In this chapter, I consider various extensions of the theory of deterrence, most of which apply in their main aspects both when sanctions are monetary and when sanctions are nonmonetary, so that I will usually not distinguish these cases.

1. INDIVIDUAL DETERRENCE

1.1 Definition. In discussions of deterrence, the notion of *individual deterrence* (sometimes called *particular deterrence* or *special deterrence*) is usually mentioned. Individual deterrence is the tendency of a person who has been penalized for committing an illegal act to be more deterred in the future from committing that act than he had been beforehand by the prospect of sanctions. For example, a person who has received a speeding ticket might be thought to be more deterred from speeding in the future by the possibility of sanctions than an otherwise identical person who has not received a speeding ticket. Individual deterrence is contrasted to *general deterrence*, the tendency of people who have not yet been sanctioned to be deterred by the prospect of sanctions for committing an illegal act.

1.2 Rationale for individual deterrence. The first point that should be made about individual deterrence is that it should not exist when calculating parties know the probability and the magnitude of sanctions for an illegal act. If a person realizes that he faces a probability of 30 percent of being ticketed for speeding on the highway and that the amount of the penalty is $100, it should not matter to him, when he is contemplating speeding, whether or not he himself has received a ticket in the past. In either case, he will face a 30 percent chance of bearing a $100 penalty if he now speeds.

Hence, for an individual to be more deterred as a consequence of having been penalized in the past—for individual deterrence to exist—it must be that the person does not know the probability or the magnitude of sanctions and, further, that his perception of one or both of them must rise as a consequence of having been penalized. Will the perceived probability of sanctions increase as a result of having been sanctioned? The answer is yes, provided that a person does not know the precise probability of sanctions. In this situation, when a person is punished, he will rationally increase his estimate of the likelihood of punishment. If, for instance, a person thought the odds of receiving a speeding ticket were in the neighborhood of 30 percent and then actually was caught for speeding, he would rationally raise his estimate of the odds of a ticket, perhaps to 40 percent or 50 percent. That is, whatever his initial beliefs about the probability, being punished will lead a person to increase his estimate of the likelihood of being punished in the future, according to the laws of conditional probability. Moreover, there is reason to believe

2. An actual increase in the probability or the magnitude of sanctions is, of course, possible as a result of an infraction. After an infraction, an individual could be watched more closely by enforcement authorities than otherwise, or the law could specify that the penalty for a second infraction (such as a second speeding ticket) be higher than that for a first infraction. But an increase in deterrence due to a literal increase in the probability or magnitude of sanctions is not what is meant by individual deterrence; individual deterrence is assumed to come about from the mere fact of having been sanctioned.

3. Suppose that a person believes the probability of being caught and sanctioned is either small, $p$, or high, $p_s$, where $p < p_s$. Further, he believes that the likelihood that $p_s$, is the probability is $q$ and that the likelihood that $p_s$ is the probability is $1 - q$. Then the person's likelihood now of being caught is $qp_s + (1 - q)p$. If the person commits the act
that people often adjust their probabilistic beliefs upward as a result of being caught more than is justified by probability theory. Hence, individual deterrence will come about on account of actual punishment influencing the perceived probability of future punishment, and this effect will be greater the more uncertainty parties have about the odds of punishment.

With regard to the perceived magnitude of sanctions, the situation is different. If individuals have imprecise knowledge of the magnitude of sanctions, then there is no systematic reason to believe that they will raise their estimates of the magnitude of future sanctions as a result of being punished. If an individual had underestimated the magnitude of sanctions and learns that they are higher, he will be more deterred in the future; but if he had overestimated the magnitude of sanctions and learns that they are lower, he will be less deterred in the future.\textsuperscript{5} Unless individuals underestimate actual sanctions more than they overestimate them, there is no reason to believe that being punished and thereby learning the true sanction would lead those who are punished to be more deterred in the future.

Finally, it may be mentioned that individual deterrence might arise for a reason apart from an increase in the perceived likelihood or magnitude of sanctions. The experience of punishment might trigger feelings of guilt,

\begin{enumerate}
\item[4.] See, for example, Tversky and Kahneman 1974.
\item[5.] Suppose that the person does not know the magnitude of the sanction; he believes it is either small, \( t_s \), or large, \( t_l \), where \( q \) is the likelihood of \( t_s \) and \( 1 - q \) that of \( t_l \). Suppose for simplicity as well that the probability of sanctions is known and equals \( p \). Then the expected sanction ex ante is \( p(qt_s + (1 - q)t_l) \). Suppose also that if a person is punished, he will learn the true sanction, either \( t_s \) or \( t_l \). Then, if he is punished and the true sanction is \( t_s \), the expected sanction will be \( pt_s \); and if he learns that the true sanction is \( t_l \), the expected sanction will be \( pt_l \). Hence, the expected sanction after a person is caught is \( q(pt_s) + (1 - q)(pt_l) \). But this equals the expected sanction ex ante, \( p(qt_s + (1 - q)t_l) \). Thus, there is no individual deterrence due to being sanctioned when there is uncertainty over the magnitude of the sanction.
\end{enumerate}
a realization that one has failed to act responsibly, and thus cause some individuals not to repeat their violations (on such guilt, see sections 2 and 3 of Chapter 26). 6

1.3 Significance of individual deterrence. From the foregoing discussion, it appears that individual deterrence is potentially important only when there is substantial uncertainty about the likelihood of sanctions or when, for some reason, parties systematically underestimate the magnitude of sanctions or experience unanticipated feelings of guilt. Otherwise, when actors have reasonably good knowledge of the likelihood of sanctions, individual deterrence does not seem of much relevance. Notably, one suspects that for firms, individual deterrence often does not come about because firms tend to apprise themselves reasonably well of the risk of sanctions for violations of law. In all, it seems that individual deterrence is often of secondary significance. 7

2. MARGINAL DETERRENCE

2.1 Definition. It has so far been assumed that an individual chooses whether or not to commit a single harmful act, so deterrence has been an either-or phenomenon. But an individual might choose which of several harmful acts to commit—for example, whether to release only a small amount of a pollutant into a river or a large amount, or whether only to kidnap a person or also to kill him. In such contexts, the threat of sanctions plays a role in addition to the usual one of deterring individuals from committing harmful acts altogether: For individuals who are not deterred altogether, expected sanctions still influence which harmful acts these individuals choose to commit. These individuals will have a reason to commit less harmful rather

6. To amplify, this explanation rests on the assumption that after being punished, the person will view the act in question differently, and will anticipate that if he commits it again, he will feel more guilty about it than he had anticipated he would beforehand; so an element of his calculus—namely, the internal sanction of guilt for committing the act—will change as a result of punishment.

7. There has been substantial study of individual deterrence from imprisonment, and the general finding is that imprisonment does not have much effect on criminality after release. See, for example, Lab and Whitehead 1988 and Wright 1994, 25–36.
than more harmful acts if expected sanctions rise with harm. Such deterrence of more harmful acts is sometimes referred to as marginal deterrence.\(^8\)

2.2 Enforcement policy and marginal deterrence. Other things being equal, it is socially desirable that enforcement policy creates marginal deterrence, so that those who are not deterred from committing harmful acts have a motive to moderate the amount of harm that they cause. This suggests that sanctions should rise with the magnitude of harm (and, therefore, that all but the most harmful acts should be punished with less than maximal sanctions). But fostering marginal deterrence may conflict with achieving deterrence generally: For the schedule of sanctions to rise steeply enough to accomplish marginal deterrence, sanctions for less harmful acts may have to be so low that individuals are not appropriately deterred from committing these acts.\(^9\)

Two additional observations should be made about marginal deterrence. First, marginal deterrence can be promoted by increasing the probability of detection as well as the magnitude of sanctions. For example, kidnappers can be more deterred from killing their victims if greater police resources are devoted to apprehending kidnappers who murder their victims than to apprehending those who do not. (Note, though, that in circumstances in which enforcement is general—see section 5—the probability of detection cannot be independently altered for acts that cause different degrees of harm.)

Second, marginal deterrence is naturally and automatically accomplished if the expected sanction equals harm for all levels of harm: for if a person is paying for harm done, whatever its level, he will have to pay more if he does greater harm. Thus, for instance, if a polluter’s expected fine would rise from $100 to $500 if he dumps five gallons instead of one gallon of waste into a lake, where each gallon causes $100 of harm, his marginal incentive not to pollute will be correct.\(^10\)

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8. The notion of marginal deterrence was remarked upon in some of the earliest writing on enforcement; see Beccaria [1767] 1995, 21, and Bentham [1789] 1973, 171. The term “marginal deterrence” apparently was first used in Stigler 1970.


10. As emphasized in section 2.4 of Chapter 20, however, it often is desirable for society to tolerate some underdeterrence in order to save enforcement costs, in which case
3. COSTS OF IMPOSING MONETARY SANCTIONS

3.1 Principal conclusion: cost should be added to a sanction. Although the imposition of monetary sanctions was presumed to be costless in Chapter 20, that is not in fact the case; legal proceedings, locating the assets of a person, and forcing him to disgorge assets all involve expenses.

The main difference that the presence of such costs makes to our conclusions is that the cost of imposing a sanction should be added to the sanction that would otherwise be optimal. The essential reason is that the effective social harm caused by a harmful act is the direct harm plus the indirect harm comprised of the expected cost of imposing sanctions. For example, suppose that a person's act causes direct harm of $100, that the person will suffer a sanction with certainty, and that the cost of imposing a sanction is $5. Then the situation is virtually the same as it would be if the person's act caused $105 of direct harm and there were no cost of imposing sanctions, for in either situation society bears $105 of costs. Hence, the optimal penalty for the harmful act that causes $100 of harm and costs $5 to penalize is $105, not $100; society wants the person to refrain from committing the harmful act unless the benefit to him is at least $105, rather than at least $100.

The conclusion that the cost of imposing the sanction should be added to the otherwise-optimal sanction also holds when there is only a probabil-ity of catching violators. Suppose that the likelihood of catching individuals who cause harm of $100 is 50 percent. Therefore, as explained in Chapter 20, the optimal sanction would be $200 in the absence of consideration of the cost of imposing sanctions. If, however, it costs $5 to impose the sanction, then the claim here is that the optimal penalty is $205. The reason is that, when a person commits the harmful act, the expected cost of imposing sanctions is 50% × $5 = $2.50, so that the expected sanction should be $102.50. And if the amount paid when the person is caught is $205, the expected sanction will be $102.50. Notice here that although we multiply the harm of $100 by a factor of two to reflect the chance of escaping expected sanctions will be less than harm. Then consideration of marginal deterrence alters the structure of sanctions that would otherwise be best.
sanctions, the basic rule for calculation of the optimal penalty is simply to add the cost of imposing the sanction to its otherwise optimal level.\textsuperscript{11}

\textbf{3.2 Comments.} To the basic rule that the cost of imposing a sanction should be added to the otherwise optimal sanction, a number of qualifications and additions are worth making.

(a) \textit{Marginal versus fixed costs of imposing sanctions.} It was taken for granted earlier that the costs of imposing sanctions are marginal in the sense that they are borne when and only when an additional person is sanctioned, but often there are also fixed costs of imposing sanctions, that is, costs that do not vary with the number of individuals sanctioned. For instance, the expense of a computer system for purposes of enforcement may have to be incurred regardless of the number of individuals sanctioned. Because these costs do not increase if another person is sanctioned, there should be no addition to the sanction on their account. (It would be wrong, for example, to "allocate" these costs, charging each person the average amount.) Such fixed costs might, however, have an effect on the sanctioning policy. The fixed costs might influence the optimal probability of catching individuals (the fixed costs might well rise with the probability of enforcement, even though they are not affected by the number of individuals sanctioned). If large enough, the fixed costs might make it undesirable to sanction parties at all, for then the fixed costs would be avoided. But the point here is that the fixed costs do not affect the optimal magnitude of the sanction given the probability of catching and sanctioning parties.

(b) \textit{Costs increase with the magnitude of sanctions.} The cost of imposing sanctions may increase with the magnitude of the sanction because of greater resistance to sanctions as their amount increases. In this case, it can be shown that the optimal sanction should be the harm plus an amount somewhat lower than the actual cost of imposing sanctions, for this sanctioning policy reduces the incentive of parties to spend on resisting sanctions.

\textsuperscript{11} To be precise, we know from general arguments along the lines of Chapters 8 and 20 that (risk-neutral) parties will be induced to behave socially correctly provided that their expected liability equals the expected social harm due to their acts. If the direct harm due to an act is \(h\), the probability of a monetary sanction is \(p\), and the social cost of imposing the sanction is \(k\), then the expected social harm due to the act is \(h + pk\). If the sanction when the person is caught is, as claimed to be optimal, \((h/p) + k\), then the expected sanction is \(p((h/p) + k) = h + pk\), so that incentives will indeed be correct.
(c) Costs borne by sanctioned parties. Some of the costs of imposing sanctions are borne by the sanctioned parties themselves, in their own time and effort and in hiring legal counsel. Such costs do not affect the optimal sanction, for the parties automatically take them into account as an implicit sanction that they bear.

(d) The optimal probability. The appeal of the use of low probabilities of sanctions increases when imposition of sanctions is costly, for then low probabilities mean a savings in costs of imposing sanctions as well as a savings in enforcement expenses.

(e) The form of liability. There is an underlying advantage of fault-based liability when there are costs of imposing sanctions. As the reader knows, under a perfectly functioning fault-based rule, all parties will be deterred from acting undesirably and thus no sanctions will ever be imposed, so no costs of imposing sanctions will be borne. Of course, as has also been discussed, various sources of error mean that parties will be found liable under the fault system, and thus the advantage of this form of liability in reducing costs of imposing sanctions is diminished.12

4. SELF-REPORTING OF VIOLATIONS

4.1 Definition. In the consideration of law enforcement, the assumption to this point has been that individuals are sanctioned only if they are detected by an enforcement agent. But in reality parties sometimes disclose their own violations to enforcement authorities. For example, firms often report violations of environmental and safety regulations, individuals frequently notify police of their involvement in traffic accidents, and even criminals sometimes admit their illegal acts and turn themselves in to the police. Such behavior will be called self-reporting.

4.2 Inducement of self-reporting and its social desirability. How, precisely, can individuals be led to report their own violations, and why might it be socially desirable for the structure of enforcement to encourage self-reporting? Self-reporting can be induced by the state’s lowering the

12. The points made in this section are developed in Polinsky and Shavell 1992, although Becker 1968, 192, recognized that sanctions should reflect enforcement costs.
sanction for individuals who disclose their own infractions. Moreover, the reduction in the sanction for self-reporting can be made small enough that deterrence is only negligibly reduced—thus, self-reporting can be accomplished with only a slight effect on deterrence. To illustrate, consider a situation in which risk-neutral violators of a law face, say, a 50 percent probability of being caught and of having to pay a sanction of $100, so that the expected sanction is $50. If there is no reduction in the sanction for self-reporting, no one will rationally report on himself; for it would not make sense to pay $100 for sure rather than to bear an expected sanction of only $50 if one does not self-report. But suppose that if a person self-reports, he only has to pay a sanction of $49.99. Under this scheme, every violator will in principle decide to come forward since $49.99 is less than the expected sanction of $50 that he would otherwise face.\textsuperscript{13} Note as well that because the penalty is $49.99 instead of $50 in expectation, the penalty for a violation has barely fallen, so that deterrence of the violation will be essentially the same under the self-reporting scheme as it would be in the absence of any reduction in the sanction for self-reporting.\textsuperscript{14}

Why is self-reporting socially advantageous? One reason is that self-reporting tends to lower enforcement costs because, when it occurs, the enforcement authority does not have to identify and prove who the violator was. For instance, environmental enforcers do not need to spend as much effort trying to detect pollution and establishing its source if firms that pollute report that fact, and police do not have to continue their investigation of a robbery if the robber comes forward and confesses.\textsuperscript{15}

\textsuperscript{13} More realistically, the self-reporting scheme would have to involve greater than a one-cent advantage for violators to be led to report on themselves.

\textsuperscript{14} To state the argument of this paragraph formally, let $p$ be the probability of being caught for a violation and $s$ the sanction then imposed, so that the expected sanction is $ps$ if the person does not self-report. Let $s'$ be the sanction if a violator self-reports, and set $s' = ps - \varepsilon$, where $\varepsilon > 0$ is arbitrarily small. A violator will therefore want to self-report because $s'$ is less than $ps$, but the deterrent effect of the sanction will be (approximately) the same as if he did not self-report.

\textsuperscript{15} In some contexts, however, self-reporting will not save enforcement costs. For example, suppose that a police officer waits by the roadside to spot speeders. Then, were a driver to report that he had sped, this would not reduce policing costs, presuming that the officer still needs to be stationed at the roadside to watch for other speeders. Usually, though, there would be some cost savings as a result of self-reporting (for example, the police officer would not have to chase as many speeders).
Second, self-reporting reduces risk for potential violators, and thus is advantageous if potential violators are risk averse.\textsuperscript{16} Drivers bear less risk because they know that if they cause an accident, they will be led to report this to the police and suffer a modest, certain sanction, rather than face the probability of a substantially higher sanction imposed if they are caught for having caused an accident (such as being caught for a hit-and-run driving accident).

Third, self-reporting sometimes allows harm to be mitigated because it may mean that harm is reported without undue delay. Early identification of a toxic leak will facilitate its containment and cleanup, and the reporting of a traffic accident may result in the victim receiving medical attention that otherwise would not have come until later.\textsuperscript{17}

5. GENERAL ENFORCEMENT

5.1 Definition. In many settings, law enforcement may be said to be general in the sense that several different types of violations may be detected by an enforcement agent’s activity. For example, a police officer waiting at the roadside may notice a driver who litters as well as a driver who goes through a red light or who speeds, or a tax auditor may detect a variety of infractions when he examines a tax return. To investigate such situations, I will suppose for simplicity that a single probability of detection applies to all harmful acts, regardless of the magnitude of the harm.\textsuperscript{18} The

\textsuperscript{16} The argument of note 14 that self-reporting can be induced without lowering deterrence applies with minor modification when individuals are risk averse. Let $U$ be the utility of a person’s wealth and $y$ his initial wealth. Then, in the absence of self-reporting, the expected utility of a violator is $(1 - p)U(y) + pU(y - \delta)$. Let $c$ be such that $U(y - c) = (1 - p)U(y) + pU(y - \delta)$. (That is, $c$ is the so-called certainty equivalent of the sanction $\delta$.) Then any sanction for self-reporting of $c - \varepsilon$, where $\varepsilon > 0$ is small, will lead to self-reporting, with only a negligible effect on deterrence.

\textsuperscript{17} The basic theory of self-reporting in law enforcement is developed in Kaplow and Shavell 1994b, but see also Malik 1993 and Innes 1999.

\textsuperscript{18} It will be clear that the main point developed in this section does not depend on the assumption that the same probability of enforcement applies to all acts. The only requirement is that the probabilities for different acts are linked because they are all a function of the same enforcement expenditure.
contrasting assumption, made previously, is that law enforcement is specific to the harmful act, meaning that the state selects the probability of sanction independently for each type of harmful act.

5.2 Optimal enforcement policy. The main point that I want to make is that in contexts in which enforcement is general, the strategy of employing very high sanctions accompanied by very low probabilities of detection, in order to save enforcement costs, is no longer as appealing as had been argued earlier (see especially section 2 of Chapter 20). Further, when enforcement is general, it is optimal to employ maximal sanctions only for the most harmful acts; otherwise, it is best to impose lower sanctions the less harmful the act.

To explain why a high sanction and low probability of enforcement does not always tend to be a desirable enforcement policy, consider the case of risk-neutral parties and deterrence of a relatively small infraction, such as double-parking. Before, it was explained that if the sanction for that infraction was less than maximal, it would typically be beneficial to raise the sanction and lower the probability of apprehension so as to save enforcement expenses while maintaining deterrence of the act. In the context of general enforcement, this scheme is no longer necessarily beneficial, however. If the likelihood of catching double-parking violations is lowered by reducing the number of police, the likelihood of detecting other, perhaps more serious violations, will also be lowered due to there being fewer police. And that may be socially undesirable, for it may not be possible to raise the sanctions for these other violations enough to maintain deterrence, because they may already be punished by very high sanctions. Indeed, if a more serious act (say intentionally running someone over with one's car) is already punished by the maximal sanction, deterrence of that act will be reduced if the likelihood of sanctions falls because there are fewer police on duty.

Let me now sketch more of the argument about optimal enforcement policy. Consider the class of very harmful violations. To deter them adequately, society needs a sufficiently high probability of apprehension, meaning a certain number of enforcement agents, even though it can and will impose the greatest sanctions for these serious violations. Now given that society uses the number of enforcement agents that it needs to control adequately the very harmful acts, these enforcement agents will, as a by-product, produce a sufficiently high probability of sanctions for less serious
acts that they can be deterred with more moderate sanctions. As a consequence, the optimal sanctions for the less serious acts may well be in proportion to their harmfulness. For example, suppose that the probability of catching violations must be one-third in order to control properly the most serious offenses. Then the optimal sanction for a violation is three times the harm, so that, for the range of harms below one-third of an individual’s wealth, the individual will be able to pay the optimal sanction, and in that range the sanction will be higher the higher the harm.19

6. INSURANCE AGAINST SANCTIONS

The possibility of insurance against sanctions has not yet been mentioned, and I have assumed implicitly that parties do not carry such insurance. As a general matter, this is in keeping with reality: Insurers are not permitted to offer coverage against most criminal fines and some civil penalties.20

The chief issue of interest to us is whether the observed policy against sanction insurance is socially desirable from a theoretical perspective. The

19. The formal argument about optimal enforcement policy of this section may be described roughly as follows in the case of monetary sanctions (the case of nonmonetary sanctions is similar). Let s(h) be the sanction given harm h. Then, for any general probability of detection p, the optimal sanction schedule is s∗(h) = h/p, provided that h/p does not exceed the level of wealth of individuals w, which is the maximal feasible sanction; if h/p is not feasible, the optimal sanction is w. In particular, this schedule is obviously optimal given p because it implies that the expected sanction equals harm, thereby inducing ideal behavior, whenever that is possible, and the expected sanction is as high as feasible otherwise. The question remains whether it would be desirable to lower p and raise sanctions to the maximal level for the low-harm acts for which s∗(h) is less than maximal. The answer is that if p is reduced for the relatively low-harm acts (and the sanction raised for them), then p—being general—is also reduced for the high-harm acts for which the sanction is already maximal, resulting in lower deterrence of these acts. The decline in deterrence of high-harm acts may cause a greater social loss than the savings in enforcement costs from lowering p. The optimal lowering of p reflects a compromise between saving enforcement costs and diluting deterrence of relatively high-harm acts. This argument, and the distinction between general and specific deterrence, is introduced in Shavell 1991b; see also Mookherjee and Png 1992 for a closely related analysis.

relevant issues here are similar to those discussed in relation to the social desirability of liability insurance (see sections 4 and 7 of Chapter 11), so I can be brief. If sanction insurance is available, risk-averse parties who might violate the law will tend to wish to purchase the insurance. Thus, the availability of sanction insurance will reduce the bearing of risk by individuals who violate the law, which is in itself socially desirable. But the ownership of sanction insurance will tend to dilute the deterrent effect of sanctions, for violators will be less afraid of sanctions owing to the insurance. Whether allowing the purchase of liability insurance is socially undesirable or desirable depends on the importance of these two effects.

Some reflection about the context of law enforcement suggests that the social advantage of reducing risk for potential violators is outweighed by the dilution of deterrence factor, making prohibition of sanction insurance socially desirable. First, it seems that, for many acts that society seeks to control through public enforcement of law, the potential violator has a clear ability to commit or not to commit the act giving rise to sanctions. If this is the case, then a person can avoid risk by deciding to obey the law. He does not much need sanction insurance to avoid the risk of penalty for beating someone up, committing fraud, or intentionally cheating on his taxes.  

Second, in the context of law enforcement, we have emphasized that it is generally desirable for society to conserve enforcement expenses by maintaining a relatively low probability of sanctions, and to countenance underenforcement as a consequence. The fact that, in reality, there is substantial underdeterrence of many undesirable acts is consistent with this point. Given that there is a problem of underdeterrence because of society’s desire to save enforcement expenses, it would only compound the problem of underdeterrence to allow individuals to obtain sanction insurance. To put the point differently, were we to allow individuals to carry sanction insurance, society would have to increase its expenditure on enforcement

21. In contrast, in the typical tort setting, a person may find himself liable through some sort of accident. As discussed in sections 1 and 2 of Chapter 10, individuals may be found negligent by mistake, and may not have complete control over their behavior. Thus, the value of liability insurance in reducing risk in the tort context seems, as a general matter, much greater than in the law enforcement context.

22. See section 2 of Chapter 20.
in order to achieve the level of deterrence that we enjoy when the insurance is forbidden.23

The foregoing is not meant to deny the possibility that sanction insurance may be socially desirable in some situations. Suppose that individuals are able to control only probabilistically behavior that may result in sanctions (say they cannot necessarily prevent oil from leaking from a boat into a lake), and there is not a real problem of underdeterrence because the magnitude of harm is not great in relation to individuals' assets and the likelihood of detection is substantial (enforcement agents can easily ascertain when spills occur). Then the value of insurance in reducing risk may be substantial, and the ownership of insurance will not be problematic for incentives (no more so than in the usual tort context). In such circumstances, insurance against sanctions may be desirable.

7. SANCTIONS FOR REPEAT OFFENDERS

In practice, the law often sanctions repeat offenders more severely than first-time offenders. For example, under the U.S. Sentencing Commission’s guidelines for punishment of federal crimes, both imprisonment terms and criminal fines are enhanced if a defendant has a prior record; civil monetary penalties also sometimes depend on whether the defendant has a record of prior offenses.24 I will attempt to explain here why such policies may be socially desirable.

23. Again, the contrast with the tort setting is instructive. Society does not face a general problem of underdeterrence in the tort context, at least not one comparable to that in the domain of public enforcement, for harmful events in the area of tort, such as car accidents, will tend to result in suit or settlement if injurers are liable. Hence, if liability insurance reduces somewhat the incentive to take proper care, this does not matter as much in the tort area as it does in the public enforcement area. Moreover, if insurers can observe the level of care, incentives will be appropriate in the usual tort situation. In the context of enforcement, however, that is not necessarily so; if insurers can observe whether individuals violate the law, that will not lead individuals to refrain from violations if the expected sanction is less than the harm.

24. See U.S. Sentencing Commission (1995, sect. 4A1.1, chap. 5 part A, and sect. 5E1.2). Regarding civil penalties, see, for example, 8 U.S. Code, sect. 1324a(e)(4)–(5)(1997), imposing minimum fines of $250 for a first offense, $2,000 for a second offense,
Note first that sanctioning repeat offenders more severely cannot be socially advantageous if deterrence always induces ideal behavior. If the sanction for polluting and causing a $1,000 harm is $1,000, then any person who pollutes and pays $1,000 is a person whose gain from polluting (say the savings from not installing pollution control equipment) must have exceeded $1,000. Social welfare therefore is higher as a result of his polluting. If such an individual polluted and was sanctioned in the past, that only means that it was socially desirable for him to have polluted previously. Raising the sanction because of his having a record of sanctions would overdeter him now; it would not be socially desirable to raise sanctions on account of past infractions.

Accordingly, only if deterrence is inadequate is it possibly desirable to make sanctions depend on offense history in order to increase deterrence. Deterrence often will be inadequate because, as I have stressed, it will usually be worthwhile for the state to tolerate some underdeterrence in order to reduce enforcement expenses.

If there is underdeterrence, making sanctions depend on offense history may be beneficial for two reasons. First, the use of offense history may create an additional incentive not to violate the law: When detection of a violation implies not only an immediate sanction, but also a higher sanction for a future violation, an individual will be deterred more from committing a violation presently. Second, making sanctions depend on offense history allows society to take advantage of implicit information about the dangerousness of individuals and the need to deter them. Individuals with offense histories may well be more likely than average to commit future violations,

and $3,000 for subsequent offenses concerning hiring, recruiting, and referral behavior under the Immigration Reform and Control Act; and see 29 U.S. Code, sect. 666(a)–(c) (1997), stating that the maximum fine is $7,000 for certain violations of the Occupational Safety and Health Act that are not repeated, but that the maximum fine rises to $70,000 if the violations are repeated.

25. There is a subtlety in demonstrating the optimality of punishing repeat offenses more severely. Namely, if there is a problem of underdeterrence, one might wonder why it would not be optimal to raise the sanction for a first offense, rather than to enhance deterrence by punishing repeat offenses more severely. See Polinsky and Shavell 1998a on the possible optimality of making sanctions depend on offense history because of the additional deterrence that such a policy creates.
which might make it desirable for purposes of deterrence to impose higher sanctions on them.\(^\text{26}\)

There is also an obvious incapacitation-based reason for making sanctions depend on offense history. Repeat offenders are more likely to have higher propensities to commit violations in the future and thus are more likely to be worth incapacitating by imprisonment.

\(^{26}\) Note that this reason for making sanctions depend on offense history is different from the first reason: This second reason involves the assumption that offenders are different from one another and that the optimal sanction for some offenders is higher than for others; the first reason applies even if individuals are identical. On the second, information-based, reason for making sanctions depend on offense history, see Chu, Hu, and Huang 2000, Polinsky and Rubinfeld 1991, and Rubinstein 1979.