



The Economics of Cruel and Unusual Punishment

JOHN P. PALMER

Economic Analysis of Property Rights Research Group, Social Science Centre, The University of Western Ontario, London, Ontario Canada N6A 5C2

JOHN HENDERSON

Lambton College, Sarnia, Ontario Canada N7T TK4

Abstract

It has sometimes been argued that one way to reduce the costs of law enforcement would be to reduce the probability of detection and conviction (hence saving those costs), while at the same time increasing the size of the punishment. Following this strategy would keep the expected costs (to a risk neutral criminal) of committing a crime constant and hence keep the deterrence level constant; it would have the benefit, though, of reducing costs to the rest of society.

There are some well-known objections to such a policy. One such objection deals with marginal deterrence: A convicted murderer serving a life sentence with no chance of parole in a jurisdiction which bans capital punishment has nothing to lose from killing a prison guard—there is no marginal deterrence to the commission of a more serious crime or any additional crime for that matter. In fact, so long as there remains any upper limit to the amount of punishment that can be inflicted upon a convicted criminal, the only ways to create some type of marginal deterrence are to reduce the punishments for less serious crimes, which will either reduce the deterrence of those less serious crimes, or alternatively to require the use of more of society's scarce resources to increase the probabilities of apprehension and conviction.

It is possible to reduce this marginal deterrence problem, however, by practicing cruel and unusual punishment on perpetrators of serious crimes, i.e. by raising the limits of allowable punishment. Anecdotal evidence suggests this practice is followed unofficially with child molesters and killers of prison guards and hence provides some additional deterrence against these crimes.

Despite the theoretical validity of this argument, our society has chosen to impose a constitutional ban on cruel and unusual punishment. Furthermore, over time we seem to have lowered the threshold of what is considered cruel and unusual. Following Dr. Pangloss, the concluding section of the paper examines why rational maximizers would choose to give up this additional potential deterrence. The explanations depend upon an assumed positive income elasticity of demand for humanitarianism or for insurance against the costs of punishing the innocent. While there are some reasons to accept the humanitarianism argument, the insurance argument seems more persuasive.

Keywords: crime, deterrence

Most contemporary discussions of cruel and unusual punishment accept the premise that it is undesirable, something to be avoided; instead they seem to focus more on what constitutes cruel and unusual punishment. The premise of such work is based on an appeal to long-standing constitutional law that proscribes the use of cruel and unusual punishment. Indeed, much of the discussion of cruel and unusual punishment is about whether

capital punishment or the current conditions of many prisons would constitute cruel and unusual punishment.¹

This study takes a step back, asking why there should be such a ban on cruel and unusual punishment in the first place. It establishes first that the use of cruel and unusual punishment could help to reduce the social costs of criminal activity as well as the apprehension and conviction costs for crime. But it also recognizes that despite these potential benefits of reverting to the implementation of cruel and unusual punishment, North American societies seem to have eschewed these benefits in favour of the pursuit of other goals. The concluding section offers some speculation about the trade-offs involved in these choices.

Expected payoffs versus expected costs

Consider an economic agent faced with the possibility of securing a gain, the expected size of which depends upon the seriousness of the crime s/he is willing to commit. While, for the sake of exposition, one can assume that the choice is made only once and that the various levels of seriousness are mutually exclusive, these assumptions are not crucial to the argument.

Suppose further that not only are the expected benefits (to the potential criminal) of committing the crime positive and monotonically increasing with the degree of seriousness of the crime, but they are also increasing at a diminishing rate². In the absence of constraints (i.e. expected costs of a general nature, whether pecuniary or culturally induced), we would expect the agent to commit crimes of maximum seriousness each time s/he is faced with this choice.

The deterrence models of crime and punishment hold that for risk-neutral agents, so long as society can impose sanctions that raise the expected cost of the crime above the expected benefits, the crime will be deterred³. The two primary components for increasing the size of the expected costs are the probability of apprehension (and conviction) and the size of the punishment upon successful conviction. Variations in either component will affect the expected costs to the criminal of committing the crime, and an important economic decision for society is how many scarce resources to devote to each of these activities: apprehension, conviction, and punishment.

It has been argued by some that because apprehension and conviction require considerable use of society's resources, especially in contrast with the costs of imposing certain types of punishment such as fines or execution, it would be efficient to reduce the probabilities of apprehension and conviction while at the same time increasing the size of the expected punishment, thus maintaining a constant expected cost of engaging in a given criminal activity⁴. While there are many practical problems with this proposition, one of interest for this study is that known as *marginal deterrence*.

Marginal deterrence and finite limits

The problem of marginal deterrence arises when, in order to increase the expected costs of a relatively minor crime, the punishment of it is increased to the extent that there is little additional deterrence potential for a more serious crime⁵. Then the only way to increase the expected costs of committing the more serious crime is to increase the probability of apprehension and conviction, precisely the costly alternatives that were to be avoided by increasing the size of the punishment for the lesser crime(s).

The reason the marginal deterrence problem arises, however, is that we perceive there to be an upper limit on the size of the punishment that can be inflicted. We seem to make this assumption because we conceive of no more serious punishment than death or because we unchallengingly accept the constitutional limits on cruel and unusual punishment.

But these limits are, in some sense, contrived. We know that for many people in certain instances there are, "fates worse than death." The fact that people commit suicide confirms this assertion. The fact that people commit suicide in prison further confirms it and adds relevance for the argument developed here. It is conceivable, then, that execution is **not necessarily** the most serious punishment that can be inflicted upon a criminal; indeed, it is likely that for many potential criminals, the spectre of receiving pain and suffering for ten or twenty years may be a much more serious deterrent than the threat of death⁶.

The result is that once the contrived nature of these upper limits on punishment is recognized, one sees immediately that the marginal deterrence problem is an inevitable fallout of the contrivances. By allowing the upper limits on punishment to extend, *ad infinitum*, beyond incarceration for life or beyond execution, it is conceivable that a strong penalty for even a minor crime would not preclude the use of an even stronger penalty for a more serious crime. And even if there does exist some upper limit on the amount of pain and suffering that a convicted criminal can withstand, it is clear that in most instances this limit is far beyond that which is presently in vogue. Consequently, by implementing cruel and unusual punishment, it would be possible to reduce, if not eliminate, the marginal deterrence problem, and hence reduce the costs of crime by devoting fewer resources to the apprehension of criminals⁷.

A geometric representation

Consider Figure 1. The vertical distances measure the expected costs and the expected benefits to the economic agent of pursuing criminal activity. The horizontal axis ranks the seriousness of the crime⁸. The solid curve, **B**, represents expected benefits to the economic agent of pursuing crimes with varying degrees of seriousness. The dashed curve, **C**, represents the expected cost to him/her of each of the options.

The curve representing the expected costs of criminal activity, **C**, reflects a negative second derivative of the expected cost function on the assumption that the costs to society associated with increasing the probability of apprehension and conviction increase at an increasing rate; it is assumed that there are some fixed factors of production and that there

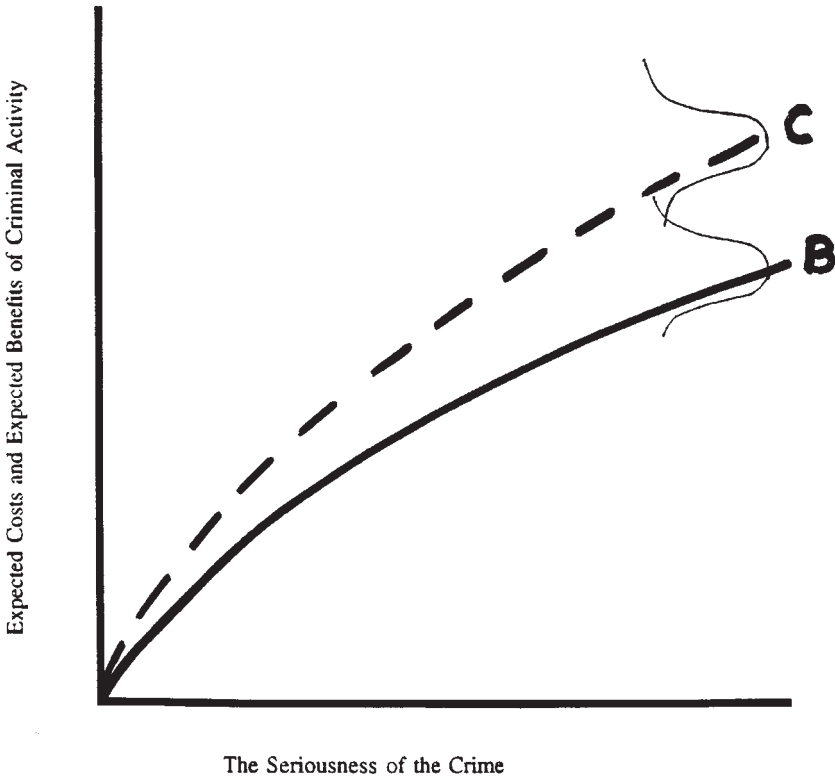


Figure 1. Expected Costs and Expected Benefits (assuming no upper limit on punishment)

is diminishing marginal productivity to increasing the variable inputs. The result of this assumption is that the expected costs to the potential criminal increase at a decreasing rate with the seriousness of the crime. Although this assumption is not crucial to the analysis, it adds to the aesthetics of the geometry.

Similarly, as noted at the outset, it is assumed that the curve representing the expected benefits of criminal activity, **B**, also increase at a decreasing rate. One possible assumption that would give rise to this shape would be the diminishing marginal utility of wealth⁹.

Although these curves represent expected costs and expected benefits to the economic agents, on average, it must be noted that because individuals vary in their ability to assess information and in the errors they are likely to make (as well as many other characteristics), there is in reality a probability distribution around each of these curves. This distribution is represented by the homoskedastic distributions depicted at the end of each curve, indicating some probable overlap in the expected costs and benefits of criminal activity, leading some economic agents to decide to commit crimes of varying degrees of seriousness.

As the curves are drawn, they conform with our understanding of North American society: some people commit crimes of varying degrees of seriousness, but more crimes of a less serious nature are committed, and fewer of the more serious crimes are committed.

But there is a problem with the curves: the expected cost curve has been allowed to increase without limit, when in fact we impose a maximum on the punishment level which can be inflicted on convicted criminals. Consequently, the expected cost curve, *C*, must be redrawn to reflect this upper limit.

Figure 2 shows the two curves with the upper limit imposed on *C*. In this case, the limit merely truncates the expected costs of crime at the upper limit. The difficulty with this depiction of the relationship is that it fails to account for the possibility of devoting more resources to increasing the probability of apprehension and conviction as the seriousness of the crime increases. Another problem is that when society imposes the limit in such a fashion, it encounters the marginal deterrence problem in its most serious form¹⁰. Once a potential criminal contemplates committing a crime of seriousness *A*, s/he quickly learns that committing crimes of seriousness even greater than *A* has even larger net expected payoffs.

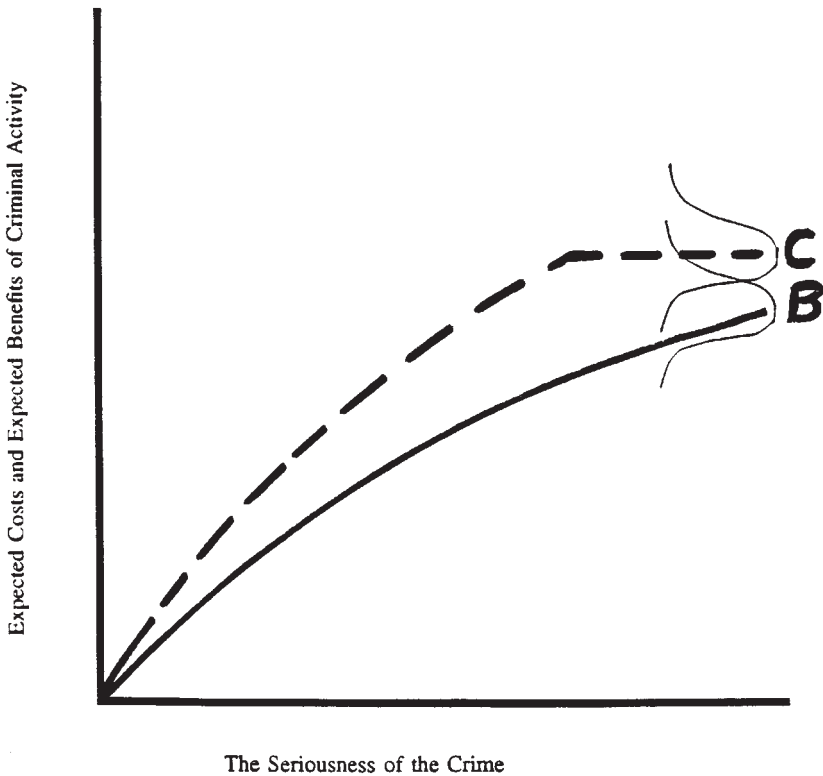


Figure 2. Expected Costs and Expected Benefits (assuming a truncated upper limit on punishment)

But because of the maximum limit imposed on the punishment that can be meted out to convicted criminals, it follows that there is a maximum amount of marginal deterrence that can be assigned to crimes of varying degrees of seriousness. In Figure 2, all of the marginal deterrence is exhausted in the deterrence of relatively minor crimes, and none is left to marginally deter the more serious crimes.

A more common reaction to the upper limit is to adjust the marginal deterrence for all crimes, lowering it for lesser crimes and making it greater than zero for more serious crimes (see Figure 3). One method of doing so is to increase the probability of apprehension and conviction for more serious crimes; another is to use very fine gradations of punishment as the seriousness increases¹¹. The exact shape of the curve is difficult to determine *a priori*, but in general the expected cost curve, **C**, will be closer to the expected benefits curve, **B**, leading more individuals to choose to engage in criminal activities of nearly all levels of seriousness. In other words, the imposition of these limits reduces the potential for deterrence and leads to increasing the costs to society resulting from crime.

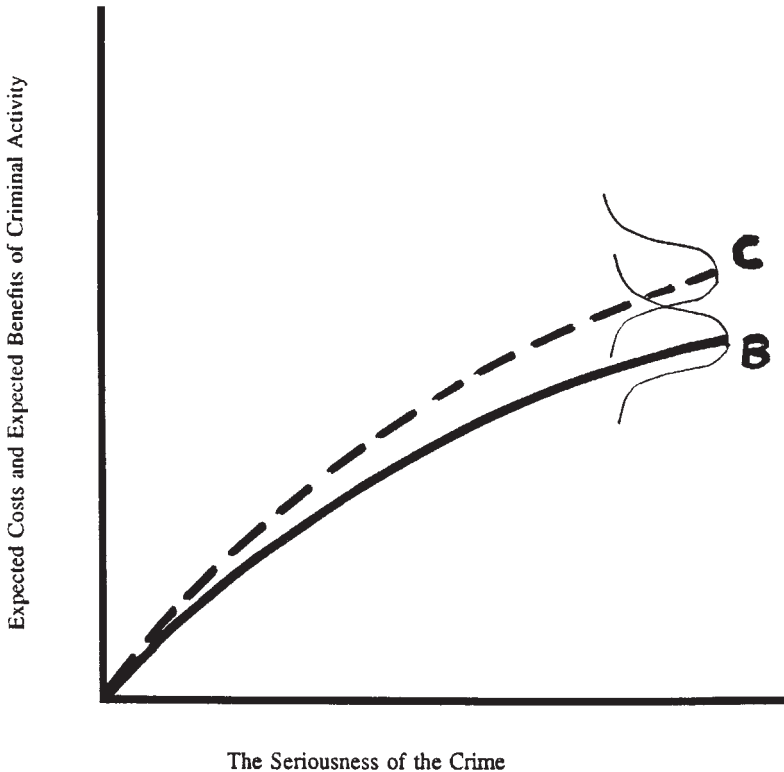


Figure 3. Expected Costs and Expected Benefits (assuming an upper limit on punishment)

Cruel and unusual versus capital punishment

While much of the discussion of these two topics has focused on whether capital punishment constitutes cruel and unusual punishment, the two are likely related in another way as well. It is likely that the type and severity of punishment may make it difficult to measure whatever deterrent effect exists from capital punishment.

Many neoclassical economists argue on an *a priori* basis that capital punishment must have a deterrent effect on murder because it is clearly a more severe punishment than life imprisonment. Unfortunately for them, empirical tests of this hypothesis do not uniformly support it¹². In general the data sets are small enough and imprecise enough that the results of testing for the deterrence effect of capital punishment are inconclusive at best.

There is another, economic, reason for these mixed results, however. As noted earlier, there are many fates worse than death, and the suicides committed by prisoners suggest that for at least some people the thought of spending many years in some prisons might be worse than the thought of death. In other words, from the viewpoint of someone contemplating the expected costs of committing a crime, capital punishment, even in today's world with limitations on the severity of the punishment that can be inflicted, may not be the worst imaginable punishment that s/he would suffer. Life imprisonment in crowded, violent prisons may provide as much deterrence as capital punishment for many people, and hence the deterrent effect of capital punishment may be swamped by the deterrent effect of an extremely unpleasant lifestyle¹³.

Not only does this approach help us understand why empirical studies of the deterrent effect of capital punishment fail to yield strong conclusions; it also raises an important policy issue about prison reform: if deplorable prison conditions exist and are well-known by potential criminals, it might be possible to reduce crime rates by not only making prison conditions worse but also by advertising how bad they are.

A visit with Dr. Pangloss¹⁴

Despite the arguments presented so far, it appears that North Americans have chosen *not* to implement cruel and unusual punishment as a deterrent, at least not explicitly. In fact, they/we are moving in the opposite direction, removing some of the more heinous types of punishment from the list of acceptable punishments and showing concern for prison reform. If it is possible to reduce the social costs associated with crime by exercising cruel and unusual punishment, and yet we choose not to do so, there must be other important variables entering into the social decision. If, *mutatis mutandis*, everything is optimal, then presumably we have chosen, optimally, to reduce the deterrence of criminal activity in exchange for the pursuit of other goals.

Two distinct possibilities present themselves. The first is that we are choosing to inflict less pain on other people, even if they are criminals; we are becoming a "kinder and gentler" society. The important question, then (for this section of this paper), is, "If so, why?"

Given that economists are reluctant to rely on such explanations as changes in tastes and preferences, we tend to look elsewhere for the answer. One possibility is that as wealth increases, people choose to purchase more humanitarianism. While it is not altogether clear that crime rates have increased as societies have lowered the ceiling on the types of punishments that can be exacted¹⁵, it is plausible that as both individuals and societies on average become wealthier, they are unwilling explicitly to impose some of the more cruel and unusual forms of punishment on criminals. They also seem willing to accept the result that by reducing the potential for deterrence of crime, they are forcing the additional victims to bear (sometimes extreme) costs, which are possibly external to themselves. In their effort to pursue humanitarianism toward criminals, they specifically reduce the disincentives facing criminals which would keep them from perpetrating crimes against others.

If, as economists are wont to assume, individuals are rational maximizers, it seems unlikely that the humanitarianism explanation is as persuasive as it might initially appear. So long as people value the preferences of potential victims as highly as they value the preferences of potential criminals, the trade-off which would create more victims, as well as more victims of more serious crimes, does not seem to be a clear net benefit on humanitarian grounds. Only a type of humanitarianism that weights more heavily the preferences of the known sufferers (the criminals who are the recipients of cruel and unusual punishment) over the preferences of the more diffuse, unknown sufferers (potential victims) would support this type of policy.

An alternative explanation is that as we acquire wealth, we attempt to acquire more insurance as well. And while we can purchase insurance in the marketplace against many of the losses imposed by criminals, we cannot purchase specific insurance against the risk of legal error¹⁶. However, innocent people can implicitly seek to insure themselves against legal error by taking action outside regular insurance markets. They do so in two ways.

First, as society's wealth increases, we can devote more of our resources to reducing legal error. the insurance premium paid in this case is explicit: it is the extra resources used; and there is a double return, because increasing the resources involved in detection and conviction not only reduces the number of innocent people who appear to be guilty on first inspection but actually are not, but at the same time, more careful and exhaustive procedures would likely detect more criminals.¹⁷

Second, for a given probability that an innocent person will be wrongfully convicted, we can reduce the expected cost of such an error by reducing the size of the punishment imposed on all persons convicted of a crime, whether s/he is truly guilty or not. The result is that the cost of legal error is reduced to those unlucky enough to be the recipients of the error; but the implicit premium of this type of insurance policy is that all of society must in turn tolerate a higher crime rate due to the reduction in deterrence. If the relevant elasticities involved are small, then this premium may also be small. Moreover, whether the implicit premium is small or not, the qualitative result is the same: there is a rational incentive for innocent people who face the potential of legal error to seek lower punishments than they would if the possibility of such error did not exist.¹⁸

Innocent people have a rational incentive to insure themselves implicitly against legal error by seeking to place increased resources in crime prevention and to impose lower

punishments than if the threat of error did not exist. This insurance explanation has more appeal than the humanitarianism explanation. One of the leading arguments against the use of capital punishment is its irreversibility in the case of wrongful conviction¹⁹. In a sense, this argument, though frequently based on Kantian philosophical principles, is the same as the insurance argument: we would like to reduce the costs involved with the risk of legal error; we know that it would be impossibly costly to completely eliminate the risk of legal error, and we choose to reduce the costs of such errors in part by reducing the severity of the punishment.

The costs of legal error are born not just by those unlucky enough to be wrongfully convicted of a crime. The risk of legal error creates an incentive for all persons, to some degree, to take protective measures against being convicted of a crime. To the extent that we set an upward limit on the severity of the punishment imposed on convicts, we thus reduce the expected costs of being a victim of legal error. And as a result, innocent persons will choose to take fewer and/or less costly measures to guard against being wrongfully charged and convicted.

If we were to implement a full range of cruel and unusual punishment (whatever that would entail), we would be increasing the expected cost of legal error. Regardless of the philosophical or humanitarian arguments against hurting other people, especially innocent ones, we might choose not to take this route on economic grounds alone. More severe punishments would require that risk averse and risk neutral individuals devote even more scarce resources to protection against wrongful conviction to avoid the high costs accompanying it, and it would hence use up some of society's scarce resources. And those who are risk averse might plausibly be willing to put up with the threat of increased crime, even against themselves, to reduce the expected costs of legal error²⁰.

In addition, it may be cost-reducing to limit the size of the punishment if it is anticipated that judges and juries would be reluctant to convict those persons guilty of crimes that entailed severe punishments. In such cases, the standard of proof may be so high that many guilty persons would be found not guilty and the deterrence effect would be lost.²¹

Conclusion

Cruel and unusual punishment would likely provide additional deterrence in society's arsenal against crime. Allowing the use of extremely severe punishments would help mitigate the marginal deterrence problem and would likely lead to a reduction in social costs due to criminal activities. Nevertheless, North American society has chosen, through very rigid constitutional means, to bar the use of cruel and unusual punishment and even to pursue prison reforms, making punishments less severe rather than more severe, hence reducing the disincentives for criminal activities.

On the surface, a plausible explanation for this societal decision might be the pursuit of humanitarian ideals. However, given that increased crime is inconsistent with humanitarian practices (so far as victims and potential victims are concerned), the attractiveness of

this explanation is lessened. A more likely explanation would seem to be the desire by the individual members of society to put up with increasing crime rates in exchange for reducing the expected costs should a type I legal error be committed.

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Notes

1. See, for example, the writings of M. J. Radin: "The Jurisprudence of Death: Evolving Standards for the Cruel and Unusual Punishments Clause," *University of Pennsylvania Law Review*, 126, 989–1064, 1978; and "Cruel Punishment and Respect for Persons: Super Due Process for Death," *Southern California Law Review*, 53, 1143–85, 1980. Also see the minority opinions of Justices Marshall and Brennan in *Furman v. Georgia*, 408 U.S. 238 (1972), in which the view is expressed that the death penalty is *per se* in contradiction to the constitutional ban on cruel and unusual punishment.
2. Once again, the assumption of diminishing marginal expected benefit is not crucial to the argument. It does, however, aid its exposition.
3. See G.S. Becker, "Crime and Punishment: An Economic Approach," *Journal of Political Economy*, 76, 169, 1968. Of course not all crime would be deterred if there exists imperfect information and/or risk-nonneutrality.
4. For a more thorough discussion of this point, see R. A. Posner, *Economic Analysis of Law (3rd edition)*, 205–210, Little, Brown and Co., Toronto, 1986.
5. For example, it would be possible to deter most trespassing by making it a capital crime, but doing so would remove much of the disincentive (i.e. expected cost) of murdering the witnesses and apprehenders. A related problem is that having the punishment for lesser crimes set "too high" in the minds of jurors may result in a reduced probability of conviction. See S. Mermin, *Law and the Legal System-An Introduction*, 14–20, Little, Brown and Co., Toronto, 1973.
6. Of course potential criminals vary in their ability to withstand pain, and so the potential deterrent effect of cruel and unusual punishment is likely to favour the strong-willed as opposed to those who are less able to withstand pain. But this possible variation of the deterrent effect is analytically no different from the varying abilities of potential criminals to bear financial penalties nor from the different opportunity costs of time experienced by those who face incarceration. In every instance, the type of punishment is felt more by some and less by others, leading to a nonuniform deterrence effect.
In some instances, the inflicting of pain and humiliation on a criminal might have two benefits to society: deterrence *and* cost-saving. As a referee has pointed out to us, it is quite likely often cheaper to administer lashings than to incarcerate a convicted criminal.
7. Posner, *op. cit.*, 211, notes that the type and painfulness of executions often varied with the detectability and/or the seriousness of crimes. He fails to take the extra step of noting that execution ends the pain, and that stronger deterrents could easily be contrived if criminals were forced to suffer the pain but were not allowed to die. Of course in some cultures and religions it is believed that the type of death suffered will affect the amount and duration of post-death suffering, and in this way the manner of execution aided the amelioration of the marginal deterrence problem.

8. A similar geometric device is shown in R. Cooter and T. Ulen, *Law and Economics*, 520–22, Scott, Foresman and Company, Glenview IL, 1988.
9. The assumption also seems to be required if the model is to bear some resemblance to reality and if the curve C is increasing at a decreasing rate. Otherwise we would observe large numbers of people committing large numbers of very serious crimes.
10. For instance, the statutory requirement in the state of Michigan that convicted drug dealers receive life imprisonment with no parole drastically reduces the disincentive to drug dealers of murdering (or threatening to murder) witnesses and arresting officers. Similar problems are faced with the murder of prison guards by those who have already been imprisoned for life or who are on death row (in jurisdictions permitting capital punishment). So while Figure 2 appears to be a somewhat implausible artifact, it does indeed represent some important situations about which much debate has occurred.
11. The legal and administrative costs of these mechanisms (including prolonged debates over whether “the punishment fits the crime”), of course, are high, and tend to offset the benefits of the extra deterrence to some extent.
12. For two excellent treatises on these and other issues in capital punishment, the reader is referred to K. L. Avio, “Capital Punishment in Canada: Statistical Evidence and Constitutional Issues,” *Canadian Journal of Criminology*, 331–49, October, 1988; and K. L. Avio, “Retribution, Wealth Maximization, and Capital Punishment: A Law and Economics Approach,” *Stetson Law Review*, 19-2, 373–409, Spring, 1990.
13. The fact that advocates of prison reform frequently refer to modern prison conditions as being tantamount to cruel and unusual punishment provides additional confirmation that at least some other people (in addition to those who commit suicide in prison) recognize the potential seriousness of this effect.
14. Dr. Pangloss, a character in Voltaire’s *Candide*, put forth the tautology that whatever is, is optimal because if it weren’t we’d have changed it by now. This statement takes into account all transaction, information, and adjustment costs. A corollary asserts that we are also on the optimal adjustment path as we change things: if we weren’t we would change it.
15. There are, after all, many other determinants of crime rates.
16. In this section, the relevant legal error is a type I statistical error, the wrongful conviction of an innocent defendant. For a constant amount of resources, the cost of reducing type I errors (typically the method of doing so would involve a change in the standard of proof or evidence) is an increase in type II errors: allowing guilty criminals to be found not guilty. The reduction of type I errors, in these circumstances, creates more incentives for rational maximizers to engage in criminal activities.
17. Put differently, increasing the amount of resources devoted to detection and prosecution would tend to reduce *both* type I and type II errors.
18. In fact, there is an additional mechanism whereby allocating additional resources to law enforcement might lead innocent people to seek an even further reduction in punishments. Recall that an increase in resources devoted to crime prevention would increase the probability of convicting criminals. Now, consider the probability of convicting criminals, and the punishment imposed, as substitute inputs in the crime-deterrence production function. An increase in this probability would lower the marginal productivity of punishment and make it less productive in fighting crime. However, if the marginal product of punishment is declining further (as would be the case with the standard assumption of diminishing marginal productivity), then the crime-fighting productivity of imposed punishments could be restored if the punishment were reduced accordingly.
19. See Avio, “Retribution, ...,” *op. cit.*, 393, and Posner, *op. cit.*, 207.
20. The assumption of pervasive risk aversion, at least in North America, does not seem unreasonable, despite the growing popularity of government sanctioned lotteries. As Bernstein and Geehan point out, “The ‘GNP elasticity of demand’ for insurance, i.e. the ratio of the percentage increase in national expenditure on insurance to the percentage increase in gross national product per capita, is greater than one.” See J. I. Bernstein and R. R. Geehan, *The Insurance Industry in Canada*, 5, The Fraser Institute, Vancouver, 1988.
21. c.f. n.5 *supra*