OF SINNERS & SCAPEGOATS: THE ECONOMICS OF COLLECTIVE PUNISHMENT

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ABSTRACT

"[I]t is better that ten guilty persons escape than that one innocent suffer." 4 WILLIAM BLACKSTONE, COMMENTARIES *358.

"[I]t is better that ten innocent men suffer than that one guilty man escape." Otto von Bismarck, Germany's first chancellor, *quoted in* John W. Wade, *Uniform Comparative Fault Act*, 14 FORUM 379, 385 (1979).

Punishing the innocent is considered an "error" that the legal system must minimize. In reality, it is a choice*. When evidence points to one of a few suspects as the victim's assailant, society must decide whether to punish all, some, or none. Despite the stated distaste, in many cases lawmakers, regulators, and enforcers elect to sanction a* large *group of innocent actors. Mass arrests, sobriety checkpoints, profiling, even increasing the number of searches and seizures, and using excessive police force—are all forms of collective punishments. They allow the targeting and sanctioning of an entire population in the name of finding the culprit. The decision is often masked by confusing terms but its effect is the same. The freedoms of many are sacrificed to punish the one. These methods have been widely criticized, but what can economics say on the subject? Are these methods even effective? Under what conditions?*

The standard economic model of crime has not offered a clear answer to these questions because it typically focuses on the apprehension and punishment of a single *actor—the offender. It therefore does not consider the possibility of punishing a group of innocent actors as a policy tool.*

This Article seeks to fill this gap. First, in deviation from previous models, it develops a realistic framework in which the enforcer can choose not only the probability of detection and the nature and severity of the punishment but also the size of the "punishment group." Our model then analyzes the welfare implications of collective punishment and the menu of

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choices available to enforcers and regulators. To be clear, our intention is not *to argue for group punishment as an enforcement strategy. Rather, our goal is to explain the logic of collective liability regimes and unravel the way detection of offenders is* currently *carried out. Our analysis also shows that in many cases enforcers applying collective sanctions are motivated by self-interest and bigotry. Concerningly, even when the enforcer's goal is to enhance deterrence, the cost on members of the punishment group is discounted or ignored, resulting in a substantial loss of freedoms and welfare. The silver lining is that many of these concerns can be addressed by appropriate reforms.*

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INTRODUCTION

In 1999, a female student was brutally raped in Grand Rapids, Michigan.[1] DNA evidence pointed to identical twin brothers: Jerome and Tyrone Cooper. It was clear that one of them committed the heinous crime, but it was impossible to determine conclusively which one was the assailant. Both twins had prior records of sexual assault and both denied any involvement.[2]

1. Alison Gee, *Twin DNA Test: Why Identical Criminals May No Longer Be Safe*, BBC (Jan. 15, 2014), https://www.bbc.com/news/magazine-25371014 [https://perma.cc/5D6P-72CV].
2. *Id.*

The strategy proved successful. Tyrone and Jerome are still walking free.[3] And they are not the only ones.[4]

Whodunnit twin cases may be rare, but the problem—separating the one wolf from the sheep—is not. Shaken baby cases provide another example. In these cases, it is often clear that either the father or mother abused the injured child. Despite the fact that the child remains in danger, criminal proceedings are unlikely to take place. As one prosecutor explained, "when you have a child who cannot testify and you cannot tell who caused the injury, we do not charge. We cannot."[5]

In other cases, prosecutors take the opposite stand. To target a single assailant, they indict a large group of actors. A recent example is the January 20, 2017 protests that erupted during President Trump's inauguration.[6] A group of more than 200 protestors—including *innocent* activists, members of the media, as well as medical and legal observers—was arrested for felony rioting and conspiracy.[7] In these so-called "J20" cases, prosecutors "argued for a far-reaching notion of liability."[8] They "sought to hold dozens of people criminally responsible for crimes—like smashing the windows of several storefronts—that only a handful of them had carried out."[9]

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3. *Id.*; Joe Clark, *New DNA Technology Could Solve a Rape Case Involving Identical Twins*, NBC4I.COM (Feb. 14, 2017, 6:42 AM), https://www.nbc4i.com/news/new-dna-technology-could-solve-a-rape-case-involving-identical-twins/#:~:text=(WOOD)%20%E2%80%93%20The%20brutal%20rape,living%20in%20the%20Muskegon%20area [https://perma.cc/D5ME-BZ2B]; Ken Kolker, *Ruling Stalls Identical Twins Rape Case*, WOODTV.COM (June 1, 2018, 10:18 PM), https://www.woodtv.com/news/grand-rapids/ruling-stalls-identical-twins-rape-case/ [https://perma.cc/N2ST-4YJP].

4. *See, e.g.*, People v. Lopez, 391 N.E.2d 105, 108 (Ill. App. Ct. 1979) (reversing twins' convictions in the shooting of two victims and explaining that "although there was evidence proving that the man who fired the gun was one of the . . . twins, no witness could identify which twin actually crossed the street and fired the gun"); People v. Cowart, 27 N.E.3d 209, 211–22 (Ill. App. Ct. 2015) (reversing the defendant's conviction in a case where at least twenty-eight shots were fired from different guns by different people during a party with more than two hundred attendees—one of which killed the victim), *vacated*, 60 N.E.3d 73 (Ill. 2016); Gee, *supra* note 1 (discussing twin cases).

5. Telephone Interview with Christopher Becker, Prosecuting Att'y, Kent Cnty., Mich. (Oct. 30, 2019) (on file with authors).

6. *See* Elizabeth King, *J20, One Year Later: What It's Like to Face Decades in Prison for Protesting*, ROLLING STONE (Jan. 20, 2018, 4:17 PM), https://www.rollingstone.com/culture/culture-features/j20-one-year-later-what-its-like-to-face-decades-in-prison-for-protesting-117207/ [https://perma.cc/5B46-3E8B].

7. Alice Speri, *DOJ Is Considering Charging Capitol Rioters with Seditious Conspiracy, Felony Murder*, INTERCEPT (Jan. 14, 2021, 5:24 PM), https://theintercept.com/2021/01/14/capitol-riot-fbi-federal-charges/ [https://perma.cc/HTC2-YRPN] (comparing "the response to the Capitol riot with the treatment of the nearly 'J20' defendants"); *see also* King, *supra* note 6 (stating that 234 people were arrested).

8. Speri, *supra* note 7.

9. *Id.* The attempt was, for the most part, unsuccessful. By 2018, after a series of defeats, mistrials, and acquittals, prosecutors dropped all remaining charges. *Id.* Still, the financial and emotional toll on defendants was immense. In other words, the defendants were sanctioned, although informally. *See* King, *supra* note 6; Owen Healy, Comment, *Group Liability and Riot Acts: Can a Non-Opponent*

In the examples above, the dilemma is explicit. Prosecutors must decide whether to charge a group of actors for crimes committed by just one or a subset of its members. In other cases, the choice is more implicit. Screening, profiling, increasing the number of searches and seizures, and using excessive police force are all group punishment tools that allow the targeting and sanctioning of an entire population in the name of punishing the culprit.[10] In these cases the sanction is often informal. It does not take the traditional form of imprisonment or fines. Still, the sanction imposes a real cost on the innocents. It denies basic freedoms (as in the case of unjustified detainment, searches, and seizures), and imposes substantial physical, emotional, and pecuniary harms on those whose sole "crime" was being at the wrong place at the wrong time.

In the examples above, members of the group do not act in unison, nor do individuals aid, abet, or support the offender. In fact, they may not even know each other or that a crime has been committed. These individuals are subject to a collective punishment simply because they were in the wrong place at the wrong time or because the enforcer believes, based on some other indicators, that the true offender is one of them. In all of these cases the same questions arise: How far should society go to punish criminals? When a crime is committed by an unidentified member of a group, should criminal liability be imposed on all (as in the case of the rioters), none (as in the twin cases), or some (as with profiling)? As the examples illustrate, the question is by no means theoretical. Legislators, courts, prosecutors, and regulators face this dilemma often.

To date, the economic literature has failed to provide clear answers to these pressing questions. The standard economic model of crime, beginning with Becker,[11] focuses on apprehending and punishing a criminal by way of imposing *individual* liability. It theorizes that an actor will commit a crime so long as the expected benefits from committing that crime outweigh the expected costs therefrom.[12] This expected cost—or the "price" of committing a crime—can be denoted by *ps*, where *p* is the probability of apprehension and conviction, and *s* is the sanction (e.g., a fine or imprisonment). Importantly, innocent actors are never punished in Becker's model. "[O]nly convicted *offenders* are punished . . . ."[13] Thus, in this model, "there are only Type I errors, i.e., the guilty criminal might escape," but

Wield a Heckler's Veto?, 91 TEMP. L. REV. 107, 108 (2018) ("the Justice Department conceded that many of those on trial did not commit such acts themselves").

10. *See infra* Part III (discussing these and other examples).

11. Gary S. Becker, *Crime and Punishment: An Economic Approach*, 76 J. POL. ECON. 169 (1968).

12. *Id.* at 176.

13. *Id.* at 177 (emphasis added).

there are no Type-II errors, i.e., there are no false convictions.[14] In other words, only the criminal may be caught and punished.

Others, like Polinsky and Shavell, have extended the model to include the possibility of false convictions.[15] But these models, with rare exceptions, have not even considered the possibility of sanctioning a group that clearly includes innocent actors in order to punish the culprit.

Surprisingly, only a few articles have analyzed collective liability as a policy tool. These articles extoll the ability of collective liability to encourage group members to monitor each other and thus *ex ante* deter actors from engaging in harmful behaviors and *ex post* extract information that would identify the culprit.[16] This scant literature is largely informal, relies on eclectic examples (mostly historical), and primarily focuses on civil sanctions. Moreover, this literature focuses on the benefits of collective liability but, with a few exceptions, ignores the cost and countereffects that come with holding innocent actors criminally liable. Importantly, most of this literature is merely descriptive. It therefore leaves open the most pressing questions regarding collective liability's utility in criminal law with respect to the most relevant choice variables: how many people should be subject to criminal liability, what should the collective sanction be, and how severe should it be? Consequently, the literature provides policy makers with little guidance as to the effects and roles of collective punishments.

This Article takes the first steps in filling this gap. To be clear, our intention is not to argue for group punishment as an enforcement strategy. The idea of group punishment would be considered contrary to any sensible approach to law enforcement, and indeed is seen as morally objectionable to many.[17] Rather, our goal is to demonstrate that understanding the effects of group punishment can shed light on the way that detection of offenders is *actually* carried out, as illuminated by the above examples.

To motivate our approach, we note that in a world of imperfect detection, criminals seek to avoid apprehension by "melting" into the crowd. The task

14. Mats Persson & Claes-Henric Siven, *The Becker Paradox and Type I Versus Type II Errors in the Economics of Crime*, 48 INT'L ECON. REV 211, 212 (2007) ("[I]n the original Becker model, there are only Type I errors, i.e., the guilty criminal might escape.").

15. A. Mitchell Polinsky & Steven Shavell, *The Theory of Public Enforcement of Law*, *in* 1 HANDBOOK OF LAW AND ECONOMICS 403, 427–29 (A. Mitchell Polinsky & Steven Shavell eds., 2007); *see also* George J. Stigler, *The Optimum Enforcement of Laws*, 78 J. POL. ECON. 526 (1970); Richard A. Posner, *An Economic Theory of the Criminal Law*, 85 COLUM. L. REV. 1193 (1985); Nuno Garoupa, *The Theory of Optimal Law Enforcement*, 11 J. ECON. SURVS. 267 (1997); Thomas J. Miceli, THE PARADOX OF PUNISHMENT: REFLECTIONS ON THE ECONOMICS OF CRIMINAL JUSTICE (2019).

16. *See infra* Part I (discussing the prior literature).

17. *See, e.g.*, RICHARD A. POSNER, THE ECONOMICS OF JUSTICE 194 (1981); *In re* Winship, 397 U.S. 358, 372 (1970) (Harlan, J., concurring) (referring to individual liability as "a fundamental value . . . of our society [because] it is far worse to convict an innocent man than to let a guilty man go free").

of law enforcers is to narrow the set of suspects down, ideally to a single individual.[18] However, one can rarely be certain of that person's guilt, which is the reason for the various procedural safeguards of defendants' rights in criminal prosecutions. The willingness to punish a group of potential offenders can increase the chances of punishing the true perpetrator, if that is the primary goal of law enforcement. Indeed, as the above examples show, in some cases it may be the only way to ensure punishment of the actual offender. Our extension of the economic model of crime explicitly allows that possibility and asks how a group sanction affects the prescriptions of the model based on the goal of achieving optimal deterrence.

We carry out our analysis within the context of the Becker-Polinsky-Shavell (BPS) framework. This allows us to highlight the differences between our conclusions and those obtained from the standard approach.

Our key findings can be summarized as follows. First, in deviation from the prior literature, we show that collective criminal sanctions—although undertheorized and understudied—are commonplace. We show that these sanctions are often implicit, which may explain why they have been neglected by the literature. Revealing the true nature of sanctions allows us to make another important contribution. We provide the first economic account for Othering—a term that encompasses different forms of group-based exclusion and has been called "[t]he problem of the twenty-first century."[19] Specifically, we show how by discounting and ignoring the impact of sanctions on minority groups, the law further marginalizes these groups and exacerbates inequalities.

Second, while the prior literature treats the imposition of sanctions on innocent people as an "error" that must be minimized, this Article shows that in reality it is a *choice*. Moreover, this Article reveals that regulators, enforcers, and courts regularly approve the imposition of collective sanctions. They do so even in cases where the vast majority (99%) of those subject to the collective sanction are believed to be innocent.[20] We further show that many of these collective sanctions are legal, whereas others occur in the shadow or in contravention of the law.

Third, this Article explains, for the first time, the factors that decisionmakers are considering in making their choices and the welfare

18. Our model is not limited to cases where only one actor committed a crime and can easily apply to cases involving a group of culprits whose identity is not easily verifiable.

19. john a. powell & Stephen Menendian, *The Problem of Othering: Towards Inclusiveness and Belonging*, *in* 1 OTHERING & BELONGING: EXPANDING THE CIRCLE OF HUMAN CONCERN, Summer 2016, at 14, 14, 17 (Andrew Grant-Thomas, Rachelle Galloway-Popotas, Stephen Menendian & Michael Omi eds., 2016) (describing a social phenomenon of exclusion that "Othering and marginality can occur on a group basis or at the individual level").

20. *See infra* notes 177–79, 215–17 and accompanying text.

implications of these choices. Our analysis shows that when punishment is perceived as costless (as in the case of fines)[21] and wrongful punishment is ignored (even when it should not be), optimal enforcement from a deterrence standpoint involves random punishment in the sense that no effort is expended to identify the true offender. Rather, in these cases a sanction is imposed on a randomly chosen individual or on all members of a randomly chosen subset of the population of which the offender is known to belong. The punishment group may even include the entire population. Both individual and group punishment can therefore be effective as long as the sanction (e.g., a fine) is appropriately scaled. However, when the sanction is bounded (e.g., because members of the punishment group do not have the means to pay the fine), enforcers employ some amount of group punishment to maintain deterrence. In this sense, group punishment mitigates the judgment-proof problem, but can result in a different and more concerning problem: Othering.

When punishment is costly to impose (e.g., because it consists of imprisonment), it is optimal for enforcers to invest in efforts to identify the true offender. The enforcer will keep eliminating, at a cost, the least likely suspects and, at the same time, increase the sanction (to ensure optimal deterrence). This process could theoretically continue until a single individual is punished. However, we show that even in these cases, when the sanction reaches the maximum accepted level first (that is, before the culprit is identified), the punishment group will necessarily include innocent individuals. Thus, group punishment is again an enticing option for enforcers, and it becomes more likely as the maximal sanction gets smaller. However, individual punishment combined with a less-than-maximal sanction may also be optimal. This result is in contrast to the BPS model, where the optimal sanction is maximal even when it is prison, and in this sense our result is more consistent with actual practice.

The rest of the paper is organized as follows. Part I reviews the prior literature and explains its shortcomings. Part II focuses on the theory of optimal deterrence. It identifies and analyzes the menu of choices available to enforcers and regulators who seek to impose collective liability regimes. In deviation from the prior literature, but consistent with practice, we treat (1) the size of the punishment group, (2) the type of sanction, and (3) the severity of the sanction—as choices. This Part also provides simple examples to illustrate the implications and welfare effects of these choices. Part II further shows that collective sanctions can be informal and investigates their efficacy—a consideration that has not escaped the courts.

21. *See infra* Section II.C.

Moving from theory to practice, Part III discusses *current* collective liability regimes in light of the analysis and how they can be abused. We identify here how a narrow focus on resource efficiency would lead law enforcers to punish groups, rather than conducting full investigations. We use this insight to recast common punitive police practices and paint them as attempts to preserve local resources at the expense of victim rights. Rather than animus alone, our explanation grounds these practices in the goal of maximizing deterrence—and thus opens them to a host of novel interventions in wrongful police practices. These include police conducting raids on a group of individuals on a belief that some possess drugs,[22] targeting all members of a racially defined group (e.g., those with Mexican appearance) in the hope of catching a few culprits,[23] setting checkpoints where all drivers are stopped while the police look for offenders,[24] and detaining every black person in town because of an attack allegedly committed by one of them.[25]

Our goal is to unravel and explain the logic of these collective liability regimes—all of which have been found to be *legal*—and to shed light on the way detection of offenders is currently carried out. Moreover, our analysis shows that in many cases enforcers applying collective sanctions are motivated by self-interest, bigotry, and xenophobia. Concerningly, even when the enforcer's goal is to enhance deterrence, the cost on members of the punishment group is often ignored or discounted, resulting in a substantial loss of freedoms and welfare.[26] The silver lining is that many of these concerns can be addressed. By uncovering the operation and effects of these sanctions, we hope to reignite and reinvigorate the debate regarding collective sanctions.

I. THE PRIOR LITERATURE

A. The Standard (BPS) Model of Crime

Under the Becker model,[27] every criminal offense results in a benefit for the criminal, b, but imposes a harm on the victim, h, resulting in a net social loss of $h-b$.[28] A major insight from the standard model is that an individual

22. *See* Maryland v. Pringle, 540 U.S. 366, 367–69 (2003); *infra* Section III.A.
23. *See* United States v. Brignoni-Ponce, 422 U.S. 873, 874–75 (1975); *infra* Section III.B.2.
24. *See* Mich. Dep't of State Police v. Sitz, 496 U.S. 444, 447–48 (1990); *infra* Section III.B.4.
25. *See* Brown v. City of Oneonta, 221 F.3d 329, 334 (2d Cir. 2000); *infra* Section III.B.2.
26. *See, e.g.*, Floyd v. City of New York, 959 F. Supp. 2d 540, 562 (S.D.N.Y. 2013) ("One NYPD official has even suggested that it is permissible to stop racially defined groups just to instill fear in them that they are subject to being stopped at any time for any reason—in the hope that this fear will deter them . . . .").
27. *See supra* note 11 and accompanying text.
28. *See* Becker, *supra* note 11, at 172–73.

will commit crimes so long as the expected net private benefit from the crime exceeds the expected gains from other activities.

This insight implies an important role for the criminal system. To deter criminals, the law must erode the perpetrators' expected benefits by increasing the "price" of committing such acts, ps.[29] But this endeavor comes at a cost. Increasing the severity of the sanction, s, or the probability of detection and conviction, p, requires more investment in policing, adjudication, and punishment.

For example, choosing $p=1$ means that all offenders will be caught and convicted, but it also requires more expenditures on investigators, prosecutors, juries, judges, and prisons. Thus, *optimal* deterrence demands a balancing act. The enforcer must choose the probability, magnitude, and type of sanction (e.g., fines or prison sentences) that minimize the sum of (i) the net damage from crimes ($h-b$),[30] (ii) the cost of apprehension and conviction, and (iii) the cost of punishing offenders (if any). Under the standard model, this can be done by setting p and s at the right levels.[31]

Most importantly, in the standard model liability is *individual*. This model does not consider the possibility of holding a group of actors liable for the acts of one. Moreover, the model assumes that only *one* actor committed the crime and only the one *true* criminal is ever convicted and sanctioned. False convictions—that is, the convictions of innocent actors—are not even a possibility in the standard model. In other words, either the actual criminal is convicted and sanctioned—or no one is.

29. *See supra* notes 12–13 and accompanying text; Becker, *supra* note 11, at 179 (explaining that "the social loss from illegal activities is usually minimized by selecting p and [s] in regions where . . . 'crime does not pay'"); *see also* Posner, *supra* note 15, at 1195 (adopting the standard model).

30. The standard approach in this literature is to incorporate the criminals' gains into the social welfare function, and we will retain that convention. For critical views, see Stigler, *supra* note 15, at 527; Jeff L. Lewin & William N. Trumbull, *The Social Value of Crime?*, 10 INT'L REV. L. & ECON. 271 (1990); DAVID D. FRIEDMAN, LAW'S ORDER: WHAT ECONOMICS HAS TO DO WITH LAW AND WHY IT MATTERS 230 (2001).

31. Becker, *supra* note 11, at 181, 207 (stating that "p and [s] are the only decision variables" for optimal enforcement). Formally, this social welfare function can be written as:

$$W = \int_{p(e,)s}^{\infty} [(b-h) - p(e)(s+cs)]f(b)db - e$$

where b is offender's benefit, h is the harm caused by the criminal act, s is the disutility to the offender from the sanction, $p(e)$ is the probability of apprehension, which depends positively on e, the expenditure on enforcement, and cs is the cost to society of imposing the sanction. The expression $s+cs$ or $(1+c)s$ is therefore the full social cost from imposing the sanction. If the sanction is a fine, there is no social cost because $c=0$ (the cost of administrating a fine is negligeable) and s is not counted in welfare because it is a transfer payment (i.e., the dollar cost to the offender is offset by the revenue from the fine). *See* Polinsky & Shavell, *supra* note 15, at 410.

B. Mistaken Convictions and Mistaken Acquittals

Others have extended the standard model to address the possibility of false convictions. These articles, however, treat these situations as "mistakes" or "errors" that should be minimized. Only a few explicitly discuss group liability as an enforcement tool. None, however, have treated the punishment group—the subset of the population that includes the culprit and should thus be punished—as a choice variable.

Harris, for example, shows that in addition to p and s, the enforcer has a third choice variable. The enforcer can determine the degree of legal protections available to suspects.[32] These protections include the suspects' safeguards against indiscriminate stops, searches, and arrests. The enforcer can increase these protections and thus lower the probability of punishment, p, if false convictions become a concern; or it can relax these safeguards (e.g., make it easier to arrest suspects) and increase p if the level of crime increases.[33]

Others have analyzed the effect of the burden of proof and the tradeoff between Type-I (false acquittals) and Type-II (false convictions) errors on optimal policy.[34] Polinsky and Shavell, for example, analyzed mistaken convictions and acquittals as extensions to Becker's model. They concluded that both "errors" lead to *underdeterrence* and may be offset by increasing p or s.[35] By contrast, our model shows that false convictions may be, under certain circumstances, part of an effective, and even optimal, deterrence policy (when deterrence is the enforcer's primary goal). In the case of collective responsibility, mistaken convictions are not "errors." As we show below, they are the result of choices that enforcers and courts are *currently* making in their battle against crime.

Persson and Siven developed a model in which criminal procedure (e.g., the threshold evidentiary level necessary for conviction) is endogenous. In

32. John R. Harris, *On the Economics of Law and Order*, 78 J. POL. ECON. 165, 168–69 (1970).

33. *Id.* at 169. A decrease in the degree of safeguards available to suspects increases the probability that the criminal will be convicted and punished (and may thus increase deterrence), but it also increases the chance of false convictions and sanctioning innocent actors (e.g., more actors will be subjected to searches and may be mistakenly convicted).

34. *See, e.g.*, I.P.L. Png, *Optimal Subsidies and Damages in the Presence of Judicial Error*, 6 INT'L REV. L. & ECON. 101 (1986); Daniel L. Rubinfeld & David E.M. Sappington, *Efficient Awards and Standards of Proof in Judicial Proceedings*, 18 RAND J. ECON. 308 (1987); Louis Kaplow & Steven Shavell, *Accuracy in the Determination of Liability*, 37 J.L. & ECON. 1 (1994); Thomas J. Miceli, *Optimal Prosecution of Defendants Whose Guilt Is Uncertain*, 6 J.L. ECON. & ORG. 189 (1990) [hereinafter Miceli, *Optimal Prosecution*]; James Andreoni, *Reasonable Doubt and the Optimal Magnitude of Fines: Should the Penalty Fit the Crime?*, 22 RAND J. ECON. 385 (1991); Thomas J. Miceli, *Optimal Criminal Procedure: Fairness and Deterrence*, 11 INT'L REV. L. & ECON. 3 (1991) [hereinafter Miceli, *Optimal Criminal Procedure*]; Louis Kaplow, *On the Optimal Burden of Proof*, 119 J. POL. ECON. 1104 (2011).

35. Polinsky & Shavell, *supra* note 15, at 427–28.

this model, actors are either workers or criminals and interact in groups of three.[36] One of the workers is the victim, and each of the two remaining individuals—the suspects—claim innocence.[37] The enforcer weighs the evidence against each of the suspects and attempts to identify the culprit.[38] Although the authors note that society may prefer to convict both actors rather than allow the criminal to escape responsibility, they do not develop this point further.[39] In other words, they do not discuss the option of imposing collective liability as an enforcement tool. Rather, they treat collective liability as a possible consequence. Moreover, in their model, the group size is fixed. By contrast, in our model, the size of the "punishment group"—the number of actors that will be subject to the formal (e.g., fine) or informal (e.g., mass arrests) punishment—is a choice variable.

C. Group Liability

A third strand of the prior literature directly discusses the possibility of imposing group liability. Surprisingly, however, the economic and legal literature on collective responsibility is sparse and mainly informal, often relying on historical and eclectic examples.[40]

The modern literature on collective liability regimes begins with Posner's observation that primitive societies relied solely on tort law to control crime,[41] and this liability was often collective.[42] One reason was the lack of privacy. In environments without "separate rooms, doors, [and] opportunities for solitude or anonymity" where "everyone kn[ew] everything about everyone else," collective liability was a tool to harness information about the culprit (i.e., to increase p).[43] The threat of paying for

36. Persson & Siven, *supra* note 14, at 213–14.

37. In every triplet, one of the parties is always an innocent bystander (i.e., worker). The model also assumes that a criminal cannot steal from another criminal as the criminals' only source of wealth is their loot. Thus, a robbery takes place if the group includes at least one criminal and one worker. When the group consists of two criminals and one worker, only one of the criminals can commit the crime. Similarly, when the group consists of one criminal and two workers, the criminal may commit a crime against only one of the workers. *Id.* at 214.

38. *Id.* at 223.

39. *Id.* at 215.

40. Three exceptions that develop formal analyses are Francesco Parisi & Giuseppe Dari-Mattiacci, *The Rise and Fall of Communal Liability in Ancient Law*, 24 INT'L REV. L. & ECON. 489, 490–91 (2004); Thomas J. Miceli & Kathleen Segerson, *Punishing the Innocent Along with the Guilty: The Economics of Individual Versus Group Punishment*, 36 J. LEGAL STUD. 81 (2007); and J. Shahar Dillbary, *The Case Against Collective Liability*, 62 B.C. L. REV. 391 (2021). Our model generalizes and extends the findings of these models.

41. Richard A. Posner, *A Theory of Primitive Society, with Special Reference to Law*, 23 J.L. & ECON. 1, 42–43 (1980) [hereinafter Posner, *Theory of Primitive Society*]; Posner, *supra* note 15, at 1203.

42. Posner, *Theory of Primitive Society*, *supra* note 41, at 43; Posner, *supra* note 15, at 1203–04; *see also* MICHAEL BARKUN, LAW WITHOUT SANCTIONS: ORDER IN PRIMITIVE SOCIETIES AND THE WORLD COMMUNITY 20 (1968).

43. Posner, *Theory of Primitive Society*, *supra* note 41, at 6.

the wrongful acts of another enlisted those subject to group liability as informers, and it encouraged them to turn in the assailant.[44] It also incentivized the group to control those who were likely to commit crimes but lacked the means to pay for their actions. Collective liability also served another function. It allowed primitive societies "to set fines [*s*, in the BPS model] that exceed the individual's ability to pay."[45]

Unlike Posner, Parisi and Dari-Mattiacci provide a formal model to explain the transition from communal to individual liability in tribal societies.[46] In their model, the individual incentives to provide security and reduce crime are tied to the tribe's initial wealth.[47] These incentives diminish as the group gets larger and wealthier due to free riding and less cooperation.[48] Both the Posner and the Parisi and Dari-Mattiacci models hypothesize that collective liability is efficient when imposed on a small group, such as the assailant's kinsmen. However, they do not discuss the cost of false convictions. Nor do they derive optimality conditions.

Building on Posner's insights, others extol the ability of collective liability to (i) *ex ante* increase deterrence by encouraging group members to monitor each other and take preventative measures, and (ii) *ex post* extract information that would identify the culprit.[49] Varian, for example, used a principal-agent model to explain how group liability can help parties overcome information asymmetries.[50] Extending loans to villagers in developing countries provides a good example. Banks in these regions face a major obstacle. They cannot observe the applicant's characteristics (e.g., their creditworthiness) or their actions (e.g., performance). As a result, banks cannot extend credit. But applicants (who are familiar with each other and each other's business) are or can be privy to such information. One solution, famously adopted by the Grameen Bank, is to allow villagers to organize in small groups and apply for loans together.[51] Each applicant is responsible for his own loan and also serves as a co-guarantor for the other applicants' loans. If one applicant fails to make payments, the other group

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44. *Id.* at 6, 44 (Collective liability "serves to enlist the entire population as informers and policemen.").

45. Posner, *supra* note 15, at 1204; Posner, *Theory of Primitive Society*, *supra* note 41, at 46. Under the standard model, with $p \approx 1$, the condition for deterrence, $ps > b$, is reduced to $s > b$.

46. Parisi & Dari-Mattiacci, *supra* note 40.

47. *Id*. at 498.

48. *Id*. at 491, 499–500.

49. *See, e.g.*, Saul Levmore, *Gomorrah to* Ybarra *and More: Overextraction and the Puzzle of Immoderate Group Liability*, 81 VA. L. REV. 1561, 1561–62 (1995); Daryl J. Levinson, *Collective Sanctions*, 56 STAN. L. REV. 345, 347, 349 (2003).

50. Hal R. Varian, *Monitoring Agents with Other Agents*, 146 J. INSTITUTIONAL & THEORETICAL ECON. 153, 153 (1990).

51. *See Credit Lending Models*, GRAMEEN BANK, https://www.gdrc.org/icm/model/model-fulldoc.html, [https://perma.cc/73NY-8J8V] ("[C]ollective responsibility of the group serves as collateral on the loan.") (citing Professor Mohammed Yunus, the founder of the Grameen Bank).

members must foot the bill.[52] In microfinancing, communal accountability allows the bank to enlist applicants as its agents in order to harness private information.

Varian's model, however, is different from ours in a number of important ways. First, it focuses on a *cooperative* environment where the principal and agents' interests are aligned. His model also assigns the task of forming the group to the agents themselves.[53] The villagers, not the bank, assemble their groups. By contrast, in our model, the enforcer must choose the group size, the type and severity of the sanction, and the probability of detection. Finally, Varian's model applies to civil cases, which are fundamentally different in nature than the criminal system—the focus of our paper.[54]

Unlike Varian, other scholars have focused on cases where an unknown actor harms another. As noted, these articles are for the most part informal, and with a few exceptions, they focus on the benefits of collective liability while ignoring or merely mentioning the costs of such regimes.[55] Importantly, many of these articles focus on civil cases or lump them together with criminal cases, as their focus is mainly on the information-forcing feature of collective liability,[56] which we will ignore.

There are, however, striking differences between civil and criminal liability regimes. One major difference is the presence of dilution. In a civil case, liability cannot exceed total harm, and so the expected liability of each actor is a function of the number of actors in the group.[57] In a group of two, each actor can expect to pay half of the damage to the victim; in a group of three, each can expect to pay one third; and so on. By contrast, in a criminal case, each actor is subject to a sanction that cannot be shared by others. A second difference is in the nature and severity of the sanction. In tort law, the sanction is mainly compensation, and it is often limited by both law (e.g., in the form of statutory caps) and the resources available to the injurer. Criminal law does not suffer from the same limitations. Criminal sanctions

52. Varian, *supra* note 50, at 154.

53. *Id.* at 159–61.

54. *See* Lars Boerner & Albrecht Ritschl, *The Economic History of Sovereignty: Communal Responsibility, the Extended Family, and the Firm*, 165 J. INSTITUTIONAL & THEORETICAL ECON. 99, 109–10 (2009) (discussing another civil-based risk sharing mehanism and noting that "[c]ommunal esponsibility at the city level gave merchants a strong incentive to form associations or guild, to control access and exit, and to monitor the behavior of its members").

55. *See, e.g.*, Levinson, *supra* note 49, at 398–400 (discussing the benefits from imposing collective liability in the case of criminal conspiracies but neglecting to discuss the cost of doing so).

56. *See generally* Levmore, *supra* note 49; Levinson, *supra* note 49, at 398–400 (discussing criminal conspiracies); ARIEL PORAT & ALEX STEIN, TORT LIABILITY UNDER UNCERTAINTY 151 (2001); Alice Guerra, Barbara Luppi & Francesco Parisi, *Do Presumptions of Negligence Incentivize Optimal Precautions?*, 54 EUR. J.L. & ECON. 349, 361–64 (2022).

57. *See generally* J. Shahar Dillbary, *Tortfest*, 80 U. CHI. L. REV. 953, 978 (2013) (exploring the effects of dilution); J. Shahar Dillbary, Cherie Metcalf & Brock Stoddard, *Incentivized Torts: An Empirical Analysis*, 115 NW. U. L. REV. 1337 (2021) (testing the theory in a laboratory setting).

range in nature and severity. And prison sentences will likely deter insolvent injurers when a compensatory verdict would not.[58] A third difference is the administrative cost of the systems. A tort is a private action. The costs of investigating, litigating, and collecting are imposed (although not completely) on the plaintiffs. These costs are substantially higher in the criminal system and are imposed on all.

Articles that focus on criminal law are also limited in scope. These articles tend to focus on cases where *all* members of the group participated in a crime, as is the case under the Pinkerton rule and felony murder.[59] The Pinkerton rule holds liable every participant in a criminal conspiracy (e.g., drug trafficking) for any crime committed by others in the course of conspiracy.[60] Similarly, with the aid of the felony murder doctrine, a getaway driver can be held liable for murders committed by her colleagues in a robbery gone wrong.[61] These collective punishment theories are different than the ones we focus on. First, in all of these cases the group is well defined: it comprises those who agreed to partake in the initial crime (e.g., drug trafficking or robbery). Moreover, in these cases all members of the groups are culpable. By contrast, we investigate cases where the enforcer must determine whether and to what extent liability should be imposed on a group of actors that includes completely innocent individuals.

The papers closest to the current one are by Miceli and Segerson,[62] and Dillbary.[63] Miceli and Segerson developed a formal model of group versus individual punishment within the context of the standard economic model of crime. Their focus was on demonstrating the circumstances in which one or the other approach is preferred, depending on the objective of the enforcer (specifically, deterrence versus retribution) and the technology of detection. The analysis, however, treated the group size as a parameter rather than a choice variable. As a result, it did not derive the optimal enforcement strategy in the most general sense, which is the objective of the current paper.[64] Focusing primarily on the cost-side, Dillbary showed that collective liability can erode actors' incentive to take care, incentivize those who can identify the true injurer to lie or collude with others to lie, and even engage in harmful activities. Dillbary focused, however, on civil cases where

58. On the optimal use of prison as a deterrent when offenders are insolvent, see A. Mitchell Polinsky & Steven Shavell, *The Optimal Use of Fines and Imprisonment*, 24 J. PUB. ECON. 89 (1984).

59. *See, e.g.*, Neal Kumar Katyal, *Conspiracy Theory*, 112 YALE L.J. 1307, 1372–75 (2003) (discussing the benefits of the Pinkerton doctrine); Guyora Binder, *Making the Best of Felony Murder*, 91 B.U. L. REV. 403, 501–10 (2011); Francis Bowes Sayre, *Criminal Responsibility for the Acts of Another*, 43 HARV. L. REV. 689, 702–08 (1930) (focusing on the doctrine of aiding and abetting).

60. Katyal, *supra* note 59, at 1372.

61. *See, e.g.*, People v. Fuller, 150 Cal. Rptr. 515, 517 (Ct. App. 1978).

62. Miceli & Segerson, *supra* note 40.

63. Dillbary, *supra* note 40.

64. Miceli & Segerson, *supra* note 40, at 82–83, 96.

liability is more easily diluted. Moreover, like Miceli and Segerson, he treated the group size as a parameter and not as a choice variable.[65]

II. THE MODEL

A. Motivation

As noted, a key choice variable of the enforcement authority in the BPS model is p, the probability of apprehension. This probability determines both the level of deterrence and the expected cost of punishment.[66] Despite its immense importance, however, the meaning of this variable remains unclear. Becker defines it as the "probability that an offense is cleared by conviction."[67] Polinsky and Shavell refer to it as the "probability of detection."[68] In other words, according to the BPS model p is the probability that the *actual* perpetrator of a criminal offense is caught and punished. What is less clear is how we should interpret the complementary probability, $1-p$. Is it the probability that no one is caught and punished, or that someone other than the actual offender is caught and punished? In terms of the impact on deterrence, this distinction actually does not matter because the crime rate only depends on how p influences the decisions of rational offenders.[69] This explains why no attention has been paid to the meaning of $1-p$.

However, the interpretation of p *does* matter with respect to the cost of imposing punishment. The usual formulation is to write the expected cost of punishment per crime as $p\beta s$,[70] where s is the severity of the sanction (measured in terms of the cost to the offender) and β is the unit cost to society of imposing it, assuming that $\beta>1$.[71] It follows that $1-p$ is the

65. Dillbary, *supra* note 40, at 392–93, 397–98, 415–16.

66. *See supra* Section I.A. Imperfect detection of offenders represents the main difference between the BPS model of crime and the economic model of tort law. *See* John Prather Brown, *Toward an Economic Theory of Liability*, 2 J. LEGAL STUD. 323, 343 (1973) (stating that in tort law, the identity of the injurer is generally assumed to be known with certainty).

67. Becker, *supra* note 11, at 174.

68. Polinsky & Shavell, *supra* note 15, at 412.

69. *See infra* note 81 and accompanying text. The possibility of wrongful punishment could theoretically affect the decision to commit a crime by lowering the value of legal behavior. This effect, however, is probably very remote for most people, so we ignore it here. See Oren Bar-Gill & Alon Harel, *Crime Rates and Expected Sanctions: The Economics of Deterrence Revisited*, 30 J. LEGAL STUD. 485 (2001), for a discussion of a reverse causal effect whereby the crime rate can impact the expected sanction through a resource limit on enforcers—we ignore this issue as well.

70. *See, e.g.*, Polinsky & Shavell, *supra* note 15, at 417. In their model, the total cost of imposing a sanction is $s+cs$, where s is the cost to the criminal and cs is the cost to society of imposing the sanction (c being the enforcer's per-unit cost). *Id.* at 409–10. The total cost can thus be rewritten as $s(1+c)$ or $s\beta$ (where $\beta=1+c$). *See supra* note 31. The term "punishment" is used loosely to include not only post-conviction sanctions, such as incarceration and fines, but also pre-conviction measures that impose cost on innocent actors, such as searches and false arrests. *See* Harris, *supra* note 32, at 166.

71. When punishment is by a fine, and hence costless to impose, the interpretation of $1-p$ truly is irrelevant in the standard formulation.

probability that *no one is punished* (i.e., that no cost is incurred). Under this approach, enforcement efforts are directed toward detecting the *true offender*. Only when he or she is identified and convicted does a punishment ensue. In other words, either the true offender is apprehended and punished (with probability p), or no one is apprehended (with probability $1–p$).[72] The notations in the standard model are summarized below:

b = the benefits to the offender from committing the crime
h = the harm to the victim
e = the expenditure on enforcement (identifying the offender)
s = the severity of sanction
c = the unit cost to society of administrating the sanction
$\beta = (1+c)$ = the unit cost to society for imposing the sanction
$p(e)$ = the probability of convicting the *one true offender*
$1-p$ = the probability that *no one* is punished
The enforcer's task: choose e and s to maximize social welfare

Now consider a different interpretation of $1-p$. Suppose that a crime has been committed and the offender is known with certainty to be a member of a group of size $N>1$, which could be very large. Detection generally involves winnowing this group down by gradually eliminating the least likely suspects, ideally until only one remains. In this context, we define p to be the probability that *this person*—the last one remaining—is the true offender. But unlike BPS, we define $1-p$ as the probability that he is not. Under this interpretation, exactly one person is apprehended and punished, but it is not possible to know with certainty whether that is the right person.

To see the differences between the two definitions, consider a case in which an unknown individual smashed a storefront window with a large object. Under both BPS and our model, $p=0.9$ means that there is a 90% chance that the true offender will be identified and punished. The models diverge, however, on the interpretation of $(1-p)$. Under BPS, there is a 10% chance that *no one* will be punished. By contrast, under our model someone is going to be punished, and there is a 10% chance that the punished person will be *innocent*.

From a pure deterrence perspective, the implications of this formulation are identical to those arising from the BPS model. Under both models—ours and BPS's—the would-be offender faces the same expected punishment, ps. For example, if the sanction for rioting is a ten-year sentence, under both models the expected punishment is nine years ($10\times90\%$). From a broader

72. *See supra* notes 13–14 and accompanying text. An extension of this model allows the possibility of errors in enforcement. *See infra* Section II.E.

policy perspective, however, the two approaches may generate very different prescriptions, as the subsequent analysis will show.

B. The Basic Setup

As a generalization of our alternative perspective, let us define the punishment group, n, to be a subset of the full population N that will be subject to collective liability, where N is the smallest population known to contain the offender with certainty ($n \in [1, N]$). We define $p(n)$ to be the probability that the true offender is a member of this subset. For example, in the protest hypothetical, N=200 may include everyone who attended the protest (including police officers and bystanders). However, the size of the punishment group can be reduced to a much smaller group, for example, n=10, consisting only of those protestors who were in close proximity to the store when it was damaged and thus were physically able to throw the object. By definition, therefore, $p(N)$=1 (i.e., it is certain that the offender is someone who is one of the 200 individuals that attended the protest). We also assume that p is increasing in n ($p'>0$), meaning that the larger is the punishment group, n, the more likely it is that the offender will be included in it. If the punishment group is reduced to a single member, then $p(1)<1$ is the probability that the sole remaining member is the true offender.

One way to reduce the size of the original group is by random exclusion. Those who remain are then subject to a sanction. With n actors in the punishment group, the probability that the true culprit is punished is thus $p(n)=n/N$.[73] If the punishment group consists of one individual, then $p(1)=1/N$. For example, suppose that the true offender is one of ten suspects. If liability is imposed randomly on eight of the suspects, the probability that the true offender is among the punished is 8/10 or 80%. In such a case, at least seven innocent individuals will be punished. By contrast, if only one member of the group is punished, the probability that that individual is the culprit drops to 10% (1/10). Random punishment, or punishment by lottery, although not unheard of,[74] is not the way criminal justice should be administered.

Suppose, therefore, that the enforcement authority proceeds more deliberately by sequentially eliminating the least likely suspects, as described above. This presumably reflects the way that detection actually happens, but it is a costly process. To capture this cost, we define $p(e,n)$ to

73. With random groupings, there are $\binom{N}{n} = \frac{N!}{n!(N-n)!}$ combinations of n individuals chosen from a set of N when the ordering does not matter. The probability of any one individual appearing in a random grouping of n is n/N.

74. *See infra* Part III (discussing the use of checkpoints for drunk driving or other violations, and the frankpledge).

be the probability that the true offender is a member of a subset of size n when an expenditure of e is made by the enforcer to choose that subset deliberately. For example, in the protest hypothetical, e includes the cost of investigating and determining who was close enough to the store when it was damaged. With a larger investment, the enforcer could be able to reduce that group even further. For example, witness testimonies or video feeds could identify the injurer's gender and age range, thereby reducing the punishment group from N=200 to n=5. We assume that the more the enforcer invests in detection, the greater is the chance that the true offender will be in the designated subgroup. We also assume that p is increasing at a decreasing rate in both e and n. This simply means that the most effective detection efforts are used first, and the least likely suspects are excluded first. Further, absent any investment, $p(0,n)=n/N$ for all $n\geq 1$. Thus, random punishment is a special case when no effort is devoted to detection. Finally, in the extreme cases, when the punishment group includes the entire population, $n=N$, it is certain the offender is a member of the group, $p(e,N)=1$ for all $e\geq 0$, and when no one is held accountable, $n=0$, then $p(e,0)=0$.

In this formulation, n, the size of the punishment group, is a choice variable, along with e, the cost of deliberately choosing the punishment group, and s, the sanction imposed on each member of the group. In the standard BPS model, by contrast, n is constrained to equal one, and absent legal error, that one person, who is detected with probability p, is assumed to be the true offender. In our formulation (as in real life), such certainty is not possible unless the entire population of N is punished. Erroneous punishment is therefore inherent to this alternative interpretation, though greater expenditure of effort increases the likelihood that the offender is in the targeted subgroup. In other words, the BPS model does *not* emerge as a special case of the above formulation by simply imposing the constraint that n=1. The notations of our model can be summarized as follows:

N = the smallest population that includes the offender
n = the size of the punishment group ($0<n<N$)
e = the enforcer's cost of choosing the punishment group
s = the severity of the sanction
$p(e,n)$ = the probability the offender is in the punishment group
$1-p$ = the probability the offender is not in the punishment group
The enforcer's task: choose e, s, and n to maximize social welfare

When only one individual is apprehended (n=1):

$p(e,1)$ = the probability that the chosen party is the true offender
$1-p$ = the probability that the chosen party is not the offender

Given the preceding setup, the following Sections derive the optimal enforcement policy in the context of this model and compare it to those from the BPS model. The objective is taken to be the same as in the BPS model—namely, maximization of social welfare (when deterrence is the primary goal), which consists of the net gain to offenders less the cost of enforcement. Our inclusion of offenders' gains in welfare is consistent with the law enforcement literature since Becker.[75] It also reflects the possible applicability of our approach to other forms of externalities, including certain tortious injuries. We emphasize the intuition for the results in the text.[76]

C. Costless Punishment

We first consider sanctions that are costless to impose. This is often the case with monetary sanctions which, unlike imprisonment, are considered costless.[77] We recognize that the sanction cannot exceed a maximal level, $\bar{s}$.[78] In the context of a fine, $\bar{s}$ is the largest amount the least wealthy suspect in the punishment group can pay. Examples of monetary sanctions include traffic fines or restitution orders for pecuniary losses resulting from the crime.[79] An example of a nonmonetary yet costless-to-impose sanction is the revocation of a license. For now, we do not consider the cost of wrongfully holding innocent actors liable (i.e., false positives)—an issue we address later.

Following the traditional BPS formulation, an offender will commit a prohibited act if the benefit from doing so exceeds the expected punishment. This is the rational offender assumption, which underlies all economic models of crime. As noted, social welfare consists of the sum of the net benefits from the offense minus enforcement costs. The enforcer's problem is to choose e, s, and n to maximize welfare—that is, achieve optimal

75. *See supra* note 30.

76. For a formal analysis, proofs, and extensions to the model, see J. Shahar Dillbary & Thomas J. Miceli, Reformulating Detection in the Economic Model of Crime: Probability Scaling and Group Punishment (Mar. 1, 2023) (unpublished manuscript) (on file with authors).

77. *See* Polinsky & Shavell, *supra* note 15, at 408 (explaining that "the payment of a fine is assumed to be a socially costless transfer of money").

78. *See infra* note 87.

79. *See infra* note 80 (discussing restitution).

deterrence—subject to the constraints that $s \leq \bar{s}$ and $n \leq N$. The solution to this problem is described as follows:

Proposition 1: Assume it is optimal to punish someone (i.e., $n^* > 0$). Then (i) the optimal policy involves no expenditure on identifying the culprit ($e=0$); (ii) if the maximal sanction can be imposed on each member of the group ($\bar{s} \geq h$), the first-best outcome can be attained. In such a case, the size of the punishment group, n, can be varied so long as the severity of the sanction is modified to account for the group size, such that $ns=Nh$ (subject to $s \leq \bar{s}$ and $n \leq N$); (iii) if the maximal sanction that can be imposed is lower than the harm caused ($\bar{s} < h$), the first-best outcome is not attainable. In such a case, the optimal policy is to subject each member of the group, N, to the maximal sanction ($s=\bar{s}$ and $n=N$).

To illustrate part (i), reconsider the protest hypothetical. Suppose that rioting resulted in property damage of h=$500, and the sanction (restitution) would be of the same amount (i.e., s=$500).[80] With a large enough expenditure on personnel and detection technologies (such as drones), the police might be able to identify the actual offender ($n=1$). In such a case, that offender would pay a fine of $500 with certainty. Alternatively, instead of the large investment in detecting the actual culprit, the enforcement authority can simply collect s=$500 from *every* protester who was known to be present ($n=N$). Under this course of action, the expected liability, and thus deterrence, remains the same because each protestor can still expect to pay s. The difference is that now many innocent actors would also be fined. The point is that by increasing the punishment group from $n=1$ to $n=N$, the enforcer is able to keep deterrence at the same level while reducing enforcement cost to $e=0$ and keeping the sanction, s, constant at h. Of course, if the police know the identity of a smaller subset of the 200 individuals who attended the protest (e.g., because submitting a list of attendees was a licensing requirement), but just cannot identify the rioter, the punished group can be set at that number ($1 < n < N$).[81] This is a case

80. Criminal restitution is common. *See, e.g.*, ALA. CODE § 15-18-67 (1980) (providing that "[w]hen a defendant is convicted of a criminal activity or conduct which has resulted in pecuniary damages or loss to a victim," in addition to any other sentence which the court may impose, the court must also "order that the defendant make restitution or otherwise compensate [the] victim for any pecuniary damages"). In determining the amount of restitution owed, courts also take into consideration "[t]he financial resources of the defendant." *Id.* § 15-18-68(a)(1) (2009); *see also* CONN. GEN. STAT. § 53a-28 (2018). Restitution is also available in federal courts. *See Restitution Process*, U.S. DEP'T OF JUST. (Sept. 18, 2020), https://www.justice.gov/criminal-vns/restitution-process [https://perma.cc/SQ8D-YCK8].

81. To facilitate collection, the police can even require each protestor to deposit a cash bond of which s will be forfeited in case of a crime. *See, e.g.*, Sruthisagar Yamunan, *The Daily Fix: Bengaluru*

where e=0 and $n<N$. (In effect, though, that smaller subset *is* the population.)

To illustrate part (ii), note that if each of the N=200 protesters is wealthy enough, the enforcer can impose a sanction of \$500 (200×500/200) on each and every one of the N=200 protestors. At the other extreme, the enforcer can collect from one (n=1) randomly chosen protestor a sum of s=\$100,000 ($s=Nh/n$=200×500/1). This case, however, requires $\bar{s} \geq$\$100,000 (i.e., the randomly chosen individual must be able to pay the high fine)—a much stricter requirement. The enforcer can also impose a sanction on any intermediate number of protestors by appropriately scaling the fine. For example, the enforcer can collect from each of n=50 randomly chosen protestors a sum of \$2,000 (200×500/50), which requires that $\bar{s} \geq$\$2,000.

In all of these cases, deterrence is optimal and identical. In the first case, when everyone is sanctioned, each protestor faces a sanction of \$500 with certainty. In the second case, when only one is randomly sanctioned, each protestor (including the offender) can expect to pay \$500—i.e., there is a 1 in 200 chance of paying \$100,000. And the same is true for the third case, where each protestor has a 1 in 50 chance of paying \$2,000. In all cases, however, $\bar{s}$ must be large enough to allow the required fine.

To illustrate part (iii), suppose the maximal fine that the least wealthy member of the group can pay is $\bar{s}$=\$400. If all protesters are fined at the maximal amount (i.e., $n=N$), each can expect to pay only $p(0,N)\bar{s}$=1×\$400=\$400, which will result in underdeterrence (400<500).

Is Making Protest the Privilege of the Rich by Demanding Costly Sureties, SCROLL.IN (Feb. 14, 2020, 9:52 AM), https://scroll.in/article/953098/the-daily-fix-bengaluru-is-making-protest-the-privilege-of-the-rich-by-demanding-costly-sureties [https://perma.cc/S5WS-AECL] (reporting that to deter a "breach [of] the peace," Bengaluru police require protest organizers to sign indemnity bonds). The U.S. Supreme Court has yet to comment on insurance and indemnification provisions in permit applications. *Compare* Sullivan v. City of Augusta, 511 F.3d 16, 20–21 (1st Cir. 2007) (upholding certain parts of an ordinance after the city abandoned a bond requirement as a precondition for a permit to conduct a parade), *with* iMatter Utah v. Njord, 980 F. Supp. 2d 1356, 1361 (D. Utah 2013) (invalidating liability insurance and indemnity as a precondition for a permit). For an extreme identification requirement, see *Buckley v. Am. Const. L. Found., Inc.*, 525 U.S. 182 (1999), which invalidated a law requiring circulators of a legislative petition to wear identification badges.

FIGURE 1: OPTIMAL COMBINATIONS OF *N* AND *S* (ISO-DETERRENCE, *E*=0)

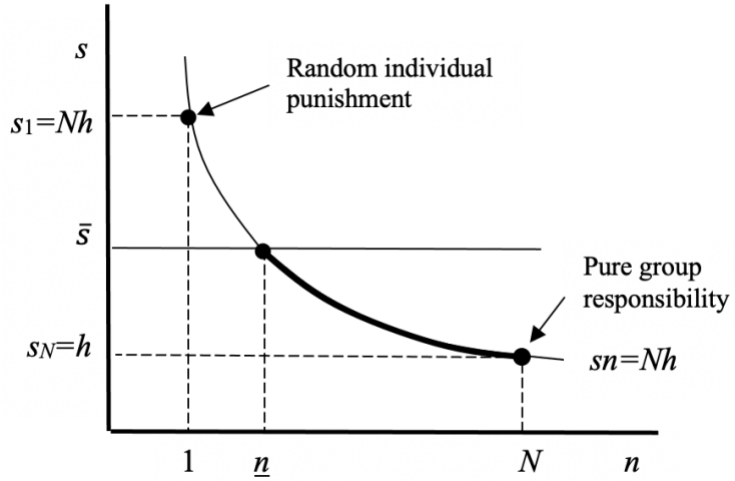

Figure 1 depicts the possible outcomes of the optimal policy. The negatively sloped convex curve depicts the combinations of the sanction, *s,* and the punishment group size, *n,* that maintain a constant expected sanction. Thus, with *e*=0, any point along this iso-welfare locus achieves optimal (first-best) deterrence. The two extreme points represent pure group responsibility (*n*=*N*) and random individual punishment (*n*=1). With no constraint on *s*, either end point is feasible, and, from a deterrence standpoint, there is no basis for choosing one or the other, or any point in between.[82] Under pure group punishment, *n*=*N* and s_N=*h*; that is, everyone in the population is fined an amount equal to the harm from the offender's act. This would optimally deter the would-be offender because, with *n*=*N*, *p*=1, so the offender can expect to be fully punished with certainty (as will everyone else in the relevant population).

Under pure individual punishment, by contrast, *n*=1 and s_1=*Nh*; that is, a single, randomly chosen member of the population is assessed a fine equal to the harm multiplied by the size of the population. Although this solution is reminiscent of the standard Becker prescription of a high fine coupled with a low probability of apprehension (albeit taken to the extreme),[83] the crucial difference is that here, the person being punished is *randomly* chosen, and is likely innocent as *p*=1/*N*. However, would-be offenders are still optimally deterred because the *expected sanction* for every member of the population is equal to the harm, *h*. As Part IV below explains, courts

82. In our example, this means that the enforcer is indifferent between requiring every protestor to pay $500 and randomly fining one protestor with $100,000.

83. *See* Becker, *supra* note 11, at 183–84; Polinsky & Shavell, *supra* note 15, at 428.

rely on this probability to determine the legality of random sanctions. In a series of decisions, the Supreme Court held that a probability equal to or above p=0.0024 meets the legal standard. In other words, the police can design a collective sanction such that the number of those innocent sanctioned is 99.9976%—a very low standard.[84]

Now suppose the cap on s is such that each member of the punishment group can pay the property damage, h, but has limited resources such that $h<\bar{s}<Nh$. In that case, the set of efficient points shrinks to the darkened segment of the iso-welfare locus in Figure 1. Since n=1 is no longer in the feasible set, *some amount of group punishment is necessary to achieve the first-best* level of deterrence, with the smallest such group being $\underline{n}=Nh/\bar{s}$. In this sense, group punishment works to correct for a judgment-proof problem on the part of offenders. This is the case where some protestors cannot pay a $100,000 fine, so instead a $2,000 fine must be imposed on fifty randomly chosen protestors.

Finally, if some members of the punishment group cannot pay even the property damage ($\bar{s}<h$,), then punishing the entire population ($n=N$) is optimal from a deterrence standpoint, but the first-best is no longer attainable. In such a case, deterrence cannot be improved by investing more in detection because, with $n=N$, the offender is already being punished with certainty. Due to the low solvency level, the optimum will be on a lower iso-deterrence line than that shown in Figure 1.

The preceding analysis shows that when maximizing deterrence is the sole criterion for enacting an optimal enforcement policy and when punishment is costless, not only is group punishment compatible with maximum social welfare, it may also be necessary to some extent if the fine is constrained.

More strikingly, an enforcement policy that only seeks to maximize deterrence *never* includes costly effort to identify the true offender—in essence, punishment should always be random (and at times in fact is—as Part IV below demonstrates). This is true because optimal deterrence can be achieved at no cost to the enforcer by randomly punishing any subset of the population in which the offender is known to reside, with the fine being inversely scaled to the size of the "punishment group." When the sanction is bounded, deterrence is maintained by appropriately increasing the size of the punishment group, possibly up to the population as a whole. This insight carries a warning: enforcers interested in deterrence (perhaps because of the incentive scheme they face) at low cost, may be more inclined to impose formal and informal sanctions on group of individuals.

84. *See infra* notes 177–79, 215–17 and accompanying text.

To modern eyes, the preceding policy will seem unacceptably arbitrary, but it is really the logical extreme of the Becker result regarding probability scaling of punishments. Indeed, once it is accepted that convicted offenders can be punished above and beyond the level of the harm they caused as a way of saving on enforcement costs—which is one of Becker's central insights—the prescription just derived is merely a quantitative extension of that policy.[85]

As a final point, we consider the possibility that for some crimes, it may not be optimal to punish anyone; that is, $n^*=0$. Indeed, in some cases, a prosecutor may decide to avoid pursuing a case. Examples include the twin rapist and the shaken baby cases that opened this Article.[86] This will be true if welfare is decreasing in n for all $n\geq 0$. In the current case, however, because punishment is costless, it will always be optimal (from a deterrence standpoint) to punish someone for committing harmful acts.

D. Costly Punishment

We now consider the case where punishment is costly to impose, focusing initially on the administrative cost of punishment, as when it takes the form of imprisonment. (The next Section considers costs associated with wrongful punishment, whether by fine or imprisonment.)

We continue to measure s in terms of its cost to the offender, but we now suppose that there is a social cost of imposing s which is equal to $\beta s=(1+c)s$ per person, where c is the unit cost of imprisonment to the state. For example, if the cost of imprisonment to the individual (e.g., loss of earnings and opportunities) is s=\$60,000 and the cost to the state is 20% of that (i.e., c=0.2, β=1.2) then total social cost is \$72,000 (1.2×60,000). All other variables are defined as above.[87] Social welfare in this case includes the cost of imposing s, which is equal to $n\beta s$ per crime, given that all n members of the punishment group are sanctioned (by definition).[88] The problem again is to choose e, s, and n to maximize welfare subject to the constraints on s and n. In this case, we can prove the following result:

85. *See supra* note 83 and accompanying text.

86. *See supra* notes 1–5 and accompanying text (providing examples of such cases when punishment is costly).

87. The same is true for $\bar{s}$, the maximum level of the sanction. The interpretation, however, may change with the context. For example, while in the case of a fine $\bar{s}$ is the largest amount each member of the group can pay, in the case of imprisonment it is the minimum opportunity cost each member of the group incurs when incarcerated—which is a function of the maximum number of days a person can be incarcerated (i.e., "a life" sentence as interpreted by the jurisdiction).

88. In this respect, the welfare function differs from the corresponding version in the standard BPS formulation, where, as discussed above, expected punishment costs would be $p\beta s$. *See supra* Section I.A.

Proposition 2: Assume punishment is costly to administer and that it is optimal to punish someone. In such a case, the optimal policy in terms of deterrence involves either a maximal sanction ($s=\bar{s}$), or punishment of a single individual ($n=1$).

The intuition is as follows. Because punishment is costly to administer, it is no longer costless to raise s, as was true with a fine. However, any increase in s can be offset by a proportionate decrease in n so as to leave punishment costs, $n\beta s$, unchanged. Further, because of the diminishing marginal impact of n on p, the expected sanction, ps, rises as a result of this adjustment, holding e fixed (i.e., as s increases and n decreases to keep $n\beta s$ constant, p also increases). In this way, deterrence can be achieved at no cost to the enforcer. It follows that these adjustments can be employed to the maximum extent possible in order to economize on enforcement costs. The limit of this strategy is reached when the constraint on s or n binds.

To illustrate, suppose the sanction for inflicting property damage during a protest is one day's imprisonment. Assume also that a day in prison costs s=\$500 to the inmate and cs=\$100 to the state (i.e., $c=0.2$ and $\beta=1.2$).[89] The total social cost from a day of imprisonment per inmate is thus βs=\$600. Punishing the entire group of 200 suspects therefore comes at a total cost of $n\beta s$=\$120,000 (200×600), but it ensures that the culprit will be punished and therefore will face optimal deterrence.

To see how the state can achieve deterrence by sanctioning fewer people, suppose a deliberate elimination of suspects at a cost of $e>0$ results in a smaller pool of $n=50$ suspects. In such a case the total cost from imposing the sanction is $n\beta s$=50×\$600=\$30,000. But suppose now that the probability that the culprit is in the remaining pool is only 50%. The expected liability each individual in the larger pool faces is thus $p(e,n)s$=0.5×\$500=\$250.[90] The enforcer can achieve the same level of deterrence by sanctioning a smaller group. For example, it can sanction only $n=25$ individuals. But to do so the enforcer will have to raise the sanction, s, to two days in prison or \$1,000 (500×2). In such a case, the total social cost of imprisonment, $n\beta s$, will remain fixed at \$30,000 (25×1.2×\$1,000). Thus, punishment costs are unchanged. Further, the assumptions we made

89. *See Prison Spending in 2015*, VERA, https://www.vera.org/publications/price-of-prisons-2015-state-spending-trends/price-of-prisons-2015-state-spending-trends/price-of-prisons-2015-state-spending-trends-prison-spending [https://perma.cc/E2FA-RZX6] (last visited Apr. 6, 2023) (reporting that "[a]mong the 45 states that provided data . . . the total cost per inmate averaged \$33,274"—about \$90 per day).

90. Of the $N=200$ individuals, $n=50$ were chosen to be punished. The process is not random but is also imperfect. Ex ante, each of the $N=200$ individuals has a 50% chance to be one of the selected $n=50$ and pay \$500 and a 50% chance not to be included in n and pay 0, for an expected punishment of 250 (50%x500+50%x0).

about the $p(e,n)$ function are such that the enforcer can lower its expenditures, e, so as to maintain the same expected liability, ps=\$250.[91] In other words, the simultaneous decrease in e and n can be chosen so that $p(e,n)$=0.25, which means that ps=0.25×\$1,000=\$250, thereby holding deterrence fixed. With expected punishment costs and deterrence held constant, the decrease in e must result in a higher level of welfare, which implies that the initial configuration could not have been optimal. This process can continue until either the pool is reduced to one suspect, n=1, or until $s=\bar{s}$—that is, until the sanction reaches the maximum accepted level (a life in prison being the highest bound).

It is a well-known result from the BPS model that the optimal sanction is maximal, even when it is costly to impose.[92] Here we find that the optimal sanction may be maximal, but only when the punishment group is larger than one. The reason for the difference is the differing interpretations of p in the two models. As explained above, in the BPS model, p is defined to be the probability of apprehending and punishing the true offender, and so punishment is only imposed if and when the actual offender is found. Thus, the expected social cost of punishment for any crime would be $p\beta s$. It follows that $1-p$ is the probability that *no one is caught and punished*. By contrast, we are assuming that $n\geq 1$ individuals are punished with certainty, and that p is the probability that the true offender is a member of that group, while $1-p$ is the probability he is not. Consequently, scaling down p in our model (i.e., reducing e) does not reduce the expected cost of punishment as long as n and s are held fixed; it only lowers the probability of punishing the right person. In other words, lowering p does *not* reduce punishment costs in our model (as it does in the BPS model) because, as long as n is held constant, the same number of people is punished. This is why we had to hold ns as well as ps fixed to keep deterrence constant while lowering e.

An interesting implication of the preceding result is that punishment of a single individual may in fact be optimal, even though we are not yet explicitly accounting for the cost of wrongful punishment. When this is the case, however, the optimal sanction is not necessarily maximal, as is true in the BPS model. In other words, only one person is punished and the sanction is less than maximal. In this sense, our model actually gives a prescription that is more in line with actual policy.[93]

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91. The assumption that $pnn<0$ means that p falls less than proportionately with n. This means that when n is halved, p is less than halved. This reflects elimination of the least likely suspects first. Thus, starting from p=0.5, when n falls from 50 to 25, p does not fall all the way to 0.25, and so e can be lowered to arrive at exactly p=0.25.

92. *See* Polinsky & Shavell, *supra* note 15, at 417 ("[W]hen the sanction is a fine, the optimal sanction is maximal. This is also true here even though the sanction is costly to impose.").

93. *See id.* (demonstrating the optimality of a maximal sanction).

As above, we conclude by considering the possibility that it may not be optimal to punish all crimes. This will be true in the current context if the harm from the act is small enough and/or if the marginal cost of punishment is large enough. Thus, in contrast to the case of costless punishment, it will not be optimal to prosecute minor crimes.[94]

E. Wrongful Punishment Is Costly

Finally, we consider the case where there is a social cost of wrongfully punishing someone. This seems especially important in our model, given that wrongful punishment is the chief moral objection to the use of group punishment. For example, it is one of the objections that was raised early on against the prescriptions of the Becker model.[95] For purposes of this discussion, we will focus only on monetary punishments, though the same logic would apply, *a fortiori*, to imprisonment.

It is worth emphasizing again that, in order to incorporate wrongful punishment into the BPS model, it would be necessary to redefine p to be the probability that *someone* is apprehended and punished, and then to define a new variable, q, to be the conditional probability that this person is the true offender. Thus, from the offender's perspective, the probability of punishment would now equal pq, while the probability of a wrongful punishment would equal $p(1-q)$. In this formulation, $1-p$ would be the probability that no one is apprehended and punished.

By contrast, in our model n individuals are punished with certainty and p is the probability that the true offender is in this group. Accordingly, wrongful punishment is inherent in our model. Either the true offender is in the group (with probability p) in which case there are $n-1$ false convictions, or she is not, in which case (with probability $1-p$) there are n false convictions. The number of false convictions is thus $p(n-1)+(1-p)n=n-p$.[96] Our assumptions about the p function ensure that this number is increasing in n, as we would naturally expect.[97] For example, suppose there is a 70% chance that a punishment group with $n=10$ individuals includes the true offender. In such a case there is a 70% chance

94. *See* Steven Shavell, *Specific Versus General Enforcement of Law*, 99 J. POL. ECON. 1088, 1098 (1991) (deriving a similar result when enforcement is costly).

95. *See* Png, *supra* note 34; Miceli, *Optimal Prosecution*, *supra* note 34; Miceli, *Optimal Criminal Procedure*, *supra* note 34.

96. The number of false convictions is the sum of two possible events: (1) either *no one* in the group is the true offender in which case there are n false convictions: $(1-p)n$; or (2) the single offender *is* in the group, in which case we have $n-1$ false positives: $p(n-1)$. Because $0\leq p\leq 1$ it must be that $n-1\leq n-p\leq n$. That is, the number of false positives is either $n-1$ (if the injurer is in the group) or n if he is not. In the extreme cases, when $p=1$ (i.e., the true offender is clearly in the group) there are $n-1$ false convictions, and if $p=0$ (i.e., the offender is clearly not in the group) there are n false convictions.

97. Specifically, we assume that $0<pn<1$.

that there are nine false convictions and a 30% chance that there are ten false convictions. Accordingly, with p=0.7 and n=10, on average there are 9.3 (10−0.7) false convictions.

Incorporating the cost of wrongful punishment into the social welfare function yields the following result:

Proposition 3: When punishment takes the form of a fine, wrongful punishment is costly, and it is optimal (in terms of deterrence) to punish someone, the optimal policy in terms of deterrence involves either a maximal sanction $s=\bar{s}$ or punishment of a single individual (n=1).

Although only wrongful punishments are costly here (as when punishment is by a fine), the welfare-enhancing strategy of lowering n and e while raising s so as to hold ps and ns constant continues to apply. Thus, as was true above, these adjustments should be used to the maximum extent allowed by the bounds on n and s before investing in e.

To illustrate, assume, as in the previous example, that initially n=50, p=0.5, s=\$500, and let σ=1 be the unit cost of wrongful punishment. The expected sanction facing offenders is therefore ps=\$250, and the social cost of imposing that sanction is $(n-p)\sigma s$=(50−0.5)×\$500=\$24,750. The enforcer can lower n to 25 and correspondingly lower p to 0.25 while raising the fine to \$1,000. The expected fine therefore remains at \$250, and the social cost of punishment remains at \$24,750 ((25−0.25)×\$1,000). However, given the above assumptions about the p function, e can be lowered, thereby raising welfare. Finally, as was true for imprisonment, crimes that impose a low level of harm should not be punished.

Taken together, the results from the previous two Sections show that when punishment is costly, individual punishment (i.e., $n<N$) emerges as the optimal deterrence policy if the maximum feasible (or acceptable) sanction is not too restrictive; in other words, if the constraint that $n\geq 1$ binds first. In that case, the optimal sanction will not generally be maximal. Further, this conclusion is true whether the sanction takes the form of a fine or prison.

F. Impact of Imposing Individual Punishment as Constraint

The analysis to this point has shown that when group punishment is allowed as part of an enforcement strategy, the enforcer may be interested in making use of it. Specifically, we have seen that when punishment is by a fine and wrongful punishment is not viewed as being socially costly, group punishment ($n>1$) is always consistent with optimal deterrence whenever $\bar{s} < Nh$. And when punishment is costly to impose—whether

administratively or because it is potentially wrongful—$n>1$ is optimal if the maximal sanction is sufficiently constrained, whether by offenders' ability to pay a fine, the maximum time they can be incarcerated, or possibly by proportionality (fairness) considerations. As noted, the BPS model implicitly rules out group punishment by imposing $n=1$ as a side constraint. We now turn to analyze the implications of imposing this $n=1$ constraint in our model.

Consider first costless punishment. If we require that $n=1$, then the expected sanction from the offender's perspective is $p(e,1)s$, which is increasing in e, as in the BPS model. It is also the case, however, that $p(0,1)=1/N>0$, whereas the BPS model assumes that $p(0)=0$. This again goes back to the differing definitions of p in the two models. In BPS, if no resources are invested in detection, no one is caught and punished. By contrast, in our model one person can always be randomly punished, and p is the probability that this is the true offender. We nevertheless saw that if $\bar{s} \geq Nh$, the first-best outcome from a deterrence standpoint can still be achieved by assessing a fine of Nh on that randomly chosen person. In this case, the optimal fine is not necessarily maximal, though it is scaled up in proportion to $1/N$. However, it would never be desirable to increase s above Nh, even if that were feasible. For small groups, this upper bound on s would therefore not be exceedingly large.

If $\bar{s} < Nh$, the first-best is not attainable in our model with $n=1$ (as we saw in Figure 1), in which case the optimal fine *is* maximal (as in the BPS model). Moreover, it is optimal to invest in some positive level of detection effort in this case to increase deterrence, though at the optimum there will be some underdeterrence.[98]

This solution thus mirrors that of the BPS model.[99] From the perspective of offenders, the results in the two models look the same—that is, the probability of being caught is low and the fine is high. The implications for deterrence are therefore also the same. As we have emphasized, however, the models differ with respect to the meaning of $1-p$. In the BPS model, it is the probability that no one is apprehended and punished, whereas in our model it is the probability that the wrong person is punished. In the case where punishment is assumed to be costless, however, this difference does not affect welfare at all.

Consider next the case where punishment is by imprisonment. Here, imposition of the constraint that $n=1$ forces an outcome in which the sanction will not generally be maximal. This result is different from the BPS

98. This is true because to achieve deterrence, enforcement effort should only be expended to the point where the marginal deterrence benefit equals the marginal cost. It follows that at the optimum, the harm from the act exceeds the expected punishment, or $h>ps$.

99. See Polinsky & Shavell, *supra* note 15, at 413–14.

model, where the optimal prison term is maximal when both *s* and *e* can be chosen optimally. The reason for the difference is that punishment is only imposed in the BPS model with probability *p*, the probability that the true offender is apprehended, whereas if the true offender is not detected, no one is punished. By contrast, in our model a single individual is apprehended and punished with certainty, and *p* is the probability that he is the guilty party. In this scenario, the optimal prison term is not generally maximal when *n* is constrained to be one. The same logic describes the situation where wrongful punishment is costly. In that case, the constraint that $n=1$ again forces an outcome in which the optimal sanction is not generally maximal.

The point of these illustrations is that the BPS model does not emerge from our model as a special case simply by constraining *n* to equal one. This suggests that the conclusions from that model, particularly the "impractical" prescription of a maximal sanction when punishment is costly, are to some extent artifacts of the particular interpretation of *p*. Further, we contend that the interpretation of *p* in our model is more consistent with actual practice in the sense that, when $n=1$, it reflects the probability that the person being punished is the true offender. In reality, there is always some residual uncertainty about the guilt of a defendant, no matter how much effort is devoted to detection.

III. THE LAW OF COLLECTIVE PUNISHMENTS

At first glance, it may be hard to imagine regimes that randomly punish innocent individuals, or target an entire group of people in order to punish the culprit(s). Yet, as this Part demonstrates, such regimes are commonplace. Before we turn to a discussion of these regimes, it is worth emphasizing once again that our goal here is not normative. We do *not* argue that criminal liability should be imposed on a group that includes many innocent actors. Rather, our claim is that *current* regimes—the product of legislative, regulatory, and adjudicative efforts—do in fact take that approach. Our goal is to reveal these regimes and their operation.

We begin with what may seem to be the most theoretical portion of our model: costless sanctions. As explained above, when deterrence is the sole criterion, costless group punishment can be (1) effective (deterrence is optimal), (2) welfare maximizing, and (3) even necessary.[100] The leading example in Section III.C was a fine. There we saw that an enforcer can achieve optimal deterrence by assessing a fine equal to *h* on each member

100. This happens when the sanction is impossible to impose (e.g., it's too severe) or socially unacceptable. *See supra* Section II.C (analyzing cases where $h<\bar{s}<Nh$); *see also supra* note 86 and accompanying text (discussing situations where society may decline to impose a group punishment).

of the group, a higher fine on a randomly chosen subset of that group, or a fine of *Nh* on one member of the group. In such cases the sanction is costless because the loss to the punished person, *s*, is a gain to others.[101] However, once it is understood that a fine is but one form of costless sanction and that a sanction neither need be formal nor the result of an adjudicatory ruling, it is easy to identify many real-life examples.

Checkpoints are one example of sanctions that enforcers treat *as if* they were costless (although they are not). In these cases, all members of a certain group are momentarily detained. Temporary investigatory police stops are another example. Although the detainees incur a real cost (e.g., delay and humiliation), the Supreme Court, focusing on the length of the stop, has repeatedly taken the position that these costs are negligible in order to justify the legality of detainments.[102] For this very reason, the Supreme Court has even authorized enforcement agents to target individuals by way of racial and ethnic profiling. In the name of deterrence, enforcement agents are now permitted to target a group of individuals, $n>1$, based on observed characteristics (e.g., race), which is perceived to impose a negligible cost in order to find the culprit.[103]

While in some cases group punishment can be justified on efficiency grounds, in other cases it may serve for Othering. In these cases, the targeting of a group that includes innocent individuals is not aimed at enhancing deterrence. Rather, group punishment becomes a tool to impose sanctions on individuals that bigoted enforcers do not view as equal or legitimate members of society.[104] Othering comes in many forms, including racism, xenophobia, homophobia, and antisemitism. In all of these cases the enforcer ignores the well-being of and the cost imposed on members of the targeted group. Still, as this Section shows, such sanctions may be held valid.[105] The subjective intent of the enforcers, the Supreme Court held, is simply irrelevant.[106]

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101. To somewhat simplify, when the sanction is a fine, the dollar cost to the offender is offset by the revenue from the fine, which is transferred and redistributed to all members of society, resulting in zero social cost.

102. Terry v. Ohio, 392 U.S. 1, 22, 24–26 (1968) (holding that in the name of "effective crime prevention and detection" the police may detain a person in order to investigate possible criminal behavior and conduct a protective search, "even though there is no probable cause to make an arrest," and explaining that unlike an arrest, such detainment merely "constitutes a brief, though far from inconsiderable, intrusion upon the sanctity of the person"); *see also infra* notes 142, 171–76 and accompanying text.

103. *See infra* Sections III.B.2–III.B.4.

104. john a. powell, *Us Vs. Them: The Sinister Techniques of "Othering"—And How to Avoid Them*, GUARDIAN (Nov. 8, 2017, 7:37 AM), https://www.theguardian.com/inequality/2017/nov/08/us-vs-them-the-sinister-techniques-of-othering-and-how-to-avoid-them [https://perma.cc/G77D-CDPA].

105. *See infra* notes 189–91 and accompanying text; *see also infra* Section III.B.3.

106. *See infra* notes 180–86 and accompanying text.

Jails—where suspects awaiting trial are incarcerated—may, in some cases, also be treated as a form of costless sanction by enforcers. First, localities often underestimate the cost of jails. The reason is that "other government agencies bear a large share of jail costs that are not reflected in [the] jail budgets."[107] Another reason is a divergence of interests between the enforcement *agent* (e.g., the police officer) and its *principal* (e.g., the state). The police officer does not bear the cost of incarceration—the state, those arrested, and society do. But the officer may be interested in reducing her (and her colleagues') own costs (time and inconvenience) that detainment entails.[108] We refer to these arrests as "costless arrests" as the enforcer agent treats them as such. Armed with these understandings, we turn to an analysis of costless sanction cases.

A. Finding the Culprit: Separating the Wheat from the Chaff

We begin with costless arrests. In the United States, the police usually must show probable cause before they make an arrest, conduct a search, or seize property.[109] However, whether the police can impose a collective sanction (e.g., search and seizure) on a group of individuals that is believed to include the culprit remains far from settled.[110]

In *Ybarra v. Illinois*,[111] an early case, the police received a warrant to search a tavern and an employee suspected of selling drugs. The Supreme Court had to determine whether the warrant allowed the police also to search each of the dozen other patrons that were present in the tavern. It held that the police cannot do so without a particularized and *individualized* suspicion that every searched individual violated the law.[112] Simply being present at the tavern when the police had reason to believe someone brought contraband for sale is not enough.[113]

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107. *See* CHRISTIAN HENRICHSON, JOSHUA RINALDI & RUTH DELANEY, VERA INST. OF JUST., THE PRICE OF JAILS: MEASURING THE TAXPAYER COST OF LOCAL INCARCERATION 5 (2015), https://www.vera.org/downloads/publications/price-of-jails.pdf [https://perma.cc/2XFC-7JM4]; *see also infra* note 123 and accompanying text.

108. For example, when the detainment occurs during the early hours of the morning on a rainy day and would involve imposing a cost on the officer and her colleagues (e.g., requiring backup or the participation of forensic units). *See infra* notes 114–18 and accompanying text (discussing Maryland v. Pringle, 540 U.S. 366 (2003)).

109. U.S. CONST. amend. IV. Under exigent circumstances, the police may conduct a warrantless arrest, search, or seizure if there is probable cause. Illinois v. McArthur, 531 U.S. 326, 330–31 (2001).

110. Callahan v. Unified Gov't of Wyandotte Cnty., 806 F.3d 1022, 1028 (10th Cir. 2015) ("[W]hether . . . an officer could not arrest an entire small group when he knows some unidentifiable members . . . of that group have committed a crime . . . . is far from beyond debate.").

111. 444 U.S. 85 (1979), *reh'g denied*, 444 U.S. 1049 (1980).

112. *Id.* at 88, 91.

113. *Id.* at 91.

Two decades later, in *Maryland v. Pringle*, the Supreme Court took a more lenient approach toward group punishment.[114] In *Pringle*, a police officer stopped a speeding car in the early hours of the morning, and observed a large amount of rolled up cash and drugs.[115] There was no indication that the three car occupants were colluding or pursuing an illegal end. Yet, in an attempt to identify the offender, the officer warned the three that if no one admitted ownership of the contraband, he would arrest all of them.[116] When none of the car occupants offered information, the officer proceeded as promised. Later that day, Pringle admitted that he owned the drugs, that he planned to sell them at a party they were going to, and that none of the other occupants knew about them.[117] The police released the two other occupants and pressed charges against Pringle.[118]

The question before the court was whether an entire group can be sanctioned (i.e., arrested) when it is clear that a member of the group committed an offense.[119] The Maryland Court of Appeals found the arrest illegal. It explained that because the crime could have been committed by any of the occupants, the police lacked *individualized* probable cause.[120] The Supreme Court reversed. It held that mere presence in a car with contraband gave the officer a reasonable belief that each one of the occupants had committed the crime independently or together with others.[121] Unlike the patrons in *Ybarra*, the Court reasoned that passengers in a small car "will often be engaged in a common enterprise with the driver, and have the same interest in concealing the fruits or the evidence of their wrongdoing."[122] The teaching of *Pringle* is clear: passengers in a car are subject to group punishment. If it is reasonable to believe that *one* passenger committed a crime, *all* can be subject to a severe sanction.

Pringle fits squarely within the predictions of Proposition 1 in our model. This is a case where it is optimal to punish someone ($n^*>0$). It is clear that at least one of the car occupants (perhaps even more than one) brought drugs into the car. The police can invest in trying to winnow down the group at a cost ($e>0$). For example, in *Pringle*, the police officer could have detained the car occupants while a forensic expert checked the drugs and cash for fingerprints that would identify the true culprit. In such a case, only the true culprit would have been sanctioned $s=h$ (i.e., arrested). Alternatively,

114. 540 U.S. 366 (2003).
115. *Id.* at 368.
116. *Id.*
117. *Id.* at 368–69.
118. *Id.* at 369.
119. *See id.* at 369–70.
120. *Id.* at 369.
121. *Id.* at 372.
122. *Id.* at 373 (quoting Wyoming v. Houghton, 526 U.S. 295, 304–05 (1999)).

instead of waiting for a long time in the very early hours of the morning, the costless option for the officer was to simply to impose $s=h$—that is, arrest each of the car occupants ($n=N=3$).[123] A third option, which we discuss later, is to randomly subject one of the car occupants to a punishment of $s=3h$. For example, the officer could (illegally) use excessive force during the arrest. In such a case, each of the occupants would also be optimally (although illegally) deterred, as each would have 1/3 of a chance of incurring $3h$ for an expected sanction of $s=h$.

By contrast, when the officer can reduce the punishment group at no cost, she will be required to do so. *United States v. Di Re* is such a case. The facts in *Di Re* are very similar to *Pringle*. Based on a tip from an informant, the police arrested three car occupants, even though the informant singled out only one of them, Buttitta. The Supreme Court held that only the named occupant, Buttitta, could be arrested. [124] Here, because the officer could identify the culprit at no cost ($e=0$), the punishment group had to be reduced to $n=1$ (in effect, $N=1$).

Pringle is not an outlier; it has become the rule.[125] Based on *Pringle*, courts have held that the police can arrest (i) an entire small group of middle school students when it is clear that some of them injured another in the bathroom;[126] and (ii) a group of police officers when "some unidentifiable members . . . of that group have committed a crime."[127]

B. Investigatory Stops: High Crime Areas, Profiling & Bigotry

In *Terry v. Ohio*, the Supreme Court recognized an exception to the probable cause requirement.[128] It held that in the interest of "effective crime prevention and detection,"[129] a police officer who reasonably believes that criminal activity is afoot can detain an individual for investigatory purposes

123. *Id.* at 368–69.

124. 332 U.S. 581 (1948).

125. Tracey Maclin, *The* Pringle *Case's New Notion of Probable Cause: An Assault on* Di Re *and the Fourth Amendment*, 2003–2004 CATO SUP. CT. REV. 395, 427 (arguing that *Pringle* likely "translates into a new *per se* rule that permits the arrest of multiple suspects whenever police discover contraband in compact spaces").

126. Fitzpatrick v. City of Fort Wayne, 679 F. Supp. 2d 947, 948–49, 952 (N.D. Ind. 2009).

127. Callahan v. Unified Gov't of Wyandotte Cnty., 806 F.3d 1022, 1028 (10th Cir. 2015). Police raids, often in violation of the Fourth Amendment, are another example of collective punishment. *See, e.g.*, Commonwealth v. Turpin, 216 A.3d 1055, 1060, 1065 (Pa. 2019) (holding that "a search warrant for a multi-bedroom residence shared by [different roommates] permit[s] police to search the entire residence and all bedrooms" even if there is probable cause against only *one* of the occupants and even if that occupant does not have control over his roommates' bedrooms); Williams v. Kaufman Cnty., 352 F.3d 994, 999–1000 (5th Cir. 2003) (involving a strip-search of roughly 100 people during a nightclub raid based on a tip regarding a few drug dealers); United States v. Jaramillo, 25 F.3d 1146, 1147 (2d Cir. 1994).

128. 392 U.S. 1, 27 (1968).

129. *Id.* at 22.

without probable cause.[130] The officer may continue with a search if she reasonably suspects the person stopped is armed and dangerous.[131] The police officer is not required to provide Miranda warnings,[132] can use a limited amount of force,[133] and may seize any contraband in plain view[134] or "plain feel,"[135] as well as any contraband found during a protective patdown.[136] In traffic stops, the *Terry* requirement is minimal. It is enough that the police legally stopped the vehicle for a potential traffic violation.[137] The police can then order the vehicle occupants to step out and search for weapons,[138] even if there is no reason to believe that any of the occupants engaged in criminal activity.[139] The result is that "wholly innocent passengers in a taxi, bus, or private car" may *all* be subject to detention "simply because they have the misfortune to be seated in a car whose driver has committed" an illegal act.[140]

When multiple parties are involved, Terry stops become a form of group punishment. They allow the police to impose a cost on a large group of innocent individuals in the hope of finding the true offender. The Supreme Court recognized as much when it noted that "*Terry* accepts the risk that officers may stop *innocent* people."[141] Importantly, the Supreme Court treated the sanction as negligible, or to use the model's terminology, costless. Stops and frisks, the Court held, "amount to a mere 'minor inconvenience and petty indignity.'"[142] It also comes at little cost to the state ($e \approx 0$) "where the police . . . have no interest in prosecuting" those detained.[143] As this Section shows, sometimes, the constitutional right of individuals to be secured in their persons and effects is sacrificed on the altar of finding the culprit. In other cases, punishing the innocents is done in the name of deterrence or due to Othering and bigotry.[144] Regardless of

130. *See id.* at 30.
131. The stop must be brief and the search limited to the discovery of weapons. *See id.* at 26.
132. *Id.* at 6–7.
133. *Id.*
134. Michigan v. Long, 463 U.S. 1032, 1050 (1983).
135. Minnesota v. Dickerson, 508 U.S. 366, 369–70 (1993).
136. *Id.* at 373 (applying the rule to non-threatening contraband provided the "search stays within the bounds marked by *Terry*").
137. Arizona v. Johnson, 555 U.S. 323, 327 (2009).
138. *Long*, 463 U.S. at 1047–48; Maryland v. Wilson, 519 U.S. 408, 415 (1997).
139. *Johnson*, 555 U.S. at 327.
140. *Wilson*, 519 U.S. at 420–21 (Stevens, J., dissenting).
141. Illinois v. Wardlow, 528 U.S. 119, 126 (2000) (emphasis added).
142. Terry v. Ohio, 392 U.S. 1, 10–11 (1968) (quoting People v. Rivera, 201 N.E.2d 32, 36 (N.Y. 1964)).
143. *Id.* at 14.
144. *See, e.g.*, Floyd v. City of New York, 959 F. Supp. 2d 540, 562 (S.D.N.Y. 2013); *see also supra* note 26 and accompanying text.

the motivation, with a few exceptions, the decision to impose collective punishment is deliberate and consistent with our model's predictions.[145]

1. High Crime Areas

Terry stops have been used as a form of collective punishment in cases where the true offender is unknown but suspected to be included in a group. One example is defining the group based on location—being present in "high crime areas." Little more than the arbitrary condition is needed to conduct a Terry stop. The Supreme Court held that the police only need a "plus factor" to detain and search individuals in a high crime area.[146] These plus factors can be unusual conduct,[147] a furtive gesture,[148] or physical and temporal proximity to the location of the criminal activity.[149]

The unbearable ease with which a police officer can (*Terry*) stop a group of innocent individuals is demonstrated in *United States v. Broomfield*.[150] About thirty minutes after a store was robbed, a police officer stopped Broomfield, a Black male. The stated reason: Broomfield was staring straight ahead when he drove past the police car. Judge Posner found the explanation unpersuasive:

> Had Broomfield instead glanced around him, the officer would doubtless have testified that Broomfield seemed nervous or, the preferred term because of its vagueness, "furtive." Whether you stand still or move, drive above, below, or at the speed limit, you will be

145. One such exception is implicit biases against the punishment group, which as we show below, is often defined, even if unconsciously so, on the basis of racial or ethnic characteristics. *See, e.g.*, L. Song Richardson, *Arrest Efficiency and the Fourth Amendment*, 95 MINN. L. REV. 2035, 2045 (2011) (explaining how "stereotypes affect the evaluation of behaviors performed by blacks").

146. *Wardlow*, 528 U.S. at 124–26 (stating that an unprovoked furtive attempt in a high crime area satisfies the *Terry* requirement that a crime may be afoot); State v. Bobo, 524 N.E.2d 489, 491–92 (Ohio 1988) (allowing a stop and search based on the fact that the car's driver was stopped in a high crime area and observing that the driver was "popping up and then ducking down or leaning forward"). *But see* Commonwealth v. Warren, 58 N.E.3d 333, 342 (Mass. 2016) (noting the disproportional targeting of people of color and stating that "whenever a black male is the subject of an investigatory stop . . . . flight is not necessarily probative of a suspect's state of mind or consciousness of guilt").

147. *Terry*, 392 U.S. at 30.

148. Commonwealth v. Holley, 755 N.E.2d 811, 815 (Mass. App. Ct. 2001); Commonwealth v. Concepcion, 411 N.E.2d 477, 480 n.2 (Mass. App. Ct. 1980). One officer, for example, explained that "'furtive movement is a very broad concept,' and could include a person 'changing direction,' 'walking in a certain way,' . . . 'making a movement that is not regular,' . . . 'adjusting their hip or their belt,' 'moving in and out of a car too quickly,' '[t]urning a part of their body away from you,' [and] '[g]rabbing at a certain pocket or something at their waist.'" *Floyd*, 959 F. Supp. 2d at 561.

149. Commonwealth v. White, 689 N.E.2d 1350, 1354 (Mass. App. Ct. 1998); Commonwealth v. Gunther G., 695 N.E.2d 696, 698 (Mass. App. Ct. 1998).

150. 417 F.3d 654 (7th Cir. 2005).

> described by the police as acting suspiciously should they wish to stop or arrest you.[151]

As one scholar noted, "the clear message is that in 'high crime' . . . areas . . . the possibility of criminal activity is so substantial as to make *everyone* in the area subject to police inquiry."[152] That message was well received by the lower courts where the nature of the area is often the only explanation offered to support the stop.[153] In other words, when the police cannot identify the culprit, they can define the punishment group, *n*, based on what is truly nothing more than their presence in a certain locale. The size of the locale varies. In one case, the police argued that "the *entire* city" is a high crime area that may justify detainment and a dog sniff.[154] A locale may of course be a mere proxy for race or ethnicity—the subject of the next examples and an issue we investigate further below.

2. Racial and Ethnic Profiling

Profiling—a widely common activity—is another form of group punishment.[155] It allows the police to impose a sanction (e.g., in the form of a Terry stop) based on the fact that the individual belongs to a *group* of people who share an observable characteristic such as race, ethnicity, or national origin.[156] To use the model's terminology, profiling allows police officers, at a very low cost ($e \approx 0$) to narrow the population, *N*, to a smaller group of people, *n*, who meet certain criteria, while treating the sanction as costless.[157]

It may be surprising, but the U.S. Constitution allows the police to engage in racial and ethnic profiling.[158] In border areas, for example, an enforcement agent is allowed to target and stop for questioning car

151. *Id.* at 655.

152. Lewis R. Katz, Terry v. Ohio *at Thirty-Five: A Revisionist View*, 74 MISS. L.J. 423, 493 (2004) (emphasis added).

153. *Id.*

154. United States v. Harris, 347 F. Supp. 3d 1233, 1240 (S.D. Fla. 2018) (emphasis added).

155. People v. Hubbard, 530 N.W.2d 130, 133–34 (Mich. Ct. App. 1995) ("We recognize that many jurisdictions allow admission of drug profile evidence for limited purposes such as to explain why a defendant was stopped or to rebut exculpatory testimony by a defendant.").

156. Elizabeth O'Connor Tomlinson, *Cause of Action for Racial Profiling Under State Laws*, *in* 71 CAUSES OF ACTION 2D 757 (2022); *Racial Profiling: Definition*, ACLU, https://www.aclu.org/other/racial-profiling-definition?redirect=racial-profiling-definition [https://perma.cc/V5SK-DX9E] (last visited Apr. 6, 2023) (defining "criminal profiling" as "reliance on a group of characteristics [that the police] believe to be associated with crime")

157. *Hubbard*, 530 N.W.2d at 132–33 (defining profile as "a list[] of characteristics that in the opinion of law enforcement officers are typical of a person engaged in a specific illegal activity" (quoting United States v. McDonald, 933 F.2d 1519, 1521 (10th Cir. 1991))).

158. Kevin R. Johnson, *How Racial Profiling in America Became the Law of the Land*: United States v. Brignoni-Ponce *and* Whren v. United States *and the Need for Truly Rebellious Lawyering*, 98 GEO. L.J. 1005, 1006 (2010).

occupants based on their apparent Mexican ancestry, even if they did not violate any law. The leading case is *United States v. Brignoni-Ponce*.[159] In this case, roving patrol agents near San Clemente, California, pursued and stopped a car for questioning. They later testified that "their *only* reason for doing so was that its three occupants appeared to be of Mexican descent."[160] Upon learning that the two passengers were illegal aliens, they arrested all three.

At trial, the driver, Brignoni-Ponce—a U.S. citizen of Puerto Rican ancestry—was found guilty of knowingly transporting illegal immigrants. The U.S. Court of Appeals for the Ninth Circuit reversed. It held that there was nothing that could have given the rover agents a reason to suspect the car occupants.[161] "All that they knew was that Brignoni-Ponce and his companions appeared to be of Mexican descent and were in a sedan . . . ."[162] And that, the court held, was not enough. "The conduct does not become suspicious simply because the skins of the occupants are nonwhite."[163]

Relying on *Terry*, the Supreme Court held that "because of the importance of the governmental interest [in preventing illegal entry], the minimal intrusion of a brief stop [($s \approx 0$)],[164] and the absence of practical alternatives for policing the border," all the police need to detain someone is a reasonable suspicion.[165] It then reversed Brignoni-Ponce's conviction. Mexican appearance, the Court held, *is* a relevant factor, but it cannot be the *only* factor. However, combined with "[a]ny number of factors," Mexican appearance can justify a stop.[166] Such factors include the "proximity to the border," "the usual patterns of traffic," "previous experience with alien traffic," "information about recent illegal border crossings," "[t]he driver's behavior," and characteristics of the car (whether it appears to be heavily loaded, large enough to conceal aliens, or has a large number of passengers).[167]

159. 422 U.S. 873 (1975).

160. *Id.* at 874–75 (emphasis added).

161. United States v. Brignoni-Ponce, 499 F.2d 1109, 1109–10, 1112 (9th Cir. 1974), *aff'd*, 422 U.S. 873 (1975); Johnson, *supra* note 158 at 1012.

162. *Id.* at 1112.

163. *Id.* (quoting United States v. Mallides, 473 F.2d 859, 861 (9th Cir. 1973)).

164. *Brignoni-Ponce*, 422 U.S. at 880 (explaining that "[t]he intrusion is modest," as it usually lasts less than a minute and requires only visual inspection).

165. *Id.* at 881.

166. *Id.* at 884, 886–87.

167. *Id.* at 884–85. "[O]fficers on roving patrol may stop vehicles only if they are aware of specific articulable facts, together with rational inferences from those facts, that reasonably warrant suspicion that the vehicles contain aliens who may be illegally in the country." *Id.* at 884. The agent's discretion is in fact so wide, that an agent can detain a Mexican-looking driver simply for slowing down, not recognizing the officer, and for the raised position of a passenger's knees. United States v. Arvizu, 534 U.S. 266, 272 (2002).

Brignoni-Ponce won, but for many it was a pyrrhic victory. "Today, race dominates immigration enforcement, in no small part due to . . . *Brignoni-Ponce*."[168] A year after the decision, in *United States v. Martinez-Fuerte*,[169] the Supreme Court held that an even lower standard is required when an enforcement agent refers a car from a checkpoint to a secondary inspection area for questioning about immigration status. In such cases, the police do not even need a reasonable suspicion. Moreover, such referrals are legal "even if [they] are made largely on the basis of apparent Mexican ancestry."[170] The result, as the dissent noted, is that an enforcement agent can "target motorists of Mexican appearance," and they can do so "wholly on whim."[171]

The difference between the majority and the dissent in *Martinez-Fuerte* can be explained by our model. For the majority, the ethnic singling out on the basis of a "visual inspection" came at little to no cost (i.e., $e \approx 0$).[172] It also involved a negligible, or to use the term of the model, costless sanction. In the eyes of the majority, being singled out at a checkpoint for further inquiry involves "a brief detention" that does not "'stigmatiz[e]' those diverted" (i.e., $s \approx 0$).[173] This "modest" intrusion, the Court explained, "is sufficiently minimal that no particularized reason need exist,"[174] and it is justified by the strong interest in deterring illegal entry.[175] By contrast, the dissent thought that the sanction that "arbitrarily selected motorists" had to endure—"the delay and humiliation of detention and interrogation"—was costly.[176] It would also "inescapably discriminate against citizens of Mexican ancestry and Mexican aliens lawfully in this country for no other reason than that they unavoidably possess the same 'suspicious' physical and grooming characteristics of illegal Mexican aliens."[177]

Another factor that played a role in *Martinez-Fuerte* was effective deterrence. The majority noted that of the 7 million cars that passed through the checkpoint each year, about 17,000 vehicles harbored illegal aliens.[178] In the words of our model, the probability of finding a culprit in the punishment group was $p=0.0024$, implying that more than 99.9976% of

168. Johnson, *supra* note 158, at 1026.
169. 428 U.S. 543 (1976).
170. *Id.* at 563.
171. *Id.* at 572 (Brennan, J., dissenting).
172. *Id.* at 558 (majority opinion).
173. *Id.* at 558–60; *supra* note 164 and accompanying text.
174. *Martinez-Fuerte*, 428 U.S. at 563.
175. *Id.* at 557 (explaining that requiring reasonable suspicion would "eliminate any deterrent to the conduct of well-disguised smuggling operations").
176. *Id.* at 573 (Brennan, J., dissenting).
177. *Id.* at 572.
178. *See also* United States v. McFayden, 865 F.2d 1306, 1313 (D.C. Cir. 1989).

those sanctioned were innocent.[179] For the Court, this "rate of apprehensions" provided "a rather complete picture of the effectiveness of the . . . checkpoint."[180]

In *Whren v. United States*, the Supreme Court went a step further.[181] It held that the subjective intent of an officer initiating a stop is irrelevant. This is so even if the stop was clearly pretextual or motivated by bigotry or racism.[182] *Whren* involved plainclothes vice officers patrolling a high drug area in an unmarked police car. "Their suspicions were aroused when they passed a dark Pathfinder truck with temporary license plates and [two] youthful occupants waiting at a stop sign" for about twenty seconds.[183] Both occupants were Black men.[184] That was enough for the officers. A pursuit ensued. Once they stopped the car, the police found several types of illegal drugs and arrested both occupants.[185]

In their motion to suppress, the defendants argued that the stop was pretextual: that it was nothing more than an excuse to search for drugs without probable cause or even reasonable suspicion.[186] A police officer, they explained, "will almost invariably be able to catch any given motorist in a technical violation," and they can do so "based on decidedly impermissible factors, such as the race of the car's occupants."[187]

There was additional support to the defendants' claim that the stop was pretextual. Vice officers usually do not concern themselves with traffic violations. The Court admitted as much when it noted that the "District of Columbia police regulations . . . permit plainclothes officers in unmarked vehicles to enforce traffic laws 'only in the case of a violation that is so grave as to pose an *immediate threat* to the safety of others.'"[188] No such threat could have been shown in *Whren*.

The Supreme Court was not persuaded. In a unanimous vote, it held that the actual motive of the officers—the real reason for a stop—is irrelevant.[189] An ulterior motive for a stop, even if it is racially-based, is simply not enough to render a stop invalid. Thus, once enforcement agents find probable cause that a traffic violation—any violation—has occurred, they

179. *Martinez-Fuerte*, 428 U.S. at 554 (majority opinion).
180. *Id.*
181. 517 U.S. 806 (1996).
182. *Id.* at 813.
183. *Id.* at 808.
184. *Id.* at 810.
185. *Id.* at 808–09.
186. United States v. Whren, 53 F.3d 371, 373 (D.C. Cir. 1995), *aff'd*, 517 U.S. 806 (1996). The officers explained that they stopped the car because the driver was "not paying full time and attention to his driving" and was "obstructing traffic." *Id.*
187. *Whren*, 517 U.S. at 810.
188. *Id.* at 815 (quoting METROPOLITAN POLICE DEPARTMENT, WASHINGTON, D.C., GENERAL ORDER 303.1, pt. 1(A)(2)(a)(4) (1992)).
189. *Id.* at 812; *see also* Scott v. United States, 436 U.S. 128, 136 (1978).

may stop the car even if they do so because of the race or ethnicity of its occupants.[190] Relying on *Whren*, some courts held that the officers' motive is irrelevant, even where they admitted its pretextual nature. Others recognized that "in practice" this means that traffic stops will be used as pretext.[191]

The scope of racial profiling was tested in *Brown v. City of Oneonta*.[192] In *Brown*, a seventy-seven-year-old woman reported that a young Black male attacked her, and had cut himself with a knife during the struggle. A canine unit tracked the assailant to the local university campus where it lost his tracks. The police then obtained a list of *every* Black male student from the university and sought to locate and question each one of them.[193] When the endeavor failed to produce suspects, the police broadened their search. They "stopp[ed] and question[ed] non-white persons on the streets and inspect[ed] their hands for cuts."[194] More than 200 Black males were questioned in this manner.[195]

The students and all those interrogated filed a suit claiming that the police had violated their constitutional rights.[196] The court dismissed the plaintiffs' equal protection claim, reasoning that despite the disparate impact on the Black minority, there was no evidence of discriminatory intent.[197] The police, the court held, were simply trying to winnow down the group by focusing on Black males.[198]

190. United States v. Wellman, 185 F.3d 651, 655 (6th Cir. 1999) ("[E]ven if the officer making a traffic stop is motivated by a [pretextual] suspicion that the defendant fits into a 'drug courier profile,' the traffic stop is not unreasonable if probable cause for a traffic violation exists." (quoting United States v. Palomino, 100 F.3d 446, 449 (6th Cir. 1996))); United States v. Linkous, 285 F.3d 716, 719 (8th Cir. 2002) (holding that "[i]t is well established that a traffic violation—however minor—creates probable cause to stop the driver of a vehicle" and noting that "[t]his is true even if a valid traffic stop is a pretext for other investigation" (first alteration in original) (first quoting United States v. Barry, 98 F.3d 373, 376 (8th Cir.1996)) (next citing *Whren*, 517 U.S. at 806)); United States v. Escalante, 239 F.3d 678, 680–81 (5th Cir. 2001) ("[U]nder *Whren v. United States*, a traffic stop, even if pretextual, does not violate the Fourth Amendment if the officer making the stop has 'probable cause to believe that a traffic violation has occurred.'" (quoting *Whren*, 517 U.S. at 810)).

191. United States v. Woodrum, 208 F.3d 8, 10 (1st Cir. 2000) (Lynch, J., dissenting) ("[T]raffic stops, in practice, may be used as a pretext to investigate other crimes because courts will not usually inquire into the actual motives of the police.").

192. 221 F.3d 329 (2d Cir. 2000).

193. *Id.* at 334.

194. *Id.*

195. *Id.*

196. *Id.*

197. *Id.* at 338. The Equal Protection Clause prohibits intentional discrimination. *Id.*

198. *Id.* at 338–39. With the exception of a handful of plaintiffs—those who, according to the court, were subject to a seizure—the court did not find any Fourth Amendment violations either. *Id.* at 340.

3. Discriminatory Motive

In other cases, the discriminatory intent *is* evident. Enforcement agents may sanction a minority group because they believe that it is more likely that the culprit is a member of that group or because the group members are more likely to commit a crime. In other cases, the group sanctions may be motivated by bigotry and animus. These sanctions should all be analyzed *as if* they are costless. Not because they are. They are not. But rather because the bigoted agent, by ignoring the welfare of the target group, treats the sanctions as costless.

Courts have long recognized the ease with which Terry stops may be abused to discriminate against minority groups. In fact, *Terry* itself is a good example. In *Terry*, an officer in plain clothes suspected that two individuals he had never seen before were up to something, but "he was unable to say precisely what drew his eye to them."[199] According to his own admission, Terry and Chilton's gravamen was simply standing at the intersection of two streets in midday.[200] The only explanation the officer offered for taking an interest in the two was that they "didn't look right to [him]."[201] What the Court failed to mention was that Terry and Chilton were people of color despite the many indications that their race was the true reason for the stop.[202]

A recent disturbing example of the abuse of Terry stops is *Floyd v. City of New York*.[203] Between 2002 and 2012, over 4.4 million Terry stops were conducted in New York.[204] Statistical and anecdotal evidence showed that the NYPD's stop and frisk policies intentionally and expressly targeted "racially defined groups,"[205] many of whom "have done nothing to attract the unwanted attention."[206] The police's own records indicated "that *at least* 200,000 stops were made without reasonable suspicion."[207] Perhaps not

199. Terry v. Ohio, 392 U.S. 1, 5 (1968).

200. *Id.*

201. *Id.*; *see also* Katz, *supra* note 152, at 430–31 (discussing the stop in *Terry*).

202. Katz, *supra* note 152, at 430, 432 (explaining that there was nothing special about Terry and Chilton, their behavior, or their clothing that would set them apart from other pedestrians "unless it was their race"). The *Terry* Court itself acknowledged that the police may abuse their power to harass minority groups. This concern, the Court explained, "is particularly true in situations where the 'stop and frisk' of youths or minority group members is 'motivated by the officers' perceived need to maintain the power image of the beat officer, an aim sometimes accomplished by humiliating anyone who attempts to undermine police control of the streets.'" *Terry*, 392 U.S. at 14 n.11 (quoting LAWRENCE P. TIFFANY, DONALD M. MCINTYRE, JR. & DANIEL L. ROTENBERG, DETECTION OF CRIME: STOPPING AND QUESTIONING, SEARCH AND SEIZURE, ENCOURAGEMENT AND ENTRAPMENT 47–48 (1967)).

203. 959 F. Supp. 2d 540 (S.D.N.Y. 2013).

204. *Id.* at 558. Compared to the previous period, the number of stops increased by 700% while the crime rate dropped. *Id.* at 591–92.

205. *Id.* at 562, 588, 660, 663.

206. *Id.* at 557.

207. *Id.* at 559.

surprising given that police officers were encouraged to "target[ ] 'the right people,'" code for young Black and Hispanic men.[208] Such racial profiling, the court held, is illegal. The police should not—although the court found that they did—"subject all members of a racially defined group to heightened police enforcement because some members of that group are criminals."[209]

4. Checkpoints & Random Enforcement

Checkpoints are a form of random enforcement. They can be set at any time along selected geographic areas. Once set, all vehicles passing through the checkpoint must stop or slow down. Drivers showing signs of intoxication are then directed to a secondary location where the officers check registration and may conduct a sobriety test.

The legality of such checkpoints was at issue in *Michigan Department of State Police v. Sitz*.[210] During a period of seventy-five minutes, 126 drivers passed through the checkpoint—an average delay of a few seconds for each vehicle. The Court first determined that the delay at the checkpoint was a seizure. It then explained that the constitutionality of the checkpoint rests on a three-prong test. This test requires "balancing the state's interest in preventing accidents caused by drunk drivers, the effectiveness of the sobriety checkpoints in achieving that goal, and the level of intrusion on an individual's privacy caused by the checkpoints."[211] In essence, the Court determined that the enforcer must consider our three choice variables. The state interest in deterrence must be evaluated in light of the probability of apprehension, *p*, which is determined by the level of expenditure made by the enforcer, *e*, as well as the nature and size of the punishment group, and the type and severity of the sanction, *s*.

In applying the test, the Court found deterrence to be an important goal.[212] It then considered the type of sanction chosen. "[T]he *choice* among . . . reasonable alternatives," the Court explained, "remains with the governmental officials."[213] It also found that the severity of the sanction—the "intrusion" to drivers' privacy, "fear and surprise"—was "slight."[214] Finally, the majority found the sanction to be effective. The level of investment, *e*, in winnowing down the group of drivers, included setting a

208. *Id.* at 561.
209. *Id.*
210. 496 U.S. 444, 450–51 (1990).
211. *Id.* at 448–49 (quoting Sitz v. Dep't of State Police, 429 N.W.2d 180, 182 (Mich. Ct. App. 1988)).
212. *Id.* at 451–52.
213. *Id.* at 453–54 (emphasis added).
214. *Id.* at 451–52.

permanent checkpoint where *all* cars had to stop for a brief examination by uniformed police officers.[215] As a result, the ratio of offenders arrested (those driving under the influence) to innocents—that is, $p(e, N)$—was 1.6% (of the 126 that were stopped at the checkpoint, only two were arrested).[216] That ratio, the Court explained, was much higher compared to a ratio of 0.24% of aliens found to vehicles stopped in *Martinez-Fuerte*.[217]

In contrast to the permanent checkpoint in *Sitz*, the court found that random stops aimed at identifying unlicensed drivers and unsafe vehicles were illegal. Empirical data showed that few people operated vehicles without a license. By contrast, "the number of licensed drivers who will be stopped in order to find *one* unlicensed operator will be large."[218] In other words, the low investment in a random stop resulted in a low probability of apprehension and a severe sanction.[219]

5. Identifying the Culprit

Terry stops and searches involve cases where the police are concerned that a crime is afoot. In other cases, the police work begins after the crime has been committed. Courts and scholars draw a distinction between the identification phase (i.e., finding the suspect) and the ensuing investigation (i.e., the evidence-gathering phase). In the preliminary identification stage, enforcers have much flexibility in taking actions against large groups of innocent individuals in order to find the one culprit.[220] And they can do so without probable cause.

An example is *Davis v. Mississippi*, which involved a rape.[221] The only description the victim could give was that the assailant was Black.[222] The other lead was fingerprints found on the victim's window. Without a

215. *Id.* at 447.

216. *Id.* at 454–55 (noting that "experience in other States demonstrated that, on the whole, sobriety checkpoints resulted in drunken driving arrests of around 1 percent of all motorists stopped").

217. *Id.* at 455 (citing United States v. Martinez-Fuerte, 428 U.S. 543, 554 (1976)); *see also* United States v. McFayden, 865 F.2d 1306, 1313 (D.C. Cir. 1989) (explaining that the rate of 3% of (1) drivers violating the law seriously enough to warrant an arrest to (2) cars stopped, "reflect[s] a higher rate of apprehension than that found in *Martinez-Fuerte* and demonstrate the effectiveness of the roadblocks" (citing *Martinez-Fuerte*, 428 U.S. at 554)).

218. *Sitz*, 496 U.S. at 454 (emphasis added) (quoting Delaware v. Prouse, 440 U.S. 648, 659–60 (1979)).

219. *Id.* at 452–53 ("[T]he circumstances surrounding a checkpoint stop and search are far less intrusive than those attending a roving-patrol stop. Roving patrols often operate at night on seldom-traveled roads, and their approach may frighten motorists. At traffic checkpoints the motorist can see that other vehicles are being stopped, he can see visible signs of the officers' authority, and he is much less likely to be frightened or annoyed by the intrusion." (quoting *Martinez-Fuerte*, 428 U.S. at 558)).

220. WAYNE R. LAFAVE, 4 SEARCH AND SEIZURE: A TREATISE ON THE FOURTH AMENDMENT § 9.8(b) (6th ed. 2022).

221. 394 U.S. 721, 721 (1969).

222. *Id.* at 722.

warrant or probable cause, the police interrogated and fingerprinted a large group of approximately seventy Black youths.[223] One of them, the defendant, was a match.[224]

In echoing *Terry*, the Supreme Court held that detaining an entire group of people for the sole purpose of obtaining fingerprints that may identify the one offender may be consistent with the Fourth Amendment, provided a proper procedure is in place.[225] Such detention, the majority explained, imposes "a much less serious intrusion" (i.e., sanction) on members of the group compared to Terry stops and searches.[226] However, because no procedures were made, the Court reversed the conviction.[227] The two dissenting justices had no issue with the way the fingerprints were collected. One of them, Justice Stewart, thought that fingerprints are simply a form of evidence, which, like the color of a person's eye, can be obtained without any concern.[228]

A few years later, in a decision authored by Justice Stewart, the Supreme Court held that a large number of individuals can be coerced to produce voice samples in order to identify the culprit.[229] *United States v. Dionisio* involved grand jury witnesses. The grand jury convened to investigate potential gambling law violations, during which it came across a voice recording.[230] To identify the people on the recording, the grand jury compelled twenty people to provide voice exemplars that could be compared to the recorded message.[231] To that end, each was required to read a transcript of the recording and have their reading recorded. [232]

The respondent, Dionsio, refused to do so and was held in contempt by the lower court.[233] The U.S. Court of Appeals for the Seventh Circuit reversed. The Fourth Amendment, it held, "bans 'wholesale intrusions' upon personal security" because one of them may be the culprit.[234] Summoning a large number of individuals was simply unreasonable. The Supreme Court disagreed. It explained that unlike Terry stops and searches,

223. *Id.*
224. *Id.* at 723.
225. *Id.* at 728; Hayes v. Florida, 470 U.S. 811, 816–17 (1985) ("There is thus support in our cases for the view that the Fourth Amendment would permit seizures for the purpose of fingerprinting, if there is reasonable suspicion that the suspect has committed a criminal act, if there is a reasonable basis for believing that fingerprinting will establish or negate the suspect's connection with that crime, and if the procedure is carried out with dispatch.").
226. *Davis*, 394 U.S. at 727.
227. *Id.* at 728.
228. *Id.* at 730 (Stewart, J., dissenting).
229. United States v. Dionisio, 410 U.S. 1, 3, 18 (1973).
230. *Id.* at 2.
231. *Id.* at 3.
232. *Id.*
233. *Id.* at 3–4.
234. *In re* Dionisio, 442 F.2d 276, 281 (7th Cir. 1971), *rev'd*, 410 U.S. 1 (1973).

a subpoena is not abrupt and does not involve a social stigma—that is, it comes at a low cost.[235] The Court then explained that the large size of the punishment group was necessary "to identify one voice."[236]

C. Denmark's 2018 Ghetto Laws

Denmark's Ghetto Laws are another example where the punishment group is defined by locale, ethnicity, and race. The loaded term "Ghetto" was originally used to denote a part of the city where Jews were forced to live, and evokes dark memories of the Holocaust. But in 2010, the Danish legislature formally introduced the term as part of a reform titled "The Ghetto [B]ack to [S]ociety—Confronting [P]arallel [S]ocieties in Denmark."[237] The stated goal of the new policy was to integrate immigrant communities and reduce crime levels.[238] The chosen method was "social mixing" combined with collective punishment.[239] To that end, the Common Housing Act was amended to require the government to prepare a list of "Ghettos" that would be subject to high assimilation and enforcement efforts.[240] These include the reduction of public housing to populations that are not considered "Western" enough by way of evicting and displacing them, forced sales, real-estate repurposing, and demolitions.[241] Parents who receive social benefits must also enroll their kids in state daycares "with a maximum migrant intake of 30%."[242]

Following a 2018 amendment,[243] a Ghetto is now defined as a public housing neighborhood with a minimum of 1,000 residents that satisfies a

235. *Dionisio*, 410 U.S. at 10.

236. *Id.* at 12–13.

237. Application for Pleadings at 5, Tenants of Mjølnerparken v. Danish Ministry of Transport and Housing, BS-27824/2020-0LR (May 27, 2020) [hereinafter Mjølnerparken Pleadings], https://www.justiceinitiative.org/uploads/77493a34-1351-424e-8cba-5dbcb1e24304/eng-tenants-v-danish-ministry-of-transport-and-housing-pleadings-english.pdf [https://perma.cc/XG66-43YW]; *see also* Anika Seemann, *The Danish 'Ghetto Initiatives' and the Changing Nature of Social Citizenship, 2004–2018*, 41 CRITICAL SOC. POL'Y 586, 596 (2021).

238. Seemann, *supra* note 237, at 587; Mjølnerparken Pleadings, *supra* note 237, at 5–6.

239. Seemann, *supra* note 237, at 594.

240. *Id.* at 596–97; Mjølnerparken Pleadings, *supra* note 237, at 5.

241. Mjølnerparken Pleadings, *supra* note 237, at 6, 8; EURO-MEDITERRANEAN HUM. RTS. MONITOR, DISGUISED RACISM: DENMARK'S DISCRIMINATORY, PUNITIVE AND COUNTERPRODUCTIVE GHETTO PACKAGE 5 (2022) [hereinafter DISGUISED RACISM], https://euromedmonitor.org/uploads/reports/GhettoPackageEN.pdf [https://perma.cc/3BC7-BYR3]; *infra* note 245 and accompanying text.

242. DISGUISED RACISM, *supra* note 241, at 5; *infra* note 248.

243. The term Ghetto was amended twice, first in 2013 and then in 2018 following a new policy proposal titled "One Denmark Without Parallel Societies: No Ghettos in 2030." GOVERNMENT OF DENMARK, ÉT DANMARK UDEN PARALLELSAMFUND: INGEN GHETTOER I 2030 [ONE DENMARK WITHOUT PARALLEL SOCIETIES: NO GHETTOS IN 2030] 6–7 (Mar. 2018) [hereinafter NO GHETTOS IN 2030], https://www.regeringen.dk/media/4937/publikation_%C3%A9t-danmark-uden-parallelsamfund.pdf [https://perma.cc/GLY6-GKGD] (explaining that by 2030 "[t]he Ghettos must be eradicated" and that "new ones do not emerge"); Mjølnerparken Pleadings, *supra* note 237, at 5–7.

number of criteria. Chief among them is that "the share of immigrants and descendants from non-Western countries exceeds 50%."[244] The definition of "non-Western"[245] not only leads to discrimination on the basis of nationality, but also on the basis of race, ethnic origin, and religious orientation.[246] It targets "non-white, non-European ethnic populations" in what are "largely Muslim neighborhoods."[247]

Importantly, the undesirable "Ghetto" status provides the government with draconian enforcement measures.[248] One of these measures is to "allow[] for collective punishment—by eviction—of entire families if one of their members commits a criminal act."[249] Another measure allows the local police to define geographical zones in which punishments for

244. Lov nr. 1322 af 27.11.2018 om ændring af lov om almene boliger m.v., lov om leje af almene boliger og lov om leje [Act No. 1322 of 27 November 2018 amending the Public Housing Act, Public Housing Rental Act and Rent Act] § 61a (commonly known as "L38"). In addition, to be a Ghetto, the area must satisfy at least two of the following four criteria: (1) The share of residents above the age of 18 with criminal convictions exceeds 270 per 10,000 residents; (2) the share of unemployed or uneducated individuals between eighteen and sixty-four years of age exceeds 40%; (3) the share of thirty-to-fifty-nine-year-old residents with only primary education exceeds 60%; or (4) the average gross income for taxpayers between the ages of fifteen and sixty-four in the area is less than 55% of the same group in the region. Areas that only satisfy two of the four criteria above are called "Vulnerable Housing Estate." An area that is designated a Ghetto for four years earns the ignominious title "Tough Ghetto." *Id.*; *see also* Mjølnerparken Pleadings, *supra* note 237, at 13.

245. Western countries include the European Union and thirteen additional countries (Andorra, Australia, Canada, Iceland, Liechtenstein, Monaco, New Zealand, Norway, San Marino, Switzerland, United Kingdom, United States, and the Vatican State). All other countries are defined as non-Western. Mjølnerparken Pleadings, *supra* note 237, at 6, 13.

246. Comm. on Econ., Soc. & Cultural Rts., Concluding Observations on Sixth Periodic Rep. of Den., U.N. Docs. E/C.12/DNK/CO/6, at 7–8 (2019) (recommending removing the "non-Western" criterion and noting that "[t]he Committee is . . . concerned that [the Common Housing Act] is discriminatory as it introduces the categorization of areas as 'ghettos,' defined by the proportion of residents from 'non-Western' countries" and "[t]hus it not only results in discrimination based on ethnic origin and nationality, but also further marginalizes those residents").

247. Press Release, U.N. Hum. Rts. Off. of the High Comm'r, UN Human Rights Experts Urge Denmark to Halt Contentious Sale of "Ghetto" Buildings (Oct. 23, 2020) [hereinafter U.N. Human Rights Office], https://www.ohchr.org/en/press-releases/2020/10/un-human-rights-experts-urge-denmark-halt-contentious-sale-ghetto-buildings?LangID=E&NewsID=26414 [https://perma.cc/6ERG-BYM5]; *see also* NO GHETTOS IN 2030, *supra* note 243, at 14 (explaining that a deciding factor in the definition of a Ghetto is "ethnic origin").

248. For example, once an area has been declared a "Tough Ghetto," residents may be evicted and the buildings demolished to reduce public housing properties to 40%. Children are required to attend daycares emphasizing Danish values or risk losing child benefits. Lov nr. 1529 af 18.12.2018 om ændring af dagtilbudsloven og lov om en børne- og ungeydelse (Obligatorisk læringstilbud til 1-årige børn i udsatte boligområder) [Act No. 1529 of 18 December 2018 amending the Daycare Act and the Child and Youth Benefits Act (Mandatory daycare offer for 1-year-old children in vulnerable housing estates)] § 44b; *see also* Feargus O'Sullivan, *How Denmark's 'Ghetto List' Is Ripping Apart Migrant Communities*, GUARDIAN (Mar. 11, 2020, 10:00 AM), https://amp.theguardian.com/world/2020/mar/11/how-denmarks-ghetto-list-is-ripping-apart-migrant-communities [https://perma.cc/XSB2-JH9E].

249. O'Sullivan, *supra* note 248; *see also* DISGUISED RACISM, *supra* note 241, at 6.

particular crimes can be *doubled* and fines may be converted to imprisonment.[250]

It is thus not a surprise that some found "Denmark's Ghetto laws [to be] a basic exercise of scapegoating."[251] However, as despicable and offensive as they may be to most people's notions of morality, they may nevertheless be consistent with optimal deterrence policy. The reduction in punishment group, n, was accompanied by an increase in the sanction, s.

D. The Frankpledge and Riot Laws

We now return to the riot example. As Section III.C explained, to achieve optimal deterrence, the enforcer can impose a sanction of $s=h=500$ on each member of the punishment group ($n=N=200$ individuals in the example), but deterrence can also be achieved by imposing a higher sanction on a subset of that group—for example, by collecting \$2,000 ($200\times500/50$) from each of fifty randomly chosen individuals. Both alternatives require, however, that members of the punishment group are wealthy enough to pay the fine. In the first case, each member must be able to pay \$500. In the second, each of the chosen fifty must be able to pay \$2,000. When members of the punishment group are not wealthy enough (i.e., when $\bar{s}<h$), deterrence will be suboptimal. For example, if each member of the punishment group can only pay \$400, sanctioning all members will still result in underdeterrence ($400<500$). These insights may explain the demise of both the frankpledge system and the English and American riot laws modeled after it.[252]

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250. Lov nr. 1543 af 18.12.2018 om ændring af straffeloven og lov om politiets virksomhed (Skærpetstraf-zone og skærpet straf for ledende medarbejderes pligtforsømmelse i offentlig tjeneste eller hverv) [Act No. 1543 of 18 December 2018 amending the Criminal Code and the Police Activity Act (Increased penalty zone and increased penalty for dereliction of duty by senior employees performing a public function or duty)]; DISGUISED RACISM, *supra* note 241, at 6; OPEN SOC'Y JUST. INITIATIVE, REQUEST TO THE COMMITTEE ON THE ELIMINATION OF RACIAL DISCRIMINATION FOR THE EARLY WARNING AND URGENT ACTION PROCEDURE IN RESPECT OF A PROPOSED EXPANSION OF DENMARK'S "GHETTO PACKAGE" (2021), https://www.justiceinitiative.org/uploads/459e0403-b0ca-47f1-95b1-33d416895dc6/ecd-danish-ghetto-laws-submission-CERD-20210715.pdf [https://perma.cc/WW9F-BDJV]; U.N. Human Rights Office, *supra* note 247 ("Under the Ghetto [Laws the] police can crack down selectively on 'ghetto' . . . neighborhoods, and people convicted of crimes there generally face sentences twice as long as those individuals committing the same crimes elsewhere.").

251. Press Release, Euro-Mediterranean Hum. Rts. Monitor, Denmark: Ghetto Package Is Discriminatory, Unnecessarily Punitive and Counterproductive (Feb. 7, 2022), https://euromedmonitor.org/en/article/4895/Denmark:-Ghetto-Package-is-discriminatory,-unnecessarily-punitive-and-counterproductive [https://perma.cc/4WA7-UGKC].

252. Abraham v. City of Woburn, 408 N.E.2d 664, 667 (Mass. App. Ct. 1980), *rev'd*, 421 N.E.2d 1206 (Mass. 1981) ("Statutes imposing civil liability on municipalities for damage due to riots have descended from the Statute of Winchester of 1285, 13 Edw. 1, st. 2, c. 2, 3 re-enacted 28 Edw. 3, c. 11 (1354) and 27 Eliz. 1, c. 13, [§] 2 (1585) [(Eng.)]; and from the Riot Act of 1714, 1 Geo. 1, st. 2, c. 5, [§§] 1–7 [(Eng.)]."); Susan S. Kuo, *Bringing in the State: Toward a Constitutional Duty to Protect from Mob Violence*, 79 IND. L.J. 177, 184–86 (2004); Levinson, *supra* note 49, at 360.

The frankpledge was a low-cost collective enforcement system. It was invented to fight crime at a time where prisons, police, and other means to identify offenders were rarely, if at all, available (i.e., e=0). The idea, according to some scholars, was that imposing a collective fine on a group of individuals would deter offenders by incentivizing group members to *ex-ante* monitor each other and *ex-post* identify the culprits.[253]

The system worked by sorting individuals into small groups called tithings. The number of individuals in the tithing varied. In some cases, it was ten, in others hundreds, and sometimes it was even an entire locality.[254] When an unidentified member of the group committed a crime, a collective punishment in the form of a fine was imposed on each member of the group.[255] The tithing, arbitrarily selected, was thus the punishment group, n. The system, however, suffered from a number of limitations. As explained below, in some cases the fine was too high. In others it was too low. Both cases resulted in suboptimal deterrence.

According to some descriptions, each member of the punishment group deposited a certain amount which was forfeited if the tithing failed to turn in the offender.[256] This form of frankpledge could deter only the commission of low-value crimes—those where the deposit was higher than the benefit to the offender. Ability to pay was a major issue (many were poor), and so the deposit (or obligation to pay) could not be set at a meaningful level.

Consistent with our model, one solution would have been to target only a few wealthy individuals. In fact, the frankpledge system did so by nominating one or two members of the group as "chief pledges."[257] These were men who had means and stature in the community. When a crime was committed by an unidentified member of the tithing, the chief pledges had to pay when others could not.[258] Their expected sanction was thus much higher and so was the incentive to use their influence to identify the offender. There is also evidence that, at least in some cases, the imposition of the sanction was done at random. In these frankpledge systems, although

253. *See* Dillbary, *supra* note 40, at 444–49 (reviewing and criticizing this view); *infra* note 261 and accompanying text.

254. SIR FREDERICK POLLOCK & FREDERIC WILLIAM MAITLAND, THE HISTORY OF ENGLISH LAW: BEFORE THE TIME OF EDWARD I 568–69 (photo reprt. 1923) (2d ed. 1898) ("[T]he 'tithing' meant different things in different parts of the country.").

255. WILLIAM ALFRED MORRIS, THE FRANKPLEDGE SYSTEM 1–2, 90, 108 (1910).

256. Levmore, *supra* note 49, at 1562 (explaining that members of the tithing "forfeited their bonds or deposits when one of their number escaped arrest for a crime"); Levinson, *supra* note 49, at 358, 379.

257. POLLOCK & MAITLAND, *supra* note 254, at 570.

258. D. A. Crowley, *The Later History of Frankpledge*, *in* 48 BULL. INST. HIST. RSCH. 1, 4 (1975); POLLOCK & MAITLAND, *supra* note 254, at 571 (reporting that chief pledges often could pay their lord to remove "a certain man, presumably a bad subject," from the tithing); MORRIS, *supra* note 255, at 2, 4, 109.

the sanction was nominally imposed on a large group, the sanction could have been collected from any randomly chosen (wealthy) member of the group.[259]

In other cases, the fine was too low. This occurred when, rather than imposing a predetermined fine on each individual, the fine was imposed on the entire group. Consequently, as the number of group members increased, the actual amount each had to pay was decreased. Thus, when the punishment group comprised a large number of individuals, the result was a suboptimal level of deterrence. This was the case when the tithing was defined as inhabitants of the "hundred"—a sub-unit of a county or a shire[260]—that is, when *n* was large:

> To bring home to each locality a realizing sense of its responsibility, therefore, [in 1285] Edward I enacted a new law making the people of each hundred and franchise responsible for robberies and damages arising through their failure to produce the offenders. The half-mark usually paid by the tithing for the escape of an offending member in the time of Henry II [i.e., the 1100s],—so heavy a burden that in some instances the sheriff seems to have been compelled to defer its collection for a year or even longer,—had now come to represent a far slighter value, the payment of which was *inadequate to spur the community to capture a fugitive neighbor with whom it was often in sympathy*.[261]

The frankpledge disappeared, but it gave birth to other collective punishment regimes. One example was the English Riot Act of 1714.[262] The act, some argue, was born out of a necessity. "[M]any rebellious riots and tumults" spread in the kingdom, while "the punishments" were "not adequate to [address the] heinous offen[s]es."[263] The act criminalized participation in a riot. It also allowed individuals who incurred property damage from rioters to recover from inhabitants of the "hundred" with funds collected by raising a general tax.[264]

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259. POLLOCK & MAITLAND, *supra* note 254, at 617 (explaining that "[t]he person who has been injured picks out two or three wealthy inhabitants of the district, sues them for the whole sum and recovers it from them" and that with no right of contribution or indemnification, "the burden lie[d] where it originally [fell]"); Russell Glazer, Comment, *The Sherman Amendment: Congressional Rejection of Communal Liability for Civil Rights Violations*, 39 UCLA L. REV. 1371, 1380 (1992).

260. Kuo, *supra* note 252, at 185.

261. MORRIS, *supra* note 255, at 152 (emphasis added) (footnotes omitted).

262. Riot Act 1714, 1 Geo. 1 c. 5 (Eng.).

263. *Id.* § 1. The Act was replaced by the English Riot (Damages) Act of 1886, which kept the collective sanction mechanism. Riot (Damages) Act 1886, 49 & 50 Vict. c. 38 (Eng.); Glazer, *supra* note 259, at 1381.

264. Unlike the frankpledge system, the sanction was imposed even if the true offender was apprehended and punished. Glazer, *supra* note 259, at 1381.

Many U.S. states followed the English model. By 1936, at least twenty-four states enacted statutes that allowed the victims of property damage and, in some cases, personal injury, to recover from cities and counties.[265] Although many of these statutes have since been abolished, some, like Maryland's, remain as relics.[266] The reason—as the model theorizes and the Court of Appeals of Maryland explained[267]—is deterrence. It was enacted "on the assumption . . . that it would deter rioters by spreading the tax burden upon the entire community."[268]

IV. CONCLUSION

Modern concepts of criminal justice, and more broadly the assignment of liability for harmful behavior, center on the principle of individual responsibility, or punishment of the truly guilty. The idea of collective responsibility, by contrast, is usually associated with a primitive past. At that time, social order was maintained by threats of retaliation by competing kinship groups, and vengeance rather than justice was the governing ethic. Yet examples of collective punishment remain in modern law enforcement, suggesting that there is a functional aspect to the strategy.

With this idea in mind, the analysis in this Article draws on the standard economic theory of crime and punishment to explore the usefulness of group punishment as a law enforcement tool. Our purpose is twofold. The first is to gain an understanding of the conditions under which this practice potentially enhances the pursuit of welfare maximization (when deterrence is the enforcer's primary goal) in a world where the detection of lawbreakers is imperfect. Existing models essentially assume away collective punishment. By contrast, our approach showed that the imposition of liability on multiple innocent individuals is inherent to the way that law enforcement is actually conducted in the presence of uncertainty.

The results of the analysis showed that group punishment is often part of an effective enforcement policy. This is especially so when punishment is not costly to impose or where such costs are ignored. This is true because when the identity of the true offender is unknown, punishing a group of

265. Kuo, *supra* note 252, at 192, 194–95. For a failed attempt to pass a federal statute that would impose a collective sanction on localities and require them to compensate riot victims, see Glazer, *supra* note 259.

266. MD. CODE ANN., PUB. SAFETY § 14-1001(b) (West 2003) ("[I]f a structure or personal property is stolen, damaged, or destroyed in a riot, the injured party may recover actual damages sustained in a civil action against the county or municipal corporation of the State in which the riot occurred.").

267. City of Baltimore v. Blibaum, 374 A.2d 1152, 1154–55 (Md. 1977).

268. *Id.* The idea of spreading costs across the community shows that insurance is a form of collective responsibility, which is especially attractive for unavoidable harms. As Part III demonstrated, these policies come with many concerns.

individuals that contains the true offender with a high probability promotes deterrence while saving on detection costs. The same result can be achieved by punishing a randomly chosen suspect with a fine that is scaled up by the size of the population that is known to contain the true offender. Although these extreme policies are highly objectionable to modern sensibilities, they follow logically from a strict economic approach aimed at achieving optimal deterrence.

The prescriptions are less extreme when punishment is costly—whether due to detention costs or aversion to wrongful punishment—but some amount of group punishment nevertheless remains part of an optimal deterrence policy. This is true because reducing the size of the "punishment group" to one necessarily mitigates deterrence, holding all other factors constant, because the true offender faces punishment with a decreasing probability. This can be offset by raising the sanction, but the ability of offenders to pay fines, or the maximum time they can serve in prison, is necessarily limited. That leaves investing more resources in detection, or raising the size of the punishment group, as the only tools for achieving greater deterrence. And since both are costly, the conscious choice to punish a single individual will not generally be optimal from a strict welfare perspective, though it may be the morally preferred one.

Which brings us to the second goal of this Article. Using our model, we are able to uncover different forms of collective sanctions and analyze their welfare effects. Our review of the pervasive use of group punishment in practice suggests that collective sanctions are imposed more commonly than policy makers might care to acknowledge. Moreover, the analysis reveals that enforcers often discount the cost of the sanction imposed on the punishment group. In other cases, they treat a costly sanction as costless. Both cases result in loss of welfare and freedoms. By unearthing these cases we are able to identify cases in which enforcers are more likely to abuse their power and thereby lay the ground for change.