ISSN 1045-6333

ECONOMIC ANALYSIS OF LAW

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Discussion Paper No. 283

6/2000

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Cambridge, MA 02138

The Center for Law, Economics, and Business is supported by
a grant from the John M. Olin Foundation.

International Encyclopedia of the Social & Behavioral Sciences, forthcoming 2001 JEL Classification D00, K00, K1

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Abstract

Economic analysis of law is concerned with (a) determination of the effects of legal rules and (b) evaluation of the desirability of the effects of legal rules with respect to well-specified definitions of social welfare. This entry surveys the approach as it applies to basic areas of law -- accident, property, contract, and criminal law -- as well as to the litigation process. The economic approach is also contrasted with traditional analysis of law, under which the effects of legal rules are not usually systematically assessed.

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Under the economic approach to the analysis of law, two basic questions about legal rules are addressed: descriptive questions, concerning the effects of legal rules on behavior and outcomes; and evaluative questions, concerning the social desirability of the effects of legal rules. In answering these questions, the method employed is that used in economic analysis generally. Namely, individuals and firms are ordinarily presumed to be forward-looking and rational, and the framework of welfare economics is adopted to assess the social desirability of outcomes. The field of economic analysis of law may be traced significantly to Bentham (1789), but lay essentially dormant until Coase (1960), Becker (1968), Calabresi (1970), and Posner (1972). The field is now rapidly growing, although it is far from mature (one indication being lack of empirical work). To illustrate the approach, this entry first focuses on accident law; then it briefly considers other areas of law, and it concludes with a section on basic foundations and criticisms of the economic approach.

1. Economic Analysis of Law Illustrated: Accident Law

By accident law is meant the law governing liability for accidents, that is, the rules

*Professor of Law and Economics, Harvard Law School. This article will be published as an entry in the *International Encyclopedia of the Social & Behavioral Sciences*, forthcoming 2001. I would like to thank Louis Kaplow for comments on the article.

determining when a party who causes an accident must pay for the harm done. Economic analysis of this branch of law centers on three issues: incentives toward safety; insurance and compensation of accident victims; and litigation-related costs.

1.1 Incentives toward Safety

A major effect of the liability system is that it fosters the taking of precautions against accidents. Suppose that a precaution will lower accident-caused harm for which a party would be liable from $3,000 to $2,000, that is, by $1,000, but costs less than this amount, say $500. Then the party would be likely to take the $500 precaution, as it would reduce the party's liability expense by $1,000. Such logic underlies the conclusion that, under many forms of liability, parties will be led to take socially desirable precautions.

An important qualification about the general point that liability creates incentives toward safety applies to accidents caused by firms' products. In particular, a firm's interest in its reputation may lead it to take proper precautions even in the absence of liability. If a firm's water heaters tend to fail and consumers know about this, they will not pay as much for the heaters, and thus the firm will have a motive to reduce the risk of heater failure in order to avoid having to accept a lower price. Note, though, that this argument depends on consumers' obtaining information about product risk.

1.2 Insurance and Compensation

The role of insurance in the context of accidents and liability is of substantial importance due to the widespread ownership of insurance. A major form of insurance is liability insurance, which provides coverage against legal liability. Because liability insurers pay for much of the losses for which injurers are found liable, it might initially be thought that liability insurance

largely negates the incentives toward safety inherent in liability. However, some such incentives are preserved under liability insurance because insurers often link premiums or conditions of coverage to the adequacy of precautions, raise premiums on the basis of accident history, and offer only partial coverage against liability.

In addition to liability insurance, standard insurance for victims, that is, their (private or public) medical, life, disability, and property insurance, is of significance. The prevalence of victims' insurance limits the need for the liability system as a means of assuring victims compensation for accidents.

1.3 Litigation-Related Costs

The litigation-related costs of the liability system are the legal fees and associated expenses (including litigants' time and effort) borne by parties in resolving disputes that arise when harm occurs. Litigation- related costs are high; for every dollar received by a victim, it appears that over a dollar is spent delivering the dollar to the victim.

1.4 Evaluation under the Economic Approach

Under the economic approach, the liability system is considered to be socially worthwhile where its social benefits exceed its litigation-related costs. The social benefits of the liability system do not lie significantly in compensation of victims, because standard forms of insurance for victims are a cheaper means of compensation than the liability system. Rather, the social benefits of the liability system reside largely in its influence on accident rates. If this accident reduction effect is sufficient to outweigh litigation-related costs, the liability system is socially worthwhile. For example, the liability system might be socially worthwhile in the area of industrial pollution -- perhaps the desire to avoid liability induces firms to reduce substantially

polluting activity; but the liability system might not be worthwhile in the area of automobile accidents -- perhaps the prospect of liability does not much affect driving behavior, which is mainly influenced by fear of personal injury in accidents.

1.5 Traditional Analysis Contrasted with Economic Analysis

The traditional view of the liability system is that its primary effect, and its major warrant for existence, is the compensation of victims of harm. This view is at odds with the economic view. On one hand, as just emphasized, compensation is to a great extent accomplished by standard forms of insurance; and, because insurance is a less expensive means of compensation than the liability system, it would be economically unwise to employ the liability system for the purpose of achieving compensation. On the other hand, the inducement of safer behavior is usually not paid serious attention under the traditional view of the liability system. Hence, the prescriptions for use of liability under the two views may conflict. Under the economic view, but ordinarily not under the traditional view, the recommendation is that the scope of liability be reduced where liability has little influence on accident frequency, and that the scope of liability be increased where liability would substantially reduce accident frequency.

A second, related aspect of the traditional view is that liability is intended to ensure the attainment of corrective justice in the classic sense that a wrongdoer should be punished by being made to pay the victim for harm done. From the economic perspective, this conception of the purpose of the liability system is problematic even in a descriptive sense. As stressed above, a party who is found liable usually does not pay a judgment himself but has his liability insurer pay; if there is punishment, it might be that the party is not fully covered or that his liability insurance premiums may rise. Hence, the degree to which a wrongdoer is punished owing to liability is not

direct; it is attenuated and translated in character by liability insurance. Additionally, the victim often does not receive the payment made by the liability insurer; rather it is the victim's insurer that frequently obtains the payment (as reimbursement for the payment that the insurer made to the victim earlier). In all, then, the liability system does not achieve corrective justice in the way contemplated by traditional analysts, because they overlook the effects of liability and of victims' insurance.

2. Economic Analysis of Other Areas of Law

In this section, the contours of economic analysis of other major areas of law will be indicated.

2.1 Property Law

A fundamental topic in economic analysis of property law is the justification for the very existence of property rights. From the economic point of view, these rights are said to exist because they promote incentives to work, to maintain and improve things, and to trade; and, as well, because the rights reduce problems of wasteful and destructive efforts to take things and to prevent takings. Some economic literature traces historical instances of the emergence of property rights (especially in land) and certain recent property rights developments (for example, in the broadcast spectrum) to these social advantages. Property rights are seen as beneficial due to their salutary effects, not to any intrinsic belief that a person should own the fruits of his labor.

Given the general basis for the existence of property rights, many issues pertaining to property law have been addressed from the economic perspective. One concerns acquisition of property rights in things not yet owned, such as fish in the sea and undiscovered mineral deposits.

Here, a theme is that the "finders-keepers" rule has the advantage that it creates incentives to find things. Yet these incentives may be socially excessive: individuals may engage in duplicative activities to find things (a large number of fishermen may compete for fish that a smaller number could easily catch; many parties may drill oil wells even though a small number of wells would be sufficient to extract the oil from a reservoir). When so, it is suggested that regulation (limiting the catch of fish, "unitizing" ownership of an oil reservoir) may be desirable to curb the problem of excessive effort.

Another issue of interest concerns external effects associated with the use of property. These "externalities" may be detrimental, such as pollution or noise creation, or beneficial, such as beautification of land or spraying to kill mosquitoes. Bargaining among affected parties may sometimes resolve externality problems. Suppose that a factory causes annual pollution harm of $10,000 to its neighbor but can prevent the pollution by installing scrubbers at an annual cost of $1,000. In the absence of legal rules preventing pollution or imposing liability for it, the victim of the pollution might be expected to pay the factory to obtain scrubbers in order to avoid suffering harm; the victim should be willing to pay more than $1,000, such as $2,000, for the factory to obtain scrubbers. Hence, a legal rule requiring the factory to install scrubbers, or a rule imposing liability for harm, may not be needed to achieve the result that the factory obtain scrubbers. The general possibility that externality problems may be avoided through bargaining, and that legal rules may not be necessary for their resolution, is known as the Coase Theorem, and was advanced in Coase (1960). However, much economic writing discusses reasons why bargaining may not cure externality problems: costs of bargaining (especially significant when the number of affected parties is large), breakdowns in negotiation (often arising when one side misgauges the

other's situation), victims' lack of knowledge of danger (suppose the pollution is not apparent). Because bargaining will often fail to solve externality problems, attention has been paid to the use of legal rules (particularly liability rules, regulatory requirements, property rights) to accomplish their amelioration.

A very different issue in economic analysis of property law involves public property, which is to say, property like roads and libraries that the government needs to supply because the private sector will not provide them, or not in appropriate quantity. In this connection, the legal system allows government sometimes to take land through its powers of eminent domain, but requires it to pay compensation for its takings. According to economic analysis, the power of eminent domain may be socially desirable where government would have undue difficulty in making purchases. A standard example is that, in trying to purchase land for a road, government would be likely to be stymied by even a few landowners on the road's planned path (landowners might be tempted to hold out for strategic reasons). The requirement that government compensate for takings cannot be justified as it sometimes is, as an implicit form of insurance against takings; for, in the absence of a compensation requirement, individuals doubtlessly would purchase insurance against takings. A possible advantage of the requirement of compensation for takings is that it may discourage government from ill-advised takings, though that argument has been criticized.

Another area of property law concerns intellectual property rights: the law of patents, copyright, and trade secrets. The main theme of economic analysis of this body of law is that intellectual property rights have the beneficial effect of spurring innovations, but the detrimental effect associated with high prices and lower than socially desirable sales of goods incorporating

the innovations. For example, economic thinking suggests that the copyright doctrine of "fair use", permitting for instance limited excerpting from a book for inclusion in teaching materials, might be socially desirable. This excerpting probably does not much reduce book sales and the financial motive to author books (indeed, limited excerpting might increase sales of a book because it serves as a form of advertising), whereas the excerpting benefits teaching because it means that teaching materials can be rapidly assembled and without added cost. Most rules of intellectual property law are viewed against the background of their influence on incentives to innovate and on the sale and dissemination of goods embodying innovations.

2.2 Contract Law

A primary issue addressed in economic analysis of contract law is that of contract formation. The basic rule of contract formation is that a contract is legally recognized when and only when both sides have given explicit assent, such as by signing a document. This rule is said to be desirable for two reasons. First, it obviously enables parties to make a contract. Second, it protects parties from becoming bound against their wishes due to their having engaged in negotiations; this protection against unwanted obligations is beneficial because, without it, the negotiations that lead to the making of contracts would be inhibited.

Another issue surrounding contract formation concerns legal duties to disclose information. Economic analysis emphasizes that the social desirability of disclosure depends on the situation. For example, disclosure of a material defect (such as a leaky basement) in the home that the owner seeks to sell tends to be beneficial; for if the buyer knows about the defect, he can take steps to avert harm (avoid storing valuables in the basement or repair it). But should an oil company that learns through costly investigative effort that oil is likely to lie under a parcel of

land be required to disclose this information to the seller of the parcel? Perhaps not: the effect of such a disclosure obligation would be to make oil companies pay substantially more for parcels of land that they learn are promising, and thus to discourage expensive investigation of the location of oil deposits. Note from the foregoing that the economic analysis of legal rules about disclosure obligations concerns their effects on outcomes and does not derive from a possible moral call to tell the truth.

The most developed aspect of economic analysis of contract law deals with enforcement of contractual agreements. Enforcement is accomplished mainly by requiring parties who commit breach to pay the victims of breach for harm, to pay them "damages." One effect of the requirement to pay damages is that it induces contractual performance, which tends to raise the value of contracts to the parties and to society. A less obvious advantage of damage payments is that they constitute an escape hatch that parties can use when contractual performance becomes difficult, for they can breach and pay damages rather than bear very high costs to perform. This escape hatch element of damage payments also raises the value of contracts, as it makes parties more willing to assume contractual obligations. The escape hatch feature of damages for breach is socially advantageous as well -- it is not socially desirable for parties to perform when the cost of so doing outstrips the benefit to the recipient of performance. These points and others (notably, concerning risk allocation, and incentives to invest) about the virtues of payment of damages for breach have been analyzed intensively in the economic literature on contracts.

The orientation of economic analysis of contractual enforcement, through damage payments for breach, is very different from that of traditional legal analysis. Under the latter, damage payments for breach tend not to be regarded as incentives toward performance or as

implicit escape hatches. Damage payments are seen primarily as compensation for harm or as proper desert for the wrong of breaking a promise. It should be added that, under the economic view, breach of a contract should not necessarily be identified with breaking a promise; the contracts that are written are not interpreted as detailed promises that parties truly want to be kept, but rather as incomplete promises that are only rough guides for behavior, and that the parties do not want to govern when performance would be very difficult.

Economic analysis of contracts has also been concerned with specific classes of contracts, including principal and agent contracts, insurance contracts, financial contracts, and donative contracts; the literature on some of these contractual contexts is now highly refined.

2.3 Litigation

One aspect of the economic analysis of litigation describes the motive to bring suits in terms of the potential plaintiff's costs of suit, the likelihood of success at trial, and the amount that would be obtained in the event of success.

Another element of the analysis of suit concerns the issue whether the number of suits is socially excessive (is there a litigation explosion?) or perhaps socially inadequate. In this regard, it is observed that when a person considers suit, he does not factor in as a cost to himself the defendant's legal costs or the state's costs. This indicates that plaintiffs' incentives to bring suit may be socially excessive and thus that suit should be curtailed or barred in some domains. Yet a person considering suit will not usually take into account the deterrent value of suit, the message that suit will send that will affect behavior of others in the future, as well as additional, wider social benefits. This divergence between the private and the social benefits from suit suggests that in some contexts, the number of suits brought might be inadequate, and that public promotion of

suit might be desirable.

Given that suit has been brought, the question arises whether the parties will settle their dispute or proceed to trial. The thrust of economic analysis of this question is that settlement is likely when the beliefs of the two sides about the trial outcome are similar, but that trial is likely when the plaintiff is much more optimistic than the defendant. For example, suppose that the beliefs of both sides are identical -- each thinks the plaintiff would definitely obtain $100,000 at trial -- and that the trial expenses of each would be $10,000. Then the plaintiff should be willing to accept as little as $90,000 (that is, $100,000 minus his litigation costs) in a settlement, and the defendant should be willing to pay as much as $110,000 ($100,00 plus his litigation costs). Hence, there should be room for settlement (any amount in between $90,000 and $110,000). If, however, the plaintiff's estimate of his winnings is much higher, say $200,000, than the $100,000 the defendant expects to pay at trial, the plaintiff would demand at least $190,000, which exceeds the $110,000 the defendant would be willing to pay. Accordingly, trial would be likely.

Economic analysis of litigation has also begun to address topics beyond the general ones of the bringing of suits and of settlement decisions. Among the topics considered are disclosure of information before trial, appeal of trial outcomes, class actions, and alternative dispute resolution.

2.4 Law Enforcement and Criminal Law

An additional area of economic analysis concerns public enforcement of law: the use of enforcement agents (such as police, safety inspectors, auditors) to detect violations of law; and the imposition of penalties for violations.

A theme of the literature on law enforcement is that the magnitude of penalties should be

inflated from the level that would be appropriate were detection of violations certain. Inflation of penalties is needed to maintain deterrence, in effect to compensate for the possibility that a violator will not be detected. For example, if a polluting firm that causes harm of $10,000 is detected only a third of the time, then the fine that is imposed when the firm is detected should be not $10,000, but this amount multiplied by 3, or $30,000. For if the fine when the firm is detected is $30,000, the firm's probability-discounted, or average, fine is $1/3 \times \$30{,}000 = \$10{,}000$, providing it with incentives not to pollute similar to those that would exist if it paid a certain fine equal to the $10,000 harm.

Another point of emphasis in enforcement literature is that, because law enforcement is expensive, it will often be desirable for society not to spend so much on enforcement as to detect violations with high probability: it may be best, all things considered, to conserve on enforcement resources even though this means that many violators will escape detection. To combat the problem of inadequate deterrence that might accompany a low level of enforcement, multiplied penalties can be applied, as just discussed. Thus, there is appeal in employing an enforcement strategy that involves significant chances of escaping punishment combined with high levels of penalty. However, a problem with this low probability-high penalty strategy is that high penalties may be infeasible. Monetary penalties cannot exceed the assets of violators, which may be quite modest. Also, jail sentences can only be so long, and sanctions that conflict with retributive justice -- sanctions that are out of proportion to the gravity of a bad act -- might be resisted by the public.

A further issue examined in the economic literature on enforcement is the socially desirable choice between fines and imprisonment as forms of penalty. Here, it is generally said

that fines are preferable to prison sentences because fines do not themselves deplete social resources very much (but rather transfer command over resources from violators to the state), whereas imprisonment does diminish social resources, for prisons are expensive to operate, deprive individuals of their liberty, and prevent individuals from participating in the labor force. Therefore, the economic prescription is that fines be employed as the form of penalty when possible. But when fines cannot be used to deter, because the appropriate fines exceed the assets of violators (the typical robber could not be deterred by the threat of fines, given his level of assets), imprisonment should frequently be employed as the form of penalty. A closely connected point is that when fines cannot be used to deter, imprisonment may be useful as a penalty not only because it may deter, but also because it will incapacitate, that is, prevent individuals from doing further harm while in prison.

The foregoing conclusions and associated ones have been applied to criminal law. It has been suggested that many of the undesirable acts that are punished under criminal law (robbery, murder, rape) have the feature that civil suit and fines would not suffice to achieve adequate prevention of the acts. Therefore, imprisonment is often necessary to deter and to incapacitate those who commit the acts. Further, the magnitude of sanctions under criminal law has been related to the likelihood of detection of the acts, among other elements. Additionally, various doctrines of criminal law have been interpreted as desirable from the economic perspective. For example, that the sanction for murder committed in the heat of passion is less than that for premeditated murder is said to be rational: the ability to deter acts carried out in the heat of passion is relatively low, implying that it would be a mistake for society to incur the costs of the higher level of sanctions that are imposed for planned acts for which deterrence is more effective.

Economic analysis of criminal law is concerned generally with the efficacy and the social costs of enforcement and the imposition of sanctions, and does not view punishment as a means of achieving retributive justice or other ideas of desert.

2.5 Additional Areas of Research

Economic analysis has been brought to bear on a host of areas of law apart from those so far mentioned. These include many business-related areas of law, such as corporate law, tax law, antitrust law, and bankruptcy law, as well as, increasingly, diverse other areas, such as family law, anti-discrimination law, and constitutional law. Moreover, economic analysis has addressed questions surrounding the role of legislative bodies in formulating and enacting legal rules and the role of courts and regulatory agencies in applying legal rules.

3. Foundations of, and Criticism about, Economic Analysis of Law

Economic analysis of law is premised on the general assumptions of the discipline of economics. These assumptions and their relationship to economic analysis of law in particular are sketched here. Also, certain commonly encountered criticisms of economic analysis of law are mentioned.

3.1 Basic Assumptions

With regard to prediction of behavior, the usual assumption made in economics is, as noted at the outset, that parties are forward-looking and rational. This assumption is sometimes criticized as unrealistic. However, the assumption is usually made with the understanding that, although it is best for predicting central tendencies in behavior, various psychological and cognitive biases also influence behavior, and that these sometimes should be taken into explicit

account. For instance, the propensity to underestimate certain classes of risk, and thus for individuals not to take proper precautions or to insure adequately against them, has been recognized in economic analysis of law.

With regard to the evaluation of outcomes under the economic framework, the well-being or "utility" of a person is basic. Economists' conception of utility is completely general and reflects not only the material pleasures of life to a person, but also, for example, the influence on his happiness of the treatment of others. From the utilities of individuals, a measure of social welfare is constructed, but there is no single, objective measure of social welfare that analysts study (thus, utilitarianism is just one among a continuum of measures of social welfare that could be examined). The only significant presumption that is ordinarily made is that the measure of social welfare depends exclusively on the utilities of individuals. This assumption is consistent with concerns for equity in the distribution of utility and wealth, and economists have studied the implications of such concerns in depth.

3.2 Notions of Fairness and the Law

As has been seen in sections 1 and 2, classic notions of fairness, such as corrective and retributive justice, typically are omitted from the evaluation of legal rules under the economic framework, whereas these notions are traditionally viewed as of great significance to the assessment of the law. The essential reason that, under welfare economics, the notions of fairness are not accorded intrinsic importance is the assumption that they do not directly enter into individuals' well-being. For instance, whether punishment is in proportion to the seriousness of a crime is ordinarily assumed not to affect individuals' utilities per se; rather, punishment may affect individuals' well-being through its deterrent or incapacitative effects. Because satisfaction

of notions of fairness is presumed not to raise individuals' well-being in a direct manner, granting these notions independent weight in the evaluation of outcomes would tend to alter social decisions in ways that lower individuals' well-being.

Nevertheless, several qualifications to the last paragraph should be made. First, the assumption that notions of fairness do not matter to individuals may not always be apposite: individuals may have tastes for adherence to notions of fairness (individuals might feel happier if punishments fit crimes). To the extent that that is so, satisfaction of a notion of fairness properly enters into individual well-being and thus into social welfare, just as satisfaction of a taste for a material good does. (Notice that the importance of notions of fairness as personal tastes, being contingent on what the tastes of individuals happen to be, is different from the intrinsic importance accorded to conceptions of what is fair and right under deontological philosophical views.) Second, notions of fairness tend to have a desirable functional role (punishment only in proportion to the gravity of bad acts tends to discourage bad acts at relatively low social cost). Thus, advancing notions of fairness and inculcating them in the population (perhaps partly through adoption of legal rules that embody them) may serve to promote social welfare.

3.3 Income Distributional Equity and the Law

It may have been noted in sections 1 and 2 that the income distributional effects of legal rules were not mentioned as relevant to their evaluation under welfare economics, even though, as noted in section 3.1, distributional equity does enter into the assessment of social welfare. The reason that the income distributional effects of legal rules are usually not considered in their evaluation is that economic analysis suggests that the income tax system (combined with income transfer programs) is a better means of achieving distributional objectives than the legal system.

The income tax system is overtly redistributive, reaches all individuals, and is relatively cheap to administer. The legal system is not well designed to redistribute: it directly affects only those individuals who are involved in litigation; and even among them, the legal system is difficult to employ to effect redistribution, for a given class of litigants is often comprised of individuals with widely varying incomes (consider the class of victims of automobile accidents). Furthermore, the legal system is a very expensive device for transferring income. Hence, according to economic analysis, the legal system should not be used as a tool to achieve distributional goals, and if legal rules turn out to have undesirable distributional effects, these can be remedied through adjustment of the income tax system.

3.4 Economic Explanation of the Law

Finally, a strand of economic analysis should be mentioned claiming that the legal rules that are observed can be explained as those which best advance social welfare. This hypothesis seems attractive at a very gross level of description (for instance, that liability is imposed for causing harm, rather than for doing good, is explainable in the sense that such liability discourages harmful acts); and sometimes the hypothesis is appealing at a fairly detailed level. However, many, if not most, economic analysts hold a nuanced view of the economic rationality of the law, for many legal rules do not have obvious economic rationales, and a number undoubtedly reduce social well-being.

Bibliography

Becker, G S 1968 Crime and Punishment: An Economic Approach. *J. Polit. Econ.* 76: 169-217

Bentham, J 1789 An Introduction to the Principles of Morals and Legislation. In: Bentham J *The Utilitarians*, Rept. Anchor Books, Garden City, New York (1973)

Calabresi, G 1970 *The Costs of Accidents.* Yale University Press, New Haven

Coase, R 1960 The Problem of Social Cost. *J. Law and Econ.* 3:1-44

Cooter, R, Ulen T 1997 *Law and Economics*, 2nd ed. Addison-Wesley, Reading, Ma

Encyclopedia of Law and Economics 2001 (forthcoming) Bouckaert, B, De Geest, G (eds.) Elgar

Kaplow L, Shavell, S 2001(forthcoming) Principles of Fairness versus HumanWelfare: On the Evaluation of Legal Policy. *Harv. Law Rev.*

Kaplow L, Shavell, S 2001 (forthcoming) Economic Analysis of Law. *Handbook of Public Economics,* Auerbach A, Feldstein M (eds.) Elsevier.

Miceli, T *1997 Economics of the Law*, Oxford University Press, New York

New Palgrave Dictionary of Economics and the Law 1998 Newman P (ed.). Stockton, New York

Polinsky, A M 1989 *An Introduction to Law and Economics*, 2nd ed. Little, Brown, Boston

Posner, R A 1972 *Economic Analysis of Law*, 1st ed. Little, Brown Boston

Posner, R A 1998 *Economic Analysis of Law*, 5th ed. Aspen, New York

Shavell, S 1987 *Economic Analysis of Accident Law*. Harvard University Press, Cambridge