

CHAPTER 3

ECONOMIC ANALYSIS OF CRIMINAL LAW

TALIA FISHER*

I. INTRODUCTION TO ECONOMIC ANALYSIS OF CRIMINAL LAW

LEGAL theorists and economists share much in common: law is a mechanism for the guiding of social behavior, and therefore lawyers, like economists, place incentives at the centerfold of their analysis.¹ Due to the close association between the perspectives underlying the two fields, it is not surprising that the economic approach to law has emerged as one of the most successful intellectual movements of legal theory. Before discussing the contours of the economic analysis of criminal law, it is imperative to introduce the theoretical infrastructure supporting this school of thought—economic analysis, generally, and economic analysis of law, specifically.

Broadly speaking, economics is the social science that analyzes the rational choice and behavior of individuals in the production and consumption of economic goods—namely, goods that are scarce. The underlying assumption of economic analysis is that under conditions of shortage, agents—whether individuals, firms,

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¹ Thomas Miceli, *The Economic Approach to Law* (2009) 1 ff.

or even the state—act as rational and forward-looking maximizers of their utilities. Put differently, the economic analysis is premised upon the claim that agents are well aware of their preferences, and operate in a rational manner in order to further them. From this rational maximization assumption derives central economic principles—these include the proposition that individuals will not act unless the expected benefit of the action outweighs its expected cost; the principle that a change in price will affect the demand for and quantity of an economic good as well as the appeal of its substitutes; the derivative prediction that the market will move to equilibrium price; and the prediction as to market efficiency, according to which when transaction costs are marginal, goods traded on the market will gravitate toward their most valuable users.

Although traditionally economic analysis was applied to market transactions, its relevancy is in fact much broader. While market price is the most noted incentive, and its previously mentioned effect on allocation by the market is indeed paramount, there are nonmonetary and intangible costs and benefits that motivate a decision or action. Such intangible costs may include damage to one's reputation, deprivation of liberty, or less time spent with one's family. Intangible benefits include intellectual pleasure, a greater sense of accomplishment, or more recreation—all ends which individuals may wish to pursue. Such costs and benefits thus enter into the agent's calculus when deliberating whether to consume certain goods or engage in certain activities. As a result, the economic logic of rational maximization applies not only to the operation of agents in pure market transactions, but also in human settings that are exterior to the market (which some have termed "implicit markets").

This is where the economic analysis of law enters the picture. The economic approach views law in an instrumentalist manner, rooting its justification not in some predetermined set of internal logical connections among legal doctrines, but rather in the manner in which it furthers social ends. The fundamentals of economic analysis of law are identical to the previously mentioned principles underlying the economic discipline more generally. Thus, the economic analysis of law shares with other branches of economics the principle of rational maximization under conditions of scarcity, and the premise that rational maximizers react to incentives. In the contexts that are of interest to the law, such rational maximizers may consist of potential tortfeasors, potential criminals, litigating parties, prosecutors, and even potential victims. The economic analysis of law stresses the role of law in incentive-setting and highlights the effect of legal rules on the choices of those subjected to such rules. When the legal sanction for an action increases (i.e. its price rises) people are disincentivized to engage in this activity (i.e. consume it to a lesser degree). Thus, for example, under economic analysis of law, the purpose of damage awards in tort law is to deter individuals from causing accidents, to provide an incentive for potential tortfeasors to take efficient precautions.

The economic analysis of law contains both positive and normative strands, based upon the underlying legal efficiency theory: the positive theory pre-assumes

law's efficiency and employs economic logic to unearth why the common law has taken the form that it has. The normative approach views efficiency as a normative end which ought to guide legal policy. It employs the analytical tools of economics for the design of legal rules, and devises suggestions for legal reform in light of the cost–benefit calculus. Additional distinctions which can be drawn in the economic analysis of law literature refer to the types of economic tools which are being employed—ranging from theoretical tools to empirical analysis which utilizes real-world data and regression models.

Armed with this brief description of economic analysis and economic analysis of law, we can now move to economic analysis of criminal law: the criminal law arena is considered one of the most controversial sites for the application of economic logic.² Even those who are sympathetic to the application of economic logic to legal settings closely associated with the market (e.g. contract law or antitrust law), are often reluctant to apply economic intuitions to criminal law. The notions of rationality, utility maximization, or efficiency strike many as foreign to the criminal sphere, commonly associated with questions of moral culpability, fairness, justice, and retribution. But the conceptual link between economic analysis and criminal law is strong and deeply rooted. In fact, criminal law is the “native domain” of the law and economics movement:³ economic analysis of law essentially emerged from the economic analysis of criminal law, and the pioneering work in modern law and economics evolved, to a large degree, from Becker's economics of crime. Moreover, Beccaria and Bentham—whose utilitarian moral theories motivate today's economic analysis—addressed many issues currently underlying the economic analysis of criminal law. As I shall attempt to demonstrate in this chapter, economic analysis has much to offer in the understanding and design of criminal law doctrine.

The economic analysis of criminal law refers to the application of economic reasoning to criminal rules and institutions. In line with the general contours of economic analysis and with the rational maximization principle, the economic approach to criminal law assumes that offenders are rational agents who seek to maximize their utilities in the criminal context. Thus, they compare the expected costs of criminal activity to its expected benefits, and engage in the criminal activity when the latter outweighs the former. The expected benefits include the gains derived from the criminal activity—whether tangible (the stolen good) or intangible (the pain and suffering of the hated victim). The costs of the criminal act include the resources expended for committing the crime (e.g. burglary tools), the costs of apprehension avoidance (e.g. purchasing gloves, destructing evidence), opportunity costs, and, most importantly, the expected costs of criminal punishment. Criminal law's primary focus is on this last cost. Criminal law attempts to increase

² Jules L. Coleman, “Crimes and Transactions,” (2000) 88 *California LR* 921 ff., 926.

³ Dan M. Kahan, “The Theory of Value Dilemma: A Critique of the Economic Analysis of Criminal Law,” (2004) 1 *Ohio State Journal of Crim. Law* 643 ff.

the expected cost of the wrongful activity, through the imposition of expected punishment. By setting the expected punishment (price) at the optimal level of severity, the potential offender will be deterred from committing the crime. The economic analysis to criminal law and punishment thus revolves around deterrence.

The economic model of criminal law focuses not only on the choice of individuals, in their capacities as potential offenders, but also on another facet of this analysis which relates to the institutions of criminal justice—to the social planner and to the crime-control policies it employs: deterrence and crime prevention do not come cost-free. They are contingent upon the state investing resources in apprehending wrongdoers (the costs of policing and prosecuting) and in imposing punishment upon these offenders (the costs of imprisonment). Just as potential offenders seek to maximize their utilities, subject to the constraints imposed upon them, so the state seeks to maximize its utility. And in light of the costs associated with law enforcement, the state's utility function can be formulated as directed at minimizing the overall expected costs of crime and crime prevention (at achieving optimal—rather than maximal—deterrence). Put differently, according to the economic analysis of criminal law, the object of the criminal law apparatus is not to eliminate crime altogether—it is not to completely deter individuals from engaging in criminal activity—but, rather, to reach an optimal level of crime and deterrence. Lastly, the economic approach to criminal law focuses on the regulated activities.

The chapter will be devoted to demonstrating how these principles and arguments unfold in a host of criminal law settings. It proceeds as follows: Section II will discuss the intellectual history of the economic analysis of criminal law, and unearth its utilitarian roots; Section III will be dedicated to surveying the foundations of the economic analysis of criminal law—criminalization, the tort law—criminal law divide, and the multiplier principle; and Section IV concludes.

II. THE INTELLECTUAL FOUNDATIONS OF THE ECONOMIC APPROACH TO CRIMINAL LAW

The traditional criminal law theory was premised upon retributivist thought with Kant's theory placed at its center. A principal element of retributivism is that the sole justification for punishment is the existence of guilt. Punishment cannot be administered in order to promote another good—whether relating to society at

large or even to the offender herself.⁴ Under retributivist thought, people ought not to be treated as a means subservient to the purpose of others and imposing punishment upon an individual for the furthering of some greater good—such as deterring others from committing the crime—amounts to such objectification. As mentioned earlier, one of the distinctive features of the economic analysis of criminal law—as compared to the traditional retributivist approaches to criminal law—is its focus on deterrence, on the social ends that are promoted through the imposition of punishment, rather than retribution and moral culpability. The economic analysis of criminal law and the deterrence-based case for criminal punishment can be traced back to the workings of the founding fathers of utilitarianism and instrumentalism in legal theory—Thomas Hobbes, Cesare Beccaria, and Jeremy Bentham.

1. Thomas Hobbes (1588–1679)

Thomas Hobbes's social contract theory was the first to view and justify criminal law not on its own intrinsic terms but rather from the perspective of the underlying social ends. In his book *Leviathan*, published in 1651,⁵ Hobbes linked criminal law and the establishment of a criminal justice system with the very preservation of mankind, thereby setting the ground for the deterrence-based case for criminal punishment. Hobbes's understanding of crime and criminal law pre-assumes a particular conception of mankind, according to which in a hypothetical "State of Nature"⁶ people behave in a self-regarding manner, irrespective of the damage to others. The condition of man absent sovereign authority is thereby one of persistent war: driven by their desire for material gains or intangible desires—food, wealth, and power—people turn to violence against each other, and are placed under constant threat of crime, war, and violence. Human beings, as rational creatures, will be prepared to exchange their freedom to engage in war for blanket protection from strikes by others. They will rationally choose to exit the state of nature by entering into a social contract. In the framework of this social contract, rational individuals will agree mutually to forego their natural rights to protect their lives by means of private violence, and transfer these self-preservation rights to the sovereign, who—in

⁴ In Kant's words, "Punishment by a court... can never be inflicted merely as a means to promote some other good for the criminal himself or for civil society. It must always be inflicted upon him only because he has committed a crime." Only a link between the criminal act and the act of punishment can ensure that the defendant's human dignity is preserved and prevent his transformation into an instrument for realizing social goals, "For a man can never be treated merely as a means to the purposes of another or be put among the objects of rights to things: His innate personality protects him from this, even though he can be condemned to lose his civil personality." Immanuel Kant, *The Metaphysics of Morals: Essays in Legal Philosophy and Moral Psychology* (transl. Mary Gregor, 1991), 141.

⁵ Thomas Hobbes, *Leviathan* (1651), 183.

⁶ The term "State of Nature" is not taken from *Leviathan*, but is the commonly accepted term used to describe this condition.

exchange—will establish a criminal justice system, and provide them with protection from crime and human predicament. The role of the sovereign and of criminal law is, thus, to enforce the social contract, and to deter people from violating it through their criminal activity. According to Hobbes, the sovereign is authorized to use force—that is, to impose criminal punishment—in order to uphold this social contract. In order to fulfill this function, punishment for the crime, claimed Hobbes, must exceed the benefit that the offender derives from engaging in the criminal activity.

2. Cesare Beccaria (1738–1794)

Building on the principles of social contract theory, Cesare Beccaria's *Essay on Crimes and Punishments*⁷ provided the justification of criminal punishment and its limits. Similar to Hobbes's depiction of the state of nature, Beccaria also assumed people to be rational creatures seeking to further their pleasures. And, like Hobbes, Beccaria also argues that such furthering of individual utilities may entail acts which harm others, and that as a result the natural state of man is that of a never-ending war. In order to escape such a state of war and peacefully enjoy the residual liberty, claimed Beccaria, men would be willing to sacrifice some of their liberty.

Criminal law and punishment are the means to defend the reservoir of peace and liberty. These institutions are needed to control deviant acts that an individual with free will and rational thought might engage in, seeking personal utility and pleasure. In Beccaria's words:

What were wanted were sufficiently tangible motives to prevent the despotic spirit of every man from resubmerging society's laws into the ancient chaos. These tangible motives are the punishments enacted against law-breakers. I say tangible motives because experience shows that the common run of men do not accept stable principles of conduct. Nor will they depart from the universal principle of anarchy which we see in the physical as well as in the moral realm, unless they are given motives which impress themselves directly on the senses and which, by dint repetition, are constantly present in the mind as a counterbalance to the strong impressions of those self-interested passions which are ranged against the universal good.⁸

Punishment plays an instrumental deterrent role in Beccaria's theory, not a retributive function: "the purpose of punishment is not that of tormenting or afflicting any sentient creature, nor of undoing a crime already committed... The purpose, therefore, is nothing other than to prevent the offender from doing fresh harm to his fellows and to deter others from doing likewise."⁹

⁷ Cesare Beccaria, "On Crimes and Punishments," in *On Crimes and Punishments, and Other Writings* ([1767] ed. Richard Bellamy and transl. Richard Davies, 1995). ⁸ Beccaria (n. 7) 9.

⁹ For depictions of Beccaria's theory as both retributivist and deterrence-based, see David Williams, *The Enlightenment* (1999), 59 ff.

Beccaria emphasizes the role of certainty in deterring potential transgressors of the law, and goes on to delineate the boundaries of punishments and the limits of the means for inflicting punishment. His principle of proportionality is based on cost–benefit analysis: in order to fulfill their deterrence function, punishments must be set just above the pleasure derived from committing the deviant act. Any punishment that outweighs that which is necessary to deter individuals from committing prohibited acts would be considered unjust. In his words, “That a punishment may produce the effect required, it is sufficient that the evil it occasions should exceed the good expected from the crime, including in the calculation the certainty of the punishment, and the privation of the expected advantage.”¹⁰

3. Jeremy Bentham (1748–1832)

Bentham explicated Beccaria’s theory of punishment, tying Beccaria’s penal principles—of deterrence, proportionality, and certainty—to the notion of utility. Bentham’s theory was based on a hedonistic conception of mankind. In his words, “Nature has placed mankind under the governance of two sovereign masters, pain and pleasure. It is for them alone to point out what we ought to do, as well as to determine what we shall do.”¹¹ From the sovereignty of the masters of pain and pleasure Bentham extracts the principle of utility, according to which “it is the greatest happiness of the greatest number that is the measure of right and wrong.”¹² Put differently, for Bentham only happiness has intrinsic value.

In Bentham’s view, all human activity can be conceptualized as the self-interested furthering of happiness and pleasure as well as the avoidance of pain. In light of their desires to further pleasure and avoid pain, people calculate the pleasures and pains associated with any course of action before deciding whether to engage in it: “Pain and pleasure . . . govern us in all we do, in all we say, in all we think. Men calculate, some with less exactness, indeed, some with more: but all men calculate. I would not say, that even a madman does not calculate.”¹³

All this applies to the criminal domain. Criminal punishment, for Bentham, is a specific category of pain, deriving from a criminal act, and the “profit of the crime is the force which urges man to delinquency.” If the benefit derived from the crime is greater than the punishment, the crime will be committed, and vice versa. The fact that for Bentham crime commission is a reflection of the utilitarian tendencies implies the attribution of rationality both in choosing and in avoiding criminal activity. And since for Bentham punishment is a category of pain, it should only be imposed where it results in greater overall happiness.

¹⁰ Williams (n. 9).

¹¹ Jeremy Bentham, *A Fragment on Government and an Introduction to the Principles of Morals and legislation* (1948), 298.

¹² Bentham (n. 11).

¹³ Bentham (n. 11).

After laying down these foundations, Bentham went on thoroughly to examine how individuals would behave in the face of criminal law incentives and evaluated these results in light of the principle of utility.

Bentham's work contains a detailed specification of the translation of the principle of utility into the criminal sphere as well as into guidelines for efficient punishment. Similar to the utilitarian theory in ethics, his utilitarian theory of criminal punishment justifies imposition of punishment only to produce desirable consequences, specifically deterring the offender from committing similar acts in the future (individual deterrence) and deterring other potential offenders from engaging in such behaviors (general deterrence).

4. Gary Becker

Bentham's application of utilitarian logic to crime and punishment remained undeveloped until the late 1960s when interest in the economic analysis of criminal law ignited, following Becker's seminal writing on crime and law enforcement. Unlike Bentham and his fellow utilitarian thinkers, who emphasized the hedonistic conceptualization of the human subject, with the underlying notions of pain and pleasure, Becker and his followers placed the neoclassical economic notions of preferences and choice at the center of their analysis.¹⁴ In his pioneering work *Crime and Punishment: An Economic Approach*,¹⁵ Becker makes the following claim: "A useful theory of criminal behavior can dispense with special theories of anomie, psychological inadequacies, or inheritance of special traits and simply extend the economist's usual analysis of choice."¹⁶ Becker applies basic economic theory and cost-benefit analysis to answer the following questions: "how many resources and how much punishment should be used to enforce different kinds of legislation? Put equivalently, although more strangely, how many offenses should be permitted and how many offenders should go unpunished."¹⁷ As mentioned previously, this study on the economics of crime was the first systematic attempt to apply the tools of economic rational choice theory and cost-benefit analysis in the legal realm.

Becker shows that the volume of crime reflects the interaction between individuals and law enforcement. Starting with the perspective of the individual—of the potential offender—the model's central underlying premise, following economic rational choice theory, is that a person commits a crime if the expected utility from it outweighs the expected cost of the crime and any alternative utility from using his time and resources on other legal or illegal activities. In other words, claims

¹⁴ Alon Harel, "Economic Analysis of Criminal Law: A Survey," in Alon Harel and Keith N. Hylton (eds.), *Research Handbook on the Economics of Criminal Law* (2012), 10.

¹⁵ Gary S. Becker, "Crime and Punishment: An Economic Approach," (1968) 76 *Journal of Political Economy* 169. ¹⁶ Becker (n. 15) 170. ¹⁷ Becker (n. 15).

Becker, people engage in criminal activity not because their basic motivations vary from those of law abiding individuals but, rather, because of their differential costs and benefits. To illustrate Becker's point here, assume all potential offenders have a benefit from engaging in the criminal activity (b), which includes the material and immaterial benefits of the crime. The offender faces costs from law enforcement activities, which are a function of the severity of punishment (c) and the probability of its imposition (p). Under these conditions, the individual's net expected returns from crime are: $b - pc$. The potential offender's decision to commit a crime is premised upon the following conditional:

$$(b - pc) > 0$$

According to standard differentiation, the criminal activity will rise as b rises, and fall as p or c rises. The social planner can thus reduce crime by enhancing the probability of imposing punishment (apprehending and convicting the offender), by enhancing the scope of punishment (imposing a greater fine or a lengthier sentence), or by reducing the benefits of the criminal activity. Put differently, the amount of crime in society is determined not only by the rationality and preferences of potential offenders, but also by the decisions of the social planner—including how much to expend on apprehension and conviction and how high to set punishments for different crimes (as well as how much to invest in education, job training, and transportation for the enhancement of legal employment opportunities).

On the basis of these underlying assumptions, Becker constructed an economic theory of optimal enforcement, arguing that criminal law, enforcement, and punishment should be structured so as to minimize the net costs of crime and crime prevention. These costs include the net harm caused by the criminal activity (which can be described as the harm to society minus the benefit to the criminal), the costs of apprehension and conviction, as well as the costs of punishment. If the net harm caused by the criminal activity does not outweigh the overall sum of the costs of apprehension and punishment, the social planner should not criminalize the activity.

In addition to the notion of an optimal level of criminal activity, Becker also introduced the idea—mentioned earlier in passing—that apprehension and conviction efforts and criminal sanctions are substitutes in law enforcement. The social planner, he argued, can thus economize on law enforcement costs by reducing the probability of apprehension and conviction while increasing the punishment. The social planner, in other words, can reduce crime-fighting costs, while keeping the expected punishment unchanged, by offsetting a cut in expenditures on apprehending offenders with a sufficient increase in the punishment of those convicted. The implication of Becker's argument is that optimal sanctions are maximal in severity. This well-known facet of Becker's model was subsequently challenged, as

will be discussed later. But, Becker's writing continues to delineate the contours of the entire field of economic analysis of criminal law.¹⁸

5. Richard Posner

Critics challenged Becker's pioneering work, claiming that his model fails to explain central attributes of criminal law—for example, the role of *mens rea*.¹⁹ Following Becker's writings, economic analysis of criminal law expanded significantly, offering a wide variety of perspectives on the criminal arena—including analyses of the tort/criminal distinction, the comparative properties of fines versus imprisonment, general and marginal deterrence, and the certainty–severity tradeoff.²⁰ Another important milestone in the history of the economic analysis of criminal law, following this line of research, is Posner's seminal 1985 article, entitled “An Economic Theory of the Criminal Law.”²¹ This was the first research comprehensively to address the specifics of criminal law doctrine and its key elements of *actus reus* and *mens rea*. Posner analyzes the rules regulating multiple-offender laws, attempt and conspiracy, special intent crimes, and insanity.

According to Posner, the main function of criminal law is to prevent people from inefficiently bypassing the market.²² The underlying assumption of Posner's analysis is that when transaction costs are low, the market allocates goods and resources more efficiently than other mechanisms of forced exchange. Criminal acts are measures people take to bypass such market transactions. Thereby the transfers that such acts facilitate are, almost by definition, inefficient. Posner illustrates this point using the example of theft: a thief, he claims, may have a higher use value for the stolen car compared to its rightful owner, yet the social interest is to compel the thief to transact through the market mechanism. The act of theft “substitutes for an inexpensive market transaction a costly legal transaction, in which a court must measure the relative values of the automobile to the parties.”²³ In addition to this inherent inefficiency, coercive acts incentivize potential victims to invest resources in precautions and potential offenders to expend resources on coercive acquisition. These measures are considered a social waste. According to Posner, the market-bypass rationale applies with respect to many of the acquisitive offenses set at the core of criminal law—such as, burglary, robbery, fraud, or extortion.²⁴ Moreover, this rationale also

¹⁸ Other dimensions of the model, including those relating to the *type* of punishment imposed—whether imprisonment or fine—will also be further elaborated on in Section III(4).

¹⁹ Kenneth G. Dau-Schmidt, “An Economic Analysis of the Criminal Law as a Preference-Shaping Policy,” (1990) *Duke LJ* 1 ff.

²⁰ David Pyle, *The Economics of Crime and Law Enforcement* (1983).

²¹ Richard A. Posner, “An Economic Theory of the Criminal Law,” (1985) 85 *Columbia LR* 1195.

²² Posner, (1985) 85 *Columbia LR* 1195.

²³ Richard A. Posner, *The Economics of Justice* (1982), 68.

²⁴ Posner (n. 23).

applies to the bypassing of implicit markets, like the market for love, friendship, and trust, manifested in crimes of passion—rape or murder. Another tenet of Posner's conceptualization of criminal law is that such bypassing of the market cannot be effectively deterred by tort law and by mechanisms of private enforcement: optimal damages would frequently exceed the offender's ability to pay, mandating imprisonment and other forms of public enforcement.

In sum, Posner views criminal law as a mechanism to induce market transactions, and argues that the central criminal law doctrines can be explained in light of this objective.

6. Behavioral economic analysis of criminal law

Behavioral law and economics is the most recent intellectual development which has emerged in the economic analysis of criminal law. Using psychological tools (both empirical and experimental), behavioral law and economics incorporates psychological insights into rational choice theory and into the economic models, and examines the assumptions underlying the “*homo economicus*” archetype, set at the heart of the economic analysis. The central premise is that, in reality, individuals suffer from cognitive biases and often diverge from rational behavior by displaying bounded rationality, bounded willpower, and bounded self-interest.²⁵ For example, individuals display over-optimism when assessing their prospects or capabilities.²⁶ The deviations from rational choice are said to be systematic and—therefore—predictable (i.e. susceptible to modeling). Providing the economic analysis of law with these behavioral insights is thereby expected to improve the quality of predictions and prescriptions about the workings of law.²⁷

In the criminal law context more specifically, behavioral economic analysis challenges the depiction of potential criminals as rational maximizers of their benefits against a particular law enforcement background, and deals with the previously mentioned gap between rational choice theory and the decision-making processes of actual criminals, victims, and law enforcers. It identifies how the behavioral assumptions regarding bounded rationality affect deterrence: for instance,

²⁵ Christine Jolls, “A Behavioral Approach to Law and Economics,” (1998) 50 *Stanford LR* 1476 ff.

²⁶ Richard H. McAdams and Thomas S. Ulen, “Behavioral Criminal Law and Economics” (Nov. 11, 2008), University of Chicago Law & Economics, Olin Working Paper No. 440; University of Chicago, Public Law Working Paper No. 244; University of Illinois Law & Economics Research Paper No. LE08-035. Available at SSRN: <<http://ssrn.com/abstract=1299963> or <http://dx.doi.org/10.2139/ssrn.1299963>>. Other deviations from standard economic assumptions regarding “*homo economicus*” which they discuss include: prospect theory, hedonic adaptation, hyperbolic discounting, and fairness preferences.

²⁷ Nuno Garoupa, “Behavioral Economic Analysis of Crime: A Critical Review,” (2003) 15 *European Journal of Law & Economics* 6 ff.

similar to other decision-makers, potential criminals may also be subjected to over-optimism, which reduces the deterrent effect of punishment. If potential criminals are systematically over-optimistic—that is, if there is a gap between the actual probability of apprehension and their subjective estimation of this probability—equalizing the objectively expected punishment with the cost of crime may lead to under-deterrence. Incorporating the over-optimism bias and other deviations from the “*homo economicus*” depiction of decision-makers (whether potential criminals, law enforcers, or victims) into the economic model paves the way for the design of rules which would lead to optimal deterrence under “real world” conditions involving “real people.”

In addition to the psychological insights informing behavioral law and economics of crime, sociological tools are also currently being employed in the traditional economic analysis with the emergence of social norm theory. Like its behavioral counterpart, social norm theory also aims at informing and enriching the “*homo economicus*” model underlying the economic analysis of criminal law. While traditional economic analysis of crime views preferences as exogenous and constant factors, stressing the role of choice and agency, sociological perspectives and social norm theories emphasize that one’s social environment plays a crucial role in the very shaping of preferences for engagement in criminal activity. Put differently, unlike the rationally instrumental *homo economicus*, the behavior of *homo sociologicus* is also shaped and governed by social norms—with the outcome of his choice reflecting a possible compromise between the two.²⁸

These sociological theories also stress the interplay between social norms and the formal criminal doctrine: according to the social norm literature, the criminalization of a certain conduct and the imposition of punishment may signal to the relevant community that the conduct deserves moral condemnation, and can set in motion a process that leads to social stigmatization. Such stigmatization may affect engagement in antisocial behavior in two ways: first, by shaping opportunities and creating incentives for desirable behavior through subjecting criminals to the pain and suffering associated with a negative social stigma; secondly, by impacting the social norms of the relevant community, thereby shaping the preferences of potential offenders and enhancing their taste for the desirable behavior.²⁹

²⁸ Jon Elster, “Social Norms and Economic Theory,” (1989) 3 *Journal of Economic Perspectives* 102 ff.

²⁹ Dau-Schmidt, (1990) *Duke LJ* 1 ff. Of course, the interplay between social norms and the criminal doctrine is complex and convoluted: crime is a legal concept, fully controlled by the legislature, which has absolute discretion to decide which behaviors are classified as crimes and which are not. Social norms, on the other hand, are relational, emanate from particular configurations of social expectations, and as such may be difficult to anticipate (let alone control or manipulate). It is possible, therefore, that a characteristic would be stigmatizing in one context or to a certain group but not in a different context or to a different group.

III. THE CORE INSIGHTS OF THE ECONOMIC APPROACH TO CRIMINAL LAW

Hereto I have briefly surveyed the intellectual development of the economic analysis of criminal law, as it unfolded from the first steps of utilitarian thinking through the classical and neoclassical approaches, and ending with the most recent trends in behavioral law and economics of crime. This long line of research in the economic analysis of crime and criminal law, which proliferated greatly following Gary Becker's 1968 article, resulted in new insights in a rich host of topics, including the economic typology of crimes, the tort versus criminal law categorization, monetary and nonmonetary sanctions, the tradeoff between certainty and severity of punishment, the economics of criminal intent, as well as the economics of law enforcement and plea bargaining. In what follows I will address some of these core discussions in the economic analysis of criminal law.

1. Crime as a negative externality

As mentioned at the outset, according to standard economic analysis, criminal acts and prohibitions are rooted in and derive from the notion of economic efficiency. The assumption is that efficiency is a useful tool for evaluating and designing criminal rules and institutions as well as for the delineation of the borders between lawful and unlawful conduct. This does not imply that every criminal rule is efficient, nor does it imply that efficiency is the only benchmark against which one ought to evaluate the normative desirability of particular criminal rules. But, within the economic analysis domain, efficiency plays a central role in the very definition of criminal acts and prohibitions.³⁰

Efficiency is judged in light of two alternative criteria: the Pareto optimality criterion, according to which society is said to be in an efficient state if resources are distributed among the members of that society in a way that no redistribution of resources can make any member better off without making another member worse off. According to the second, less restrictive, measure of Kaldor–Hicks efficiency, a given change would be efficient if an individual could, in principle, compensate those who lose as a result, and still remain better off. Criminal law regulates a class of inefficient acts imposing *negative externalities*—namely, causing adverse spillover effects upon third parties, which are not accommodated by the market.³¹ These

³⁰ Posner, (1985) 85 *Columbia LR* 1195 ff. For critical views regarding the appropriate definition of efficiency, see “Symposium on Efficiency as a Legal Concern,” (1980) 8 *Hofstra LR* 485.

³¹ Generally speaking, a negative externality is caused whenever a decision-maker chooses a course of action without regard to its adverse impact on other parties. See Hal R. Varian, *Intermediate Microeconomics* (2009), 644.

costs to others remain “external” to the potential offender’s cost–benefit calculus. Under the standard economic assumptions of utility maximization, in situations in which particular acts cause negative externalities, individuals may decide to engage in these acts even when the costs to others outweigh their benefits from doing so, since they do not bear these costs to others. It is clear to see why this state of affairs is inefficient: those potentially harmed by the act could be made better off, without making the person interested in engaging in the activity worse off, simply by paying him or her to refrain from engaging in the activity, and buying him off to yield to their preferences.

The problem can thus be conceptualized as that of a missing market: the negative externalities associated with the conduct present a problem in terms of efficiency for lack of viable market transactions between potential criminals and their victims. The solution to this situation is a “Pigouvian tax”—namely, the creation of a “market” in which the person engaging in the externality-generating activity is charged with its external costs, in a manner which forces him or her to “internalize” these costs in his or her cost–benefit calculus. Gary Becker viewed the criminal sanction as such a “Pigouvian tax.”³² In accordance with this analysis, crimes are externality-generating acts and the justification for outlawing them is rooted in this underlying inefficiency. Imposing criminal liability and punishment (ex post) forces potential offenders to internalize the costs to others of those activities (ex ante),³³ and thereby serves as a means for deterring potential offenders from engaging in these inefficient acts.³⁴

2. The tort–crime distinction

As claimed previously, the criminal sanction serves a deterrent function through alteration of potential offenders’ cost–benefit calculus in a manner which facilitates internalization of the costs others bear due to the harm-causing activity.³⁵ But, the

³² Becker, (1968) 76 *Journal of Political Economy* 192.

³³ Posner offers an alternative approach to Becker’s internalization theory. According to Posner, rather than corresponding to the social *harm* the criminal sanction should exceed the expected *gain* to the offender. This would deter potential offenders by eliminating the illegal benefits. Under this approach, however, individuals would also be deterred from engaging in acts in which their gain exceeds the level of harm. See Nuno Garoupa, *An Economic Analysis of Criminal Law* (2003), section 2.3.

³⁴ Of course, not all externality-generating behavior is criminalized, and the mirror-image questions may still arise with respect to victimless crimes, with respect to the criminalization of acts where the benefit to the perpetrator outweighs the costs to the victims, as well as situations where criminalization is rooted not in the causing of negative externalities, but rather in abstaining from imposition of positive externalities. These issues cannot be accounted for within the confines of this chapter. For further discussion of some of these issues, see Posner, (1985) 85 *Columbia LR* 1195 ff.

³⁵ Dau-Schmidt, (1990) *Duke LJ* 12 ff. For a critique of the deterrent function of criminal law, see Paul H. Robinson and John M. Darley, “The Role of Deterrence in the Formulation of Criminal Law Rules: At Its Worst When Doing Its Best,” (2003) 91 *Georgetown LJ* 950 ff.

criminal law and sanction are not the sole mechanisms for such internalization of external harms and for the control of damage-causing conduct. These objectives may also be met through the tort law system. Like the criminal sanction, tort remedies can also be viewed as a form of “Pigouvian tax” and as a means for minimizing the divergence between the private and social costs associated with engagement in harmful acts. Moreover, not only are tort remedies potential substitutes for the criminal sanction, but they may actually be deemed superior to the paradigmatic criminal sanction of imprisonment. The reasons are twofold. First, whereas tort remedies involve mere transfers of wealth, imprisonment generates a social cost (i.e. a function of sentence severity).³⁶ Secondly, the active role that the concrete victim plays in bringing the tort suit to trial and in the obtaining of remedy (in her capacity as plaintiff) is expected to reduce information costs.³⁷ In light of the fact that tort law and tort remedies offer a substitute (at times even a superior and less costly substitute) to criminal law and incarcerating punishment, there is room to question the need for criminal law and to challenge the distinction between these two bodies of law. In the words of Shavell, “Why should society want to designate a certain set of acts as falling under a special head, that of criminal law, and then use imprisonment and other sanctions as punishments for commission of these acts?”³⁸

One focal argument for a distinctive criminal law apparatus is rooted in conditions of insolvency and in the subsequent failure of monetary remedies, underlying tort law (but also criminal fines) to control certain kinds of harm-causing behaviors. According to Shavell, absent the threat of imprisonment potential offenders will be under-deterred from committing the activities at the core of the criminal apparatus—such as theft, murder, or rape—for the following reasons.

- (a) Criminality is correlated with low wealth levels. In light of the prospect of insolvency of potential offenders, the exclusive resort to monetary sanctions may not provide effective deterrence. Violators would be able to escape paying the full scope of sanctions required for deterrence.
- (b) When acts are intentional—planned and executed by offenders, who attempt to escape identification—the probability of detection is relatively low. In light of the lower levels of detectability, the monetary sanction which would be required for deterrence is elevated beyond the level of ex post harm. This raises the likelihood that the monetary sanction would exceed violator’s budgetary constraints.
- (c) The private benefits potential offenders are expected to obtain from committing the acts at the core of the criminal law are typically significant as compared

³⁶ Becker, (1968) 76 *Journal of Political Economy* 192 ff.

³⁷ Alon Harel, “Economic Analysis of Criminal Law,” in Uriel Procaccia (ed.), *The Economic Approach to Law* (2012), 646 ff. (in Hebrew).

³⁸ Steven Shavell, *Foundations of Economic Analysis of Law* (2004), 543 ff.

to those associated with tort law. The elevated benefits raise the likelihood that the monetary sanction needed for effective deterrence would exceed the violator's level of wealth.

- (d) The expected social harm caused by commission of the acts at the core of crime is a priori very substantial, and this also substantiates the limited efficacy of the monetary sanction to achieve deterrence.³⁹

In addition to the concern that the solvency of defendants cannot always accommodate the harm that they inflict upon others through their actions, another reason for a criminal apparatus is rooted in enforcement costs: victims cannot always bear the costs associated with detection, proof, and the bringing of suit to trial (or may be able to bear these enforcement costs but refrain from doing so because these costs outweigh the harm borne by each individual plaintiff). The result is a reduction in the probability that those who inflict harm will be held liable for their actions. Parallel to the solvency cap, such a reduction in the probability of liability imposition also lowers the expected costs faced by potential defendants, leading to under-deterrence. Public enforcement is consequently called for.⁴⁰

Lastly, another relative advantage of imprisonment vis-à-vis monetary compensation and sanctioning is rooted in the incapacitative benefits the former type of punishment provides: unlike monetary remedies or fines, imprisonment prevents the criminal from committing further wrongs for the duration of the prison term.⁴¹

For all of these reasons, the tort law apparatus and the monetary remedies it offers do not suffice for regulating the entire array of harm-causing behavior in society. It should be stressed, however, that under the economic analysis, imprisonment should remain a residual sanction: the primary purpose of criminal punishment is to provide incentives for efficient behavior, so when the previously mentioned insolvency circumstances or incapacitative advantages do not materialize, monetary remedies or sanctions ought to be relied on.⁴²

³⁹ Shavell (n. 38), 546. See also A. Mitchell Polinsky and Steven Shavell (eds.), "The Theory of Public Enforcement of Law," in A. Mitchell Polinsky and Steven Shavell, *Handbook of Law and Economics*, Vol. 1 (2007), 403.

⁴⁰ Richard Epstein, "The Tort/Crime Distinction: A Generation Later," (1996) 76 *Boston University LR* 12.

⁴¹ Murat C. Mungan, "The Law and Economics of Fluctuating Criminal Tendencies and Incapacitation," (2012) 72 *Maryland LR* 156. For discussion of the moral dimensions of the tort–crime divide, see Alvin K. Klevorick, "Legal Theory and the Economic Analysis of Torts and Crimes," (1985) 85 *Columbia LR* 905 ff.

⁴² Becker, (1968) 76 *Journal of Political Economy* 193; Dau-Schmidt, (1990) *Duke LJ* 12. A problematic conclusion which may emerge from the solvency consideration is that wealthy defendants should be subjected to monetary fines in cases in which less affluent defendants are imprisoned. See Harel (n. 37) 646 ff. For further discussion of some of these problematic disparities, see John Lott, "Should the Wealthy be able to Buy Justice," (1987) 95 *Journal of Political Economy* 1307 ff.

3. The multiplier principle

Previous sections identified the conditions justifying, from an efficiency viewpoint, the criminalization of certain activities as well as the imposition of criminal punishment—specifically imprisonment—on those engaged in these types of conduct. But, as mentioned earlier, achieving deterrence by way of imposing criminal punishment is costly, with the most notable costs relating to apprehension and imprisonment. Therefore, while it may be theoretically possible to eliminate nearly all acts of crime by imposing a harsh punishment with near certainty on criminals, such deterrence may not be optimal in light of the associated cost: enforcement is resource-consuming and may offset the advantages associated with (or the social costs saved through) crime reduction. A tradeoff thereby emerges between the costs of enforcement and the benefits of deterrence, with the resulting question being: what is the optimal level of enforcement and how should the level of punishment be set?⁴³

The answer to this question emanates from Becker's theory regarding the internalization of harm and from the conceptualization of the criminal sanction as a "Pigouvian tax."⁴⁴ In line with the Pigouvian tradition, Becker argued that society would reduce criminal activity to the efficient level by setting the criminal punishment so that its *ex ante* expected value is equal to the expected harm of the crime. If the expected punishment is set at a level equal to the expected social harm, a potential offender would commit the crime only if her benefits from doing so exceeded the costs of the crime to society.⁴⁵ Since criminals escape detection and conviction, the actual punishment imposed upon those who are ultimately convicted at trial would have to exceed the social costs of the criminal act for the expected value of the punishment to equal the social harm. This brings us to the "multiplier principle," which states that the ideal penalty from a deterrence perspective equals the harm caused by the violation multiplied by 1 over the probability of punishment. For example, if a violator faces only a 25% (or 1 in 4) chance of being punished, on this view the optimal penalty should be set at four times the harm caused by the violation.⁴⁶

The multiplier principle does not apply across the board, and exceptions exist, in which optimal enforcement does not mandate a multiplier of 1 over the probability of punishment. One exception relates to the potential offender's tendency toward risk. For risk-seeking offenders, the deterrence effect of punishment will be lower than its expected value, whereas for risk-averse offenders, the deterrent effect of punishment will exceed its expected value. What follows is that for optimal deterrence the fine has to be adjusted until its discounted or inflated disutility equals the social harm of the crime.⁴⁷

⁴³ Mungan, (2012) 72 *Maryland LR* 181 ff.

⁴⁴ Becker, (1968) 76 *Journal of Political Economy* 192 ff.

⁴⁵ Dau-Schmidt, (1990) *Duke LJ* 12 ff.

⁴⁶ Dau-Schmidt, (1990) *Duke LJ* 12 ff.

⁴⁷ Dau-Schmidt, (1990) *Duke LJ* 12 ff.

Another exception to the multiplier principle, requiring adjustment, relates to situations when offenders are subject to additional non-legal sanctions, above and beyond formal criminal punishment. For example, offenders may be subject to exceptionally high reputational costs upon conviction, in addition to the cost of the state-imposed sanction. In this case, too, optimal deterrence is achieved by diverging from and adjusting the multiplier principle: the social cost of the crime must be equated with the expected value of the total legal and non-legal sanctions the offender faces, not merely with the expected value of the official criminal punishment. This will usually require deducing the legal sanction from the official sanction that would otherwise be called for.⁴⁸

4. The probability–severity tradeoff

The previous section discussed the optimal enforcement level and expected punishment, as a function of the tradeoff between the costs of enforcement and the benefit of deterrence. Another question that soon emerges relates to the optimal tradeoff between the two facets composing expected punishment and the costs of enforcement—namely, the costs of apprehension and prosecution (denoted in the probability of conviction) and the costs of punishment (denoted in sentence severity). In other words, once the expected punishment of the crime has been set, it becomes necessary to identify the optimal tradeoff between severity and probability of punishment.⁴⁹ Suppose, for example, a risk-neutral offender deliberating whether to engage in an offense causing a social harm of \$1,000. When the probability of punishment is 50%, the multiplier principle dictates that the criminal sanction should be set at \$2,000. When the probability of punishment is lower, say, 20%, the multiplier principle dictates a sanction of \$5,000. The offender would be indifferent in his choice between the two scenarios, as the expected punishment is identical. However, for the social planner, a vital question would be: which of the two scenarios is more efficient and desirable?

Of course, the very positing of this query reflects a deviation from the principle of proportionality, underlying the retributivist tradition.⁵⁰ The proportionality

⁴⁸ Dau-Schmidt, (1990) *Duke LJ* 12 ff. See Robert D. Cooter and Ariel Porat, “Should Courts Deduct Non-Legal Sanctions from Damages?,” (2001) 30 *Journal of Legal Studies* 401.

⁴⁹ Becker, (1968) 76 *Journal of Political Economy* 184 ff.

⁵⁰ The principle of proportionality, which prescribes the offender’s just deserts, was described by Kant as follows:

Whatever undeserved evil you inflict upon another within the people that you inflict upon yourself. If you insult him, you insult yourself; if you steal from him, you steal from yourself; if you strike him, you strike yourself; if you kill him, you kill yourself. But only the law of retribution (*ius talionis*) ... can specify definitely the quality and the quantity of punishment; all other principles are fluctuating and unsuited for a sentence of pure and strict justice because extraneous considerations are mixed into them.

Kant (n. 4) 140 ff.

principle mandates the imposition of formulaic sanctions suited to the moral gravity of the underlying crime.⁵¹ Retributivists reject the merging of the penal dimension with the enforcement dimension, and the accompanying breach of ties between crime and punishment. Penal variability—as a function of the probability of conviction—collides head-on with these principles. But the intuitions substantiating a dichotomy between punishment magnitude and probability of conviction do not align with the general contours of the economic approach, which highlights the deterrence functions of criminal punishment. Since deterrence can be affected either by adjusting the magnitude of the punishment or by adjusting the probability of conviction, these two variables are viewed in tandem and as interchangeable under the economic analysis of criminal law. Armed with this we can return to the question of: what is the optimal tradeoff between severity and probability of punishment?

In attempting to answer this question, it is useful to divide the discussion between the cases of monetary sanctions and nonmonetary sanctions. Starting with the first category, as mentioned earlier fines are viewed as mere transfers of wealth from the offender to the state. The imposition of such monetary sanctions is considered costless. A \$100 fine bears a social price tag that is equivalent to the imposition of a \$500 fine. Detection and prosecution of the offender, on the other hand, are presumed to consume social resources. Raising the probability of conviction from 10% to 50% has social costs. Since every increase in the size of the fine is costless, whereas every increase in the probability of conviction increases the costs of enforcement, according to Becker, the efficient tradeoff would be one in which the sanction is set as high as possible while the probability of conviction (and the enforcement costs entailed) is set close to zero.⁵²

Contrary to Becker, Polinsky and Shavell challenge the conception of fines as a pure case of transfer, and assert a link between the amount of the fine and the social cost embodied in its imposition. Becker's proposition, they claim, does not hold with respect to risk-averse offenders, for whom a reduction in the probability of conviction alongside a corresponding increase in the magnitude of the fine imposes an additional cost of risk that (unlike the fine) does not benefit society.⁵³

Turning to the category of nonmonetary sanctions—for imprisonment and other forms of nonmonetary sanctions as well—Becker assumed that increasing the expected punishment by enhancing the sentence is a priori less costly than increasing the expected punishment by way of enhancing the probability of conviction. Against the background of this assumption, the efficiency-maximizing

⁵¹ For an extensive discussion of this principle, see Thomas. E. Hill, "Kant on Wrongdoing, Desert and Punishment," (1999) 18 *Law & Philosophy* 407; Michael S. Moore, *Placing Blame: A General Theory of the Criminal Law* (1997), 153 ff.

⁵² Becker, (1968) 76 *Journal of Political Economy* 192 ff.

⁵³ A. Mitchell Polinsky and Steven Shavell, "The Optimal Tradeoff between the Probability and Magnitude of Fines," (1979) 69 *American Economic Review* 884.

scheme dictates the highest possible sanction coupled with a minimal probability of apprehension, even for lenient offenses. Becker advocates such a low-probability, maximal-penalties model for all types of offenses. This model, which has been depicted as “hang tax evaders with probability zero,”⁵⁴ generates extensive interest.

The central refutation of Becker’s low-probability, maximal-penalty model is based on the concept of “marginal deterrence” introduced by Stigler.⁵⁵ According to Stigler, marginal deterrence implies that punishment should fit the crime. As he argues, “If the offender will be executed for a minor assault and for a murder, there is no marginal deterrence to murder. if the thief has his hand cut off for taking five dollars, he had just as well take \$5,000.”⁵⁶ Stigler’s claim is that relatively severe crimes should receive higher punishments, as compared to less severe crimes, so as to prevent offenders from substituting less serious crimes for more severe ones.⁵⁷

IV. CONCLUSION

The economic approach to criminal law can be distinguished from other theoretical perspectives on criminal law in light of the economic tenets at its base: under this approach, potential offenders are viewed not as deviant individuals with abnormal choice-making capacities, but rather as rational maximizers of their utilities, who are responsive to incentives. The central role of criminal law and punishment is to change the expected payoff of potential offenders to deter them from engaging in unwanted crime. The economic approach to criminal law, in other words, views punishment as simply a specific case of the general theory of rational choice, highlighting its deterrent function rather than retributivist notions of moral culpability.

⁵⁴ Serge-Christophe Kolm, “A Note on Optimum Tax Evasion,” (1973) 2 *Journal of Public Economics* 265.

⁵⁵ George J. Stigler, “The Optimum Enforcement of Laws,” (1970) 78 *Journal of Political Economy* 343.

⁵⁶ Stigler, (1970) 78 *Journal of Political Economy* 343.

⁵⁷ In addition to the injury to marginal deterrence, alternative refutations of Becker’s claim include Polinsky and Shavell’s argument regarding neglecting to take risk aversion into account (A. Mitchell Polinsky and Steven Shavell, “The Optimal Tradeoff between the Probability and Magnitude of Fines,” (1979) 69 *American Economic Review* 880 ff.); arguments regarding the distinctions between general and specific enforcement of law (Steven Shavell, “Specific Versus General Enforcement of Law,” (1991) 99 *Journal of Political Economy* 1088); arguments regarding individuals’ imperfect information as to the probability of apprehension (Lucian A. Bebchuk and Louis Kaplow, “Optimal Sanctions when Individuals are Imperfectly Informed about the Probability of Apprehension,” (1992) 21 *Journal of Legal Studies* 365); social resistance to optimal deterrence schemes (Cass Sunstein et al., “Do People Want Optimal Deterrence?” (2000) 29 *Journal of Legal Studies* 237) as well as error costs considerations Harel (n. 37) 659.

Finally, the economic analysis to criminal law adopts efficiency as the normative criterion for evaluating criminal rules and institutions.

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