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Escalating Interest in Escalating Penalties

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Escalating Interest in Escalating Penalties

by

Thomas J. Miceli*

Abstract: Escalating penalties for repeat offenders are a pervasive feature of punishment schemes in a variety of contexts. Economic theory has had a hard time rationalizing this practice, however, because setting the penalty equal to the social cost of an act should achieve optimal deterrence irrespective of the offender's record. This paper reviews the literature on escalating penalties, and then develops a theory based on uncertainty on the part of enforcers about offenders' gains from committing socially undesirable acts. The analysis derives the conditions under which escalating penalties are both optimal (cost minimizing) and subgame perfect.

Key words: Criminal punishment, escalating penalties, repeat offenders
JEL codes: K14, K42

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Escalating Interest in Escalating Penalties

1. Introduction

The imposition of increasingly harsh penalties for repeat offenders is a pervasive feature of punishment schemes in a variety of contexts, including criminal sentencing, regulatory enforcement, and penalization of sports infractions, to name just a few examples. As intuitively appealing as such schemes appear, however, it has proven surprisingly difficult to show that they are consistent with an optimal (cost-minimizing) enforcement policy. One difficulty lies in the notion of "efficient offenses," which is based on the idea that optimal punishments should reflect the social cost of an offense and nothing more, thus inducing only those offenders who value the act more than its cost to society to commit it. This approach, which characterizes the standard economic theory of law enforcement since Becker (1968),[1] offers no basis for increasing penalties regardless of how many times an offender commits an illegal act. Repeat crimes are no different (nor less desirable) than repeat purchases of a product.

This logic suggests that a policy of increasing penalties for repeat offenders is relevant only for those offenses that should be prevented altogether (Posner, 2003, p. 228). But even in this context, if the social harm from an act exceeds the benefit, then a policy of setting the initial penalty equal to (or above) the harm should deter all "rational" offenders from *ever* committing the offense. And if some irrational offenders still commit the act, there is no social gain from threatening to punish them more harshly in the future (or at all!). One possible explanation is that harsher penalties are aimed at incapacitating recidivists,[2] which could be an effective way of preventing harm caused by undeterrable offenders, but this logic doesn't explain increasing fines,

[1] See Polinsky and Shavell (2000) for a modern treatment of that model.
[2] For economic analyses of incapacitation, see Shavell (1987) and Miceli (2010).

and more generally, it does not provide a very satisfying explanation for the common-sense appeal of escalating penalty schemes.

This paper attempts to offer the simplest possible explanation for escalating penalties based on the following intuitive explanation. An enforcer wishes to deter a particular undesirable act but is unsure about what level of punishment it will take because offenders vary in their gains from committing the act. One approach would be to set a high initial punishment, but this policy would be costly to implement if some offenders are, for whatever reason, not deterred. Thus, a cheaper strategy may be to set a low initial punishment, and then to raise it for those who commit the act, thereby revealing their higher valuation. Under this escalating scheme, some early crime is tolerated in order to save on punishment costs. I will show that the optimality of this strategy turns on the following factors: (1) social undesirability of the act in question, (2) the costliness of punishment, and (3) the existence of a sufficiently large number of "undeterrable" offenders. Before proceeding with the analysis, I will review the existing literature on escalating penalties, which itself has recently been escalating.

2. Literature Review

As noted, the existing literature has had mixed success in explaining escalating penalties. Most notably, models of criminal enforcement based on the standard economic approach, extended to allow offenders to commit crimes over multiple periods, generally find that the optimal penalty structure is either flat or declining (Dana, 2001). For example, in a model where offender gains are counted in social welfare and punishment is by a fine, Polinsky and Shavell (1998) show that although first time offenders face less severe fines than repeat offenders in the second of two periods, repeaters face the same (maximal) fine in both periods. Thus, fines never actually escalate for a given offender. In a model where criminal acts are strictly undesirable, Emons (2003, 2004) and Burnovski and Safra (1994) show that the optimal fines are actually declining over a two period time horizon. While Rubinstein (1980) is able to show that there exists a utility function for offenders that makes an escalating penalty scheme optimal within the context of Becker's model, this special case can hardly account for the pervasiveness of the practice.

Evidently, some departure from the standard framework is necessary to show that escalating punishments are optimal. One possibility, first noted by Stigler (1970, pp. 528-529), is that first-time offenders may have committed their crimes "accidentally." Following this suggestion, several authors have shown that this situation may indeed lead to an increasing penalty structure (Rubinstein, 1979; Chu, Hu, and Huang, 2000; and Emons, 2007). Intuitively, because repeat offenders are more likely to have committed their acts deliberately, they need to be punished more severely to be deterred.

Another approach, first proposed by Polinsky and Rubinfeld (1991), is based on the idea that offenders differ in their propensities to commit socially undesirable acts. An escalating fine may be useful in this context as a sorting device, aimed at differentially deterring those offenders with high offense propensities. In a similar model, McCannon (2009) shows that if some offenders are "experimenters" whose acts may turn out to be socially desirable, while others are habitual offenders whose acts are definitely undesirable, then a rising penalty scheme can again serve as a screening device to punish the latter type of offenders more harshly.

Several authors have argued that an escalating penalty scheme is necessary to offset the learning-by-doing effect of repeat crime, which raises the cost of apprehending experienced offenders (Baik and Kim, 2001; Posner, 2003, p. 229). While this may justify increasing sanctions, an offsetting effect is that enforcers will likely pursue repeat offenders more vigorously, and if this latter effect dominates, it will make declining punishments optimal (Dana, 2001; Mungan, 2010). Garoupa and Jellal (2004) note, however, that enforcers can also learn from experience—for example, about more efficient apprehension technologies or the tendencies of offenders. When this is true, low initial penalties may be optimal in order to allow enforcers to learn from early crimes.

A final strand of literature has focused on the stigma effect of criminal conviction, which acts as a supplement to formal criminal penalties in deterring some offenders (Rasmusen, 1996; Funk, 2004; Miceli and Bucci, 2005; Dana, 2001, pp. 772-776). Although stigma may help to deter some would-be offenders from committing crimes in the first place (thereby lowering the need for high formal sanctions), it also reduces the deterrent effect of criminal punishment for repeat offenders because, for example, their legal employment opportunities are diminished. Thus, higher actual penalties are necessary to deter them. A related explanation for escalating penalties is based on the notion that some (if not most) people obey the law not because of some cost-benefit calculation, but because it is the right thing to do. In this view, legal sanctions serve an "expressive" function by defining what kinds of conduct are right and what kinds are wrong. An escalating scheme may be especially useful for this purpose, and may therefore induce compliance with the law at a lower cost (Dana, 2001, pp. 776-783).

As is evident from the foregoing survey, several arguments can be used to justify escalating penalties. The fact that none seems entirely satisfactory on its own suggests that some basic insight is missing. The following analysis seeks to further close the gap between theory and practice.

3. The Model

This section develops the simplest possible model of repeat offenders in an effort to derive the minimal conditions under which escalating penalties are consistent with an optimal law enforcement strategy.

3.1. Assumptions

The following assumptions describe the structure of the model.

A1. There are three types of offenders who differ according to their gains from committing an offense: g_L, g_H, and g_∞, where $0<g_L<g_H<g_\infty$. The offenders of type g_∞ are assumed to be "undeterrable" in the sense that their gain from committing the act is larger than the maximum feasible punishment. (See the further discussion in assumption A5 below.) The existence of these undeterrable types reflects the realistic possibility that some offenders are irrational, mentally impaired (permanently or temporarily), or simply attach a very high value to committing crimes. In terms of the model, it implies that a policy of setting the sanction high enough initially to deter those "rational" offenders with the highest gain (the g_H's) will not necessarily be optimal because it will entail a high cost of punishing the g_∞'s. Let α be the proportion of g_L's in the population, β the fraction of g_H's, and $1-\alpha-\beta$ the fraction of g_∞'s.

A2. An offense imposes social harm of h, and is considered socially undesirable in the sense that it should ideally be completely deterred. In other words, the gain to offenders is not counted in social welfare. This is contrary to most versions of the standard economic model of crime,[3] but is probably descriptive of many criminal acts. As noted, this assumption seems to be crucial for showing the optimality of escalating penalties since if offenders' gains counted, then

[3] There are, however, competing views of whether the gain to offenders should be counted. See, for example, Stigler (1970, p. 527), Lewin and Trumbull (1990), and Friedman (2000, pp. 230).

repeat offenses, if "efficient" in the sense that the gain to the offenders exceeded the social harm, would not be undesirable.

A3. For simplicity, the probability of apprehension and conviction, p, is set at one, though the analysis would carry through if $p<1$ but fixed. Although a simplification, this assumption is not unrealistic since the level of criminal sanctions and the probability of conviction are determined at different times and by different decision makers, possibly pursuing different objectives.

A4. Punishments are costly to impose. This is obviously true of imprisonment, but may also be true of fines, either because there could be administrative costs of collecting fines, or because society simply has an aversion to imposing criminal sanctions of any sort beyond what is deemed "appropriate" (or proportional) to the offense in question, or is minimally necessary to deter the offense. The costliness of punishment is key for the model because, given the existence of undeterrable offenders, it implies that high initial penalties aimed at deterring first-timers are costly. Let the cost of a sanction to an offender be denoted s and the cost of imposing that sanction to society be denoted cs, where c is the (fixed) marginal cost.

A5. When indifferent between committing an offense and not, an offender will not commit it. Thus, $s \geq g_i$ will deter an offender of type i ($i=L,H$). The maximum possible sanction in a given period is $\bar{s}$, where $g_\infty > \bar{s} > g_H > g_L$. Recall that this assumption implies that g_∞'s cannot be deterred. Let s_1 denote the sanction for a first-time offender and s_2 the sanction for a repeat offender. The only *a priori* restrictions on these sanctions are that $s_j \geq 0$ and $s_j \leq \bar{s}$ ($j=1,2$).

A6. Offenders live for two periods and can commit at most one criminal act in each period. They are forward-looking and thus commit acts in period 1 based on the expected gain over *both* periods. For example, even if $g_i < s_1$ for an offender of type g_i in period one (a first-timer), he will commit the act if the sanction for a repeat offender in period two is such that $2g_i > s_1 + s_2$.[4] Note that an offender can be a first-timer in period one or two, but he can only be a repeat offender in period two.

A7. An optimal enforcement strategy will be chosen to minimize the expected present value of social harm from an offense plus punishment costs over the two-period time horizon. In addition, the strategy must satisfy subgame perfection. In other words, non-credible penalty schemes will not be allowed. Thus, the enforcer will use backwards induction and Bayesian updating whenever possible based on the observed behavior of offenders in period one.

3.2. Analysis of the Model

Using backward induction, we begin by examining the second (and final) period. Observe first that the optimal sanction for repeat offenders (if any) will be either $s_2=0$, g_L, or g_H. To prove this, note first that $s_2>g_H$ can never be optimal because it contributes nothing to deterrence (given that $s_2=g_H$ will deter all g_H's and g_L's) but it involves additional costs. By similar logic, $g_L<s_2<g_H$ and $0<s_2<g_L$ cannot be optimal. The optimal choice among these three options depends on s_1, the sanction for first-timers, and how offenders responded to that sanction in period one. There are three possible scenarios.

Suppose first that s_1 was set such that no offenders were deterred in period one; that is, all offenders are potential repeaters. In this case, the observation that an offender committed a period-one crime conveys no information about his type to the enforcer. Thus, if the enforcer sets $s_2=0$, all offenders will repeat their crimes, and the total period-two cost will be $TC_2^0=h$. Alternatively, if the enforcer sets $s_2=g_L$, only g_H's and g_∞'s will commit crimes in period two, and the expected period-two cost will be $TC_2^L=(1-\alpha)(h+cg_L)$. Finally, if the enforcer sets $s_2=g_H$,

[4] For simplicity I ignore discounting.

only g_∞'s will commit repeat offenses, and the expected period-two cost will be TC_2^H=(1–α–β)(h+cg_H). In this case, we will rule out s_2=0 as uninteresting because it would imply that no offenders are ever deterred. (That does not mean that s_2=0 cannot be optimal in other cases, as will be seen below.) Thus, the choice in this first scenario is between s_2=g_L and g_H. The cost-minimizing choice will be g_H if and only if TC_2^H<TC_2^L, or if and only if[5]

$$(1-\alpha)c(g_H-g_L) < \beta(h+cg_H). \quad (1)$$

The second scenario is where s_1 was set such that g_H's and g_∞'s committed period-one crimes (that is, only g_L's were deterred). Now if the enforcer sets s_2 equal to either 0 or g_L, both types will commit the offense again, yielding period-two costs of TC_2^0=h and TC_2^L=(h+cg_L), respectively. Clearly, s_2=0 strictly dominates s_2=g_L in this case because it results in the same level of crime but lower punishment costs, so the latter choice will never be optimal. Finally, if the enforcer sets s_2=g_H, only g_∞'s will commit a further crime. Using Bayes' Rule, the expected period-two cost of this option is

$$TC_2^H = \left(\frac{1-\alpha-\beta}{1-\alpha}\right)(h + cg_H),$$

where (1–α–β)/(1–α) is the probability, as of the start of period two, that the offender is a g_∞ type conditional on his having committed a crime in period one. The enforcer will prefer s_2=g_H over s_2=0 if and only if $TC_2^H < TC_2^0$, or if and only if

$$(1-\alpha)cg_H < \beta(h+cg_H). \quad (2)$$

In the final scenario, s_1 was set such that only g_∞'s committed period-one crimes. In this case, s_2 will have no deterrence effect since it will only apply to undeterrable offenders. It immediately follows that s_2=0 is optimal. This completes the analysis of the possible period-two scenarios.

[5] The assumption that s_2=0 is not optimal in this case amounts to assuming that h>min{(1–α)(h+cg_L), (1–α–β)(h+cg_H)}.

We now move back to period one to derive the optimal choice of s_1, conditional on the preceding results. In the first scenario, we conjectured that all offenders committed an offense in period one, and then showed that $s_2=g_H$ is optimal if (1) holds, and $s_2=g_L$ if it does not. (Recall that we ruled out $s_2=0$ in this scenario.) In either case, $s_1<g_L$ is consistent with all types committing a crime in period one, but $s_1\geq g_L$ is not, for in that case g_L's will be deterred in period one.[6] Given this, suppose first that condition (1) holds, so that $s_2=g_H$ is cost-minimizing. The period-one problem for the enforcer is therefore to

$$\min_{s_1<g_L}(h+cs_1)+(1-\alpha-\beta)(h+cg_H), \qquad (3)$$

which has as its solution $s_1=0$. The optimal (s_1,s_2) pair in this case is thus $(0, g_H)$, and the resulting expression for social costs is

$$TC_1^* = h + (1-\alpha-\beta)(h+cg_H). \qquad (4)$$

Now suppose that (1) does not hold, so that $s_2=g_L$. In this case, the enforcer's period-one problem is to

$$\min_{s_1<g_L}(h+cs_1)+(1-\alpha)(h+cg_L), \qquad (5)$$

which again has as its solution $s_1=0$. The optimal (s_1,s_2) pair in this case is therefore $(0, g_L)$, and the resulting expression for social costs is

$$TC_2^* = h + (1-\alpha)(h+cg_L). \qquad (6)$$

(Comparing (4) and (6) verifies that the cost-minimizing choice indeed depends on (1).) Note that both of these schemes involve an escalating penalty for repeat offenders, with a zero penalty for first-timers and a positive penalty for repeaters.

In the second scenario above, g_H's and g_∞'s committed period-one crimes but g_L's were deterred. Note that this requires $s_1\geq g_L$ for otherwise, g_L's will also commit a crime in period one

[6] Note that because g_L's know they will be deterred in period two under both possible choices of s_2, there is no future gain to justify committing a crime in period one that yields no immediate net benefit.

regardless of what s_2 is (i.e., even if they have no intention of committing a second offense). Given this situation in period one, we showed that if condition (2) holds, it is optimal to set $s_2=g_H$ in order to deter g_H's from becoming repeat offenders. In that case, the optimal choice of s_1 solves

$$\min_{s_1 \geq g_L}(1-\alpha)(h+cs_1)+(1-\alpha-\beta)(h+cg_H), \tag{7}$$

which has as its solution $s_1=g_L$. Thus, the optimal penalty structure is (g_L, g_H), and the resulting total cost is

$$TC_3^* = (1–\alpha)(h+cg_L) + (1–\alpha–\beta)(h+cg_H). \tag{8}$$

Note that this is also an escalating scheme with a positive (but low) initial penalty.

In this same scenario, when (2) does not hold, $s_2=0$. In this case, there is a risk of g_L's committing an offense in period one, even with $s_1 \geq g_L$, in order to essentially to have a "free crime" in period two as a repeat offender. Thus, to deter g_L's in period one, it must be the case that their lifetime return from committing a period-one crime is non-positive, or $g_L–s_1+g_L \leq 0$, which implies that $s_1 \geq 2g_L$. We also need to ensure that g_H's *will* commit period-one offenses, which, based on the same reasoning, requires that $g_H–s_1+g_H>0$, or that $s_1<2g_H$. Given these constraints, the optimal choice of s_1 solves

$$\min_{2g_L \leq s_1 < 2g_H}(1-\alpha)(h+cs_1)+(1-\alpha)h, \tag{9}$$

which has as its solution $s_1=2g_L$. The resulting penalty structure is ($2g_L$, 0), which is a declining scheme, and the resulting total cost is

$$TC_4^* = (1–\alpha)(h+c2g_L) + (1–\alpha)h. \tag{10}$$

The final scenario involved only g_∞'s committing period-one offenses, which implied that $s_2=0$ is optimal. In this case, s_1 must be set to deter both g_L's and g_H's in period one. According to the above reasoning about lifetime criminal gains, this requires setting $s_1 \geq 2g_H$. The corresponding first-period problem is to

$$\min_{s_1 \geq 2g_H} (1-\alpha-\beta)(h+cs_1) + (1-\alpha-\beta)h, \tag{11}$$

which has as its solution $s_1=2g_H$. The resulting penalty scheme is $(2g_H, 0)$, which is again a declining scheme, and the associated total cost expression is

$$TC_5^* = (1–\alpha–\beta)(h+c2g_H) + (1–\alpha–\beta)h. \tag{12}$$

This exhausts the description of the penalty schemes that are potentially optimal in the model. Table 1 summarizes the possibilities: note that three are escalating and two are declining.[7] The next task is to compare the corresponding total cost expressions, given by (4), (6), (8), (10), and (12), to determine the conditions under which each is optimal.

The first step is to show that scheme number 3 is dominated by the lower cost of schemes 4 and 5. Comparing costs under 4 and 5 shows that 5 has lower costs when (1) holds and 4 has lower costs when the converse holds. Thus, supposing first that (1) holds, we compare 5 and 3 and find that 5 involves lower costs. Next, supposing that the converse of (1) holds, we compare 4 and 3 and find that 4 involves lower costs. This rules out 3 as an optimal scheme. To see why this is true, note that scheme 3 is a combination of schemes 4 and 5 in terms of its implications for the behavior of g_H types (g_L's and g_∞'s behave the same under all three schemes). Specifically, g_H's commit crimes in both periods under scheme 4, and are deterred in both periods under scheme 5, but they commit crimes in period one and are deterred in period two under scheme 3. Given the linearity of costs, it turns out that either complete or no deterrence of this offender type is cost-minimizing, depending on whether or not condition (1) holds. Thus, the combination of the two strategies can never be optimal.

[7] Notably, a flat penalty scheme is never optimal in the current model (save the uninteresting scheme (0,0), which is ruled out by assumption).

It is not possible to rule out any of the other schemes, which implies that each may be optimal under different conditions. We have already seen that condition (1) determines whether 4 or 5 is optimal among the two declining schemes. It turns out that (1) also determines which of the two remaining escalating schemes is preferred: scheme 1 involves lower costs when (1) holds, and scheme 2 involves lower costs when the converse of (1) holds. Thus, supposing first that (1) holds, we compare schemes 1 and 5 and find that scheme 1 is preferred when $TC_1^* < TC_5^*$, or when

$$(\alpha+\beta)h < [1-(\alpha+\beta)]cg_H. \tag{13}$$

Conversely, when (1) does not hold, we compare schemes 2 and 4 and find that scheme 2 is preferred when $TC_2^* < TC_4^*$, or when

$$\alpha h < (1-\alpha)cg_L. \tag{14}$$

The globally optimal outcome can now be determined by using conditions (1), (13) and (14). Figure 1 graphically depicts the ranges over which the 4 schemes are optimal for different combinations of the parameters α and β, subject to the constraint that $\alpha+\beta \leq 1$. (Recall that α is the proportion of g_L's and β is the proportion of g_H's—the "deterrable" offender types—in the population of all offenders.) The fully solid, negatively sloped diagonal line defines the locus of point for which condition (1) holds as an equality; for points to the northeast of this line (and below the dashed line), condition (1) holds, and thus schemes 1 and 5 may be optimal, while for points to the southwest of this line, the converse of (1) holds, and schemes 2 or 4 may be optimal.

[Figure 1 here]

The ranges are further partitioned by using conditions (13) and (14). Graphing the locus defined by (13) written as an equality yields the half solid, half dashed diagonal line. As shown, it has a higher intercept and is steeper than the fully solid line, and the two lines intersect at $\alpha=cg_L/(h+cg_L)$. The only portion of this line that is relevant, however, is the segment in the range where (1) holds, and so that portion of the line is drawn solidly. In the triangle defined by the two solid diagonal lines, conditions (1) and (13) simultaneously hold, so scheme 1 is optimal in this region. In the remaining region above the two diagonal lines, (1) holds but (13) does not, so scheme 5 is optimal.

Now consider condition (14). Note that it defines a vertical line at $\alpha=cg_L/(h+cg_L)$, and so it intersects the solid line at the same point as the intersection of the two diagonal lines defined above. The relevant portion of the vertical line, however, is the solid segment below the fully solid diagonal line in the region where schemes 2 and 4 may be optimal. To the left of this vertical segment, scheme 2 is preferred, while to the right, scheme 4 is preferred.

We have now characterized the optimal penalty scheme over the entire parameter space. The results show that the two escalating schemes (schemes 1 and 2) are optimal if the deterrable offenders (the combined g_L and g_H types as well as the g_L's alone) do not comprise too large a percentage of the population of all offenders. The next section offers some intuition behind this conclusion.

3.3. Discussion

Recall that the basic trade-off in the model is between the benefits of deterrence (the saved social harm from crime) and the costs of imposing punishment. The declining schemes, because they deter one or both of the deterrable offender types over both periods by setting high initial penalties, are therefore more desirable as the gains from deterrence increase, which will be true when the fraction of deterrable offenders in the population is high. In the limit where all offenders are deterrable, these schemes will theoretically be able to deter all crimes, and hence will involve no costs. This shows the importance of the assumption that some offenders are undeterrable, which rules out this first-best, zero-cost outcome. The advantage of the escalating schemes, in contrast, is the savings in initial punishment costs from setting a low (zero) penalty for first-time offenders, and then raising the penalty for repeat offenders so as to selectively deter one or both of the deterrable offender types from committing further offenses in period two. In other words, the escalating schemes balance the benefits of some deterrence against low initial punishment costs. These schemes will therefore be more desirable as the fraction of undeterrable offenders in the population of all offenders becomes high. (Recall that we have ruled out schemes that deter no crimes over both periods but avoid all punishment costs.)

Because the advantage of escalating penalties comes from the costliness of punishment, one might suppose that the current explanation applies only when punishment takes the form of imprisonment. It is worth noting, however, that society's dislike of high penalties could reflect factors other than (or in addition to) monetary costs, such as an aversion to disproportionate penalties. As Hart (1982, Chapter VII) notes, actual punishment schemes embody a vestige of retributive motives, reflecting a desire for proportionality (or "just desserts") in the setting of criminal penalties. By this logic, harsh punishment schemes aimed primarily at deterrence, whether in the form of prison or fines, may be viewed as non-credible by offenders, especially given the sequential nature of criminal procedure, which leaves considerable discretion in the hands of prosecutors, judges, and juries after an offender has been apprehended. Often, for example, judges and juries are reluctant to impose harsh punishments, even if prescribed by legislatures, and prosecutors may be unwilling to pursue cases if the punishment on conviction seems disproportionate.[8] This reluctance, however, likely wanes as offenders continue to

[8] See, for example, Adelstein (1981) and Miceli (2008) for discussion of some of these aspects of the criminal punishment process.

commit crimes, thereby displaying resistance to (if not outright defiance of) previous "reasonable" efforts to deter them. For these habitual offenders, harsh punishments will eventually become acceptable as the only way to prevent them from committing further undesirable acts.

4. Conclusion

Criminal penalties are aimed at deterring two kinds of offenders: those who have never committed a crime but may, and those who have already committed crimes in the past. Common sense suggests, however, that different penalties are appropriate for these two groups, with lighter punishments being set for the former and harsher punishments being reserved for the latter. While this prescription is routinely followed in a wide range of punishment settings, the economic theory of law enforcement seems to suggest that it is not generally an optimal policy. The simple logic of the economic approach suggests that by setting the punishment equal to the social cost of an act, the efficient level of deterrence (whether complete or partial) will be achieved. Such a policy prescribes no relationship between the punishment imposed on an offender and his record.

While this departure of theory from practice is not the only one that has emerged from the economics of crime literature, it has for some reason been seized upon by authors seeking to reconcile the two. The resulting scholarship has had indifferent success; although several of the arguments that have been advanced are plausible, none seems to contain the whole truth (the current theory included). This does not necessarily reflect a failure of the theory, however; sometimes a theory can be as useful for what is does not explain (or at least for what it has difficulty explaining) as for what it does. The criminal justice system is a complex social institution that serves many goals, only one of which may be economic efficiency. Also important are concepts of fairness and proportionality, which seem to be hardwired into human thinking about punishment in a way that theory can't easily rationalize. After reading the extensive literature on escalating penalties and thinking hard about the issue for a long time, I'm convinced that purely economic models miss an important reason for their pervasiveness—they just "feel right."

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Table 1. Candidates for an Optimal Penalty Scheme

Scheme	(s_1, s_2) pair	Total cost	Type
1.	$(0, g_H)$	$h+(1-\alpha-\beta)(h+cg_H)$	escalating
2.	$(0, g_L)$	$h+(1-\alpha)(h+cg_L)$	escalating
3.	(g_L, g_H)	$(1-\alpha)(h+cg_L)+(1-\alpha-\beta)(h+cg_H)$	escalating
4.	$(2g_L, 0)$	$(1-\alpha)(h+c2g_L)+(1-\alpha)h$	declining
5.	$(2g_H, 0)$	$(1-\alpha-\beta)(h+c2g_H)+(1-\alpha-\beta)h$	declining

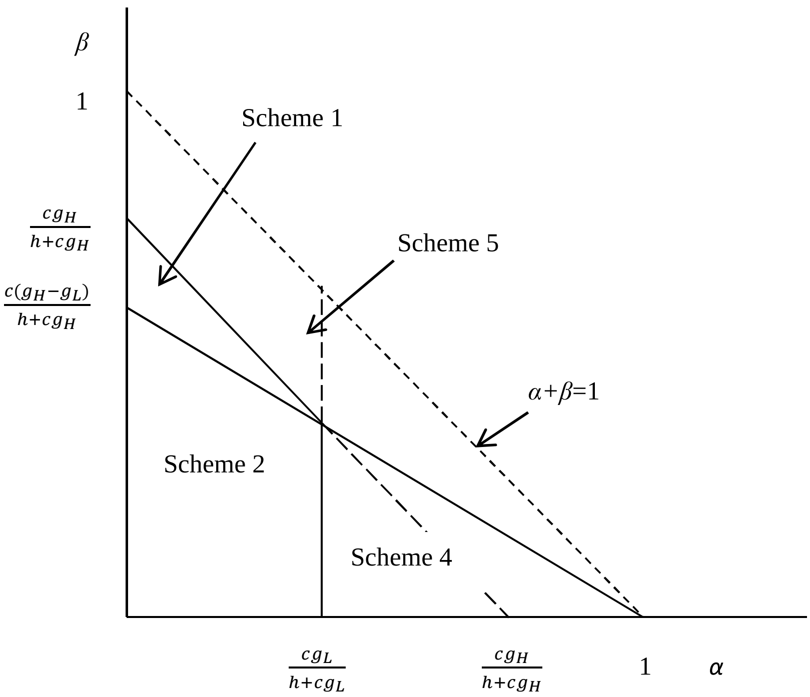

Figure 1. Regions where the various punishment schemes are optimal.