necessary to support separation until a critical level is reached, at which point further increases in λ do not affect the level of accuracy necessary to support separation.

Remark 3 *Increasing the Prosecutor's preference for not over-charging the suspect weakly increases the range of judicial accuracy that can support a separating equilibrium in which the Officer files accurate allegations against the suspect and the Prosecutor adopts the charges*

the Officer makes.

It also bears noting that whenever $\beta < 0$—that is, whenever the Officer is biased against high-type charges—then separation can be supported for any level of judicial accuracy. That is, $\pi > \overline{\pi}$ for any $\beta < 0$. Thus, when considering other regions of the parameter space below, the most interesting dynamics will involve cases where $\beta > 0$.

Proposition 1 reveals another dynamic, which is that for a sufficiently pro-conviction court (i.e., a low enough π), some types of Prosecutors are willing to charge a suspect with high-type charges even when she is *certain* that the suspect is a low-type. This requires that the Prosecutor not value matching low-type charges to low-type suspects enough, relative to the court's accuracy—i.e., that λ is sufficiently small relative to π.

Corollary 1 *For a sufficiently small λ and π, the Prosecutor is willing to pursue high-type charges against a suspect she knows to be a low-type.*

It is worth pausing to note why there is no pooling equilibrium in which the Officer always chooses $a = H$ and the Prosecutor always responds with $c = L$. The intuition is straightforward: if the Prosecutor were going to charge $c = L$ regardless, the Officer would strictly prefer to choose $a = L$ as well, because choosing $a = H$ only to have the Prosecutor downgrade the charges imposes the trust cost $\delta > 0$ on the Officer. Thus, pooling on $a = H$ with $c = L$ unravels from the Officer's side. The only pooling equilibrium in which the Officer chooses $a = H$ is one in which the Prosecutor follows suit with $c = H$, because it is only in that case that the Officer's high-type allegations are rewarded rather than penalized.

This result points towards the logic of pooling equilibrium behavior. The dynamic pointed to in Corollary 1 is a sufficient condition for pooling, though pooling can generally exist under less restrictive conditions. Because we know by Corollary 1 that there is a condition where the Prosecutor will be willing to choose $c = H$ for *any* belief about θ, we should expect there will be a pooling equilibrium where the Officer will pool on $a = H$. To understand the logic supporting this kind of behavior, note that when the Prosecutor does not value matching

low-type defendants to low-type charges, then she has a preference to pursue high-type charges against low-type defendants and the probabilistic return of a wrongful conviction. (She always receives a positive return from pursuing high-type charges against a high-type defendant, because by assumption she can secure those convictions with certainty.) Let $\underline{\lambda}$ denote the critical value of λ such that the Prosecutor prefers to gamble on a high-type conviction for a low-type defendant under any circumstances. Whenever $\lambda < \underline{\lambda}$, then the only possible equilibrium behavior is one in which the Officer pools on $a = H$, and the Prosecutor always plays $c = H$.

Definition 2 *Define* $\underline{\lambda} \equiv (1-\pi)\eta - \epsilon$. *By Proposition 2, only a pooling equilibrium can be supported whenever* $\lambda < \underline{\lambda}$.

The intuition behind the pooling equilibrium is straight-forward. When π is small enough, the Officer is willing to gamble on having the suspect prosecuted with high-type charges, even if the suspect is a low type. The high-type suspect will be convicted with certainty, while the small π justifies the risk of acquitting a low-type. Formally, the critical value of π for the Officer is $\frac{\beta-\gamma}{\phi} \equiv \overline{\pi}$. So, as the Officer becomes more biased in favor of high-type prosecution, he is willing to take that chance for a wider range of π—less likely convictions of low-type suspects on high-type charges. Naturally, as the Officer becomes more interested in matching charges to suspect types (γ), we find the opposite relationship. In order for the Officer to be willing to pool, it must also be the case that the Prosecutor be willing to choose high-type charges, understanding that the Officer is pooling. This requires that the value the Prosecutor places on matching low-type suspects with low-type charges (λ) be small enough. Specifically, as the value of securing high-type convictions (η) increases, the Prosecutor will be more willing to always choose high-type charges and pursue them no matter the suspect's type.

Proposition 2 *For a sufficiently low* λ *there exists a pooling equilibrium in which the Officer*

always chooses $a = H$ and the Prosecutor always chooses $c = H$. Low-type suspects are probabilistically convicted of high-type crimes and high-type suspects are always convicted.

That observation points to the possibility of an informative equilibrium, even in the face of the temptation the Officer faces to induce the Prosecutor to pursue high-type charges against low-type suspects. Because separation is not possible for $\pi < \overline{\pi}$ and pooling is not possible for $\lambda > \underline{\lambda}$, the question is what condition can support a hybrid, semi-separating equilibrium. Perhaps intuitively, it must be the case that λ is large enough that the Prosecutor is not willing to pursue high-type charges independent of the suspect's type. But it also must be the case that λ is low enough that she is willing to employ a strategy that is at least partially responsive to the Officer's strategy in light of his incentive to misrepresent the suspect's type. Denote the largest λ that can support this semi-separating behavior as $\overline{\lambda}$; the Prosecutor will only be willing to pursue this strategy if $\lambda < \overline{\lambda}$.

Definition 3 *Define* $\overline{\lambda} = \frac{\eta(1-p-\pi+p\pi)+\delta}{1-p}$.

Given λ large enough that the Officer and Prosecutor are unwilling to pool on high-type allegations and charges but not too large (i.e., $\lambda \in \left[\underline{\lambda}, \overline{\lambda}\right]$), there exists a semi-separating equilibrium in which the Officer always makes high-type allegations ($a = H$) against a high-type suspect ($\theta = H$) and probabilistically makes high-type charges against a low-type suspect ($\theta = L$). The result is that if the Prosecutor sees low-type allegations ($a = L$), then she knows the suspect is a low-type, and she will always choose low-type charges ($c = L$). However, if she sees high-type charges, she will know there is some chance that the suspect is in fact a low type. Thus, she will probabilistically drop charges from high-type charges to low-type charges. Because some low-type suspects, though, will be charges as a high type, there is positive probability that a low-type suspect is convicted of high-type charges.

Proposition 3 *For $\pi < \overline{\pi}$ and $\lambda \in \left[\underline{\lambda}, \overline{\lambda}\right]$, there exists a semi-separating equilibrium. In*

this equilibrium, the Officer always chooses $a = H$ when $\theta = H$. When $\theta = L$, the Officer chooses $a = H$ with probability $\sigma_O^* = \frac{p(\lambda+\eta)}{(1-p)(\lambda+(\pi-1)\eta-\delta)}$. Upon observing $c = L$, the Prosecutor believes with certainty that $\theta = L$ and chooses $c = L$. Upon observing $c = H$, the Prosecutor believes that $\theta = H$ with probability $\hat{p} = \frac{p}{p+(1-p)\sigma_O^*}$ and chooses $c = H$ with probability $\sigma_P^* = \frac{\gamma+\delta}{\beta+\delta-\pi\phi}$.

This kind of equilibrium behavior requires that the Officer and Prosecutor are able to make each other indifferent between their choices of high-type and low-type allegations and charges, respectively. Whether that is possible depends on a variety of exogenous factors, including p and η. For some configurations of parameters, semi-separation cannot be supported.

In particular if $\lambda > \overline{\lambda}$, then there is no proper mixing probability that can sustain a hybrid equilibrium. Provided that $\lambda > \underline{\lambda}$, we know by Proposition 2 that pooling cannot be sustained, either.[7] In this case, a different kinds of pooling equilibrium exists and is the unique equilibrium to the game. In such an equilibrium, the players both play cut-point strategies that are a function of the prior probability that the suspect is a high-type, p.

Specifically, given a sufficiently high prior belief that $\theta = H$ (i.e., $p \geq \hat{p}$), the Officer chooses high-type allegations ($a = H$), independent of the suspect's true type (θ). Otherwise, the Officer chooses low-type allegations ($a = L$), independent of θ. The Prosecutor uses the same cut-point, choosing high-type charges ($c = H$) whenever $p \geq \overline{p}$ and ($c = L$) otherwise, independent of the Officer's allegations.

Proposition 4 *For $\pi < \overline{\pi}$ and $\lambda > \overline{\lambda}$, the unique equilibrium is a non-informative (pooling) equilibrium with cut-point strategies. In this equilibrium, the Officer and Prosecutor both choose high-type allegations and charges, respectively, if $p \geq \overline{p}$ and low-type allegations and charges if $p < \overline{p}$, where $\overline{p} = \frac{\lambda+(\pi-1)\eta-\delta}{\lambda+\pi\eta}$.*

The intuition that supports this equilibrium behavior is as follows. Given the Officer's

[7] As I discuss below, it is possible that $\overline{\lambda} < \underline{\lambda}$. In that case, there is no range of the parameter space for which semi-separation can be sustained.

strategy is non-informative, the Officer knows the Prosecutor's strategy can depend only on her prior belief about the suspect's type (as well as the other model parameters). Thus, he knows that the Prosecutor will choose $c = H$ as long as $p \geq \overline{p}$. Thus, independent of the suspect's type, the Officer prefers to play $a = H$, because he benefits from the high-type charges and is willing to take the risk that the suspect is acquitted, given that $\pi < \overline{\pi}$. That is, the Officer is willing to play a pure, non-informative strategy. In the event $p < \overline{p}$, given the Officer plays a non-informative strategy, the Prosecutor prefers to choose $c = L$. Given the Prosecutor will choose $c = L$ in the wake of a non-informative signal from the Officer, the Officer is willing to choose $a = L$, independent of the suspect's true type. This behavior holds because the Prosecutor's prior belief that the suspect is a high-type is sufficiently low, relative to her interest in matching low-type suspects to low-type charges and the accuracy of the courts that she is willing to incur the disutility of losing trust with the Officer. That willingness deters the Officer from choosing high-type allegations ($a = H$) in the first instance. The cut-point equilibrium thus has a distinctive logic. Unlike the other equilibria, neither player's strategy responds to the Officer's private information—the Officer's allegations are driven entirely by the prior p, not by θ. The Prosecutor's strong preference for avoiding over-charges (large λ) makes her unwilling to gamble on high-type charges in response to the Officer's signal, which in turn eliminates the Officer's incentive to signal at all. Communication breaks down not because the players' interests are aligned on high-type charges (as in pooling) but because the Prosecutor's commitment to leniency is so strong that no signal from the Officer can move her.

Notice that the cut-point equilibrium differs from the pooling equilibrium in an important qualitative way. Both equilibria are uninformative. However, in the pooling equilibrium, all defendants are over-charged, and the Officer is able to leverage his informational advantage over the Prosecutor to pursue his bias for high-type charges. In the cut-point equilibrium, the Officer is unable to leverage his informational advantage, because the Prosecutor cares too much about avoiding over-charging low-types. The result is that the Officer will have to

adjust his own strategy in anticipation of the Prosecutor's charging decisions.

Thus, in this equilibrium, the Prosecutor's interest in avoiding over-charging low-type defendants (λ) undermines the value of the Officer's informational advantage but it does so while also undermining the potential for credible communication of any kind. There is no equilibrium strategy in which the Officer conditions his choice on the suspect's type, and so there is no equilibrium in which the Officer's allegations convey information to the Prosecutor. Given a $p < \overline{p}$, a high-type suspect is under-charged, and given $p \geq \overline{p}$ a low-type suspect is over-charged. The reason for the mismatch between suspect type and allegation and charge decisions, though, is different from the other equilibria—here it is simply due to the impossibility of any kind of communication.

Finally, notice that for $\lambda \in \left(\underline{\lambda}, \overline{\lambda}\right)$ the cut-point pooling equilibrium can be supported as well. In the next section, where I describe comparative statics, I focus attention on the semi-separating equilibrium when it exists for two reasons. First, it is the more substantively interesting equilibrium, because there is at least partial information communication. Second, the cut-point pooling equilibrium does not survive the Intuitive Criterion in this region. In the event $\underline{\lambda} < \overline{\lambda}$, the Officer receives strictly greater utility from choosing $a = L$ whenever $\theta = L$ as long as the Prosecutor would choose $c = L$ upon observing $c = L$.

Remark 4 *For any $\lambda \in \left(\underline{\lambda}, \overline{\lambda}\right)$, only the semi-separating equilibrium survives the Intuitive Criterion.*

4.4 Comparative Statics and Empirical Implications

One of the most striking features of the model's equilibrium space is that three of the equilibria share an empirical equivalence. In each of the separating, pooling, and cut-point pooling equilibria, the Prosecutor's charges always match the Officer's allegations. That is $c^* = a^*$ in all three equilibria. Moreover, we observe across the three equilibria both types of charges—both high-type and low-type charges. (We only observe high-type charges in the pooling equilibrium.) But, critically, this means that the failure to observe the Prose-

cutor deviating from the Officer's allegations does not discriminate among an informative equilibrium in which the Officer truthfully communicates private information to the Prosecutor, a non-informative equilibrium in which the Officer systematically misrepresents the suspect's types by claiming that all low-types are in fact high-types, and a non-informative equilibrium in which the Officer's allegations are completely unrelated to the suspect's true type. Moreover, observing variation in Officer and Prosecutor behavior does not discriminate between truthful, informative communication and non-informative cut-point pooling between the Officer and the Prosecutor. In short, the analysis reveals that the observation of variation in charges and perfect alignment between prosecutors choices and police choices cannot distinguish between an informative and a non-informative equilibrium.

Result 1 *Variation in the kinds of allegations made by police and charged filed by prosecutors does not discriminate between informative and non-informative equilibria. Nor does perfect alignment between police allegations and prosecutors' charges. Mismatch between prosecutor choices and officer choices only occurs in the semi-separating equilibrium.*

Propositions 1 through 4 describe the range of possible equilibrium behavior that the model can support. However, not all of that behavior can be supported for all possible parameter values. Most immediately, consider the Officer's bias (β) and justice incentive (γ). Recall that in order for the Officer to be willing to play a separating strategy, the courts must be sufficiently unlikely to convict a low-type suspect of high-type charges–formally, $\pi > \frac{\beta-\gamma}{\phi}$. (It must also be the case that the Prosecutor places enough value on matching low type suspects to low-type charges—i.e., $\lambda > \underline{\lambda}$.) An immediate comparative static, then, is that as β decreases—as the Officer becomes less biased towards high-type charges—it is easier to sustain separation. Indeed, if $\beta < \gamma$, then (nearly) any value of π supports separation. That covers any Officer biased against high-type charges (i.e., $\beta < 0$) as well as an Officer whose bias is less than his interest in matching suspect types to the charges filed by the Prosecutor (γ). To see that, notice that $\beta < \gamma$ implies $\overline{\pi} < 0$, in which case separation is possible for any value of π, provided that $\lambda > \underline{\lambda}$. However, as β increases or γ decreases,

then separation requires an increasingly accurate judicial system.

Result 2 *As an Officer becomes less biased towards high-type charges, or the judicial system becomes more accurate, separating behavior is more likely in which the Officer always matches his allegations to the suspect type and the Prosecutor always adopts the Officer's allegations.*

With respect to Figure 1, this result concerns the location of the vertical line that partitions the space. As β increases, that line moves to the right. Notably, the downward sloping lines that describe the space to the left of the vertical line do not depend on β or γ. Thus, those parameters simply affect whether behavior is captured by the fully informative equilibrium behavior or the less informative behavior in pooling or semi-separating equilibria.

Turning to the left-hand side of Figure 1, a greater variety of parameters affect equilibrium behavior. Most immediately, the equilibrium analysis above highlights the consequences of the Prosecutor's incentive to ensure suspects are not over-charged, measured by λ. As λ increases, we move from the players all pooling on high-type charges to a more informative equilibrium in which the Officer can credibly communicate some information about the suspect's type. However, as λ continues to increase, pooling re-emerges, in which the players' actions are driven just by the prior probability that the suspect is a high or low type. The most direct implication is that the impact of a Prosecutor's incentive to avoid over-charging suspects is maximized when the Prosecutor's incentive is counter-balanced by other goals—including electoral incentives (η) and trust with the Officer (δ).

Importantly, though, semi-separation cannot always be sustained. A necessary condition is that $\lambda \in \left[\underline{\lambda}, \overline{\lambda}\right]$. But, for some regions of the parameter space $\overline{\lambda} < \underline{\lambda}$ (i.e., $\left[\underline{\lambda}, \overline{\lambda}\right] = \emptyset$) . The most intuitive condition is that δ (the parameter measuring the importance of trust between the police and the prosecutor) must be large enough. Intuitively, this makes sense, because the more important trust, the less incentive each player has to ignore each other. Given this condition is met, equilibrium behavior is as shown in Figure 2. Here, we see two

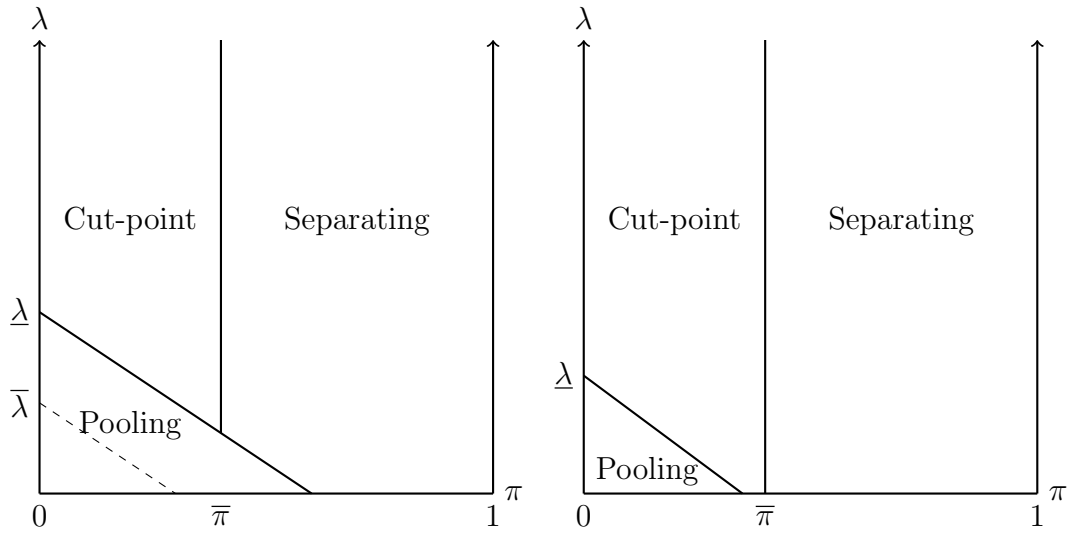

Figure 2: *Equilibrium space in baseline model, assuming parameter values that make semi-separation possible.* Note: the figure shows the maximally rich equilibrium space. Depending on parameter values, the semi-separating space can collapse, as can the lower pooling region.

different possible scenarios, depending on $\underline{\lambda}$.

As $\underline{\lambda}$ increases, the pooling range grows, reducing the range of cut-point pooling and separating equilibria. Recall that $\underline{\lambda} = (1-\pi)\eta - \epsilon$. Thus, increasing the electoral incentives the Prosecutor faces to secure convictions strictly decreases the range of the parameter space for which suspects will be charged with low-type charges, independent of their types. But, the magnitude of that effect is compounded by the quality of the judicial system. The more error-prone the courts are, the greater the impact of electoral incentives on prosecutorial punitiveness.

Result 3 *Increasing the electoral returns to convicting criminal suspects on high-type charges increases pooling on high-type allegations by Officers and high-type charges by Prosecutors. That effect is exacerbated by the quality of the courts.*

Notice, also that as $\underline{\lambda}$ increases, as in both panels in Figure 2, the semi-separating region collapses, and so the only possible equilibrium behaviors entail non-informative behavior. For low values of λ, pooling is on high-type charges. For higher values of λ, there is only pooling (with a cut-point). Thus, when the judicial system is too likely to wrongfully convict

a low-type suspect of high-type charges (i.e., low π), then credible communication from the Officer to the Prosecutor requires both that the Officer values trust with the Prosecutor sufficiently and that the Prosecutor places a balanced weight on not over-charging low-type suspects.

Both decreasing the value of convicting suspects on high-type charges (η) and increasing the value of trust between the Officer and the Prosecutor (δ) make it more likely that the semi-separation region will exist (i.e., $\underline{\lambda} < \overline{\lambda}$). Thus, in the face of less accurate courts, the police and prosecutor can credibly communicate if they value trust and the prosecutor is not too committed to avoiding over-punishing criminal suspects.

Result 4 *Given a small π, the police can partially communicate credible information about the suspect's type only with a sufficiently large δ and moderate λ. Otherwise, the prosecutor ignores the officer's charges and makes a decision only on the basis of her prior belief about the subject's type.*

This result points to the importance of the Prosecutor's prior belief that the suspect is a high-type. Of course, there are institutional factors that affect that belief, most evidently the quality of police work. But, there are selection mechanisms shaping who becomes a prosecutor in the first place that can shape those beliefs. We might also imagine that broader political forces play a role in framing the context that gives rise to a prosecutor's expectations about the suspects that police bring to them for prosecution. Evaluating the nature of the Prosecutor's beliefs and how they might be endogenously shaped by parts of the criminal justice and political-legal system is an important avenue for research but beyond the scope of what this paper can accomplish.

5 Discussion and Conclusion

In recent years, political scientists have focused renewed attention on the politics of the criminal justice system. Alternatively examining policing and prosecution, that work highlights

the ways in which discretion by powerful actors in American civic life affects the application of law. The analysis here helps put some of those insights together to illustrate how the interaction of these two critical actors in the American legal system shapes the way the law is applied to individuals. The results have implications for a number of salient subjects of study in the field.

Empirical implications. While the model's most immediate contribution to empirical research is a cautionary one—Result 1 demonstrates that alignment between police and prosecutors is consistent with very different underlying dynamics—the analysis also yields testable predictions. Most directly, the model predicts that the relationship between a prosecutor's leniency preferences and the informativeness of police-prosecutor communication is non-monotonic. For moderate values of λ, police can credibly communicate some information about a suspect's culpability; for very low or very high values, communication breaks down entirely, though for different reasons. This suggests that jurisdictions with either very traditional or very reform-oriented prosecutors should exhibit less variation in the relationship between police allegations and prosecutorial charges than jurisdictions where prosecutors hold intermediate positions. Similarly, the model predicts that court accuracy (π) should interact with prosecutorial preferences in shaping charging patterns: in jurisdictions with more accurate courts, the relationship between police allegations and charges should be more informative, and that relationship should be less sensitive to the prosecutor's preferences over leniency. Cross-jurisdictional variation in court quality—driven, for example, by differences in public defender resources or judicial caseloads—provides a natural source of leverage for testing these predictions.

Possibilities for reform prosecutors. To be sure, not only do police potentially adjust their behavior in anticipation of prosecutorial discretion, but so too do prosecutors respond to expectations about the electoral landscape (e.g., Gordon and Huber 2002, 2009). The epidemic of mass incarceration in the US has motivated some candidates for prosecutorial

offices to run on reform platforms, promising to avoid over-punishing small crimes. At the same time, punitive approaches to law enforcement, especially in the wake of high-profile events or spikes in crime, remain effective in American electoral politics. And, police make use of public support for crime-fighting to build political capital for their own policy goals (e.g., Cheng 2023). Those competing tensions can combine to shape what is possible for advocates for criminal justice reform.

While the analysis in this paper does not directly speak to those debates, several of the findings have implications for how they might play out. For example, the model demonstrates that cooperation between the police and prosecutors—in the sense that police can credibly communicate their street-level information about criminal suspects to prosecutors—depends on the quality of the judicial system. One of the more challenging insights, for example, comes from Result 1, which demonstrates the observational equivalence of a number of theoretically distinct kinds of behavior. There, we saw that empirical observations about alignment of prosecutor and police behavior, or variation in charging decisions, alone do not discriminate among informative and non-informative equilibria. Thus, if we want to understand the nature of cooperation and communication between police and prosecutors, empirical scholars and reformers will need to investigate patterns that incorporate broader features of the criminal justice system. The implication is that debates about law enforcement reform or prosecutorial reform cannot take place in isolation, nor can they take place independent of considerations about the workload and resources that courts have. While this point complicates matters, it underscores the extent to which police, prosecutors, and courts are intimately linked as components of the political-legal bureaucracy in America.

Directions for future research. The model also suggests connections to several literatures that the present analysis does not directly engage but that future work might fruitfully develop.

Most immediately, the model identifies important ways in which the police can play a

role in setting an agenda for plea bargaining. While I do not explicitly model an agenda-setting process, the model illustrates how cooperation between police and prosecutors can allow them to tailor charges to individual criminal defendants. At the heart of the model is an individual defendant who is characterized by a level of criminal culpability, which may be only partially related to that individual's specific crime. To the extent individuals arrested under similar circumstances for similar crimes vary in the extent to which a sense of justice suggests harsher treatment by the legal system, prosecutors must rely on police. They typically will have better information about who to "go easy on" and who they know to be highly culpable. In this way, by isolating the conditions under which cooperation between police and prosecutors is possible, the model yields insights that can inform both theoretical and empirical investigations of plea bargaining. Moreover, these dynamics are distinct but complementary to others that have been studied in formalizations of the prosecutorial and plea bargaining processes (e.g., Agan, Doleac and Harvey 2023, Little and Simpson 2024). Taken together, these related dynamics highlight the complexities of drawing empirical inferences from patterns of prosecutorial discretion, police charging decisions, and defendant pleas in isolation of each other.

A related dynamic that the model sets aside is police behavior itself. The quintessential street-level bureaucrat, a police officer is endowed with tremendous discretion and faces a wide range of opportunities to allocate his time and energy in ways more or less consistent with political will. The expansive literature on bureaucratic expertise and effort demonstrates that carefully calibrated incentives are crucial to optimal performance (e.g., Brehm and Gates 1999, Carpenter 2002, Gailmard and Patty 2007). Research on the police, specifically, has focused on how policies governing their discretion can affect their behavior (e.g., Clark et al. 2023, Mummolo 2018), though no model has explicitly studied how the prosecution of cases can shape street-level policing. The model I develop focuses on how an interest in maintaining trust between a prosecutor and a police officer can affect their ability to cooperate, but it is not a far stretch to consider extending the logic to focus on police

effort itself. We might imagine that expectations about prosecutorial preferences or priorities might influence efforts by police and the mix of criminal suspects presented for prosecution. Indeed, some of the model results, as summarized in Result 2, show that parameters associated with a police officer's preferences for punitiveness influence the extent to which he is willing to work with or against a prosecutor's priorities. Those results directly speak to and inform concerns about police officers systematically altering their behavior in response to stated shifts in prosecutorial priorities in the 2020s captured the attention of some media and policy-makers. Future analysis of policing and prosecution may find it fruitful to develop those ideas more deeply.

Finally, the present model takes the officer's private information about the suspect's culpability as given, and asks whether he can credibly convey that assessment. But in practice, police also make choices about how much evidence to gather and what to include in the case file they present. These choices could be modeled as a form of Bayesian persuasion, in which the officer designs an information structure to influence the prosecutor's beliefs (e.g., Kamenica and Gentzkow 2011). A persuasion framework would complement the present analysis by allowing the officer to shape the evidentiary basis for prosecution, rather than simply reporting a private signal. The interaction between evidence production and the kind of credible communication studied here is a natural direction for future research, and may be particularly relevant for understanding how institutional reforms—such as body cameras or mandatory reporting requirements—alter the dynamics between police and prosecutors.

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Online Appendix

Proof of Proposition 1: If the players are playing separating strategies, then upon observing $a = H$, the Prosecutor's posterior belief that the suspect is a high type is given by $\hat{p} = \Pr(\theta = H|a = H) = 1$ and upon observing $a = L$ by $\hat{p} = \Pr(\theta = L|a = L) = 1$. If the Officer chooses $a = H$ and the Prosecutor chooses $c = L$, then she expects to receive $\underline{\eta} - \delta$. If she chooses $c = H$ then she expects to receive η. By assumption $\eta > 0$, which implies she strictly prefers $c(H) = H$. If the Officer chooses $a = L$, then she expects to receive λ from $c = L$ and $(1 - \pi)\eta - \epsilon$ from $c = H$. $\lambda > 0$ implies she prefers $c(L) = L$. Incentive compatibility requires also that the Officer prefers pure separation. Assuming $c(L) = L$ and $c(H) = H$, if $\theta = L$ the Officer expects to receive γ from $a = L$ and $\beta - \pi\phi$ and $a = H$. $\pi > \overline{\pi}$ implies he prefers $a = L$. If $\theta = H$, he expects to receive $\gamma + \beta$ from $a = H$ and 0 from $a = L$. $\gamma, \beta > 0$ implies she strictly prefers $a = H$. ■

Proof of Proposition 2: First notice that by Corollary 1, the Prosecutor prefers $c = H$ even when she is certain that $\theta = L$ as long as $\lambda \leq \underline{\lambda}$. In a pooling equilibrium, the Prosecutor's posterior belief about the suspect type is equal to her prior, p. Thus, pooling requires:

$$EU_P(c = H|a = H) > EU_P(a = L|a = H) \tag{1}$$
$$p\eta + (1 - p)(1 - \pi)\eta > (1 - p)\lambda - \delta$$
$$\lambda < \overline{\lambda}.$$

Pooling also requires that the Officer always weakly prefers to choose $a = H$. If $\theta = H$, the Officer strictly prefers to play $a = H$ as long as $\beta > -\gamma$. If $\theta = L$, then the Officer strictly prefers $a = H$ whenever $\pi < \overline{\pi}$. If $\pi \geq \overline{\pi}$, the Officer is indifferent between $a = H$ and $a = L$ and so $a = H$ is a best response to either state of the world. ■

Proof of Proposition 3: If $\Pr(a = H|\theta = L) = \sigma_O$ and $\Pr(a = H|\theta = H) = 1$, then the Prosecutor's posterior belief is given by $\Pr(\theta = H|a = H) = \frac{p}{p+(1-p)\sigma_O} \equiv \hat{p}$. To be indifferent between the two strategies in her choice space, the following condition must hold:

$$\begin{aligned} EU_P(c = H|a = H) &= EU_P(c = L|a = H) \qquad (2) \\ \hat{p}\eta + (1-\hat{p})(1-\pi)\eta &= (1-\hat{p})\lambda - \delta \\ \hat{p} &= \frac{\lambda - (1-\pi)\eta - \delta}{\lambda + \pi\eta} \\ \frac{p}{p+(1-p)\sigma_O} &= \frac{\lambda - (1-\pi)\eta - \delta}{\lambda + \pi\eta} \\ \sigma_O &= \frac{p(\delta+\eta)}{(1-p)(\lambda - (1-\pi)\eta - \delta)} \end{aligned}$$

Note that σ_O is a proper probability if $\lambda \leq \overline{\lambda}$. Assuming semi-separation, then the Prosecutor's posterior belief upon observing $\theta = L$ is $\Pr(\theta = L|a = L) = 1$. Thus, to sustain equilibrium behavior, it must also be the case that

$$\begin{aligned} EU_P(c = L|a = L) &> EU_P(c = H|a = L) \qquad (3) \\ \lambda &> (1-\pi)\eta - \epsilon \\ \lambda &> \underline{\lambda} \end{aligned}$$

This in turn requires $\underline{\lambda} < \overline{\lambda}$ which is satisfied whenever $\delta > \eta(1 + p^2 - p(1+\pi)) - (1-p)\epsilon$. In order for the equilibrium to be incentive compatible, given a mixing probability, σ_P, for the Prosecutor upon observing $a = H$, the following condition must be satisfied as well:

$$\begin{aligned} EU_O(a = H; \sigma_P|\theta = L) &= EU_O(a = L; \sigma_P|\theta = L) \qquad (4) \\ \sigma_P(\beta - \pi\phi) - \delta(1 - \sigma_P) &= \gamma \\ \sigma_P &= \frac{\gamma + \delta}{\beta + \delta - \pi\phi} \end{aligned}$$

It must also be the case that

$$EU_O\left(a=H;\sigma_P|\theta=H\right) \geq EU_O\left(a=L;\sigma_P|\theta=H\right) \tag{5}$$

$$\sigma_P\left(\gamma+\beta\right)-\delta\left(1-\sigma_P\right)\geq 0$$

$$\frac{\delta}{\beta+\delta+\gamma} \leq \sigma_P = \frac{\gamma+\delta}{\beta+\delta-\pi\phi}$$

which is always true, because $\gamma, \phi > 0$ and $\pi \in (0,1)$. ■

Proof of Proposition 4: Suppose a pooling equilibrium. Upon observing any signal, the Prosecutor's posterior belief is equal to her prior. The Prosecutor therefore prefers to play $c = H$ whenever

$$EU_P(c+H|a=H) > EU_P(c=L|a=H) \tag{6}$$

$$p\eta+(1-p)(1-\pi)\eta > (1-p)\lambda-\delta$$

$$p > \frac{\lambda+(\pi-1)\eta-\delta}{\lambda+\pi\eta} \equiv \overline{p}$$

and $c = L$ otherwise. Two conditions must be true for the Officer to pool on $a = H$. First, $EU_O\left(a=H|\theta=H\right) > EU_O\left(a=L|\theta=H\right)$ must hold, which is true as long as $\beta > 0$. Second, $EU_O\left(a=H|\theta=L\right) > EU_O\left(a=L|\theta=L\right)$. Suppose $p \leq \overline{p}$, in which case the Prosecutor prefers to play $c = L$. $\delta > 0$ implies this condition is satisfied. Suppose $p \geq \overline{p}$. $\gamma > 0$ implies $EU_O\left(a=L|\theta=L\right) > EU_O\left(a=H|\theta=L\right)$, establishing a contradiction. Thus, the Officer must play $a = L$ with some positive probability. By proof of Proposition 3, there is no mixing probability that can sustain a hybrid equilibrium for $\lambda > \overline{\lambda}$. By proof of Proposition 1, separation is not possible for $\pi < \overline{\pi}$. Thus, the only possible equilibrium is an uninformative equilibrium. Given a cut-point pooling equilibrium, the Prosecutor will play $c = H$ whenever $p \geq \overline{p}$ and $c = L$ otherwise. Given that, the Officer strictly prefers $a = H$ whenever $p \geq \overline{p}$ and $a = L$ otherwise. ■