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# Principle of Proportionality in Sentencing and Economic Approach in Criminology

Economic approach is not a novelty in criminological research. Two important contributors to criminology during the eighteenth and nineteenth centuries, Beccaria and Bentham, explicitly applied an economic calculus. Unfortunately, such an approach lost favour for a significant period of time from the end of the nineteenth century until during the 1960s when economists turned their attention to the field of criminology. Then followed a further period of relative silence in this field, but the second half of the nineties has witnessed a vitalisation of the economic approach in criminology.<sup>1</sup> In this paper application of the economic approach on the principle of proportionality in sentencing is analysed.

There is totally unanimous support for the idea that there must be proportionality between the crime committed and the sentence to be served. But as to what characteristic of the crime the sentence should be proportional to, opinions differ. There are at least three different viewpoints to measure the crime: one, from the viewpoint of the effect on the offender; second, on the society as a whole; and third, on the victim. From the different standpoints, the proportions are seen remarkably differently.

The first standpoint was proposed already by Jeremy Bentham. In his "Principles of Morals and Legislation" he asserted that "the value of the punishment [f] must not be less in any case than what is sufficient to outweigh that of the profit of the offence [c]".<sup>2</sup>

$$(1) \quad f \geq c$$

Gary S. Becker supports in his almost as famous "Crime and Punishment: An Economic Approach"<sup>3</sup> a much more sophisticated position: "a person commits an offence

if the expected utility to him exceeds the utility he could get by using his time and other resources at other activities" and that "[s]ome persons become 'criminals', therefore, not because their basic motivation differs from that of other persons, but because their benefits and costs differ". While considering only the effect on the offender, the last position would mean that the punishment should be as severe as needed to cause the offender disutility (d) that would outweigh the expected utility of the crime (c) minus utility he/she could get by using his/her time and other resources at the most efficient available legal activities (l).

The expected utility of the same offence is different for different offenders. E.g., the expected utility of speeding (saving a few minutes) is higher to the richer offender.<sup>4</sup> And consequently it is reasonable to punish him/her more severely (use of day-fine system serves very conveniently this purpose). But there are plenty of offences, where utility is almost exactly the same to all offenders independent of their extremely different attributes. E.g., stealing \$100 provides the same amount of money to a poor man as a rich man and consequently it is not so easy to demonstrate that the rich man should be punished more severely as it is effected by use of day-fine system.

As offenders usually do not have access to efficient, legally recognised means to achieve their goals and the time allotted for illegal activities is most often not extensive, we may presume that l is marginal. Hence, it should be achieved that,

$$(2) \quad d > c$$

Becker makes it quite blatantly clear<sup>5</sup> that, as we are able to punish only a fraction of all offenders, the disutili-

ty for a single offender is not the punishment meted out for the concrete offence committed ( $f$ ), but the punishment discounted for the (usually quite low) probability of conviction ( $p$ ).

$$(3) \quad d = pf > c$$

The probability of conviction depends on the probability of reporting an offence to police (the most recent Estonian studies on victimisation revealed that the probability of a theft to be reported is 0.276<sup>6</sup>) multiplied by the probability that the report will result in apprehension (0.078<sup>7</sup>) and conviction. Hence, if the offence is theft of \$100, the punishment should be a fine  $1/p * 100 = 46.5 * 100 = \$4650$

The effect of probability has been analysed most scrupulously. In his recent study, Richard Craswell points out that deterrent effect of punishment differs depending on whether the multiplier ( $p$ ) is calculated (I) case by case, to reflect each defendant's actual probability of punishment, or (II) on an average probability of punishment facing all defendants, and that the deterrent effect will also be different if the law uses (III) a constant fine, based on the average probability of punishment and the average harm.<sup>8</sup> In this paper, the effect on the concrete offender is analysed. Hence, the latter two regimes will not be analysed here.

The first regime should be analysed in two different subregimes: a) defendant's actual probability of punishment for the offence he/she is being punished for, ( $p'$ ); b) defendant's probability of punishment for a similar offence if he/she commits the offence after (or while serving) the punishment for the primary offence, ( $p''$ ).

In the real world  $p'$  equals to  $p''$  infrequently. It is quite likely that,  $p'' > p'$  because for law-enforcement agencies, it is, as a rule, easier to identify and apprehend offenders who already have been punished. But in concrete cases,  $p''$  may be lower than  $p'$ , because the offender will become more experienced and more able to avoid risk of apprehension and punishment. While analysing from the utilitarian point of view the optimal amount of punishment ( $f$ ) to deter an individual offender from further similar criminal activities, we should use  $p''$ , because if  $p'' > p'$ , the offender would have been deterred already via use of  $f = 1/p'' * c$  and using  $f = 1/p' * c$  the amount of punishment  $f^0 = (1/p' - 1/p'') * c$  would be just wasted without any additional positive effect. And if  $p'' < p'$ , the use of  $f = 1/p' * c$  would result in a waste of  $f = 1/p' * c$ , because it would not be enough to outweigh the utility of the second offence and the offender would commit it anyway.

Furthermore,  $p''$  is objective probability, but the offender acts according to his/her perception of the probability. **Hence, in the formula (3) we should bear in mind the probability of punishment for a future similar crime as perceived by the offender.**

The probability of future punishment is perceived depending upon one's disposition to take risks.<sup>9</sup> Becker

acknowledges that the effect of punishment on an offender depends on whether the offender is risk preferrer, risk neutral or risk avoider.<sup>10</sup>

It has been asserted that:

$$(4) \quad d = pf,$$

only for risk neutral offenders, for risk avoiders:

$$(5) \quad d > pf,$$

and for risk preferers:

$$(6) \quad d < pf.$$

Hence, we need to add in formula (3) an extra variable  $r$  to reflect the effect that an average offender is a risk preferrer and, as  $p$  is significantly less than 1, discounts considerably the punishment:

$$(7) \quad d = pf > rc.$$

Still, we should not be sure that if  $pf > rc$ , the offender will be effectively deterred. There is a period of time (as a rule not a short one) between the time, an offence was committed, and the time, the offender will be sentenced. And as we all are inclined to discount to some extent the future positive as well as negative consequences (e.g. if a person is offered \$100 for a certain performance, the probability that the offer is accepted depends significantly on the length of the period of time between the performance and the receipt of the \$100, if the period is e.g. longer than 3 years the offer will not very likely be accepted), we have to add the time effect<sup>11</sup> ( $t$ ) to the formula (7):

$$(8) \quad d = pf > trc.$$

But average offenders are most likely young males, who discount future negative consequences even more than average members of community. Furthermore, we should not forget the fact that the situations in which crimes are committed are not necessarily the situations in which we should assume that the actor is capable of reasonable foresight. Quite often the situations involve extreme emotions that significantly hinder the probability that all possible negative effects (including possible apprehension, conviction and punishment) of contemplated acts are scrupulously estimated. Hence, the formula (8) needs an extra variable ( $t'$ ) to represent these effects:

$$(9) \quad d = pf > t'rc.$$

An additional issue to be discussed is the possibility that an increase in the magnitude of punishment may not be in linear correlation with the disutility caused to an offender. It is possible (and seems to be quite likely) that for an offender the first year of imprisonment involves great disutility and the additional years involve lessening disutility per year, because the offender gets used to the conditions. In some cases it is also possible that disutility rises more than in proportion to the term (e.g. something causes imprisonment to become increasingly difficult to tolerate). A. Mitchell Polinsky and Steven Shavell analyse these two possible situations along with the situation where disutility rises proportionally with the magnitude of punishment. They conclude that in the situation, where the disutility

from punishment rises less than in proportion to the sentence, raising the magnitude of sanctions has a smaller deterrent effect than increasing their probability.<sup>12</sup> In real life, correlation between the magnitude of sentence and the caused disutility is likely to be not so simple. E.g. it is possible that disutility of imprisonment:

(i) rises more than in proportion to the length of it, so long as the period of incarceration increases from 0 to the length of imprisonment that already requires serious psychological adaptation to the conditions of captivity (A);

(ii) from this point the disutility rises less than in proportion until the imprisonment is becoming likely to produce considerable changes in the personality that will increasingly deteriorate the chances of successful life after the sentence is served (B);

(iii) during this period of increasing deterioration of chances for future success the disutility may be rising more than in proportion to the length of imprisonment (C);

(iv) if the chances of future success are already, close to zero, the possibility that disutility rises is most likely less than in proportion to the length of captivity.

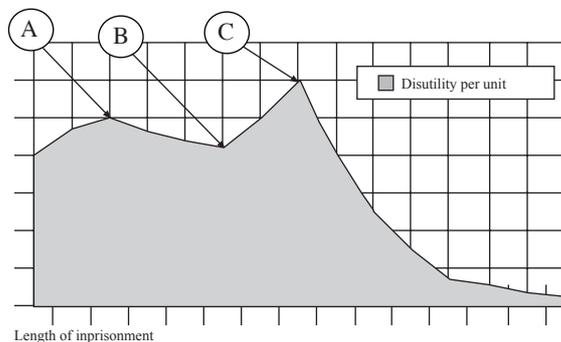


Figure 1. Imaginable correlation between the length of imprisonment and disutility of imprisonment per unit of imprisonment

It is extremely difficult to predict the future correlation between the disutility and the magnitude of punishment, but it seems to be very likely that the summary disutility generally rises less than in proportion to the magnitude and therefore the amount of punishment should be multiplied by  $m$  to reflect the effect.

$$(10) \quad d = pf ( mt' trc$$

Considering all the multipliers, we have to conclude, that in most cases, society is not in a position to impose sanctions as severe as needed, according to formula (10), to deter all offenders effectively from further similar offences.<sup>13</sup> The most common argument against severe sanctions is that punishment should never exceed the amount offender deserves for his/her offence.<sup>14</sup> But how one could find out the exact magnitude of punishment an offender deserves has remained undetermined.

Another argument against extremely severe sentences is connected with proportionality of punishment from the point of view of society as a whole. That is that it would

cost the society much more to impose the sanctions (cost of apprehension, conviction and operating prisons) than the society would benefit from the imposition of the sanctions. In this line of argument one utilitarian conception that "the value of the punishment must not be less in any case than what is sufficient to outweigh that of the profit of the offence"<sup>15</sup> is disputed by another utilitarian conception that "[t]he economically correct rule is to prevent an offence if and only if the net cost from the offence occurring is greater than the cost of preventing it".<sup>16</sup>

This latter conception may be contested on the grounds of an equal protection clause. It is possible that the prevention of similar offences can have remarkably different costs for society. And if only the crime that is cheaper to prevent is prevented then both offenders may have a claim under an equal protection clause.

The offender, who was prevented from committing the crime may have a claim that he/she has unequally suffered from the prevention (he/she was punished to prevent further crime). And the offender, who was not prevented from committing the crime may also have a claim that he/she has unequally suffered, because nobody prevented him/her from committing the second offence and he/she got punished for the offence he/she would have never committed if he/she had been equally prevented from committing it.

The only technique to reconcile the conflict between utilitarianism and equal protection, seems to be, to estimate the harm caused to society if equal protection is not guaranteed and most likely, if this harm is also considered, the conclusions (to prevent or not to prevent?) will also be, from the utilitarian standpoint, alike for similar offences.

And third, proportionality from the standpoint of a victim. From this standpoint, it is possible to analyse proportion between:

a) punishment and the adverse effect a crime had on the victim, or

b) the adverse effect a crime had on the victim and the satisfaction he/she gets from the punishment imposed on the offender.

The proportion b) is truly victim-oriented. Even so strictly victim-oriented that even the most radical advocates for more concern about the status of the victim in criminal justice have not proposed to apply such proportion. Obviously, it is quite impossible to reason why society should cause suffering to a member of society to achieve a certain level of satisfaction for another member of the society. The closest ideas to the proportion b) are the proposals to reform criminal punishments in a way that maximises the victim's chances of receiving compensation from the offender. These proposals encourage use of non-custodial sentences that enhance the offender's capabilities to furnish compensation. Therefore this is in open disagreement with the ideas of proportionality from the offender's or a social standpoint that, as it was analysed

above, suggest use of extremely severe sentences.<sup>17</sup>

The proportion a) has been analysed most widely in connection with the use of victim impact statements that the United States Supreme Court at last approved in *Payne v. Tennessee*<sup>18</sup> overruling *Booth v. Maryland*<sup>19</sup> and *South Carolina v. Gathers*<sup>20</sup> that had very recently held that evidence and argument relating to the victim and the impact of the victim's death on the victim's family are per se inadmissible at a capital sentencing hearing.

David D. Friedman argues that *Payne v. Tennessee* "is rejecting one of the implications of the economic approach to criminal law [that w]here criminals are aware of characteristics that affect the value of the lives of their victims, selective punishment [considering the differences in the values] would provide selective deterrence and thus make the criminal law more efficient".<sup>21</sup> But there are no grounds to suggest that *Payne v. Tennessee* completely rejects all implications of the economic approach. Vice versa, upholding the victim impact statements *Payne v. Tennessee* enhances the possibilities to consider in sentencing the damages from the victim's perspective.

David D. Friedman suggests that the rule established by *Payne v. Tennessee* "would also permit such evidence to be introduced in cases where the offender was not aware of the relevant facts at the time of the murder".<sup>22</sup> In that case, it would be another example of a clear disagreement between proportionality from the offender's perspective and proportionality from the victim's perspective. Proportionality from the offender's perspective cannot be reconciled with the consideration in sentencing of facts that the offender did not and could not know.

## Conclusion

Overwhelming support for the idea that there must be proportionality between the crime committed and the sentence to be served cannot help us much as long as different supporters of proportionality view it from very different standpoints. Proportionality from the offender's standpoint should not be reduced to the requirement that the value of the punishment be not less in any case than what is sufficient to outweigh that of the profit of the offence. So lenient punishments could have effective deterrent effect only if 100 per cent of all offenders would be punished. It is impossible to impose severe enough punishments to deter all offences, hence, we have to look at proportionality also from the standpoint of society as a whole, and to acknowledge that the economically correct rule is to prevent an offence if and only if the net cost from the offence occurring is greater than the cost of preventing it. We have to consider also the damage from the victim's perspective, but only so far as we can reasonably expect that the offender was or should have been aware of the value of damages from the victim's perspective.

## Notes:

<sup>1</sup> Q.v. e.g. R. Craswell. Deterrence and Damages: The Multiplier Principle and its Alternatives.— *Michigan Law Review*, Vol. 97, No. 7, June 1999. — Available [http://papers.ssrn.com/sol3/paper.taf?ABSTRACT\\_ID=156809](http://papers.ssrn.com/sol3/paper.taf?ABSTRACT_ID=156809), 19.05.1999; J.J. Dilulio, Help Wanted: Economists, Crime and Public Policy. — *Journal of Economic Perspectives*, Vol. 10, 1996, pp. 43-67; J. Ehrlich, Crime Punishment and the Market for Offences. — *Journal of Economic Perspectives*, Vol. 10, 1996, pp. 43-67; R.B. Freeman, Why Do So Many Young American Men Commit Crimes and What Might We Do About It?. — *Journal of Economic Perspectives*, Vol. 10, 1996, pp. 25-42; E.L. Glaeser, B. Sacerdote, J.A. Scheinkman, Crime and Social Interactions. — *Quarterly Journal of Economics*, Vol. 111, 1996, pp. 507-548; J. Grogger, The Effect of Arrest on the Employment and Earnings of Young Men. — *Quarterly Journal of Economics*, Vol. 110, 1995, pp. 51-72; A. M. Polinsky, S. Shavell. On the Disutility and Discounting of Imprisonment and the Theory of Deterrence. — National Bureau of Economic Research Working Paper Series, Working Paper 6259. — Available, <http://www.nber.org/papers/w6259>, 18.05.1999.

<sup>2</sup> J. Bentham. *An Introduction to The Principles of Morals and Legislation*, New York. — Hafner Publishing Co. p. 179.

<sup>3</sup> G.S. Becker. Crime and Punishment: An Economic Approach. — *Journal of Political Economy*, Vol. 76, March-April, 1968, p. 176.

<sup>4</sup> David D. Friedman. Should the Characteristics of Victims and Criminals Count? *Payne v Tennessee* and Two Views of Efficient Punishment. — *Boston College Law Review*, Vol. 34 No 4, July 1993.— Available <http://shell9.ba.best.com/~ddfr/Academic/Payne/Payne.html> 17.05.1999, p. 6.

<sup>5</sup> *Ibid*, at p 177; q.v. also Bentham at p. 184.

<sup>6</sup> Kauko Aromaa & Andri Ahven. Victims of Crime in Two Baltic Countries. Finnish and Estonian data from the 1992/1993 International Crime Victimization Survey. Helsinki, 1993, p. 30.

<sup>7</sup> Available, <http://www.pol.ee/politseistatistika/politseistatistika.html>, April 12, 1999.

<sup>8</sup> Richard Craswell. Deterrence and Damages: The Multiplier Principle and its Alternatives. - *Michigan Law Review*, Vol. 97, No. 7, June 1999. — Available [http://papers.ssrn.com/sol3/paper.taf?ABSTRACT\\_ID=156809](http://papers.ssrn.com/sol3/paper.taf?ABSTRACT_ID=156809), 19.05.1999.

<sup>9</sup> The perception depends also on factual errors in assessing the probability, but as we have no grounds to believe that offenders are more likely to make factual errors producing overestimation of the probability of future punishment or underestimation the same, the factual errors are not considered in this paper. Due to risk preference, offenders may be more likely to make factual errors producing underestimation of the probability of future punishment. This tendency may, if detected, be considered in the multiplier  $r$ , reflecting the effect of offenders' risk preference.

<sup>10</sup> Becker, at pp. 183-184. He suggests that if offenders were risk neutral the most efficient criminal policy could be to punish a minimal fraction of offenders, but to sentence them extremely severely so that the product  $pf$  would be high enough to deter offenders' further criminal activities. The apprehension and trial costs would be minimal and the cost of executing the sentences would be the same as if more offenders were sentenced more mildly. As offenders tend to be more risk preferers and therefore discount the disutility of probable future punishment, the suggested policy does not work.

<sup>11</sup> Jeremy Bentham employed the term "proximity" while discussing the time effect. See, Bentham at p 184.

<sup>12</sup> A. Mitchell Polinsky, Steven Shavell, On the Disutility and Discounting of Imprisonment and the Theory of Deterrence.— National Bureau of Economic Research Working Paper Series, Working Paper 6259.— Available, <http://www.nber.org/papers/w6259>, 18.05.1999, pp. 13-16.

<sup>13</sup> This suggestion does not rule out that in many cases society can provide severe enough punishments to prevent many crimes. It is even more true, because the adverse effect of punishment also includes stigmatisation.

<sup>14</sup> Q.v., Jaan Sootak. *Criminal Policy (in Estonian)*.— Juura, Tallinn, 1997, p. 67.

<sup>15</sup> J. Bentham. *An Introduction to The Principles of Morals and Legislation*,

New York. — Hafner Publishing Co. p. 179.

<sup>16</sup> David D. Friedman, Should the Characteristics of Victims and Criminals Count? *Payne v Tennessee and Two Views of Efficient Punishment*. - Boston College Law Review, Vol. 34 No 4, July 1993.— Available <http://shell9.ba.best.com/~ddfr/Academic/Payne/Payne.html> 17.05.1999, p. 2.

<sup>17</sup> Non-custodial sentences (most commonly fines) cannot be, in most cases, severe enough, because offenders lack assets to pay extensive fines.

<sup>18</sup> *Payne v. Tennessee*, 501 U.S. 808 (1991)

<sup>19</sup> *Booth v. Maryland*, 482 U.S. 496 (1987)

<sup>20</sup> *South Carolina v. Gathers*, 490 U.S. 805 (1989)

<sup>21</sup> David D. Friedman, Should the Characteristics of Victims and Criminals Count? *Payne v Tennessee and Two Views of Efficient Punishment*. - Boston College Law Review, Vol. 34 No 4, July 1993.— Available <http://shell9.ba.best.com/~ddfr/Academic/Payne/Payne.html> 17.05.1999, p 7.

<sup>22</sup> *Ibid.*