The Law and Economics of Fluctuating Criminal Tendencies and Incapacitation

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ABSTRACT

Economic analyses of criminal law are frequently and heavily criticized for being unable to explain many criminal law rules and doctrines people find intuitively just. Existing economic models cannot properly explain, for instance, why criminal law distinguishes between (1) repeat offenders and first-time offenders, (2) murder and voluntary manslaughter, and (3) remorseful and non-remorseful offenders.

This Article proposes a richer economic theory of crime that captures the rationales behind these practices and potentially behind many other important criminal law principles and doctrines. Unlike an overwhelming majority of previous economic analyses, my theory accounts not only for the deterrent effect of criminal punishment, but also for its incapacitative effect. Moreover, and perhaps more importantly, it acknowledges the fact that people have fluctuating, rather than constant, criminal tendencies. That is, it recognizes that some people who ordinarily would not consider committing a wrongful act can, in rare circumstances, lapse into committing a crime. Surprisingly, these two simple but critical concepts have never to my knowledge been jointly considered in an economic analysis of crime,

even though their inclusion appears to be an obvious extension of the standard crime and deterrence model formalized almost half a century ago by Gary Becker.

The threat of imprisonment deters crime, but even when deterrence fails and a crime is committed, imprisonment benefits society by preventing the criminal from committing further wrongs outside prison for the duration of the sentence. The more dangerous the criminal, the stronger the rationale for imprisonment because these incapacitive benefits exist only if the offender would commit more crimes if left at large. Since people have fluctuating criminal tendencies, however, the mere fact that a person committed a crime reveals imperfect information regarding his likelihood of recidivating. As such, the offender's criminal history and the circumstances surrounding the crime reveal important pieces of information that can be used to update our beliefs concerning the offender's expected dangerousness—that is, to distinguish those who have made an uncharacteristic mistake from the dangerous and reckless criminals.

Capturing the interaction between the incapacitation function of imprisonment and potential offenders' fluctuating criminal tendencies allows the model to supply specific, consequentialist justifications for repeat offender laws, voluntary manslaughter laws, and the treatment of remorse in criminal law. Going forward, this more nuanced approach will provide a clearer lens through which to view other pervasive elements of criminal law, such as the mens rea requirement, and to revisit the normative prescriptions of the previous generation of economic analyses.

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INTRODUCTION

   Law and economics ("L&E") has become one of the dominant approaches to analyzing legal subjects,[1] including criminal law,[2] but has also been one of the most controversial—especially in criminal law.[3] Paralleling and sometimes intersecting the ongoing scholarly

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   1. See Francesco Parisi, *Positive, Normative and Functional Schools in Law and Economics*, 18 EUR. J.L. & ECON. 259 (2004), who states:

>   In many respects, the impact of law and economics has exceeded its planned ambitions. One effect of the incorporation of economics into the study of law was to irreversibly transform traditional legal methodology. Legal rules began to be studied as a working system—a clear change from the Langdellian tradition, which had relied almost exclusively on the self-contained framework of case analysis and classification, viewing law as little more than a filing system. Economics provided the analytical rigor necessary for the study of the vast body of legal rules present in a modern legal system. This intellectual revolution came at an appropriate time, when legal academia was actively searching for a tool that permitted critical appraisal of the law, rather than merely strengthening the dogmatic consistencies of the system.

Id. at 261; *see also* Joni Hersch & W. Kip Viscusi, *Law and Economics as a Pillar of Legal Education* 1 (Vanderbilt Univ. Law Sch., L&E Working Paper No. 11-35, 2011), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1907760 (discussing "the role of economists in the faculty at major law schools, the influence of law and economics on legal scholarship, and the substantive areas of economics that intersect with legal issues"); Ben Depoorter & Jef Demot, *The Cross-Atlantic Law and Economics Divide: A Dissent*, 2011 U. ILL. L. REV. 1593, 1594–97 (2011) (discussing the success of L&E as a discipline and comparing its use in law schools in the United States versus Europe).

   2. The L&E approach has been applied to study crime and criminal law by lawyers as well as economists, and this line of research continues to attract the attention of numerous scholars. *See, e.g.*, Nuno Garoupa, *The Theory of Optimal Law Enforcement*, 11 J. ECON. SURVEYS 267, 291–95 (1997) [hereinafter Garoupa, *Optimal Law Enforcement*] (citing references); A. Mitchell Polinsky & Steven Shavell, *The Economic Theory of Public Enforcement of Law*, 38 J. ECON. LITERATURE 45, 73–76 (2000) [hereinafter Polinsky & Shavell, *Economic Theory of Law Enforcement*] (same); A. Mitchell Polinsky & Steven Shavell, *The Theory of Public Enforcement of Law, in* 1 HANDBOOK OF LAW AND ECONOMICS 450–54 (A. Mitchell Polinsky & Steven Shavell eds., 2007) [hereinafter Polinsky & Shavell, *Public Enforcement of Law*] (same); CRIMINAL LAW AND ECONOMICS 432–36 (Nuno Garoupa ed., 2009) (same).

   3. *See, e.g.*, Nuno Garoupa*, Behavioral Economic Analysis of Crime: A Critical Review*, 15 EUR. J.L. & ECON 5, 5 (2003) ("Within the law and economics controversy, the economic approach to crime has been one of the most challenged subjects. The skepticism towards economic research on crime and criminal law has been widely expressed by criminologists

exchange over consequentialist and retributive theories of criminal punishment,[4] there has long been heated debate over the usefulness[5]—and even legitimacy[6]—of economic analysis of criminal law.

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and sociologists.") (footnote omitted); Jules L. Coleman, *Crimes and Transactions*, 88 CAL. L. REV. 921, 926 (2000) ("I am denying simply that the economist of law can give anything resembling a plausible explanation of our criminal law."); Paul H. Robinson & John M. Darley, *Does Criminal Law Deter? A Behavioral Science Investigation*, 24 OXFORD J. LEG. STUDIES 173 (2004) [hereinafter Robinson & Darley, *Does Criminal Law Deter?*] (expressing skepticism over the deterrent effect of criminal law); Paul H. Robinson & John M. Darley, *The Role of Deterrence in the Formulation of Criminal Law Rules: At Its Worst When Doing Its Best*, 91 GEO. L.J. 949, 950–53 (2003) [hereinafter Robinson & Darley, *Role of Deterrence*] (questioning the deterrent effect of specific rules in criminal justice systems, potential offenders' knowledge of legal rules, and potential offenders' ability to use their knowledge of legal rules to guide their decisions). For an additional view, see William L. Barnes, Jr., *Revenge on Utilitarianism: Renouncing a Comprehensive Economic Theory of Crime and Punishment*, 74 IND. L.J. 627 (1999), who debates the appropriateness of assumptions used in L&E analyses of criminal law:

> I will then examine some additional assumptions made by law and economics scholars: that behavior can be best explained by assuming that people weigh the costs and benefits of any action and choose the action that provides the greatest utility (the "rational actor" assumption); and that an economic analysis provides a complete explanation of any field of law (the "universality" assumption). I will show that these assumptions are particularly ill-suited to an analysis of criminal law, and that they, like the deterrence assumption, detract from the usefulness of the economic theory.

Id. at 628.

4. Retributivists frequently point out that consequentialism does not provide a principled account for why innocent people should not be punished. *See, e.g.*, Russell L. Cristopher, *Deterring Retributivism: The Injustice of "Just" Punishment*, 96 NW. U. L. REV. 843, 848–49 (2002) (summarizing retributivist criticisms directed at consequentialist theories of punishment, and "seek[ing] to turn back retributivism's principal criticisms of the consequentialist theory onto itself"). The failure by consequentialism to justify adherence to this pervasive criminal law principle was used by retributivists to question the normative appeal of utilitarian theories. *See, e.g.*, Dan Markel, *Retributive Justice and the Demands of Democratic Citizenship*, 1 VA. J. CRIM. L. 1, 43 n.111 (2012) (criticizing utilitarian welfarism). As briefly discussed in this Article, a similar method was used by L&E critics to question the normative appeal of economic analyses of criminal law.

5. *See, e.g.*, Barnes, *supra* note 3, at 627–28 (discussing "the limits of the economic model as a useful tool for enhancing our understanding of the criminal law"); Claire Finkelstein, *The Inefficiency of Mens Rea*, 88 CAL. L. REV. 895, 896 (2000) (noting that there

Pioneers of L&E, including Richard Posner, Mitchell Polinsky, and Steven Shavell, rigorously applied the L&E methodology to assess the desirability of various criminal laws and procedures.[7] On the other hand, prominent legal scholars such as Jules Coleman and Claire Finkelstein have expressed enormous skepticism toward the L&E approach.[8] Scholars in the latter camp focused on the inability of the L&E approach to provide explanations for a number of criminal law doctrines with popular and intuitive appeal[9] and concluded on that basis that L&E is ill-suited for analyzing criminal law.[10]

No single article is likely to resolve the larger philosophical differences separating the two camps, but in this Article I will attempt to demonstrate that this core criticism, at least, is unwarranted. To do so, I develop a richer L&E theory[11] that is capable of explaining the

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are "fundamental features of economic analysis that make it ill-suited to explain the existence of the criminal law's mens rea requirement").

6. *See, e.g.*, Coleman, *supra* note 3, at 927–30 (arguing that "the economic analyst's conceptualization of [criminal law] is fundamentally flawed"); Finkelstein, *supra* note 5, at 896 (criticizing economic analysis of criminal law).

7. *See* PIONEERS OF LAW AND ECONOMICS (Lloyd R. Cohen & Joshua D. Wright eds., 2011) (reviewing the academic contributions of pioneers of L&E, including Posner, Polinsky and Shavell).

8. *See supra* notes 3 and 5.

9. *See, e.g.*, Finkelstein, *supra* note 5, at 896 (arguing that economics is incapable of explaining "the existence of the criminal law's mens rea requirement"); *see also* Dan M. Kahan & Martha C. Nussbaum, *Two Conceptions of Emotion in Criminal Law*, 96 COLUM. L. REV. 269, 304–05 (1996) (discussing the limits of the "narrow consequentialist[]" approach, used frequently in normative economic analyses, in providing an explanation for the treatment of voluntary manslaughter in criminal law).

10. See, for example, Finkelstein, *supra* note 5, who states:

If I am correct, both about the core of mens rea and about the inability of economic analysis to explain it, the prospect of an economic analysis of the notion of crime seems dim. For if a knowledge requirement cannot be explained in economic terms, and if knowledge is as pervasive a requirement as I believe it to be, then economic analysis would be unable to explain the basic structure of criminal wrongs.

Id. at 898; *see also, e.g.*, Barnes, *supra* note 3, at 627 ("Since Gary Becker's seminal article, various scholars have either endeavored to resolve the economic model's inherent inconsistencies or have *rejected the model entirely*" (emphasis added) (footnotes omitted)).

11. Developing a richer L&E theory necessitates the elimination of simplifying assumptions in prior L&E analyses. It should be noted, however, that using simplifying as-

social benefits of numerous pervasive criminal law rules and doctrines. Specifically, I construct an economic model of criminal law that incorporates two simple facts: (1) one's tendency to commit a crime or crimes fluctuates over time,[12] and (2) imprisonment reduces crime through its incapacitation effect.[13] I illustrate that the interaction between these two simple facts is so crucial that L&E models that ignore one or both are incapable of capturing the usefulness of important phenomena in criminal law. As such, it is the exclusion of these factors, and not any inherent unsuitability of the approach, that is responsible for some of the criticized failures of economic analyses of criminal law.

Surprisingly, these two facts have never to my knowledge been jointly accounted for in existing normative L&E analyses of criminal law[14] since its inception by Gary Becker in 1968.[15] In fact, an over-

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sumptions may provide many advantages, including allowing tractability by isolating various issues. In fact, the success of the L&E approach is due, at least in part, to its ability to formulate discrete hypotheses by making harmless and simplified assumptions.

12. Professor Robert Cooter, to the best of my knowledge, was the first to formalize a similar point in the L&E literature. *See* Robert D. Cooter, *Lapses, Conflict, and Akrasia in Torts and Crimes: Towards an Economic Theory of the Will*, 11 INT'L REV. L. & ECON. 149, 149–51 (1991) (constructing an L&E model where people occasionally *lapse* and commit crime); *see also* Eric A. Posner, *Law and the Emotions*, 89 GEO. L.J. 1977, 1977–79 (2001) (building a framework which assumes that people have "calm" preferences and "emotion state" preferences, which implies that they have varying degrees of control over their actions at different points in time). See *infra* Part IV for a discussion of fluctuating criminal tendencies in further detail.

13. *See* Steven D. Levitt, *Why Do Increased Arrest Rates Appear to Reduce Crime: Deterrence, Incapacitation, or Measurement Error?*, 36 ECON. INQUIRY 353, 353–55 (1998) (analyzing deterrence and incapacitation effects of imprisonment); Daniel Kessler & Steven D. Levitt, *Using Sentence Enhancements to Distinguish Between Deterrence and Incapacitation*, 42 J.L. & ECON. 343, 343–46 (1999) (same); *see also* Steven D. Levitt & Thomas J. Miles, *Empirical Study of Criminal Punishment*, *in* 1 HANDBOOK OF LAW AND ECONOMICS 455, 471–74 (A. Mitchell Polinsky & Steven Shavell eds., 2007) (summarizing empirical studies distinguishing the deterrence and incapacitation effects of imprisonment in reducing crime).

14. See *infra* Part III for a review of trends in L&E analyses of criminal behavior.

15. GARY S. Becker, *Crime and Punishment: An Economic Approach*, 76 J. POL. ECON. 169 (1968); *see also* Nuno Garoupa, *The Economics of Organized Crime and Optimal Law Enforcement*, 38 ECON. INQUIRY 278, 278 (2000) [hereinafter Garoupa, *Organized Crime*] ("The economic analysis of crime has its starting point with Becker's [1968] seminal work") (alteration in original). It should be noted, however, that as early as the eighteenth century, Montesquieu, Beccaria, and Bentham, without using tools from modern microeconomics,

whelming majority of previous analyses assume that criminals have constant tendencies to commit crime[16] *and* that the only benefit of imprisonment is deterrence.[17]   But an analysis that does not acknowledge fluctuating criminal tendencies overlooks the fact that even calm and peaceful people may, even if rarely, *lapse* into committing crimes.[18]   Moreover, a framework that ignores the incapacitation

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provided insights that resemble the ideas presented by Becker and other L&E scholars. CESARE BECCARIA, ON CRIMES AND PUNISHMENTS (Henry Paolucci trans., Bobbs Merril Educ. Publ'g 1978) (1764); JEREMY BENTHAM, AN INTRODUCTION TO THE PRINCIPLES OF MORALS AND LEGISLATION (Clarendon Press, rev. ed. 1823) (1789); BARON DE MONTESQUIEU, THE SPIRIT OF THE LAWS (D. Appleton & Co. ed., 1900) (1748). Some of Bentham's ideas have striking similarities to those presented by Becker, although Becker appears to have had no knowledge of Bentham's ideas when he started thinking about the economic analysis of crime. *See* Richard A. Posner, *Bentham's Influence on the Law and Economics Movement, in* 51 CURRENT LEGAL PROBLEMS 425, 431–32 (1998) (noting the similarities between the two but noting, "I have it on good authority—namely from Becker himself—that when he began thinking about the economics of crime, he was unaware of Bentham's discussion of it"); *see also* Polinsky & Shavell, *Economic Theory of Law Enforcement, supra* note 2, at 45 (discussing the contributions of Montesquieu, Beccaria, and Bentham to the economics of criminal law enforcement).

16. *See, e.g.*, Posner, *supra* note 12, at 1984 ("Economists usually assume that preferences remain stable over the period of time relevant to analysis."); *see also* Garoupa, *Optimal Law Enforcement, supra* note 2, at 287 (surveying economic models of law enforcement and criminal law where constant criminal tendencies are typically assumed); Polinsky & Shavell, *Economic Theory of Law Enforcement, supra* note 2, at 47–51 (same); Polinsky & Shavell, *Public Enforcement of Law, supra* note 2 (same). Part III discusses constant criminal tendencies in further detail.

17. There are a few normative L&E articles focusing on the incapacitation effect of punishment without considering fluctuating criminal tendencies. *See, e.g.*, Steven Shavell, *A Model of Optimal Incapacitation*, 77 AM. ECON. REV. 107 (1987) [hereinafter Shavell, *Optimal Incapacitation*]; Thomas J. Miceli, *A Model of Criminal Sanctions That Incorporate Both Deterrence and Incapacitation*, 107 ECON. LETTERS 205 (2010) [hereinafter Miceli, *Deterrence and Incapacitation*]; Thomas J. Miceli, *Deterred or Detained? A Unified Model of Criminal Punishment* (Univ. Conn. Dep't Econ., Working Paper 2009-16, 2009), *available at* http://www.econ. uconn.edu/working/2009-16.pdf [hereinafter Miceli, *Deterred or Detained?*]; Thomas J. Miceli, *Deterrence and Incapacitation Models of Criminal Punishment: Can the Twain Meet?* (Univ. Conn. Dep't Econ., Working Paper 2009-25, 2009) [hereinafter Miceli, *Can the Twain Meet?*], *available at* http://www.econ.uconn.edu/working/2009-25.pdf). Alternatively, some articles consider variants of fluctuating criminal tendencies without considering incapatitation. *See, e.g.*, Cooter, *supra* note 12, at 149–51.

18. *See supra* note 12.

function of imprisonment fails to recognize that, under the standard consequentialist account, we punish not just to deter future misconduct, but also to segregate a dangerous person from society, so that he can no longer act as a threat.[19] Therefore, it is only natural for previous economic analyses of crime to fail to capture the *information exploiting features* of various criminal law practices.

A rule or mechanism is capable of exploiting information if it can, on average, distinguish between individuals based on their likelihoods of recidivating and punish them accordingly.[20] Practices such as (1) punishing repeat offenders more severely,[21] (2) punishing remorseful offenders less severely,[22] and (3) punishing voluntary man-

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19. *See* Shavell, *supra* note 17, at 107–09 (constructing an economic model of incapacitation where social benefits from imprisonment increase with the dangerousness of the offender). This argument has a caveat that was pointed out by Isaac Ehrlich: Criminals can continue to commit wrongful acts in prison. Isaac Ehrlich, *On the Usefulness of Controlling Individuals: An Economic Analysis of Rehabilitation, Incapacitation, and Deterrence*, 71 AM. ECON. REV. 307, 315 (1981).

20. There is a related literature on selective incapacitation, which focuses on the possibility of "discriminat[ing] among offenders on the basis of predicted risk by using" proxies for offenders' dangerousness that differ from those being used in the criminal justice system. PETER W. GREENWOOD, SELECTIVE INCAPACITATION xx (1982). My objective is not to suggest the use of such proxies, but to focus on existing practices in criminal law, and to show that L&E can explain their social desirability. It should also be noted that information-exploiting features of repeat offender laws have attracted the interest of noneconomists. Although I am unaware of normative L&E analyses of optimal law enforcement that focus on the information-exploiting features of these laws, there are articles that provide simple simulations, some of which make the descriptive point that short prison terms can be sufficient to incapacitate dangerous offenders. *Cf., e.g.*, Linda S. Beres & Thomas D. Griffith, *Do Three Strike Laws Make Sense? Habitual Offender Statutes and Criminal Incapacitation*, 87 GEO. L.J. 103, 138 (1998) (concluding that longer prison terms can only achieve a modest reduction in crime).

21. *See, e.g.*, U.S. SENTENCING GUIDELINES MANUAL § 5A (2011) (displaying sentencing table, which imposes harsher penalties for repeat offenders); *see also* A. Mitchell Polinsky & Steven Shavell, *On Offense History and the Theory of Deterrence*, 18 INT'L REV. L. & ECON. 305, 305 (1998) [hereinafter Polinsky & Shavell, *On Offense History*] ("In practice, the law often sanctions repeat offenders more severely than first-time offenders."). The authors also provide a number of examples of laws requiring harsher penalties for repeat offenders. *Id.* at 305–06.

22. *See infra* Part III.B.2.

slaughter less severely than murder[23] can be viewed as information exploiting mechanisms. Previous L&E models cannot provide satisfying rationales for these practices because they overlook their information-exploiting features.[24]

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23. *See, e.g.*, MODEL PENAL CODE § 210.3(2). (designating voluntary manslaughter as a "felony of the second degree"); *see also* Posner, *supra* note 12, at 1995 n.34 (briefly discussing conditions under which heat of passion killings were excused in Roman law); Kahan & Nussbaum, *supra* note 9, at 305–23 (discussing the conditions under which murder is reduced to voluntary manslaughter in common law and existing scholarship attempting to provide rationales for such reduction).

24. Existing L&E analyses of repeat offender laws provide mixed and qualified results, ranging from less severe to equal or more severe punishments for repeat offenders. *See, e.g.*, Murat C. Mungan, *Repeat Offenders: If They Learn, We Punish Them More Severely*, 30 INT'L REV. L. & ECON. 173 (2010) [hereinafter Mungan, *Repeat Offenders*] (deriving optimal sanction schemes for repeat offenders when they can learn how to escape detection through their past experiences with the criminal justice system, and suggesting that repeat offenders ought to be punished more severely than first time offenders only if such learning effects are significant); Polinsky & Shavell, *Public Enforcement of Law, supra* note 2, at 438 (demonstrating that uniform sanctions are optimal when adequate deterrence can be achieved, and observing that "only if deterrence is inadequate is it possibly desirable to condition sanctions on offense history"); Winand Emons, *A Note on the Optimal Punishment for Repeat Offenders*, 23 INT'L REV. L. & ECON. 253 (2003) (concluding that "[t]he optimal sanction scheme is decreasing rather than increasing in the number of offenses" when "agents . . . follow history-dependent strategies" and a few other conditions are met); Polinsky & Shavell, *On Offense History, supra* note 21, at 305–07 (deriving optimal sanction schemes for repeat offenders and concluding that it is optimal to punish repeat offenders and young first-time offenders with the same sanction, and to punish old first-time offenders less severely than the former two). Part III.B.1 provides a more detailed discussion of the discrepancies between implications of economic analyses of criminal law and existing laws concerning the punishment of repeat offenders. Similarly, consequentialist analyses generally suggest that remorse ought to be irrelevant in the determination of sanctions. *See, e.g.*, Bryan H. Ward, *Sentencing Without Remorse*, 38 LOYOLA U. CHI. L.J. 131, 132 (2006) (arguing that "remorse should not be relevant in criminal sentencing"); Murat C. Mungan, *Don't Say You're Sorry Unless You Mean It: Pricing Apologies to Achieve Credibility*, 32 INT'L REV. L. & ECON. 178, 178, 181 n.20 (2012) [hereinafter Mungan, *Apologies*] (arguing that remorse is ordinarily mere "*cheap talk*" and that taking remorse seriously "makes little sense" from a utilitarian point of view if one "abstracts from issues related to the incapacitation function of imprisonment"). To the best of my knowledge, there is no economic model of law enforcement suggesting that voluntary manslaughter ought to be punished less severely than murder.

To address this shortcoming, I argue for modifying the standard economic model of crime and deterrence in two ways: (1) replacing the assumption of constant criminal tendencies with the assumption of *fluctuating criminal tendencies,* and (2) accounting for the fact that imprisonment lowers crime by segregating criminals from the rest of the society. To explain the first proposed modification, consider the standard L&E model of crime in which people have constant criminal tendencies. The standard model unrealistically assumes that a person's illicit benefit from committing a given act is constant over time and that he has perfect self-control.[25] As such, the model assumes that people consistently make the same choices over illegal and legal options. They do not, for instance, park legally today and park illegally tomorrow, unless the expected fine for illegal parking changes over time. Fortunately, existing tools in economics can be used to replace this false assumption with a more realistic one: fluctuating criminal tendencies. This new assumption embodies the common belief that, as one court observed in 1859, crimes may occur "from the infirmity of passion to which even *good men* are subject."[26]

The explanation of the second proposed modification requires a brief description of trends in economic analyses of criminal law. An overwhelming majority of economic analyses of criminal law focus on deterrence and ignore other potential justifications for punishment, including incapacitation. Needless to say, the incapacitation function of punishment contributes to reductions in crime rates.[27] Such incapacitation benefits, however, are largely ignored in normative economic analyses of criminal law because their inclusion has not been seen to dramatically alter the implications of standard crime and deterrence models.[28] But, as I demonstrate, a richer economic model incorporating fluctuating criminal tendencies provides simple and powerful rationales for existing practices, which the standard model cannot explain. A repeat offender's criminal record reveals that it is unlikely that he is a person who, under unusual circumstances, failed to exert control over temptations to commit a crime. Instead, it is much more probable that he is a person who has a high tendency to

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25. *See supra* note 16.

26. State v. Cook, 1859 WL 4467, at *144 (Ohio Com. Pl. 1859), *rev'd,* 1859 WL 4465 (Ohio Dist. 1859) (emphasis added).

27. *See supra* note 13.

28. *See, e.g.,* Shavell, *supra* note 17; Miceli, *Deterrence and Incapacitation, supra* note 17; Miceli, *Deterred or Detained?, supra* note 17; see *infra* Part III for a discussion of this point in further detail.

commit crime. Therefore, if not imprisoned, he is more likely than a first-time offender to commit subsequent crimes. As such, due to the high benefits from incapacitation, penalty enhancements for repeat offenders are justified. Similarly, a truly remorseful offender is less likely to commit his previous wrongs under similar conditions in the future. Therefore, he is unlikely to recidivate and incapacitation benefits from imprisonment are minimal. Accordingly, it is desirable to punish truly remorseful offenders less severely.[29] Finally, a person who commits a crime in the heat of passion is likely to have committed the crime due to extreme emotional stimuli. If so, the mere fact that he committed the crime reveals relatively little information about his dangerousness absent those stimuli. Expected incapacitation benefits from punishing him are small compared to similar benefits from punishing a criminal who committed an illegal act without provocation. As such, reduced penalties for voluntary manslaughter are justified.

All explanations provided above rely on similar rationales.[30] Once fluctuating criminal tendencies are incorporated, the mere fact that a person committed a crime reveals imperfect information about his dangerousness. The circumstances surrounding the crime reveal important pieces of information that can be used to update our beliefs concerning offenders' dangerousness. Since expected incapacitative benefits are greater for more dangerous offenders, the more strongly we believe—based on the circumstances surrounding the crime—that the criminal is dangerous, the stronger an L&E approach suggests that he should be imprisoned. We should be more skeptical,

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29. One may naturally question whether courts can distinguish truly remorseful offenders from offenders who "fake remorse." It is plausible to assume that perfectly separating remorseful and non-remorseful offenders is impossible. This is the primary reason why the deterrence-based economic analysis, in which there is no direct social benefit to punishing truly remorseful offenders less severely, suggests that sentence reductions for successfully asserting remorse are generally suboptimal. *See, e.g.*, Mungan, *Apologies, supra* note 24, at 178 (arguing against reducing sentencing for assertions of remorse). If, however, as argued in Section V there are benefits to punishing truly remorseful offenders less severely, a trade-off emerges between obtaining such benefits and costs due to non-separability problems. This suggests that sentence reductions for those who convincingly display remorse are justified in a broader range of conditions. Part V.B discusses remorse and apologies in further detail.

30. These rationales rely on what can formally be called *Bayesian updating*, which is described more formally and in further detail in note 193.

in turn, of harsh sentences for individuals who demonstrate a low propensity for crime.

Beyond offering an efficiency rationale for these existing practices, correcting the standard model has significant descriptive and normative implications for the economic theory of criminal law. Although future work will focus on determining the extent to which accounting for the information-exploiting features of criminal law leads to results different from those obtained under the standard model, I will make two preliminary observations here.

First, existing economic models of crime and deterrence frequently have been used to advocate for the necessity of harsh criminal justice policies.[31] As briefly discussed above and explained in further detail in the proceeding Parts, a richer economic model of crime, as presented in this Article, suggests that first-time offenders ought to be treated leniently, and that remorseful individuals and criminals acting in the heat of passion ought to be punished less severely. As such, this Article suggests that harsh penalties should be reserved for individuals who have, through their actions, demonstrated that they are likely to recidivate.

Second, it has been previously suggested that "fundamental features of economic analysis . . . make it ill-suited to explain the existence of the criminal law's mens rea requirement."[32] I believe the economic theory of criminal law I propose in this Article is capable of proving this claim wrong. The mens rea requirement in criminal law can be conceptualized as an information-exploiting device: a criminal's mental state while committing a harmful act provides information about his likelihood of recidivating. As such, the rationales identified in this Article suggest that criminals should be punished, *ceteris paribus*, in proportion to the intentionality of their acts. Developing a complete model to conceptualize mens rea as an information-exploiting device is, however, an immense task that I cannot undertake in this Article.

This Article proceeds as follows. Part I provides a summary of the relevant criticisms directed at economic analyses of crime and punishment. Part II briefly explains how economic analyses of crime

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31. *See* John J. Donohue III, *Economic Models of Crime and Punishment*, 74 SOC. RES. 379, 380 (2007) (explaining how Gary Becker's 1968 article "started to powerfully influence criminal justice policy in the 1970s and provided the intellectual support for . . . the increasing harshness of the American criminal justice system over the last 30 years." (citing Gary S. Becker, *Crime and Punishment: An Economic Approach*, 76 J. POL. ECON. 169 (1968))).

32. Finkelstein, *supra* note 5, at 896.

and punishment have focused on deterrence and have largely ignored other potential consequentialist justifications for punishment, such as rehabilitation and incapacitation. In Part III, I explain how economic models assume constant criminal benefits. Section IV clarifies how fluctuating criminal tendencies can be incorporated in economic analyses of crime. Finally, in Part V, I describe how a rich model incorporating fluctuating criminal benefits and incapacitation benefits of imprisonment provides rationales for existing criminal law doctrines and practices. Part VI concludes.

I. CRITICISMS DIRECTED AT ECONOMIC ANALYSES OF CRIMINAL LAW

Despite providing useful analytical tools to evaluate the desirability of numerous rules and standards,[33] L&E is frequently criticized on various grounds. In particular, economic analyses of criminal law are criticized for making use of unrealistic assumptions and having limited explanatory power.[34] Before specifying these criticisms, it will be useful to summarize the simple Beckerian framework,[35] which many L&E scholars use to analyze issues related to criminal law and procedure.[36]

A. *Crime and Deterrence Model: The Beckerian Framework*

In 1968, Gary Becker provided a framework to analyze criminal decision-making by using modern economics.[37] After his great contribution, many scholars started analyzing various issues in criminal law by adopting his framework.[38] In the simplest form of the Beckeri-

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33. *See supra* note 1.

34. *See supra* notes 3, 5 and 9.

35. A variant of this framework was presented by Bentham in 1789. But Becker provided the first formal model by using modern economic tools. *See supra* note 15.

36. *See* Garoupa, *Organized Crime, supra* note 15 (applying a Beckerian framework); Garoupa, *Optimal Law Enforcement, supra* note 2, at 267–69 (same); Polinsky & Shavell, *Economic Theory of Law Enforcement, supra* note 2, at 46–48 (same); *see also* Polinsky & Shavell, *Public Enforcement of Law, supra* note 2, at 405 (surveying economic models of law enforcement developed subsequent to Becker's article).

37. Becker, *supra* note 15; *see also* Garoupa, *Organized Crime, supra* note 15; Donohue, *supra* note 31, at 381–85.

38. *See* Garoupa, *Optimal Law Enforcement, supra* note 2, at 267–69 (utilizing a Beckerian analysis); Polinsky & Shavell, *Economic Theory of Law Enforcement, supra* note 2, at 46–48 (utilizing a Beckerian analysis); Polinsky & Shavell, *Public Enforcement of Law, supra* note 2

an model, a fraction of society consists of potential offenders, and a potential offender is a person who benefits from the commission of a crime and dislikes being punished.[39] Offenders are assumed to know the probability (p) with which they will be caught if they commit a crime and the sanction (s) that they will be subject to if caught.

In this framework, a potential offender is assumed to commit a crime only if the benefit from the crime (b) exceeds the expected sanction ($p \times s$).[40] Because it is assumed that potential offenders differ from each other in their criminal benefits, it follows that only offenders with $b > (p \times s)$ commit crime.[41] This model is then used to evaluate various law enforcement mechanisms and to derive optimal policies.[42]

It should be noted that Beckerian models do not rule out the possibility that potential offenders, when making decisions, may take into account moral or sociological considerations. The variable b is interpreted as incorporating all considerations related to the commis-

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(surveying economic models of law enforcement developed subsequent to Becker's article).

39. One may question whether under this definition everyone in society is a potential offender. This does not follow, because, as explained in the proceeding portion of this Part, *benefits* include non-monetary considerations; therefore, not all individuals *benefit* from the commission of a crime. I elaborate further on this and related points in Part III and IV.

40. This is true in the simplest form of Beckerian models. In more sophisticated models that incorporate criminals' risk preferences, criminals are assumed to make decisions by comparing *expected utilities* rather than *expected values*. See, for example, Donohue, *supra* note 31, at 328–83, for an informative discussion on criminals' risk preferences and how risk preferences may appear in Beckerian models. *See also* Jeffrey Grogger, *Certainty vs. Severity of Punishment*, 29 ECON. INQUIRY 297, 297–98 (1991) (reconciling conflicting findings from prior research on the effect of the certainty of punishment and the severity of punishment on crime rates); Michael K. Block & Vernon E. Gerety, *Some Experimental Evidence on Differences Between Student and Prisoner Reactions to Monetary Penalties and Risk*, 24 J. LEGAL STUD. 123, 123–24 (1995) (employing an empirical model to study criminals' risk preferences). For purposes of demonstrating what constant benefits mean, it is sufficient to focus on simpler models.

41. An earlier version of this statement dates back to 1789. *See* Posner, *supra* note 15, at 431 ("Bentham had made a number of important economic points in the *Introduction*: a person commits a crime only if the pleasure he anticipates from the crime exceeds the anticipated pain . . . .").

42. *See, e.g.*, Polinsky & Shavell, *Public Enforcement of Law*, *supra* note 2, at 450–54 (listing a number of articles using this approach).

sion of a crime; a potential offender's *benefit* is not limited to monetary or pecuniary gains.

Implicit in the Beckerian framework is the idea that people, even criminals, respond to incentives. A potential criminal compares the benefits to expected losses, and decides whether or not to commit a crime. Although this idea sounds intuitive—and is trivially true to many economists[43]—it is the basis for many criticisms aimed at economic analyses of crime.

B. The Deterrability Assumption

Simple Beckerian models imagine a world where every individual can be deterred from committing crime. This deterrence can potentially be achieved through the threat of punishment. Using the previously introduced notation, I deduce that for any individual who has a benefit of b from crime there generally is an expected sanction (p x s) exceeding his benefit, and therefore capable of deterring him.[44]

This feature of simple Beckerian models is the focal point of many criticisms.[45] Many scholars make the observation that it may be impossible to deter a particular individual from committing crime under many circumstances. A person who is intoxicated or finds his wife in bed with a stranger may not consider the expected punishment associated with committing a crime, even if fully aware of the severity and certainty of punishment.[46]

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43. Many economists interpret this as a simple application of the "revealed preference" concept. *See* Hal R. Varian, *Revealed Preference, in* SAMUELSONIAN ECONOMICS AND THE TWENTY-FIRST CENTURY 99–115 (Michael Szenberg, Lall Ramrattan & Aron A. Gottesman eds., 2006) (providing a survey of revealed preference analysis and explaining the concept in detail).

44. In the rare case where a potential offender does not value his life much, it may be impossible to deter him through punishment. Ignoring the possibility of torture, let s be the upper bound for punishment (for example, the death penalty). In this case, it is impossible to deter an individual for whom $b>ps$. But, even in those rare cases, deterrence can theoretically, although impracticably, be achieved by offering the potential offender something of greater value than what he has to gain through crime, on the condition that he abstains from committing crime.

45. *See supra* notes 3, 5, 9, and 10 and accompanying text.

46. *See* Robinson & Darley, *Does Criminal Law Deter?, supra* note 3, at 178–82 (discussing the "Rational Choice Hurdle" and arguing that "[b]ehavioural scientists who study the decision-making patterns of people now realize that being able to demonstrate that a person has some knowledge of various facts that could be relevant to a decision does not mean

The idea that people often do not consider costs when making decisions, or heavily discount them, is also supported by recent research in behavioral L&E. This line of research points out that many people suffer from what is called *bounded willpower*, and that they face difficulties in delaying gratification, even when they know that doing so will serve their long-term self-interest.[47] As such, insights from behavioral L&E support the claim that the basic assumption that people are deterrable is not globally applicable.

C. Common Knowledge Assumption

Another assumption that is commonly invoked in simple Beckerian models is that potential criminals have perfect knowledge about the expected punishment associated with various crimes.[48] Using the previous notation,[49] a potential criminal is assumed to know the certainty (p) and severity of punishment (s). But is this really true?

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that those facts are recalled, and mobilized appropriately, by the decision-maker"); *see also* Posner, *supra* note 12, at 1993–94 (claiming that people experiencing intense anger cannot be deterred). *But see, e.g.*, Miceli, *Deterred or Detained?, supra* note 17, at 1 ("Central to [Beckerian Models], and crucial for deterrence to be possible, is the *rational offender assumption*, which maintains that would-be criminals decide whether or not to commit a crime by comparing the gains from the illegal act to the expected punishment. Although some may doubt the validity of this assumption, there is ample empirical evidence to support it." (citing Levitt and Miles, *supra* note 13)).

47. *See infra* Part IV.C (discussing, in further detail, bounded willpower and other issues analyzed in behavioral L&E).

48. *See* Robinson & Darley, *Does Criminal Law Deter?, supra* note 3, at 175–78 (discussing the "Legal Knowledge Hurdle" and stating: "To sum up, people rarely know the criminal law rules, even when those rules are formulated under the express assumption that they will influence conduct"). It should be noted that there are, even if very few, economic analyses of law enforcement incorporating the fact that not all individuals are informed of legal rules and procedures. *See, e.g.*, Louis Kaplow, *Optimal Deterrence, Uninformed Individuals, and Acquiring Information About Whether Acts Are Subject to Sanctions*, 6 J.L. ECON. & ORG. 93, 93 (1990) (discussing the significance of individuals' "lack of knowledge about legal rules"); Murat C. Mungan, *Optimal Warning Strategies: Punishment Ought Not to Be Inflicted Where the Penal Provision Is Not Properly Conveyed*, at 1 (Fla. State Univ. College of Law, Public Law Research Paper No. 505, 2012) [hereinafter Mungan, *Optimal Warning Strategies*], *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1803275 ("When uninformed individuals are present and the punishment of the innocent is assumed to be costly, there is a trade-off between such costs and reduced levels of deterrence.").

49. *See supra* Part I.A.

Many scholars argue that potential criminals may not be very responsive to increases in the certainty and severity of punishment. According to a study conducted by Professor David A. Anderson, "76% of active criminals and 89% of the most violent criminals either perceive no risk of apprehension or are incognizant of the likely punishments for their crimes."[50] Anderson's study is cited for the proposition that criminals are not as informed about criminal law as is commonly assumed.[51]

Furthermore, new insights from behavioral L&E studies suggest that people may possess cognitive biases, such as optimism and overconfidence, which prevent them from objectively assessing the probability with which they can experience negative events.[52] These studies cast further doubt on the validity of the common knowledge assumption, which is frequently invoked in economic analyses of law enforcement.

D. Problematic Implications

In short, many normative economic analyses of criminal law invoke assumptions concerning the deterrent effect of punishment schemes that are not applicable in all situations. This naturally raises questions as to whether normative implications of analyses invoking false assumptions can be taken seriously.[53] Because most economic analyses of crime rely on a deterrence-based theory of punishment,[54]

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50. David A. Anderson, *The Deterrence Hypothesis and Picking Pockets at the Pickpocket's Hanging*, 4 AM. L. & ECON. REV. 295, 295 (2002); *see also* Richard H. McAdams & Thomas Ulen, *Behavioral Criminal Law and Economics*, *in* CRIMINAL LAW AND ECONOMICS 414–15 (Nuno Garoupa ed., 2009) (briefly reviewing other empirical studies that suggest the common knowledge assumption does not globally hold). *But see, e.g.*, Miceli, *Deterred or Detained?*, *supra* note 17, at 1 (claiming that "there is ample empirical evidence to support" the assumption that offenders act rationally).

51. *See* Robinson & Darley, *Does Criminal Law Deter?*, *supra* note 3, at 176 (citing Anderson, *supra* note 50, for this proposition).

52. *See infra* Part IV.C (discussing cognitive biases, such as overconfidence and optimism, and listing a number of relevant articles analyzing related behavioral issues).

53. *See, e.g.*, Robinson & Darley, *The Role of Deterrence*, *supra* note 3, at 952 ("Formulating criminal law rules according to a deterrence analysis can produce erroneous results if based upon missing or unreliable data.").

54. See *infra* Part II for my summary of how economic theories of law enforcement focus mainly on deterrence.

their explanatory power will naturally be limited if their assumptions concerning the deterrent role of punishment are false.

Perhaps this is the reason why there are numerous tensions between the implications of simple economic analyses of crime and existing practices in criminal law. In particular, as explained in Part III, economic analyses are unable to provide satisfying rationales as to (1) why repeat offenders are punished more severely than first time offenders, (2) why there is a de facto tendency to punish less severely, and (3) why offenders who commit voluntary manslaughter are punished less severely than offenders who commit murder.

Do these observations imply that economic analyses of criminal law can never be useful? Not necessarily. First, it should be noted that if assumptions concerning the deterrent effect of punishment schemes often, even if not always, hold, then such assumptions are not very harmful. Second, even assuming, arguendo, that most criminals do not react to incentives, economic analyses can provide useful insights by focusing on nondeterrence-based consequentialist theories of punishment, such as incapacitation. Third, economic analyses of criminal law can incorporate the fact that not all individuals can be deterred through threats of punishment.[55] In fact, as Part V demonstrates, an economic analysis of criminal law that focuses on the second and third points provides satisfying rationales for some of the legal practices most people find intuitive and fair.

Before proceeding, however, it is useful to provide a brief summary of economic theories based on deterrence compared to other theories of punishment. This brief review serves several important functions. First, it reveals the lack of interest shown to non-deterrence theories. Second, it allows the identification of different types of social benefits through deterrence versus incapacitation. Deterrence lowers present crime rates by making crime a costly option for potential offenders. Incapacitation, on the other hand, lowers future crime rates by making it impossible for criminals to commit subsequent crimes while imprisoned. Third, it hints at how the explanatory power of economic analyses of crime can be increased by jointly focusing on the incapacitative and deterrent effects of punishment. On one hand, an exclusively deterrence-based theory cannot provide justifications for imprisoning dangerous and undeterrable individuals for trivial reasons. On the other hand, an exclusively incapacitation-

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55. *See, e.g.*, Kaplow, *supra* note 48 (incorporating into economic analyses of law enforcement the fact that some individuals may be uninformed of legal rules and procedures).

based theory cannot provide satisfying rationales as to why minor offenses receive monetary fines, rather than imprisonment. This follows from the simple fact that monetary fines do not have an incapacitative function.

II. DETERRENCE, INCAPACITATION AND REHABILITATION IN NORMATIVE ECONOMIC ANALYSES OF CRIMINAL LAW

It is only natural for economic analyses of crime to focus on some or all of the three main consequentialist justifications for punishment: deterrence, rehabilitation and incapacitation.[56] But, as discussed below, economic theories of crime and law enforcement focus predominantly on deterrence[57] and pay very little attention to rehabilitation and incapacitation.

In this Article, I focus on the incapacitation and deterrence functions of punishment. I refrain from commenting on potential rehabilitative effects, primarily because "[i]ncarceration rarely is imposed today for rehabilitative (reform) purposes."[58] Unsurprisingly, normative economic analyses take a similar approach and do not focus on the rehabilitative effects of punishment. This Part briefly presents a variety of historical, methodological, and theoretical reasons for this approach before proceeding to lengthier reviews of L&E analyses focusing on incapacitation and deterrence.

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56. *See, e.g.*, Ehrlich, *supra* note 19, at 311 (observing that "[t]he three basic measures of crime control most frequently discussed in the criminological literature are deterrence, incapacitation, and rehabilitation").

57. *See* Barnes, *supra* note 3, at 628 (suggesting that L&E scholars "bas[e] their analyses primarily on only a small part of the traditional framework—deterrence"); Miceli, *Can the Twain Meet?*, *supra* note 17, at 1 ("Economic models of law enforcement beginning with Becker (1968) have primarily focused on the role of criminal punishment in deterring crime." (citing Gary S. Becker, *Crime and Punishment: An Economic Approach*, 76 J. POL. ECON. 169 (1968))); Polinsky & Shavell, *Public Enforcement of Law*, *supra* note 2, at 444 n.81 ("Economists have paid much less attention to incapacitation than to deterrence, despite the significance of the incapacitation rationale in criminal law enforcement."). It is also remarkable that Polinsky and Shavell, in their extensive review of economic theories of public enforcement of law, do not even once refer to the word "rehabilitation" except when citing Ehrlich's work, which contains the word "rehabilitation" in its title. Polinsky & Shavell, *Public Enforcement of Law*, *supra* note 2; Ehrlich, *supra* note 19. This reflects the fact that economists have largely ignored rehabilitation in their analyses, perhaps due to reasons discussed in the proceeding paragraphs.

58. JOSHUA DRESSLER, CASES AND MATERIALS ON CRIMINAL LAW 36 (4th ed. 2007).

A. *Rehabilitation Is Ignored*

Among the three potential consequentialist justifications for punishment, rehabilitation receives the least attention. This is perhaps due to trends and developments in the 1970s, which led to the "trashing of rehabilitation."[59] Moreover, economists may be ignoring rehabilitation due to its "counterdeterrent" effects identified by Isaac Ehrlich in his 1981 article. According to Erlich, "[t]he reason [for this counterdeterrent effect] is that successful rehabilitation confers an implicit subsidy on potential offenders by offering training and employment benefits at public expense. . . . [T]he rehabilitation benefits provided to actual offenders *ex post* produce a counterdeterrent effect on potential offenders *ex ante*."[60] A third potential factor, which may contribute to the neglect of rehabilitation by economists, has to do with the problems it poses for social choice theory.[61] Social choice

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59. Francis T. Cullen & Paul Gendreau, *Assessing Correctional Rehabilitation: Policy, Practice, and Prospects*, 3 CRIM. JUST. 109, 112 (2000) (summarizing the events in the 1970s that led to "the abandonment of, or loss of faith in, rehabilitation as a goal of corrections" and questioning whether such abandonment "was deserved"); *see also* Alfred Blumstein, *Interaction of Criminological Research and Public Policy*, 12 J. QUANTITATIVE CRIMINOLOGY 349, 351 (1997); Robert Martinson, *What Works?—Questions and Answers About Prison Reform*, 35 PUB. INT. 22, 25 (1974) (providing a skeptical view of rehabilitative approaches, and stating that "with few and isolated exceptions, the rehabilitative efforts that have been reported so far have had no appreciable effect on recidivism"); Ehrlich, *supra* note 19, at 314 ("Numerous studies indicate little success, if not outright failure, of most programs in bringing about any enduring rehabilitative outcomes for treated offenders.").

60. Ehrlich, *supra* note 19, at 315 (emphasis omitted). More specifically, Ehrlich argues as follows:

> [T]he effect of rehabilitation on the equilibrium frequency of offenses is even more complex. The reason is that successful rehabilitation confers an implicit subsidy on potential offenders by offering training and employment benefits at public expense. Even if the rehabilitation programs were not carried out at the expense of the criminal sanctions, but rather in addition to them, the provision of rehabilitative net benefits—to the extent that they are positive—necessarily enhances the anticipated net return from crime to the potential offender . . . by the magnitude of the rehabilitation subsidy per offense . . . .

Id.

61. *See* ANDREU MAS-COLELL ET AL., MICROECONOMIC THEORY 787 (2003) ("The central question of [social choice] theory concerns the possibility of deriving the objectives of the policy maker as an aggregation of the preferences of the agents in the economy, and

theory identifies ways to aggregate individual preferences to rank the social desirability of various options. As such, it provides the tools for normative evaluations of rules and laws. Rehabilitation, by definition, involves externally incited changes to a person's preferences. This is problematic for social choice theory because the theory commonly considers members of society as having fixed preferences.[62]

B. Incapacitation Is Rarely Analyzed

Normative L&E analyses of law enforcement that incorporate incapacitation as a justification for punishment are rare. There is only one pre-2010 article by Professor Steven Shavell[63] and three very recent articles by Professor Thomas Miceli[64] specifically focusing on incapacitation by using the standard normative L&E approach. Shavell's article analyzes optimal punishment schemes when incapacitation is the only function of punishment, and Miceli's articles extend the analysis to cases where punishment has deterrent as well as incapacitation effects. To investigate why incapacitation may have been ignored in normative economic analyses, I first review Shavell's 1987 article. Miceli's articles are briefly reviewed in Part II.D, which discusses the effect of combining deterrence and incapacitation in L&E models.

Steven Shavell conducted the single pre-2010 economic analysis of optimal law enforcement in 1987, in which he incorporated inca-

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of doing so in a manner that could be deemed as satisfactory according to a number of desiderata.").

62. In social choice theory, it is common to assume that members of society have "well defined preferences," which are not manipulated through social policies such as rehabilitation and therefore remain constant throughout analyses. *Id.* at 789.

63. Shavell, *Optimal Incapacitation, supra* note 17, is the single pre-2010 economic study focusing specifically on incapacitation of which I am aware. I am excluding Ehrlich, *supra* note 19, which also contains a brief discussion of incapacitation, but does not provide a complete theory as does Shavell's 1987 article. Miceli, *Can the Twain Meet?, supra* note 17, and Polinsky & Shavell, *Public Enforcement of Law, supra* note 2, briefly review existing economic analyses of optimal law enforcement incorporating incapacitation as a potential justification for punishment and only cite Shavell's 1987 article. There are, however, numerous articles that consider optimal nonmonetary fines, such as imprisonment, and justify their use to achieve deterrence—especially when the judgment-proof-offender problem is a significant concern. See *infra* note 73 for examples of three articles by Shavell.

64. Miceli, *Deterrence and Incapacitation, supra* note 17; Miceli, *Deterred or Detained?, supra* note 17; Miceli, *Can the Twain Meet?, supra* note 17.

pacitation as a potential justification for punishment.[65] His article suggests that an offender ought to be imprisoned if and only if his potential to cause harm, per unit of time free, exceeds the cost, per unit of time, of imprisonment.[66] It follows that if an offender's dangerousness is constant, he should either be imprisoned for life or not imprisoned at all. This result is in sharp contrast to existing punishment schemes, where offenders are generally punished with intermediate sentences.[67] If, however, an offender's dangerousness declines with age,[68] it is optimal to release the offender after his dangerousness falls below a critical level. Although Shavell's model of incapacitation, when combined with the rehabilitative effects of aging, produces some sensible results,[69] it appears to be incapable of producing results of similar quality and quantity to the standard deterrence model, which was "brought to its current level of maturity by" the same author and Mitchell Polinsky.[70]

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65. For another brief review of Shavell, *supra* note 17, see Polinsky & Shavell, *Public Enforcement of Law, supra* note 2.

66. Shavell, *supra* note 17, at 585–87.

67. In 2006, for example, the average felony sentence to incarceration in the United States was three years in state prisons and jails and more than five years in the federal system. SEAN ROSENMERKEL ET AL., BUREAU OF JUSTICE STATISTICS, FELONY SENTENCES IN STATE COURTS, 2006—STATISTICAL TABLES 2 (2009).

68. *See, e.g.*, Levitt & Miles, *supra* note 13, at 460 (citing CRIMINAL CAREERS AND "CAREER CRIMINALS" (Alfred Blumstein et al. eds., vol. I 1986)); Polinsky & Shavell, *Public Enforcement of Law, supra* note 2, at 443 (citing JAMES Q. WILSON & RICHARD J. HERRNSTEIN, CRIME AND HUMAN NATURE (1985)).

69. As Professors Levitt and Miles note,

> the predictions of Shavell's (1987) model are broadly consistent with observed criminal justice policies when incapacitation is the exclusive purpose. For example, in *Kansas v. Hendricks*, 521 U.S. 346, 372–74 (1997), the Supreme Court upheld a state law authorizing the civil confinement of sex offenders who have completed their criminal sentences. The Court concluded that further confinement was permissible when offenders suffered from mental abnormalities rendering them likely to re-offend and unlikely to be deterred by the threat of incarceration. Thus, the Court has permitted in limited circumstances confinement solely for the purpose of incapacitation.

Levitt & Miles, *supra* note 13, at 460.

70. Miceli, *Deterred or Detained?, supra* note 17, at 1 (referring to Polinsky & Shavell, *Public Enforcement of Law, supra* note 2; Polinsky & Shavell, *Economic Theory of Law Enforcement, supra* note 2).

Consider the use of monetary fines, rather than imprisonment, for minor offenses.[71] Deterrence-based theories provide satisfying rationales as to why imprisonment should be reserved for major offenses. The harm inflicted through a minor offense is, by definition, relatively low. As such, using an expensive method of deterrence, namely imprisonment, is not necessary to deter the infliction of such harm. A degree of deterrence can be achieved by resorting to the exclusive use of monetary fines. More serious crimes, however, necessitate the use of imprisonment or other nonmonetary fines to increase deterrence.[72] It simply *pays-off* to incur the expense of imprisonment to marginally reduce social harms inflicted through more serious crimes.

Theories focusing only on incapacitation do not, and cannot, provide satisfying rationales for the exclusive use of monetary sanctions. This follows from the fact that monetary fines do not ordinarily prevent offenders from committing subsequent crimes. A weak rationale can be provided for exceptional cases where the commission of a crime requires some financial means or investment. But such explanations certainly cannot compare to the convincing explanations provided by deterrence-based theories.

C. Deterrence: The Predominant Theory of Punishment

As stated earlier, deterrence is the main focus of economic theories of crime. Topics analyzed by employing economic crime and deterrence models range from the very general, such as the optimal use of monetary versus non-monetary sanctions,[73] the optimal standard of proof in criminal trials,[74] and the punishment of attempts[75] to the very

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71. *See* Polinsky & Shavell, *Public Enforcement of Law, supra* note 2, at 419 ("Under the strict sanctioning rule . . . it never is optimal to employ a prison sentence unless the fine has been set as high as possible, since fines are socially cheaper sanctions. Whether it is optimal to use a prison sentence in addition to the maximal fine depends on the extent of underdeterrence that would result if fines were used alone, and the social cost of imprisonment.").

72. *Id.*

73. *See, e.g.*, Mitchell A. Polinsky & Steven Shavell, *The Optimal Use of Fines and Imprisonment*, 24 J. PUB. ECON. 89 (1984); Steven Shavell, *Criminal Law and the Optimal Use of Nonmonetary Sanctions as a Deterrent*, 85 COLUM. L. REV. 1232 (1985); Steven Shavell, *The Optimal Use of Nonmonetary Sanctions as a Deterrent*, 77 AM. ECON. REV. 584 (1987); Louis Kaplow, *A Note on the Optimal Use of Nonmonetary Sanctions*, 42 J. PUB. ECON. 245 (1990).

74. *See, e.g.*, Henrik Lando, *Prevention of Crime and the Optimal Standard of Proof in Criminal Law*, 5 REV. L. & ECON. 33, 33 (2009); Thomas J. Miceli, *Optimal Prosecution of Defend-*

specific, such as the optimal role of apologies in sentencing,[76] and sentence enhancements for hate crimes.[77] What is common among most normative economic analyses is the focus on the deterrent effect of various laws and procedures, which is implied by the assumption that potential criminals react to changes in criminal law rules. As briefly discussed in Part I.A., normative economic theories assume that greater expected penalties lead to more deterrence.

Increasing the expected punishment to achieve deterrence, however, is costly. The most commonly identified costs in the existing literature include detection and imprisonment.[78] As such, a trade-off emerges between reducing such costs and increasing deterrence. Since there are a number of variables at work, the correct trade-off requires a circumstance-specific approach. The standard economic model of crime and deterrence is appealing and quite successful, at least in part, because of its ability to generate such fact-specific trade-offs.

Although there is a broad and sophisticated literature on the economics of crime and deterrence,[79] a few key points are worth highlighting. The main trade-off, as stated, is between reducing costs required to increase expected punishment and increasing the benefits associated with deterrence. A few corollaries immediately follow. *Ceteris paribus*, the greater the harm associated with crime, the more im-

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ants Whose Guilt Is Uncertain, 6 J.L., ECON. & ORG. 189, 189–90 (1990) (same); Murat C. Mungan, *A Utilitarian Justification for Heightened Standards of Proof in Criminal Trials*, 167 J. INSTITUTIONAL & THEORETICAL ECON. 352, 352 (2011); Okan Yilankaya, *A Model of Evidence Production and Optimal Standard of Proof and Penalty in Criminal Trials*, 35 CANADIAN J. ECON. 385, 385 (2002); Matteo Rizzolli & Margherita Saraceno, *Better That Ten Guilty Persons Escape: Punishment Costs Explain the Standard of Evidence*, PUB. CHOICE (forthcoming), *available at* http://dx.doi.org/10.1007/s11127-011-9867-y.

75. *See, e.g.*, Steven Shavell, *Deterrence and the Punishment of Attempts*, 19 J. LEGAL STUD. 435, 436 (1990); Murat C. Mungan, *Welfare Enhancing Regulation Exemptions*, 31 INT'L REV. L. & ECON. 249, 253 (2011).

76. *See, e.g.*, Mungan, *Apologies*, *supra* note 24.

77. *See, e.g.*, Dhammika Dharmapala & Nuno Garoupa, *Penalty Enhancements for Hate Crimes: An Economic Analysis,* 6 AM. L. & ECON. REV. 185 (2004).

78. *See* Polinsky & Shavell, *Public Enforcement of Law, supra* note 2, at 450–54 (listing relevant existing literature).

79. *See supra* note 2 (listing scholarship on the economics of crime and deterrence).

portant the benefits associated with deterrence.[80]   Similarly, all else equal, the greater the deterrent effect of punishment, the greater the justification for imposing punishment.[81]

D. Combining Incapacitation and Deterrence?

This last observation highlights a caveat in deterrence-based theories. Consider a society consisting of two types of individuals: undeterrable criminals, and noncriminals (that is, individuals who never commit crime). In such a society, deterrence based theories suggest that crimes should go unpunished, because punishment would have absolutely no deterrent effect. As such, punishment—in an economic deterrence model—would only generate imprisonment and detection costs, without any benefits. Therefore, in such a society, it would be optimal to not punish criminal acts.[82]

This caveat demonstrates how the standard economic model of crime can benefit from the incorporation of the incapacitation function and benefit of punishment. Imprisoning undeterrable criminals in such a society makes sense if one recognizes the fact that criminals can repeatedly commit crime,[83] and that the prevention of future crime requires imprisonment, even if punishment has no effect of deterring crime in the present.

This observation leads one to ask whether an economic model that combines deterrence and incapacitation can address the criticisms directed at previous economic analyses of crime and have sufficient explanatory power. The answer is "no,"[84] unless some of the assumptions in the standard economic model of crime can be replaced with new and more useful ones. To see why, consider whether such a

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80. *See* Steven Shavell, *Specific Versus General Enforcement of Law*, 99 J. POL. ECON. 1088, 1094–95 (1991) (modeling the benefits of deterrence in relation to the severity of the harm associated with crime).

81. *See* Mungan, *Optimal Warning Strategies*, *supra* note 48 (constructing a model where the frequency and severity of the optimal sanction is increasing in the proportion of individuals who are deterrable).

82. *See* Miceli, *Can the Twain Meet?*, *supra* note 17, at 32 (making the same observation: "the economic model offers no rationale for punishing offenders who are undeterrable").

83. A legal economist may object to this statement by claiming that crimes committed by undeterrable individuals may be efficient. I address this issue in Part IV.

84. For examples of models combining deterrence and incapacitation as incapable of providing rationales for punishing repeat offenders more severely, see Miceli, *Deterrence and Incapacitation*, *supra* note 17.

model would be capable of explaining why it makes sense to punish repeat offenders more severely than first-time offenders.

In standard economic models of crime, the combined incapacitative and deterrent benefits of punishing a repeat offender and punishing a first-time offender are roughly the same. A first-time offender, by committing a crime, reveals a high and constant propensity to commit crime. Under this theory, committing a subsequent crime and becoming a repeat offender reveals very little additional information concerning the offender's dangerousness.[85]

This implication in the standard model is best illustrated in Professor Thomas Miceli's recent work, which jointly analyzes deterrence and incapacitation in a theoretical L&E model of law enforcement.[86] Miceli's model, however, does not fully capture the information-exploiting feature of repeat offender laws. Specifically, under this theory, a first-time offender completely reveals his dangerousness by committing crime. Miceli makes a similar observation:

> [T]he threat of imprisonment deters some offenders from committing dangerous crimes in the first place, while those offenders who reveal their predilection to commit crimes in spite of the threatened punishment should be imprisoned for life *on their first apprehension* in order to prevent them from having further criminal opportunities.[87]

An economic model that can provide a satisfactory explanation as to why repeat offenders ought to be punished more severely must be capable of incorporating the informative value of an offender's prior record. This cannot be achieved in standard models of crime and deterrence, unless some of their unrealistic assumptions are re-

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85. This brief analysis abstracts from the fact that more severe punishments for repeat offenders makes the expected costs of committing subsequent crimes higher. Similarly, it abstracts from the hypothesis that *stigma costs* are highest for first time offenders. *See, e.g.*, Eric Rasmusen, *Stigma and Self-Fulfilling Expectations of Criminality*, 39 J.L. & ECON. 519, 520–23 (1996) (theorizing that stigma is greatest in first time offenders); Patricia Funk, *On the Effective Use of Stigma as a Crime-Deterrent*, 48 EUR. ECON. REV. 715, 717 (2004) (finding that stigma simultaneously deters unconvicted individuals from committing crimes *and* enhances recidivism); Alon Harel & Alon Klement, *The Economics of Stigma: Why More Detection of Crime May Result in Less Stigmatization*, 36 J. LEGAL STUD. 355 (2007). These opposing effects should not affect the analysis significantly.

86. Miceli, *Can the Twain Meet?*, *supra* note 17.

87. *Id.* at 32 (emphasis added).

placed with new, realistic and useful alternatives.[88]   In Part IV, I consider a candidate for such a replacement, namely the substitution of constant criminal benefits with fluctuating criminal tendencies. Before doing so, it will be useful to describe how constant benefits are incorporated in standard crime and deterrence models, and what problems they cause.

III. IMPLICIT ASSUMPTION OF CONSTANT CRIMINAL TENDENCIES & FAILURES OF L&E AS A POSITIVE THEORY OF LAW ENFORCEMENT

Economic theories of law enforcement focus predominantly on deterrence[89] because normative economic analyses of incapacitation have not revealed many interesting results,[90] and because many scholars have deemed rehabilitation, the last of "[t]he three basic measures of crime control most frequently discussed in the criminological literature,"[91] to be ineffective at reducing crime.[92]   Furthermore, the reluctance of economists to incorporate rehabilitation in normative theories of crime reflects an implicit belief that criminals' attitudes are hard to change through institutions, or at least that achieving such changes would have "counterdeterrent" effects.[93]   This implicit belief may have produced some spillover effects: the unwillingness of economists to consider institutionally incited changes in criminal attitudes may have led them to overlook or ignore the possibility that criminals' attitudes may change due to internal, and possibly even external and random, events.   This theory is consistent with the fact that an overwhelming majority of economic theories of crime invoke an implicit or explicit assumption of constant criminal tendencies.

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88. Professor Miceli seems to agree with this conclusion. He states: "[T]he current model with fully rational offenders provides no basis at all for waiting until the third (or even the second) offense to impose the maximal sentence. Explaining this provision of the law therefore requires further elaboration of the basic model." *Id.* The acknowledgment of fluctuating criminal tendencies can be interpreted as the "further elaboration" referred to by Professor Miceli.

89. *See supra* note 57 and accompanying text.

90. *See supra* Part II.

91. Ehrlich, *supra* note 19, at 311.

92. *See supra* Part II.A.

93. *See supra* note 60.

A. Constant Criminal Tendencies Assumption

To see how the constant criminal benefits assumption is invoked in standard crime and deterrence models, consider the simple Beckerian framework introduced in Part I.A. In this framework, potential offenders are, by definition, people who have positive benefits (bs) from committing crime, despite the moral cost. If a person has a non-positive benefit, then this would immediately imply that she would be deterred from committing crime, even with the smallest possible expected punishment (that is, $b \leq 0 < (p \times s)$). Whether potential offenders (that is, people with $b > 0$) decide to commit crime depends on whether the expected sanction ($p \times s$) is sufficiently high.

Consider David, who is often in a position where he does not have enough change to feed parking meters. When he has to park his car and has no change, he would rather pay up to twenty-five dollars than drive around and find change to feed the meter.[94] In this case, David's illicit (though not criminal) benefit (b)[95] from illegally parking his car is twenty-five dollars.[96] If, for instance, David estimates that his probability (p) of getting a parking ticket is $1/10$, and the monetary fine (s) for illegal parking is $100, then he chooses to park his car illegally whenever he does not have enough change to feed the meter.

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94. Assume that David cannot find parking meters that are out of order.

95. Illegal parking is a good example of how the simple Beckerian model works, although it is considered a civil infraction and not a crime in many jurisdictions, because: (1) the sanction is purely monetary, (2) the monetary sanction is not high enough to trigger the *judgment-proof-offender problem* and (3) counting the offender's benefit in the social welfare calculus is less controversial than in the criminal context. *See* Steven Shavell, *The Judgment Proof Problem*, 6 INT'L REV. L. & ECON. 45 (1986) (describing the judgment-proof problem: "Parties who cause harm to others may sometimes turn out to be 'judgment proof,' that is, unable to pay fully the amount for which they have been found legally liable."); Becker, *supra* note 15 (including criminal benefits in the social welfare calculus). For a criticism of this approach, see George J. Stigler, *The Optimum Enforcement of Laws*, 78 J. POL. ECON. 526 (1970). A recent working paper by economics Professors Philip A. Curry and Matthew Doyle contributes to this debate by showing that criminal benefits may be irrelevant, even if accounted for, in a utilitarian framework. Philip A. Curry & Matthew Doyle, *Social Welfare and the Benefits to Crime* (July 11, 2012), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1987177. The discussion in the proceeding parts extends the analysis to more conventional crimes.

96. For purposes of this example, it is harmless to ignore David's legal compliance cost; he would have had to incur the cost of feeding the meter, were he to comply.

This follows, because his illicit benefit ($25) exceeds his expected loss from parking illegally ((1/10) x $100 = $10).

Existing economic theories of law enforcement implicitly or explicitly assume that David's illicit benefit from illegal parking is *constant*—it is *always* twenty-five dollars. This, coupled with the assumption that David has perfect self-control, implies that whenever David has to choose between illegally parking and not parking, he will make the same decision, as long as the expected sanction remains the same. To prevent potential confusion, it should be noted that a similar constancy assumption is not invoked across individuals. As stated earlier, potential offenders are assumed to differ from each other in their illicit benefits. Another person, Jay, may have an illicit benefit of five dollars from illegal parking. The assumption of constant benefits refers to Jay's and David's unchanging benefits from illegal parking of twenty-five dollars and five dollars, respectively.

The reliance on constant illicit benefits is best demonstrated in the broad and expanding economic analysis of optimal punishment of repeat offenders. Such analysis considers models in which potential offenders are assumed to have multiple opportunities to commit an illegal act. Those who are caught multiple times committing the offense are called repeat offenders. Economic models are used to determine conditions under which repeat offenders ought to be punished more severely than first-time offenders.[97] Often, the assumption of constant benefits is invoked implicitly[98] by assigning the same benefits (*b*) to individuals across multiple opportunities. Sometimes the assumption is invoked explicitly. The best example is Polinsky and Shavell's 1998 article on repeat offenders,[99] which summarizes the assumption that individuals differ from each other in their illicit and

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97. For a short list of articles taking this approach, see *supra* note 12.

98. *See, e.g.*, Mungan, *Repeat Offenders*, *supra* note 24, at 174–76 (presenting a two-period crime and deterrence model, where potential offenders have two opportunities to engage in an illegal act). As is evident from the analysis, potential offenders are assumed to derive the same expected benefit from committing the offense in each period. This assumption of constant benefits is not explicitly stated in the article.

99. *See* Polinsky and Shavell, *On Offense History*, *supra* note 21. *See also* Miceli, *Deterrence and Incapacitation*, *supra* note 17, at 205 (invoking the constant benefit assumption explicitly: "Assume that potential offenders have infinite life spans. At time zero, they each take a random draw of the monetary gain from committing a crime, *g*, which is distributed by the density function *z(g)*. Each offender's realized *g* will remain his "type" throughout his life (thus, each offender will make the same choice each time he is confronted with a criminal opportunity).").

constant benefits: "The magnitude of the benefit is the same in both periods for a given individual but varies among individuals."[100]

One can imagine many reasons why the assumption of constant benefits from crime is unrealistic.[101] Jay, being a patient person, may on average have an illicit benefit from illegal parking of five dollars. But what if he is in a hurry? What if he is hungry, or angry? In these situations, his benefit from illegal parking may greatly exceed five dollars. Thus, Jay's benefits vary based on circumstances. Such variation implies fluctuating, rather than constant, criminal tendencies.

A second source of fluctuation in criminal tendencies is related to variations in individuals' self-control. Even if a person's true benefit from an illegal act remains constant, he may still commit it today and refrain from committing it tomorrow. For instance, a person, who is ordinarily deterred from attacking people he hates (due to expected sanctions), may temporarily lose his ability to compare costs and benefits when he is provoked. In these cases, criminal benefits and tendencies may diverge. Such divergences are discussed in further detail in Part IV.

In short, law enforcement models make use of the unrealistic assumption that people have constant criminal tendencies. Economists always make use of simplifying assumptions,[102] and unrealistic assumptions are expected to some extent. The real question is not whether

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100. Polinsky & Shavell, *On Offense History, supra* note 21, at 307. The authors note that their results would not be affected if they were to assume random benefits from crime, showing that they have not overlooked, but assumed away, random benefits from crime, presumably because the incorporation of random benefits does not add anything and over-complicates their analysis. Polinsky and Shavell's effort to assume away random benefits is harmless, mainly because the model is deterrence-based and does not formally incorporate incapacitation. In fact, the authors acknowledge that if incapacitation were considered in the model, then information on prior offenses could be used to evaluate the propensity of an individual to commit crime. In Part V, I argue that criminal records provide relevant information about a repeat offender's propensity to commit crime only when people have fluctuating tendencies to commit crime.

101. *See* Posner, *supra* note 12 (describing a number of reasons why potential offenders may have different tendencies to commit crime at different points in time related to their emotional states).

102. *See, e.g.*, Miceli, *Deterrence and Incapacitation, supra* note 17, at 205 (assuming that "offenders are infinitely lived and potentially commit crimes throughout their lives"); Mungan, *Repeat Offenders, supra* note 24, at 174 (assuming that "[s]ociety consists of individuals who are continuously distributed over benefits").

an unrealistic assumption was used but whether the assumption affected results that can be applied to the real world.

To demonstrate that the assumption of constant tendencies is not only simplifying but misleading, I proceed by summarizing a number of conclusions derived from law enforcement models that make use of constant tendencies and that are in tension with various legal practices. In Part V, I argue that this tension disappears when one relaxes the assumption of constant criminal tendencies.

B. Divergences Between Normative L&E and Actual Legal Practices

Despite L&E's success as a legal discipline,[103] there are some important conflicts between the suggestions of normative L&E theories and actual law enforcement mechanisms and practices. This suggests that (1) some legal practices are sub-optimal, and/or (2) existing L&E theories make use of simplifying assumptions that are misleading.

An extensive body of literature has investigated whether legal, and in particular common law, institutions converge to efficiency over time through some process of sociolegal or institutional evolution.[104] I do not enter this debate in this Article; instead I focus on a more modest issue. Specifically, I investigate whether it is possible to reconcile existing legal practices with the implications of L&E models by relaxing a simplifying assumption, namely the constancy of criminal tendencies. As such, I focus on (2) above.

I hope to demonstrate the divergence between the implications of L&E models and actual legal practices in three specific areas: (1) punishment of repeat offenders, (2) treatment of remorse and apologies, and (3) punishment of voluntary manslaughter.

1. Punishment of Repeat Offenders

"In practice, the law often sanctions repeat offenders more severely than first-time offenders."[105]   The 2011 Federal Sentencing Guidelines, for instance, categorize offenders based on their criminal records and call for longer sentences for criminals with longer rec-

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103. *See supra* note 1 and accompanying text.

104. *See, e.g.*, Nuno Garoupa & Carlos Gómez Ligüerre, *The Evolution of the Common Law and Efficiency*, 40 GA. J. INT'L & COMP. L. (forthcoming), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1805141.

105. Polinsky & Shavell, *On Offense History, supra* note 21, at 305.

ords.[106]   The Clean Water Act similarly punishes repeat offenders by doubling the maximum criminal fines and sentences for negligent violations of various sections of the Act.[107]   State criminal statutes also call for increased sentences for repeat offenders through *three strike laws.*[108]

The implications of L&E studies are not as uniform, and do not always suggest that repeat offenders should be punished more severely.   The simplest model of deterrence, for instance, suggests that detection history should be completely irrelevant for determining optimal sentences:

> If the [expected] sanction for polluting and causing a $1,000 harm is $1,000, then any person who pollutes and pays $1,000 is a person whose gain from polluting (say the savings from not installing pollution control equipment) must have exceeded $1,000.   Social welfare therefore is higher as a result of his polluting.   If such an individual polluted and was sanctioned in the past, that only means that it was socially desirable for him to have polluted previously.   Raising the sanction because of his having a record of prior convictions would overdeter him now.[109]

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106.   The guidelines require a complicated examination of the criminal's previous record for purposes of determining her "criminal history category."   There are six such categories, where category I is reserved for "inexperienced" criminals and category VI is for what may be called "habitual criminals."   The appropriate sentence for a given crime is generally longer for a criminal in category VI than a criminal in category I (unless the offense in question is level 1, 42, or 43.   In these cases both categories are assigned the same sentence: between 0–6 months for level 1, 360 months to life for level 42, and life for level 43).   Sentencing Table, 2011 FED. SENTENCING GUIDELINES, *available at* http://www.ussc. gov/Guidelines/2011_guidelines/Manual_PDF/Sentencing_Table.pdf.

107.   33 U.S.C. § 1319(c)(1).

108.   *See, e.g.,* CAL. PENAL CODE § 667 (1994); GA. CODE § 17-10-7(c) (2012); MD. CODE, CRIM. LAW § 14-101(d)(1) (2007).

109.   Polinsky & Shavell, *Public Enforcement of Law, supra* note 2, at 438.   It should be noted that this explanation as to why criminal history should not play a role in the simple crime and deterrence model implicitly relies on the offender's benefit being constant, namely $1,000 in the past and in the present.   It also relies on offenders' benefits entering into the social calculus.   *See supra* note 95.

This explanation, of course, is valid only under a set of simplify-ing assumptions.[110] Many scholars have extended the basic Beckerian framework in various dimensions to analyze punishment schemes in richer settings.[111] Such extensions, however, have not always led to re-sults that are consistent with actual practices. In fact, some economic models suggest that it may be a good idea to punish first-time offend-ers more severely than repeat offenders.[112] Other models provide ra-tionales as to why it may make sense to punish repeat offenders more severely for purposes of achieving optimal deterrence.[113] These ra-tionales, however, usually rely on restrictive conditions, and the re-sults have limited applicability.[114]

The mixed and qualified implications of L&E studies of optimal punishments for repeat offenders have led scholars to perceive the problem as a "puzzle."[115] The puzzling status of escalating punish-ments for repeat offenders in the L&E literature places it in sharp contrast with the wide approval for punishing repeat offenders more severely in actual practice.

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110. Polinsky and Shavell also describe the various simplifying assumptions at work. Polinsky & Shavell, *Public Enforcement of Law, supra* note 2, at 65–66 & 72 n.80.

111. *See, e.g.*, Garoupa, *Organized Crime, supra* note 15, at 278 (examining organized crime within the Beckerian framework).

112. *See, e.g.*, Emons, *supra* note 24, at 254.

113. *See, e.g.*, Mungan, *Repeat Offenders, supra* note 24, at 173.

114. *See* Thomas J. Miceli & Catherine Bucci, *A Simple Theory of Increasing Penalties for Repeat Offenders*, 1 REV. L. & ECON. 71, 78 (2005) ("[T]his justification for escalating penal-ties, like earlier theories, seems to apply to a fairly restrictive set of circumstances—specifically, crimes that should definitely be deterred."); Mungan, *Repeat Offenders, supra* note 24, at 173 (constructing a model where escalating punishments are optimal only if offenders "learn how to evade the detection mechanism employed by the government"); C.Y. Cyrus Chu et al., *Punishing Repeat Offenders More Severely*, 20 INT'L REV. L. & ECON. 127, 127, 135 (2000) (demonstrating that increasing penalties are better than uniform penal-ties, without comparing them to decreasing penalties); Polinsky & Shavell, *On Offense His-tory, supra* note 21, at 66–67 (constructing a model based on less restrictive assumptions, but providing a rationale for slightly different sanction schemes than escalating punish-ment schemes for repeat offenders).

115. *See, e.g.*, David A. Dana, *Rethinking the Puzzle of Escalating Penalties for Repeat Offend-ers*, 110 YALE L.J. 733, 737 (2001) (stating that "the phenomenon of escalating penalties based on offense history presents an even greater puzzle from an economic perspective than has been previously recognized"); Emons, *supra* note 12, at 254 (referring to the pun-ishment of repeat offenders more severely as a puzzle).

2. *Remorse and Apologies*

Remorse can be a mitigating factor in determining a criminal's punishment.[116] Although the instances in which the Federal Sentencing Guidelines call for a reduction in sentences due to manifestations of remorse are very limited,[117] a number of states may "permit the use of remorse as a mitigating factor."[118] Perhaps more importantly, manifestations of remorse, such as apologies, can affect the way judges exercise discretion in sentencing criminals.[119] In fact, a number of previous studies discuss how judges are tempted to impose shorter sentences when they are convinced that an offender is remorseful.[120]

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116. U.S. SENTENCING GUIDELINES MANUAL § 5K2.16 (2011).

117. *See id.* ("[D]ownward departure under this section might be considered where a defendant, motivated by remorse, discloses an offense that otherwise would have remained undiscovered."). But such sentence reductions are more closely related to the "voluntary disclosure of offense" than the manifestation of remorse. As such, these sentence reductions are completely consistent with the suggestions of economic studies of law enforcement, which advocate a reduction in penalty for self-reporters. *See, e.g.*, Louis Kaplow & Steven Shavell, *Optimal Law Enforcement with Self-Reporting of Behavior*, 102 J. POL. ECON. 583, 603 (1994) (finding that "increasing incentives for reporting harmful acts would induce more reporting and raise welfare"). This makes sense from a purely economic perspective because by self-reporting a person increases his probability of being caught from some smaller probability to one, which reduces the necessity of imposing costly sanctions to deter the criminal. This does not necessarily imply, however, that apologies should lead to sentence reductions. *See* Mungan, *Apologies*, *supra* note 24, at 179 n.5 (arguing that self-reporting and apologies can be unbundled).

118. Paul H. Robinson et al., *Extralegal Punishment Factors: A Study of Forgiveness, Hardship, Good-Deeds, Apology, Remorse, and Other Such Discretionary Factors in Assessing Criminal Punishment*, *in* SCHOLARSHIP AT PENN LAW, March 29, 2011, at 7, *available at* http://lsr.nellco.org/upenn_wps/362 (citing State v. Trostle, 951 P.2d 869, 887 (Ariz. 1997); Jackson v. State, 684 So. 2d 1213, 1238 (Miss. 1996); State v. Allen, 994 P.2d 728, 764 (N.M. 2000); Pope v. State, 441 So. 2d 1073, 1078 (Fla. 1983); FLA. STAT. § 921.0026(2)(j) (2012)).

119. Stephanos Bibas & Richard A. Bierschbach, *Integrating Remorse and Apology into Criminal Procedure*, 114 YALE L.J. 85, 99 (2004).

120. *See, e.g., id.* ("[J]udges heed expressions of remorse and apology and weigh them heavily at sentencing."); STANTON WHEELER ET AL., SITTING IN JUDGMENT: THE SENTENCING OF WHITE-COLLAR CRIMINALS 115 (1988) (reviewing empirical research and finding that "it is important for many judges that defendants recognize the gravity of their offense, accept the blame for their misdeeds, and express remorse or contrition for them").

Consequentialist approaches studying the proper role of remorse and its manifestations in the criminal justice system, however, suggest that they should not be used as mitigating factors.[121] Under simple consequentialist analyses focusing exclusively on deterrence, this follows because remorse is by definition an ex post concept, and therefore it should be irrelevant for deterring criminals ex ante.[122] In addition, apologies are viewed as mere "cheap talk"[123] making them "non-informative of an individual's conscious state"[124] and non-credible.[125] Furthermore, the prospect of reducing a sentence for apologizing decreases deterrence.[126] Finally, a system in which convincing apologies lead to reduced penalties generates asymmetric incentives for potential offenders because of the difficulty in "sort[ing] out the truly remorseful defendant from the unrepentant but savvy defendant."[127] As demonstrated by a number of articles, asymmetric incentives can lead to costs associated with under- as well as over-deterrence.[128]

In short, there is a divergence between the way remorse and apologies are treated in the criminal justice system, and the way they ought to be treated according to simple but meticulous consequentialist analyses of manifestations of remorse.

3. Voluntary Manslaughter

Voluntary manslaughter is punished less severely than murder.[129] From a simple deterrence-based L&E perspective, such reductions appear to be problematic. Unless the degree of control one can exert fluctuates over time and circumstances, it is hard to understand why the law reduces the punishment for killing when committed in the "heat of passion," without sufficient "cooling time" and produced by

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121.   *See supra* note 24.

122.   Mungan, *Apologies*, supra note 24, at 181.

123.   Robert H. Frank, *Departures from Rational Choice: With and Without Regret, in* THE LAW AND ECONOMICS OF IRRATIONAL BEHAVIOR 25 (Francesco Parisi & Vernon L. Smith eds., 2005).

124.   *See* Mungan, *Apologies, supra* note 24, at 178.

125.   Ward, *supra* note 24, at 132.

126.   *See* Mungan, *Apologies, supra* note 24, at 178 ("Imposing lower sanctions on those who convincingly display remorse will therefore have an effect of lowering the expected punishment.").

127.   Ward, *supra* note 24, at 164.

128.   *See, e.g.,* Shavell, *supra* note 75, at 446–47; Mungan, *supra* note 75, at 249.

129.   *See supra* note 23.

an "adequate provocation."[130] It is, therefore, not surprising that the deterrence-based justification for such reductions, offered by Eric Posner, relies on a variant of fluctuating criminal tendencies.[131]

The consequentialist rationale identified by Posner for punishing voluntary manslaughter less severely than murder focuses on the fact that voluntary manslaughter is generally hard—and sometimes impossible—to deter.[132] As such, reductions in punishment are justified because "expensive sanctions should not be wasted on people who cannot be deterred by them."[133] This reasoning relies on the fact that people experience intense anger under extraordinary circumstances and, under the stimulus of such emotions, are very unresponsive to punishment and therefore hard to deter.[134] Accordingly, Posner's rationale relies on people being less able to exert control over their actions when they find themselves in extraordinary circumstances, which violates the constant benefit assumption discussed earlier.[135]

Although Posner's rationale is very appealing, it has a caveat that can be exploited by scholars who disfavor consequentialist approaches. A criticism of Posner's claim can be formulated in a few steps. First, since courts cannot perfectly identify whether people were undeterrable at the time they committed crime, they must rely on blunt proxies to decide whether a killing should be classified as voluntary manslaughter.[136] Second, since such blunt proxies are overinclusive, they classify some killings committed by deterrable individuals as voluntary manslaughter. Therefore, sanction reductions for voluntary manslaughter may lower deterrence for individuals who are indeed deterrable.[137] Furthermore, individuals who are less responsive to

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130. *See* Kahan & Nussbaum, *supra* note 9, at 305 (summarizing what constitutes voluntary manslaughter).

131. Posner, *supra* note 12, at 1978. The concept of fluctuating criminal tendencies is explained further in Part IV.

132. *Id.* at 1993–95.

133. *Id.* at 1994.

134. *Id.* at 1995.

135. *See supra* Part III.A.

136. *See* Kahan & Nussbaum, *supra* note 9, at 305 (observing that "[h]omicide law typically grades a certain class of emotional killings as voluntary manslaughter rather than murder").

137. *See* Kahan & Nussbaum, *supra* note 9, at 310 ("But how can a consequentialist be sure that the savings from relaxing one offender's punishment on this ground will not be

punishment, but not completely undeterrable, may require penalty enhancements to be deterred from committing crime.[138]

Posner's argument can be strengthened in a framework that incorporates the incapacitation function of punishment as well as fluctuating criminal tendencies.[139]

C. Constant Criminal Tendencies and Their Role in the Divergences Between Normative L&E and Actual Legal Practices

So far, I have demonstrated that there is a divergence between what simple law enforcement models suggest the law ought to be, and how the law actually manifests itself.[140] Simple law enforcement models rely on the assumption that criminals have constant criminal tendencies,[141] which may be responsible for the divergences between normative L&E and actual legal practices. But is it?

Section V demonstrates that the implications of economic models capable of producing fluctuating criminal tendencies are more consistent with actual legal practices and intuitions. It should be noted that a simple departure from constant criminal tendencies is, in most cases, insufficient to achieve these results.[142] In addition to incorporating fluctuating criminal tendencies, it is also necessary to move from a simple deterrence-based framework to one that incorporates the deterrence and incapacitation functions of criminal justice systems.[143] As such, fluctuating criminal tendencies, as defined in Part IV, are necessary—but not sufficient—to provide economic justifications for the practices summarized in Part III.

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offset by the deterrence-undermining effects of such a disposition on the behavior of others who find themselves in such situations for the first time?").

138. *See, e.g.*, Moin A. Yahya, *Deterring* Roper*'s Juveniles: Using a Law and Economics Approach to Show That the Logic of* Roper *Implies That Juveniles Require the Death Penalty More Than Adults*, 111 PENN. ST. L. REV. 53, 65 (2006) (arguing that severe penalties, such as the death penalty, are required and justified to deter juveniles, who may be harder to deter than adults).

139. *See supra* Part V.

140. *See supra* Part III.B.

141. *See supra* Part I.D.

142. *See* notes 136–138 and accompanying text.

143. *See supra* Part II.D.

IV. INTEGRATING FLUCTUATING CRIMINAL TENDENCIES INTO THE
      ECONOMIC THEORY OF CRIME

People may have fluctuating, rather than constant, criminal tendencies for two reasons. First, people may have different benefits from the same illegal activity at different points in time. Second, people may possess different degrees of self-control at different points in time.

This Part, for pedagogical reasons, begins by focusing on the first factor, and formalizes how fluctuating criminal tendencies can be incorporated into standard L&E models.[144] Then, in Part IV.C, I draw on insights from the behavioral L&E literature to incorporate the second factor, namely that people may lack perfect self-control.

A. Incorporating Fluctuating Tendencies

Standard crime and deterrence models assume that a person's tendency to commit crime is defined through his constant benefits from crime.[145] Using the previously introduced framework, a person commits a crime if his constant benefit (b) exceeds the expected punishment from the crime (p x s).[146] This framework can be altered easily to incorporate *fluctuating criminal tendencies*: instead of assuming that b is constant, one can assume that it is a *random variable*.[147]

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144. *See infra* Parts IV.A, B.

145. *See* Gary S. Becker, *Crime and Punishment: An Economic Approach*, 76 J. POL. ECON. 169, 176 (1968) (observing that "[s]ome persons become 'criminals,' therefore, not because their basic motivation differs from that of other persons, but because their benefits and costs differ").

146. *See supra* Part I.A.

147. A random variable describes the outcome generated through a stochastic or random process. "Consider an experiment in which a person is selected at random from some population and her height in inches is measured. This height is a random variable." PROBABILITY AND STATISTICS 98 (Morris H. DeGroot & Mark J. Schervish eds., 2002). By using mathematics, a more precise definition can be provided:

> Consider an experiment for which the sample space is denoted by S [i.e. Pr(S)=1, where Pr(X) denotes the probability of X occurring]. A real-valued function that is defined on the space S is called a *random variable*. In other words, in a particular experiment a random variable X would be some function that assigns a real number $X(s)$ to each possible outcome $s \in S$.

Id. at 97. Part IV discusses how fluctuating criminal tendencies can be modeled by making use of random variables.

Random variables take on values through stochastic processes. To be more specific, consider the previous example involving Jay and illegal parking. Jay may have a certain tendency to park illegally under normal circumstances, but this tendency may be greater when he is impatient or in a hurry. The instant purpose is not to elaborate on specific conditions that may change Jay's illicit benefits,[148] but to identify a simple way to incorporate his fluctuating criminal tendencies in standard economic theories of crime, namely by converting b into a random variable.

To exemplify how random variables can be included in standard economic theories of crime, let us begin by making the extreme assumption that Jay only has three psychological states: *calm, impatient,* and *frustrated.* Let us also assume that his benefits in these three states are $5, $20, and $30, respectively. Assume further that half of the time Jay is calm, a quarter of the time he is impatient, and the other quarter of the time he is frustrated. In this case, Jay's fluctuating illicit benefits can be represented by the *probability function*[149] depicted in Figure 1.

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148. *See* Posner, *supra* note 12, at 1981–82 (providing a detailed discussion as to why individuals' criminal tendencies may fluctuate).

149. For probability functions, see DeGroot et al., *supra* note 147, at 99. Here, Jay's benefit from illegal parking can take on a finite number of values, namely three. To reflect this fact an economist would say that Jay's benefit from illegal parking is a *discrete* random variable. More precisely and generally "[i]t is said that a random variable X has a *discrete distribution* or that X is a *discrete random variable* if X can take only a finite number k of different values $x_1, \ldots, x_k$ or, at most an infinite sequence of different values $x_1, x_2, \ldots$" *Id.* To describe probabilities with which a discrete random variable takes on specific values, we use probability functions ("PF"). It follows that "the *probability function* . . . of X is defined as the function f such that for every real number x, $f(x)=\Pr(X=x)$." *Id.* Using this notation the PF describing Jay's illicit benefits can be expressed as:

$$f(x) = \begin{cases} 0.5 & \text{if } x=5 \\ 0.25 & \text{if } x=20 \\ 0.25 & \text{if } x=30 \end{cases}$$

Figure 1: Probability function (PF) describing
Jay's fluctuating benefits from illegal parking

probability

Expected Fine = $10

0.5

0.25

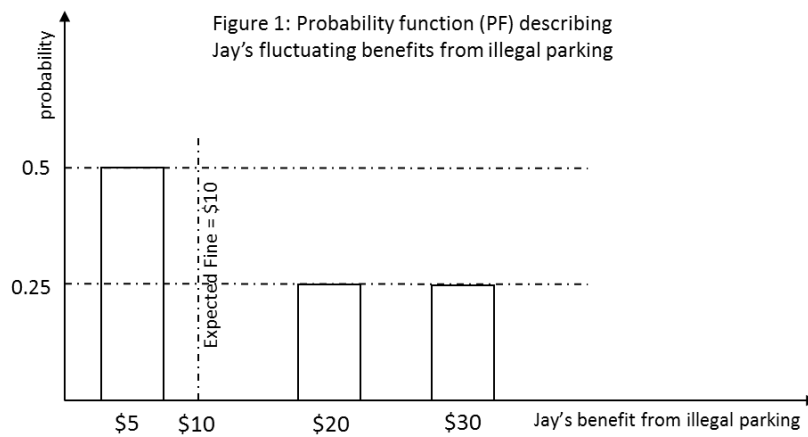$5 $10 $20 $30   Jay's benefit from illegal parking

Figure 1 compares the expected fine from illegal parking ($10) with Jay's illicit benefits when he is calm ($5), impatient ($20), and frustrated ($30). Since Jay's illicit benefits exceed the expected fine from illegal parking when he is either impatient or frustrated, and since he is impatient or frustrated half of the time, Jay will decide to park illegally half of the time when he does not have sufficient change to feed the meter. This frequency, through no coincidence, corresponds to the probability obtained by summing the heights of the boxes to the right of the expected fine (that is, $10) in Figure 1: ¼+¼=½.

It is plausible to assume, of course, that in reality people do not have three potential psychological states but many, perhaps an infinite number.[150] To incorporate this assumption, we can allow b to take on an infinite number of values. Furthermore, for expositional purposes,[151] we may assume that b is distributed around a certain value most of the time and that it rarely deviates from that value significantly. Specifically, we may assume that Jay's benefits from illegal parking vary between $0 and $30,[152] and that most of the time his benefits are

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150. As Posner also observes, people may experience emotions with different intensities (for example, one may be very angry, angry, slightly angry, not angry at all, etc.). *See* Posner, *supra* note 12, at 1980.

151. The exact distribution obviously depends on the person and the illegal activity in question. The purpose here is to give an example of how b can potentially be distributed. The arguments in the next Part do not rely on these specific assumptions. *See infra* Part IV.B.

152. It is implicitly assumed that Jay's benefits can take on any real number between 0 and 30. If benefits are assumed to take on values corresponding to whole dollars, for in-

between $4 and $6.   In this case Jay's *probability density function* ("PDF")[153] over illegal parking can be represented by the following graph.

Figure 2: Probability density function (PDF) describing Jay's fluctuating benefits from illegal parking
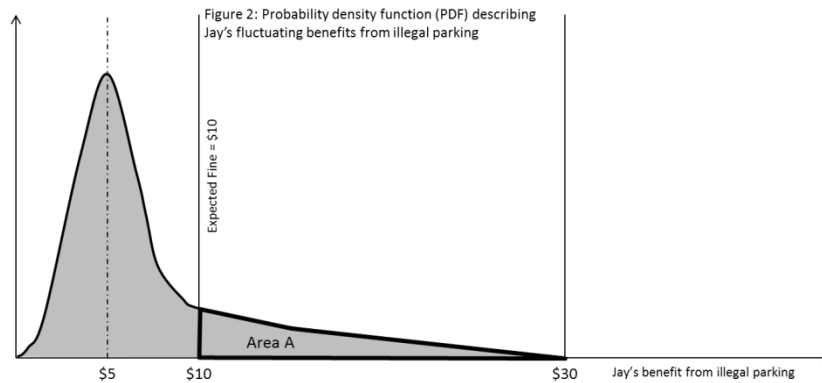
When a PDF is used, as in Figure 2, to represent Jay's fluctuating tendency to park illegally, the probability with which Jay's illegal benefit exceeds the expected fine can no longer be measured by focusing on the height of the boxes representing probabilities, as in the *discrete distribution*[154] case represented by Figure 1. Instead, we must focus on the area that lies below the PDF and to the right of $10. The size of this area, that is, Area A in Figure 2, represents the probability with which Jay's illegal benefit exceeds the expected fine of $10. It should also be noted that since Jay's benefit from illegal parking is assumed to always lie between $0 and $30, the entire area below the PDF in Figure 2 (shaded in gray) corresponds to a probability of one.

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stance, then his benefits can take on only thirty-one different values, that is, $0, $1, $2, . . . $28, $29, $30), in which case a PF, as in Figure 1, would better represent Jay's fluctuating benefits from illegal parking.

153. Since Jay's benefit "can assume every value in an interval" it has a "continuous distribution." DeGroot et al., *supra* note 147, at 103. More generally, "[i]t is said that a random variable *X* has a *continuous distribution* or that *X* is a *continuous random variable* if there exists a nonnegative function *f*, defined on the real line, such that for every subset *A* of the real line, the probability that *X* takes a value in *A* is the integral of *f* over the set *A*." *Id.* For instance, if *A*=(4,6], then

$$\Pr(4 < x \le 6)$$

"The function *f* is called the *probability density function . . .* of *X*." *Id.*

154. *See supra* note 149.

B. Multiple Potential Offenders with Fluctuating Tendencies

So far, we have focused on the potential illicit benefits of a single person (namely Jay). But, as stated in Part III, different individuals may have different tendencies to commit crime, or, in our example, park illegally. These differences in tendencies can be represented by making use of multiple PDFs, one for each individual in society.

Consider, for instance, David, a person who is more likely than Jay to park illegally, because he is, on average, less patient (or values his time more). David's tendency to park illegally can be captured by a PDF that assigns high probabilities to greater benefits from parking illegally. Figure 3 demonstrates how different PDFs can be used to represent individuals with different tendencies to park illegally.

Figure 3: Probability density functions describing Jay and David's fluctuating benefits from illegal parking
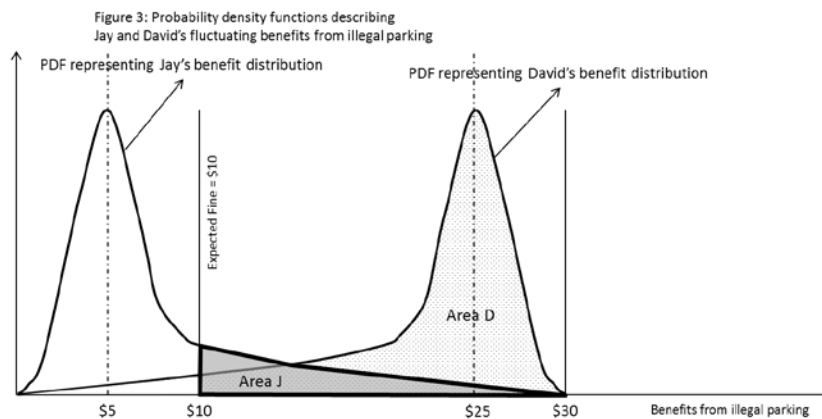
As can be inferred from Figure 3, David is more likely to park illegally than Jay, because his benefit from illegal parking is more likely to exceed the expected fine of $10. Specifically, Area D (the dotted area) is greater than Area J (the semi-transparent gray area) in Figure 3, which respectively represent the probabilities with which David and Jay will have benefits from illegal parking exceeding $10.

These examples focus on illegal parking, because it is an "offense" that many people have committed, perhaps multiple times. As such, most people can relate to the idea of having fluctuating benefits or tendencies by reflecting on their own experiences with illegal parking.

C. Insights from Behavioral Economics and Divergences Between Criminal Tendencies and Benefits

Previously, when referring to illegal parking, I characterized the offender's fluctuating tendency to park illegally as a direct result of fluctuations in his actual benefits from parking.[155] This was mainly for pedagogical reasons, and to introduce fluctuating tendencies in an easily comprehensible way. It is not hard to imagine that people may temporarily act in ways that do not serve their best interests. In such cases, criminal tendencies and benefits diverge.

When it comes to battery, for example, many people presumably have criminal benefits distributed around zero. Yet there are exceptional cases where the same people have significantly high criminal tendencies: a person who is hungry and hypoglycemic may be tempted to attack a person who she finds irritating;[156] a fanatic soccer team supporter may temporarily find it in his best interest to attack a person insulting his team;[157] a person who comes home and finds his wife in bed with another person may lose control and attack that person or his wife.[158]

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155. *See supra* Part IV.A.

156. *See, e.g.*, Winchell v. Guy, 857 N.E.2d 1024, 1026 (Ind. Ct. App. 2006) (describing a fight that broke out in a drive thru lane of a Taco Bell because a hungry woman yelled at the driver in front of her for taking too long while placing his order). Of course, this particular justification has also been used in the reverse. *See* Eileen A. Scallen & William E. Wiethoff, *The Ethos of Expert Witnesses: Confusing the Admissibility, Sufficiency and Credibility of Expert Testimony*, 49 HASTINGS L.J. 1143, 1161 (1998) (describing the "Twinky defense," where accused murderer Dan White attributed his killing the San Francisco Mayor George Moscone and Harvey Milk to eating a large amount of sugary pastries).

157. *See* Lindsay M. Korey Lefteroff, *Excessive Heckling and Violent Behavior at Sporting Events: A Legal Solution?*, 14 U. MIAMI BUS. L. REV. 119, 134–35 (2005) ("Some [soccer] venues have even installed moats around the soccer pitch to distance unruly fans from game officials and players, who are often the primary targets of the fans' fury.").

158. For an example, see Lynn Hecht Schafran, *There's No Accounting for Judges*, 58 ALB. L. REV. 1063 (1995). She relays this story:

> On February 8, 1994, a Maryland trucker named Kenneth Peacock came home unexpectedly during a winter storm and found his wife in bed with another man. For several hours Peacock argued with his wife while drinking wine and beer. Then he shot her in the head with a hunting rifle. Peacock plead guilty to voluntary manslaughter.

Id. at 1063 (footnote omitted).

These observations reveal the fact that people have fluctuating criminal tendencies. How one interprets criminal tendencies vis-à-vis criminal benefits, however, may have important implications concerning the desirability of various punishment schemes from a consequentialist perspective, even if under a limited set of circumstances.[159]

In particular, if one includes criminal benefits in the social welfare calculus,[160] then one cannot immediately rule out the possibility that individuals with high tendencies to commit crime are committing *efficient crimes.*[161] Specifically, if the expected punishment for a crime is set at a significantly high level and a person is still not deterred from committing that crime, one may incorrectly conclude that the crime must have been efficient.[162] Because I invoke assumptions that contradict this conclusion, I first explain why it is incorrect.

159. The interpretation is irrelevant if criminal benefits are not included in the social welfare calculus. *See supra* note 95. This follows trivially, because what matters is not whether and how much the criminal benefits from his actions, but simply his likelihood or tendency to commit crime. Moreover, even if criminal benefits are included in the social welfare calculus, the distinction is unimportant in cases where the harm associated with the crime is not exceeded by any potential offender's benefit from crime. In this case, there are always benefits from deterrence as well as incapacitation, which is the main observation that I rely on in conducting the analysis in Part V. The only case where the absence of divergences between benefits and tendencies may have a substantial effect on the analysis is when criminal benefits are included in the social welfare calculus *and* there are criminals whose benefits exceed the harm inflicted through crime. In this particular case, interpreting tendencies as occasionally diverging from benefits supports my analysis. This is the case analyzed in the proceeding paragraphs.

160. *See supra* note 95.

161. A crime is defined to be efficient if the social harm from the crime is exceeded by the criminal benefits enjoyed by the criminal. *See* Becker, *supra* note 145, at 180–82 (explaining efficient crimes). With crimes leading to monetary losses, it is easy to see how a crime can be efficient. If the only loss—all direct and indirect costs included—created by the crime is worth $100, and if the criminal is willing to pay $101 to commit that crime, the crime is efficient. For other, more serious offenses, such as murder, the harm inflicted through crime is extreme, and it may be plausible to assume that no criminal benefit can exceed the harm inflicted through murder. But this Article does not make this assumption because it does not appear to be necessary. Instead, I am making the weaker assumption that—at any relevant punishment level—serious crimes committed by offenders are, *on average*, inefficient. I support and explain this assumption in further detail in the proceeding paragraphs.

162. This is a commonly invoked argument in the law enforcement literature. Its simplest form can be stated more discretely as follows: If h is the harm from crime, p is the

There are at least three reasons as to why the commission of a crime, despite very high penalties, does not imply that the criminal possesses benefits that exceed the harm inflicted through crime. First, some criminals, even if they are completely rational, are nondeterrable. Some criminals simply do not view imprisonment as a significant punishment.[163] The fact that such a person commits crime despite an expected sentence of 100 years does not imply that the crime committed by this person is efficient.[164]

The two remaining reasons come from behavioral economics, which studies how people systematically deviate from common assumptions invoked in standard economic analyses and how "human beings make *systematic* mistakes in their decision making."[165] Systematic mistakes occurring due to *cognitive biases*[166] and *bounded willpower*[167] appear to account for departures from the deterrability and common knowledge assumptions discussed in Parts I.B. and I.C., respectively,

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probability, and *s* the severity of punishment, then setting *s=h/p* implies that a risk-neutral potential offender will commit crime, if and only if, his benefit exceeds the harm from crime, which makes the crime efficient. *But see infra* note 164 (showing why this argument does not generalize to cases where sanctions have differential deterrent effects on people).

163. Consider, for instance, the case of Earl Albert Moore, an attempted bombing suspect, who, according to his former son-in-law "did what he did because he wanted to go back to prison." Jeffrey Wolf & Will Ripley, *Relative: Southwest Plaza Mall Bomb Suspect 'Wanted to Go Back to Prison,'* 9NEWS.COM *(*Apr. 26, 2011), http://www.9news.com/news/ story.aspx?storyid=195506&catid=222; *see also* Jazmine Ulloa, *Convict Couldn't Handle Being Free,* MYSA (Sept. 25, 2011), http://www.mysanantonio.com/news/local_news/article/ Convictcouldn-thandlebeing-free-2187648.php ("Most inmates want out of the pen. Randall Lee Church burned a house down to get back inside."); Andrew Marra, *Man Charged in Robbery of West Palm Beach Bank of America Branch,* PALM BEACH POST (Dec. 29, 2010), http://www.palmbeachpost.com/news/crime/man-charged-in-robbery-of-west-palm- beach-1152346.html (explaining that "Charles Latham, 47, robbed the Bank of America in downtown West Palm Beach because he wanted to go back to prison").

164. In symbols, if *p* denotes the probability of conviction, *h* is the harm from crime, and $c_i(s)$ denotes the cost incurred by person *i* from being convicted for *s* years, then $pc_i(s) <h$ can be true for all *s* and for some *i*. Therefore, there will be individuals with benefit *b* such that, $pc_i(s) <b<h$, who commit, by definition, inefficient crimes.

165. McAdams & Ulen, *supra* note 50, at 406.

166. *See, e.g., id.* at 417–21 (discussing cognitive biases in further detail).

167. *See, e.g.,* Christine Jolls, Cass R. Sunstein & Richard Thaler, *A Behavioral Approach to Law and Economics,* 50 STAN. L. REV. 1471, 1479 (1998) (discussing bounded willpower in further detail).

and thereby supply explanations for why people may commit ineffi-
cient crimes even when expected sanctions are very high.

Specifically, it is well documented that many people have cogni-
tive biases leading them to be overconfident and optimistic.[168] This
insight, when applied to criminal law enforcement, suggests that crim-
inals will tend to *overcommit* crimes, that is, they will commit crimes in
cases where the expected utility from committing crime exceeds their
expected utility from refraining from committing crime.[169] Finally,
people may possess *bounded willpower*, which refers to the inability of a
person to act in a manner that serves his long term benefits, even
when he is perfectly informed about the costs and benefits associated
with his actions.[170] Criminals with bounded willpower will also tend to
overcommit crimes, since the presence of immediate criminal benefits,
rather than delayed expected penalties, will guide their decisions to
commit crimes.[171]

The existence of cognitive biases suggest that people may commit
inefficient crimes, even when there are very high expected penalties,
and that some criminals do not view imprisonment as a particularly
harsh punishment. As such, crimes will occur at any given level of
punishment, even when the social cost exceeds the criminal benefits
of such crimes. In the remainder of this Article, I will assume that—at
all relevant punishment levels—the proportion of inefficient crimes is
relatively high, such that there are expected benefits from deterring

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168. *See, e.g.*, Christine Jolls, *On Law Enforcement with Boundedly Rational Actors, in* THE
LAW AND ECONOMICS OF IRRATIONAL BEHAVIOR 273 (Francesco Parisi and Vernon Smith
eds., 2004) ("[A] highly robust feature of human behavior is that people underestimate
the probability that negative events will happen to them as opposed to others"); *see also*
Russell B. Korobkin & Thomas S. Ulen, *Law and Behavioral Science: Removing the Rationality
Assumption from Law and Economics*, 88 CAL. L. REV. 1051, 1091–93 (2000) (discussing issues
related to overconfidence and optimism biases); McAdams & Ulen, *supra* note 50; Neil D.
Weinstein, *Unrealistic Optimism About Future Life Events*, 39 J. PERSONALITY & SOC. PSYCHOL.
806 (1980); Neil D. Weinstein, *Unrealistic Optimism About Susceptibility to Health Problems:
Conclusions from a Community-Wide Sample*, 10 J. BEHAV. MED. 481 (1987).

169. A similar point is made by Korobkin and Ulen, *supra* note 168, at 1092.

170. This point was made by Professor Robert Cooter long before the recent literature
on behavioral L&E emerged. *See* Cooter, *supra* note 12.

171. This problem is commonly called dynamic inconsistency and is theorized by mak-
ing use of hyperbolic discounting. *See, e.g.*, Manuel A. Utset, *Hyperbolic Criminals and Re-
peated Time-Inconsistent Misconduct*, 44 HOUS. L. REV. 609, 612 (2007).

crimes and from incapacitating individuals with a likelihood of recidivating.[172]

Having introduced the reasons why people may possess fluctuating criminal tendencies and how their tendencies do not necessarily reflect their criminal benefits, I now consider individuals who almost never need to be deterred because they find it morally wrong to commit crimes. Such individuals have low tendencies to commit crime, but, even if rarely, may "lapse"[173] into committing crime.

D. Law Abiding Citizens, Fluctuating Criminal Tendencies, and Non-Deterrable Crimes

Consider Michael, a person who under normal circumstances cannot even imagine murdering someone. Ordinarily he would not kill, even if it were legal. But, if he ever finds his wife in bed with another man, he would temporarily be overcome by the temptation of attacking that person (or his wife[174]) regardless of the penalty associated with murder (or manslaughter), and this attack may result in the death of that person. If, however, Michael has sufficient *cooling time*,[175] he would realize that attacking either individual would be a mistake and decide not to commit a crime. When Michael acts under the influence of temporary and emotional stimuli, he acts against his best interest.

For purposes of sketching out Michael's fluctuating criminal tendencies, which may diverge from his benefits, it is sufficient to note that Michael may temporarily be undeterrable in cases where he is under the influence of emotional stimuli. Furthermore, even if very rarely, Michael gets so angry at people that, but for the prospect of imprisonment, he would consider killing them. In this case, the PDF

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172. This is a weaker assumption than the assumption that the harm from crime always exceeds the benefit from crime, which has previously been invoked in economic analyses of law enforcement. *See, e.g.*, Louis Kaplow, *The Optimal Probability and Magnitude of Fines for Acts that Definitely are Undesirable,* 12 INT'L REV. L. & ECON. 3 (1992).

173. The term *lapsing* is used by Cooter, *supra* note 12, to refer to situations where individuals commit crime. Professor Cooter defines lapses as the "rare occasions when [the potential offender] draws preferences from the tail of the distribution where uncertain or future costs are discounted very highly." *Id.* at 150.

174. *See supra* note 158.

175. *See* Kahan & Nussbaum, *supra* note 9, at 305 (discussing the concept of *cooling time* and a number of cases interpreting it).

Figure 4: PDF describing Michael's tendency to commit crime
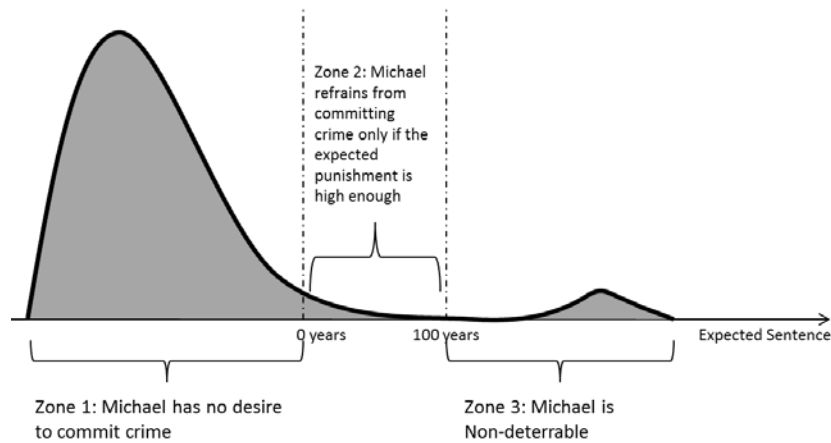
representing Michael's tendency to commit crime can be represented by Figure 4 below.[176]

As Figure 4 demonstrates, there is little deterrence value to punishing Michael, because (1) most of the time (as in Zone 1) punishment is unnecessary; Michael abstains from crime even if there is no punishment, (2) in the unlikely event that Michael has a desire to commit crime, it is more likely than not that there is no punishment available that can deter him (as in Zone 3). Furthermore, in the rare case when Michael has a desire to commit crime and can be deterred from doing so (as in Zone 2), relatively small expected punishments are usually sufficient for deterrence purposes. Thus, from a deterrence perspective, if each individual in society were like Michael, it

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176. For expositional purposes, Figure 4 is drawn such that it assigns positive densities for values smaller than "0 years" as well as for values greater than "100 years." The choice of '100' years is completely arbitrary. One may object to this exposition, suggesting that such values cannot exist or are meaningless. The purpose here is to represent by Zone 1 the frequency with which Michael has no desire to commit crime and by Zone 3 the frequency with which Michael is nondeterrable. This exposition enables such representation in a comprehensible and compact manner. An alternative way of representing the same idea would be to assign positive probabilities to points "0 years" and "100 years." But this would require the use of *mixed distributions*, which would be more difficult to represent and explain. *See* DeGroot et al., *supra* note 147, at 108 (explaining mixed distributions). Furthermore, with some creativity, values smaller than "0 years" could be interpreted as cases corresponding to subsidized crimes (for example, the government rewards rather than punishing crime) and values greater than "100 years" can be interpreted as being tortured at varying degrees of severity while in jail.

would be desirable to either not punish the killing of other people, or to impose relatively small punishments.

Scholars have criticized L&E theories of punishment by making similar points;[177] if most crimes are committed by people who are undeterrable, how can we explain the fact that we punish them by using an L&E theory? I answer this and related questions in the next Part.

V. ECONOMIC ANALYSIS WITH FLUCTUATING CRIMINAL TENDENCIES

There are at least two interrelated potential reasons why, from a consequentialist perspective, criminals ought to be punished, even if most criminals are frequently nondeterrable. First, imprisoning nondeterrable criminals incapacitates them and prevents them from committing further crime.[178] Accordingly, if the harm[179] associated with the crime prevented through incapacitation exceeds the cost of imprisonment, punishing nondeterrable criminals through imprisonment is justifiable on consequentialist grounds.[180] Second, even if some potential criminals are frequently nondeterrable, punishment could still, even if infrequently, lead them to abstain from committing crime[181] and deter other potential criminals who are more responsive to punishment. Therefore, if benefits associated with the deterrence of such a minority exceeds the cost of punishing nondeterrable criminals, then punishment would again be justifiable on consequentialist grounds.

The first consequentialist (and incapacitation-based) justification for punishment exists only if the criminal being punished has a significant likelihood of committing crime in the future.[182] If every individual were like Michael,[183] we would not expect to see a high frequency of recidivism; therefore, benefits from incapacitation would be offset

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177. *See supra* note 3.

178. *See supra* note 13 and accompanying text. *But see* Ehrlich, *supra* note 19, at 315 (mentioning a caveat "although imprisonment temporarily eliminates participation in criminal activity outside of prison walls, it does not stop it inside").

179. If criminal benefits are included in the social welfare calculus, then social harm equals the harm to the victim minus the benefit to the criminal. *See supra* Part II.

180. *See infra* Part V.A.

181. For example, Michael, whose criminal tendencies are depicted in Figure 4, is deterred from committing crime when his criminal tendencies fall in Zone 2 in Figure 4.

182. *See* Shavell, *Optimal Incapacitation*, *supra* note 17 (demonstrating that incapacitative benefits increase with the offender's dangerousness, that is, his likelihood of recidivating).

183. *See supra* Figure 4 (summarizing Michael's criminal tendencies).

by costs of imprisonment.[184]   Similarly, we would not expect benefits associated with deterrence to be high, because punishment rarely deters people like Michael.[185]   Both justifications rely on there being at least some individuals who do not have criminal tendencies similar to Michael's.

Having established that the presence of individuals, who are different than Michael, is a necessary condition for the proffered consequentialist justifications for punishment in general, we must ask whether they are also sufficient for providing rationales for the "puzzling" practices in criminal law discussed in Part III.   In the remainder of this Part, I demonstrate that if there are some individuals who have high criminal tendencies[186] and are more responsive to punishment—along with people like Michael—then many "puzzling" doctrines and legal practices can be justified on consequentialist grounds.   I also demonstrate the key role that fluctuating criminal tendencies play in these justifications.

Briefly stated, when there are *professional criminals* (individuals with fluctuating and high criminal tendencies), as well as *non-professional criminals* (individuals like Michael), existing practices in criminal law can be interpreted as mechanisms that address the trade-off between minimizing the unnecessary costs of punishing *non-professional criminals* and maximizing the deterrence and incapacitation of *professional criminals.*

A.   Punishing Repeat Offenders More Severely

When people possess constant criminal tendencies, it is hard to provide a consequentialist and satisfying justification as to why repeat offenders should be punished more severely.   When we assume that people have fluctuating criminal tendencies, then punishing repeat

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184. *See* Shavell, *Optimal Incapacitation, supra* note 17 (explaining that higher levels of punishment, like incapacitation, are ineffective in situations where there are only rare instances of potentially criminal behavior).

185. This follows from the fact that Zone 2, in Figure 4, occupies a very small area in comparison to Zones 1 and 3.

186. The existence of individuals with high criminal tendencies is supported by arrest data offered by the Bureau of Justice Statistics. In particular, the data suggest that over two thirds of prisoners released in 1994 were rearrested within three years after their release. Patrick A. Langan & David J. Levin, *Recidivism of Prisoners Released in 1994*, 15 FED. SENTENCING REP. 58, 58 (2002).

offenders more severely serves a consequentialist purpose related to its information-exploiting feature.[187]

When a person is caught committing crime for the first time, it is not clear whether he did it because he is a professional criminal, or because he is a nonprofessional criminal who happened to have an unexpected impulse which led him to lose control over his actions.[188] If the first time offender committed a crime due to the latter explanation, then it makes little sense to punish him severely. As explained earlier, nonprofessional criminals are unlikely to recidivate, and severe sanctions are rarely necessary or incapable of deterring them.[189] In this case, incapacitation and deterrence rationales for punishment do not exist, or are very weak. If, on the other hand, the first-time offender is a professional criminal, then he should be punished severely because punishment results in significant incapacitation as well as deterrence benefits.

For purposes of sentencing, however, it is not possible to distinguish between first-time offenders who are professional and nonprofessional criminals, because criminal tendencies are not directly observable.[190] Accordingly, both types must be punished uniformly. This creates a simple trade-off: reducing costs of punishing nonprofessional criminals and increasing the deterrence and incapacitation of professional criminals.[191] The greater the proportion of nonprofes-

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187. An interesting question to consider is to what extent the rationales provided in this Section extend to corporate crimes and liabilities. Since individuals who have control over corporations change over time, updating Bayesian beliefs, as described in note 193, concerning the dangerousness of corporations may often be difficult or meaningless. In cases where such updating is impossible the rationale for punishing offenders discussed in this Section vanishes for corporations, but not individuals. For a discussion of optimal punishment of corporations versus individuals, see Douglas H. Ginsburg & Joshua D. Wright, *Antitrust Sanctions, in* 6 COMPETITION POL'Y INT'L 3 (2010); Jennifer Arlen, *Corporate Criminal Liability: Theory and Evidence, in* RESEARCH HANDBOOK ON THE ECONOMICS OF CRIMINAL LAW (Alon Harel & Keith Hylton, eds., forthcoming 2012).

188. This would correspond to the case where a person has criminal tendencies similar to those depicted in Figure 4, and due to some rare event temporarily falls in Zone 3 and is undeterrable.

189. They are unlikely to recidivate, because ex ante, their likelihood of falling in Zones 2 and 3, as in Figure 4, is very small. They are rarely deterred by severe sanctions because Zone 2, in Figure 4, occupies a very small area in comparison to Zones 1 and 3.

190. *See supra* Part IV.D.

191. *See supra* Part II.D.

sional offenders in society, the more important it becomes to reduce the costs of punishing these offenders, and vice versa.[192] This observation is key to explaining why, from a consequentialist perspective, repeat offenders ought to be punished more severely.

Just as it is impossible to determine with certainty whether a first-time offender is a nonprofessional or a professional criminal, it is impossible to determine the same for a repeat offender. The fact that a person is a repeat offender, however, does provide some valuable information for sentencing purposes: a repeat offender is much less likely to be a nonprofessional criminal than a professional criminal. This follows from a simple application of Bayesian updating of beliefs.[193] Given that a person has committed crime twice, it is likely that this person is professional criminal and has a PDF that assigns high benefits from crime. As a result, the proportion of repeat offenders who are nonprofessional criminals should be much lower than the proportion of first-time offenders who are nonprofessional criminals.

As explained earlier, there is a trade-off between minimizing the costs of punishing nonprofessional criminals and deterring and incapacitating professional criminals. This trade-off necessitates the im-

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192. This observation may be capable of providing a novel explanation as to why penalties for similar offenses are higher in the United States than in other countries. More generally, if the proportion of nonprofessional criminals is decreasing with inequality, then we should see higher sentences for similar offenses in countries with higher inequality. As such, this brief observation may provide a starting point for future research projects.

193. Bayesian updating of beliefs occurs when the discovery of a piece of information affects the estimated likelihood of an event taking place. The concept is closely related to the calculation of conditional probabilities and Bayes's Theorem. *See, e.g.*, DeGroot et al., *supra* note 147, at 49–79. The likelihood that one believes a certain event will occur, prior to the discovery of new information, is called the *prior probability* of that event happening. Similarly, the likelihood that one believes a certain event will occur, after the discovery of new information, is called the *posterior probability* of that event happening. The posterior probability that a repeat offender, named *Y*, is a professional criminal (PC), can be calculated by using Bayes's Theorem.

Pr(Y is PC|Y committed 2nd crime) =

$$\frac{Pr(\text{Y is PC})\,Pr(\text{Y committed 2nd crime}|\text{Y is PC})}{Pr(\text{Y is PC})\,Pr(\text{Y committed 2nd crime}|\text{Y is PC}) + Pr(\text{Y is not PC})\,Pr(\text{Y committed 2nd crime}|\text{Y is not PC})}$$

Id. at 69. This expression, which makes use of the notation introduced in note 147, is greater than the prior probability of *Y* being a professional offender as long as professional criminals have greater tendencies to commit crime.

position of severe punishments to a group of criminals when it is known that the proportion of professional criminals in that group is high. From the preceding discussion, it follows that the proportion of professional criminals is much higher among repeat offenders. This implies that repeat offenders should be punished more severely than first-time offenders.

It should be noted that this reasoning provides a rationale for the common practice of tying criminal penalties to criminals' prior records.[194] The Federal Sentencing Guidelines structure punishment schemes by increasing sentences for those with prior criminal activity.[195] Many states have "three strikes" laws, which require enhanced punishments for criminals with a record of three or more serious offenses.[196] These practices are justified from a consequentialist perspective. Prior criminal records indicate a greater likelihood that the criminal has high criminal tendencies and has not committed a crime due to some unexpected random event.[197] This implies that the criminal is both more dangerous and often deterrable, and therefore should be punished severely.

Finally, it is worth mentioning that this justification cannot be derived under theories that rely on or assume constant criminal benefits. In such theories, a person's criminal tendency is immediately revealed after he commits a crime. As such, it is neither possible nor necessary to obtain further information regarding the offender's criminal tendencies. Therefore, the trade-off identified in the preceding parts of this Section, and accordingly the rationale justifying more severe punishments for repeat offenders, disappears.

B. Remorse and Apologies

In Part IV, I explained how potential offenders' criminal tendencies may fluctuate, and how a PDF may be used to describe the likelihood with which a potential offender commits crime. Although this framework accounts for fluctuations in criminal tendencies over time, it still generates a *static* framework. In other words, it assumes that a potential offender has the same PDF over time. To study remorse, this assumption can be replaced with a more realistic one under a *dy-*

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194. *See supra* Part III.B.1.

195. *See supra* note 21.

196. *See supra* note 108.

197. *See supra* Part III.B.1.

namic setting. In particular, an offender's PDF may piecewise shift upon committing crime.[198]

Shifts in PDFs are convenient and realistic ways to capture remorse. A person who feels truly sorry after committing a crime, presumably, and at least partially, loses his willingness to commit crime and is likely to exert more control over his actions in the future.[199] Thus, he is less likely to commit crime in the future. As such, the change in a remorseful offenders' criminal attitude can be captured by a shift in his PDF, as demonstrated in Figure 5 below.

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198. *See, e.g.*, Murat C. Mungan, *A Note on the Effects of State-Dependent Benefits on Optimal Law Enforcement*, 6 REV. L. & ECON. 97 (2010) [hereinafter Mungan, *State-Dependent Benefits*] (showing that if criminals' benefits are dependent on the state then maximal fines need not be optimal); Mungan, *Apologies*, *supra* note 24 (providing formal models where remorseful offenders derive disutility, in the form of guilty conscience). These models, unlike the model presented here, do not incorporate repeated interactions, and therefore cannot capture the effects of such disutilities on future propensities to commit crime.

199. *See* Mungan, *State-Dependent Benefits*, *supra* note 198, at 98 (briefly reviewing the existing literature and concluding that "[i]n sum it has been documented that some individuals, if not all, feel a sense of guilt after committing a crime"); *see also, e.g.*, JACOB ADLER, THE URGINGS OF CONSCIENCE: A THEORY OF PUNISHMENT (1992); Michael S. Bernick, *Of Crime and Conscience*, 68 A.B.A. J. 306 (1982); Stephanos Bibas, *Forgiveness in Criminal Procedure,* 4 OHIO ST. J. CRIM. L. 329 (2007); Darren Bush, *Law and Economics of Restorative Justice: Why Restorative Justice Cannot and Should Not Be Solely About Restoration* 2003 UTAH L. REV. 439; Robert F. Cochran, Jr., *Crime, Confession, and the Counselor-At-Law: Lessons from Dostoyevsky*, 35 HOUS. L. REV. 327 (1998); John Tasioulas, *Repentance and the Liberal State*, 4 OHIO ST. J. CRIM. L. 487 (2007); Bruce J. Winick, *The Jurisprudence of Therapeutic Jurisprudence*, 3 PSYCHOL., PUB. POL'Y & L. 184 (1997).

Figure 5: PDF's describing the shift in a remorseful offender's criminal tendencies.

Curve R

Curve I

Zones 2&3: The reduction in the likelihood that a remorseful offender will be tempted to commit crime is reflected by a downward shift.

0 years   100 years   Expected sentence.

Zone 1: The increase in a remorseful offenders tendency to refrain from crime is represented by an upward shift.
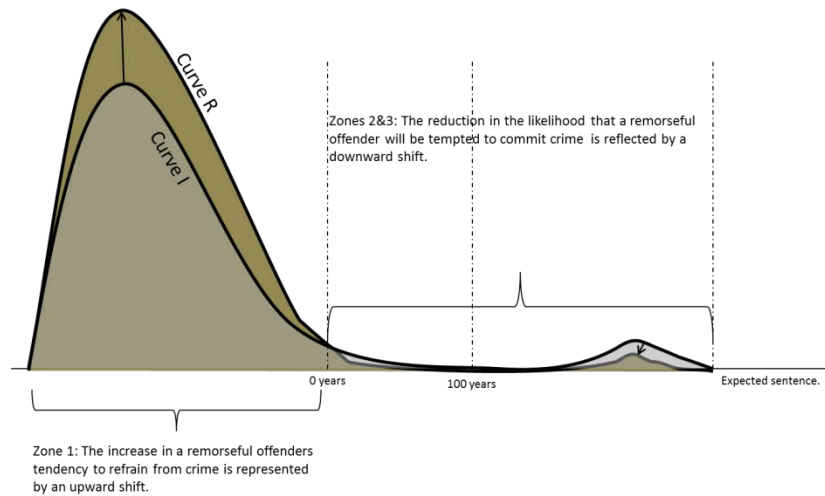
Figure 5 demonstrates that a truly remorseful offender is less likely to recidivate than a nonremorseful offender whose fluctuating criminal tendencies remain unchanged and therefore is represented by Curve I. Accordingly, the incapacitative benefits of punishing remorseful offenders are not as high as the corresponding benefits arising through the punishment of non-remorseful offenders.[200] This implies that if it were possible to separate truly remorseful offenders from those who are not, it would be optimal to punish remorseful offenders less severely.[201]

Remorse does not only signal that an offender's criminal tendencies have been altered after committing a crime. It is plausible to assume that a person who has committed a crime due to some unexpected impulse is more likely to experience remorse than a professional offender.[202] As such, the proportion of professional offenders among nonremorseful offenders is higher than the proportion of professional offenders among remorseful offenders. Therefore, as explained in Part V.A, the expected incapacitative and deterrent benefits of punishing remorseful offenders are lower than the corresponding expected benefits of punishing nonremorseful offenders. This implies that, if it were possible to separate truly re-

200. This follows from the fact that, in Figure 5, the area of the first zone lying under Curve I is smaller than the corresponding area lying under Curve R.

201. This follows from the simple fact that punishment of remorseful offenders results in smaller deterrent as well as incapacitative benefits, as implied by Figure 5.

202. I thank Mark Seidenfeld for making this point.

morseful offenders from those who are not, it would be optimal to punish remorseful offenders less severely.

It is impossible, however, to separate truly remorseful offenders from those who are not.[203] This impossibility, as I have demonstrated in a previous article,[204] may lead to substantial costs associated with penalty reductions for those who convincingly display remorse.[205] Incorporating the observation that remorseful offenders are less likely to recidivate, and therefore that they ideally ought to be punished less severely, generates a counter rationale as to why it may be desirable to allow penalty reductions for seemingly sincere apologies.[206] As such, incorporating dynamic and fluctuating criminal tendencies in economic analyses leads to a broader range of conditions under which sentence reductions for those who convincingly display remorse is justified.

A second important implication of incorporating remorse through dynamic fluctuating benefits is revealed when one makes the observation that a repeat offender was most likely not remorseful after his first offense, since it is unlikely for a remorseful offender to recidivate.[207] Therefore, a repeat offender is not likely to have experienced remorse after his initial crime, and it is unlikely that a repeat offender has a *shifted* PDF.[208]

This observation provides an additional rationale as to why repeat offenders ought to be punished severely. The proportion of first-time offenders who feel remorseful upon committing crime is expected to be much higher than the corresponding proportion of repeat offenders. Therefore, expected incapacitative benefits associated with punishing repeat offenders is much higher than the incapacitative benefits of punishing first-time offenders. Hence, it is worth incurring greater punishment costs to imprison repeat offenders for longer periods of time.

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203. *See supra* note 127 and accompanying text.

204. *See* Mungan, *Apologies, supra* note 24.

205. *See supra* note 128 and accompanying text.

206. Mungan, *Apologies, supra* note 24.

207. *See id.* at 180 n.14 ("The unit cost of punishing a truly remorseful offender may be smaller than punishing a non-remorseful offender, because the former may be less likely to recidivate.").

208. Recall that the shifted PDF is the one represented by Curve I in Figure 5.

C. Voluntary Manslaughter

Existing L&E literature is not very successful in providing consequentialist justifications as to why heat of passion crimes should be punished less severely.[209] When one considers fluctuating criminal benefits and the incapacitation function of punishment, consequentialist theories providing rationales for penalty reductions for voluntary manslaughter can be strengthened significantly.

Recall Michael's fluctuating criminal tendencies from Part IV: Voluntary manslaughter presumably occurs when Michael has criminal tendencies falling under Zone III in Figure 4. For instance, if Michael finds his wife with another man, he may temporarily be unaware of the expected punishment associated with attacking his wife[210] or the person with whom she is having an affair; therefore, he is undeterrable.

Since Michael is undeterrable under these circumstances, it makes little sense, from a deterrence based L&E perspective, to punish him for his crime.[211] In fact, if we were certain that every person killing his adulterous spouse was undeterrable at the time he committed the crime—again from a simple deterrence-based perspective—it would be optimal to not punish any person for such crimes.[212]

It is certainly much more realistic to assume that at least a proportion of people respond to incentives, even when confronted with the unfortunate circumstance just described.[213] In fact, it may be necessary to increase, rather than reduce, the sanction for voluntary manslaughter to deter people who respond to incentives but place a very high value on inflicting pain on adulterous people.[214]

This being the case, it is a priori and theoretically ambiguous from a deterrence-based perspective, whether penalty reductions for

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209. But see Part III.B.3, where I summarize a powerful argument presented by Posner. Note that this argument, too, relies on a variant of fluctuating criminal tendencies.

210. *See supra* note 158.

211. One may argue that punishing him may result in benefits to the victim's family, relatives, and friends. Although this argument is somewhat convincing, it is certainly incomplete. Not punishing the offender results in similar benefits to the offender's family, relatives, and friends.

212. *See supra* Parts II.C–D.

213. *See* Kahan & Nussbaum, *supra* note 9, at 310 ("[T]he common law paradigms of 'adequate provocation'—adultery and humiliating but non-life-threatening blows to the face—occur frequently without leading to deadly retaliation.").

214. *See supra* notes 137–138 and accompanying text.

voluntary manslaughter are justified, even when one accounts for fluctuating criminal tendencies. The question ultimately becomes an empirical one: Are the imprisonment cost savings from penalty reductions for voluntary manslaughter offset by the same reductions' deterrence-lowering effect?[215] To the extent that we believe the answer to this question is "no," we have a consequentialist justification for penalty reductions for voluntary manslaughter in a purely deterrence-based framework.

Assuming, however, that we answer this question in the affirmative, a second consideration must be taken into account, namely the incapacitation function of imprisonment. The limited L&E research on incapacitation suggests that the benefit of incapacitation increases with the imprisoned offender's dangerousness.[216] Therefore, if the expected dangerousness of a murderer is higher than the expected dangerousness of a person who has committed voluntary manslaughter, a second rationale emerges as to why voluntary manslaughter ought to be punished less severely.

It is reasonable to assume that individuals like Michael are more likely to commit voluntary manslaughter than murder.[217] As such, the proportion of individuals who are likely to recidivate among murderers is higher than the corresponding proportion of individuals who have committed voluntary manslaughter.[218] Therefore, the expected dangerousness of a murderer is higher than the expected dangerousness of a person who has committed voluntary manslaughter.

This observation supplies a second, consequentialist reason as to why penalty reductions for voluntary manslaughter make sense. Finally, for the sake of completeness, I will briefly propose a third, inde-

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215. *See supra* Part II.C–D.

216. *See supra* notes 64–65 and accompanying text.

217. This follows from the assumption that circumstances pushing Michael's criminal tendencies to Zones 2 and 3 in Figure 4 are more likely to be products of extreme emotional stimuli. Therefore, a killing committed by Michael is more likely to constitute voluntary manslaughter than murder.

218. This reasoning implicitly makes a number of harmless suppositions. The most important one is that the number of "dangerous" people being convicted for murder is at least as great as the number of people being convicted for voluntary manslaughter. The second one is that people like Michael are unlikely to recidivate, which follows from the fact that Zones 2 and 3 in Figure 4 occupy small areas. Furthermore, to the extent that people like Michael are likely to experience remorse, their probability of becoming recidivists falls even further.

pendent rationale as to why voluntary manslaughter ought to be pun-
ished less severely, although this rationale is unrelated to the two sim-
ple observations that constitute the focus of this Article.[219]

In general, precautions taken by victims to avoid harm are social-
ly wasteful.[220] In the case of voluntary manslaughter, to the contrary,
they can be socially beneficial. In the context of voluntary man-
slaughter, the precautionary activity on the victims' side would corre-
spond to not provoking the potential offender. To the extent that
such provocation is socially costly,[221] its prevention is socially benefi-
cial.[222] Therefore, *ceteris paribus*, the existence of such social benefits

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219. These observations are: (1) that people exert varying degrees of control over their
actions over time, and (2) that imprisonment has an incapacitation effect.

220. A common example is the installation of an alarm system to protect one's house
from theft. For related literature on costly precautionary activity by potential victims, see
Steven Shavell, *Individual Precautions to Prevent Theft: Private Versus Socially Optimal Behavior*,
11 INT'L REV. L. & ECON. 123 (1991). Specifically, he says:

> Individuals act in a variety of ways to protect their property against theft: they
> lock their doors, purchase alarm systems, hire guards, and so forth. The things
> that individuals do on their own to reduce theft are of substantial importance. It
> is notable that private expenditures on security from crime exceed public ex-
> penditures.

Id. at 123 (citing William C. Cunningham & Todd H. Taylor, *The Growing Role of Private Se-
curity*, NAT'L INSTS. JUSTICE, RESEARCH IN BRIEF (1984), for the proposition that "private
expenditures on security from crime exceed public expenditures")); Gordon Tullock, *The
Welfare Costs of Tariffs, Monopolies, and Theft*, 5 W. ECON. J. 224, 231 (1967) ("The total social
cost of theft is the sum of the efforts invested in the activity of theft, private protection
against theft, and the public investment in police protection."); Keith N. Hylton, *Optimal
Law Enforcement and Victim Precaution*, 27 RAND J. ECON. 197 (1996) (extending the analysis
of costly precautionary activity by potential victims). Other secondary or indirect effects of
criminal law rules and standards on parties other than potential criminals are explored in
the existing literature to some extent. *See, e.g.*, Alon Harel, *Efficiency and Fairness in Crimi-
nal Law: The Case for a Criminal Law Principle of Comparative Fault*, 82 CAL. L. REV. 1181
(1994) [hereinafter Harel, *Comparative Fault*].

221. Provocation may, for instance, involve insulting the potential offender, causing
him distress.

222. *See* Harel, *Comparative Fault*, *supra* note 220, at 1215–16 (raising a similar point).
This observation presents an alternative explanation to Kahan and Nussbaum's proffered
explanation as to why the common law categorizes provocation the way it does. *See* Kahan
& Nussbaum, *supra* note 10, at 312 ("From the common law provocation categories, for
example, it can be inferred that the law does not attach as much value to the life of the

provides a third consequentialist rationale for punishing voluntary manslaughter less severely.

D. *The Role of Fluctuating Criminal Tendencies and Incapacitation*

The rationales provided for these three selected criminal law practices share a commonality: they exploit information revealed through various aspects of the crime or characteristics of the criminal. By using such information, one can use a Bayesian belief updating process[223] to re-evaluate the likelihood that the criminal is dangerous. Since incapacitative benefits are greater for more dangerous offenders, the more dangerous the criminal, the longer he ought to be imprisoned.

Fluctuating criminal tendencies play a key role in this reasoning. It is only because criminal tendencies are fluctuating that one cannot conclude from the mere fact that an offender committed a crime that he is sufficiently dangerous.[224] Because of the uncertainty created by the existence of fluctuating criminal tendencies, one should hesitate to impose harsh punishments on individuals and question whether the offender will repeat his wrongs in the future.

VI. SUMMARY & CONCLUSION

Economic analyses of criminal law are criticized for invoking unrealistic assumptions and performing poorly in providing rationales for a number of criminal law doctrines.[225] These criticisms may lead legal scholars to be skeptical about the usefulness of conclusions drawn from economic analyses of criminal law.[226] In this Article, I demonstrate that the poor performance of economic analyses in providing rationales for various criminal law doctrines is not the result of some inherent flaw in its methodology, but instead a result of its oversimplified assumptions.

Existing normative economic analyses apply consequentialism narrowly by focusing on deterrence as the single justification for punishment, and by implicitly or explicitly assuming that potential of-

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paramour as it does to the life of the average person, and for that reason it invests less in punishing emotions that promote killings of the former.").

  223. *See supra* note 193.

  224. *See supra* Part V.A.

  225. *See supra* Parts I, III.B.

  226. *See supra* Parts I, II.B.

fenders' tendency to commit crime remains constant over time.[227] By relaxing these two assumptions, and replacing them with simple, yet more realistic alternatives, economic analyses can perform much better in providing rationales for existing criminal law practices.[228] In particular, economic analyses perform much better when they replace the assumption of constant criminal tendencies with fluctuating criminal tendencies, and incorporate the fact that the incapacitation function of imprisonment contributes to reductions in crime.[229] As pointed out in this Article, these replacements can be made by employing existing tools in modern economics.[230] An economic model that makes these simple adjustments can provide strong rationales for pervasive criminal law practices.[231]

These rationales focus on a Bayesian belief updating process.[232] When fluctuating criminal tendencies are considered, the mere fact that a person has committed a crime reveals imperfect information about his dangerousness.[233] Therefore, circumstances surrounding the crime reveal important pieces of information that can be used to update beliefs concerning an offender's dangerousness.[234] Since incapacitative benefits are greater for more dangerous offenders, the stronger we believe—based on circumstances surrounding the crime—that the criminal is dangerous, the longer we are willing to imprison him.[235]

By relying on these rationales, this Article demonstrates that the poor performance of economic analyses in providing explanations for a number of criminal law practices is something that can be remedied by focusing on a broader application of consequentialist theories of punishment.[236] Although this Article focuses on three selected issues in criminal law—repeat offender laws, voluntary manslaughter laws, and punishment of remorseful offenders—the model proposed ap-

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227. *See supra* Part III.

228. *See supra* Part IV.

229. *See supra* Part IV.

230. *See supra* Parts IV, V.

231. *See supra* Part V.

232. *See supra* Parts IV, V.

233. *See supra* Parts IV, V.

234. *See supra* Parts IV, V.

235. *See supra* Part V.A.

236. *See supra* Part V.

pears capable of explaining the social desirability of other pervasive principles and doctrines in criminal law.

Consider, for instance, the mens rea requirement in criminal law. This Article provides a framework to conceptualize this requirement as an information-exploiting device.[237] A criminal's mental state while committing a harmful act reveals information about his likelihood of recidivating. Applying the insights identified in this Article suggests that criminals should be punished in proportion to the intentionality of their acts. I have not, however, provided a complete model to integrate the mens rea requirement into economic analyses of criminal law. This is an interesting and promising area for future research.

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237. *See supra* Part V.