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On the Use of Economic Theory in the Design of Accident Law¹

BY HENRIK LANDO, ASSOCIATE PROFESSOR

In the latest issue of TtR, Professor Jan Hellner responds to my article in the fifth issue of 1997. I had argued that theoretical insights and empirical results of the law and economics approach are useful and should be given more attention in Scandinavian legal scholarship. Also, I had criticized the beliefs among tort scholars that we do not know how tort rules affect behavior and that there is no preventive effect of tort rules (or compensation systems). The emerging empirical evidence demonstrates an important preventive effect in some but not all areas of accident law. I had further argued that since Scandinavian compensation systems are to a large extent constructed from a lack of belief in prevention they are, especially perhaps in the field of personal injury, in need of review. Finally, I had stated as a more general point that economic analysis provides a conceptual framework which is useful in structuring thought on tort law, and I had given examples of the way in which old questions of tort law, e.g. the question of liability for negligence versus strict liability, are addressed using the modern economic approach. In his reply, Professor Jan Hellner is critical both of the role attached to prevention by the economic approach and more generally of the economic approach's method and basic assumptions. This article will begin by discussing the first point: does accident law have a significant potential for deterring overly dangerous activities? We will then take up the broader questions raised by Hellner concerning the applicability of economic analysis. The discussion will concern not only tort law in a narrow sense but also the more insurance-like compensation systems which have evolved in the field of workplace-accidents, medical accidents and traffic accidents.

On Prevention and the Purpose of Compensation Systems

Concerning prevention, Hellner's stance is somewhat ambiguous. On one hand, he does not deny that tort law and compensation systems may have a preventive effect also in the presence of insurance. Indeed, he even thinks there may in some cases be *over-deterrence* (p.). He agrees both that insurance companies are involved in the lowering of risks, and that insurance bonus-systems may play a role in inciting people to avoid risks. He does not argue with the empirical findings that have established the importance of experience-rated bonus-systems. On the other hand he has stated that tort rules do not have as great an impact on behavior as economists assume.

¹ I wish to thank Steven Shavell for comments.

His reluctance to view prevention as a major goal of tort law or compensation systems is to a large extent based on the belief that there are better instruments for preventing accidents than tort law, mainly public safety regulation. As a consequence, he thinks that in the area of personal injury the present system rightly has as its objective to fairly compensate people in need, not to prevent accidents. Furthermore, he doubts that the details of tort law such as the precise conditions for incurring liability (e.g. whether the rule is one of strict liability or liability for negligence) are important for the level of deterrence. Other factors tend to be more important, such as insurance conditions, he maintains.

Perhaps due to the ambiguity of Hellner's stance, it is not quite obvious where our disagreement lies. I would not deny that in some circumstances, the details of the tort or compensation system do not matter. To take an obvious example, if the probability of victims filing claims is small or if the compensation is low, the existence of liability and the exact conditions for incurring liability are unlikely to have a great effect on the behavior of the injurer. Also, if people do not know the law and insurance companies do not use bonus-systems, whether the rule is that of liability for negligence or strict liability may not matter. But I would e.g. argue with the proposition that the conditions for incurring liability (e.g. whether the rule is strict liability or liability for negligence) generally do not influence behavior in circumstances where the injurer has taken out liability insurance. If premiums are experience-rated there is likely to be an effect on behavior at least in some areas of activity if victims file claims, compensations are large, causality can be established etc.

Perhaps our disagreement can be put in the following terms: Hellner thinks that the tort and compensation systems can only create deterrence at an inordinately high administrative cost compared with the alternative of public safety regulation, or at the cost of interfering with what he perceives as the most important objective of tort law, namely that of compensating people in (rightful) need. I argue that for some activities, liability for accidents is a cost-effective instrument of prevention and one should not a priori discard prevention as a goal of tort law. It is not true that a compensation system can serve only one purpose. Prevention, risk-allocation and fairness are all worthwhile objectives. Where they interfere with each other a compromise must be reached. It should be kept in mind, however, that in areas where tort law does not deter there are strong reasons for relying on insurance (perhaps making sure that people are insured) rather than on tort law since the former is the more cost-effective instrument of compensation.

As a matter of experience, a discussion of these matters easily becomes too abstract. More insight is gained from analyzing a concrete system of compensation than to argue in general terms. In consequence, I have chosen to discuss the issues just mentioned with reference to a concrete area of personal injury compensation. As such, I have chosen the system of worker's compensation. Thus, the issues to be discussed in the following is whether the economic approach is useful in devising a system

of worker's compensation, more particularly whether the system can be devised so as to create a significant preventive effect, or whether prevention should be left to public safety regulation. Subsequently we will discuss Hellner's criticisms in other areas of accident law.

The Case of Worker's Compensation

The economic theory of worker's compensation will first briefly be drawn up. Second, it will be discussed whether the number of work-accidents is influenced by the nature of the compensation system, and third the question will be addressed whether public safety regulation should be preferred as an instrument of prevention. Finally, some policy-conclusions are drawn.

Some Theoretical Considerations

Accidents in the workplace occur *within a contractual relationship* and employers have an incentive to lower accident rates in order not to have to pay workers for taking on the risk of work-accidents. In a 'perfect' labor market, dangerous workplaces would have to pay workers higher salaries in exact proportion to worker's evaluation of their higher risk of injury. If workers were fully rational and perfectly informed of all risks, employers would in this way be faced with proper economic incentives for safety (in the absence of social security benefits, tax-paid medical expenses etc. that put costs unto society at large). It is obvious that this market mechanism may not work perfectly. There may be irrationality and ignorance on the part of one or both of the contracting parties. Workers may e.g. think 'it will not happen to me' and hence underestimate the risk. Furthermore, concern about reputation may only work imperfectly to incite employers. Sometimes workers contract with employers without knowing their reputation for safety,² sometimes employers only operate for a short time-span in a given activity (building a bridge in a foreign country)³ and do not have the time to build a reputation.

It is worth observing that a system of worker's compensation that compensates workers but which does not experience-rate insurance premiums may have a negative effect on work-safety by lowering the market-incentive for safety (workers will require lower compensations for taking on risks if they are insured through the worker's compensation system). From this account it follows that empirical evidence one would be looking for concerns the strength of the market mechanism (how large are the risk-premiums paid to workers in dangerous industries?) and the extent to which worker's compensation 'repairs' (or further aggravates) market imperfections.

² However, once they discover the real risk, they may quit, and this affects the compensating wage differential in practice, see Viscusi, *Risk by Choice*, Cambridge Mass 1983, p. 59 ff.

³ Eight people died building 'Storebåtsbroen'.

The empirical evidence

The empirical evidence reveals that in the United States the market-incentive is a very strong safety-incentive facing employers.⁴ Compensating wage differentials are, at least in the US, large and an important inducement to employers toward safety. Still, the market does not function perfectly. Worker's compensation plays an important role, the empirical evidence indicates. In the first article I made reference to some results in Viscusi's work concerning the preventive effect of worker's compensation and Hellner would like to know the details. However, it would take us too far to go into the details of Viscusi's empirical results. Instead, I shall refer to an overview of the empirical evidence provided by Dewees, Duff and Trebilcock.⁵ They conclude from American and Canadian evidence that the preventive effect of larger compensations and resulting larger experience-rated premiums is likely to be substantial:

'A study of the Ontario system illustrates the incentives that can be created by experience-rating.⁶ Examining individual firms in a number of industries over the period 1978-80, the study determined that, for many industries, some firms would receive very large rebates while others would pay large surcharges. The result would be cost differentials ranging from several hundred thousand dollars to up to a few million dollars between competitors. The largest differential was 4.2 million \$ between two direct competitors in the automobile industry, an amount considerably larger than the fines levied for violations of safety regulations...' (p. 380).

'A later study by Moore and Viscusi used fatality rates to avoid the reporting problem and the moral hazard problems. The main finding was that increasing benefits led to a decrease in injury rates. Indeed, the authors estimated that worker fatalities would have been almost 40% higher in the United States without workers' compensation (and without tort), resulting in almost 2,000 additional worker deaths per year. This means that the effect of workers' compensation in protecting workers from occupational fatalities has been far greater than the effect of OSHA;⁷ this is a dramatic and significant finding...' (p.382).

'Overall, the evidence regarding the ability of workers' compensation to reduce worker injuries is mixed but positive. We conclude that operation of the workers' compensation system does reduce worker injury rates and that for high-risk industries and risk-rated firms this reduction is substantial, although the absolute magnitude of the effect is subject to enormous uncertainty. We accept the evidence that this effect is greater than that created by the tort system or that created by U.S. federal occupational safety and health regulation' (p. 382).

Is State-regulation preferable?

As mentioned, Hellner thinks prevention is better taken care of by State regulation than by tort rules and compensation systems. In the first

⁴ See Viscusi: *Risk by Choice*, Cambridge Mass 1983, p. 36 ff.

⁵ In: *Exploring the Domain of Accident Law, Taking the Facts Seriously*, Oxford 1996.

⁶ P.C. Weiler: *Protecting the Worker from Disability: Challenges for the Eighties*, Toronto 1983.

⁷ 'The Occupational Safety and Health Agency'.

article, I had stated that 'it is impossible (and to many intolerable) to imagine all dangerous activities regulated by the State' (p. 941). Hellner replies that in Sweden all dangerous activities are in fact under the regulatory supervision of the State. In this he is right in the sense that product safety, working conditions, traffic safety etc. all are regulated by the State, but what I meant was that *within these areas* there is a large number of activities not all of which can be effectively reached by public regulation. It may be worth being more precise here. Public regulation in which the State initiates the claim against the (possibly potential) injurer can take different forms. It may take effect before an accident has occurred as when specific safety measures are mandated by law or decree or as when corrective indirect taxes are used. Or it can take effect after the accident as when a fine is levied after an accident for breach of broadly formulated public law (Arbejdsmiljøloven). What I meant was that neither of these instruments can reach all actions that influence riskiness. Shavell formulates the point as follows⁸:

'A multitude of things we do affect risk, hundreds of things, and the regulator cannot possibly think of all of them, and even if he could, decide what is the best way to behave in each dimension, and even if he could do that, observe all that we do. To prevent fire, for instance, how close to a heating pipe do we store paint, how often do we check its state, in how small a room do we store it, what exactly do we tell people who work for us about storing the paint, etc.,etc. No regulation can reach all these decisions.'

This is an insight that has been borne out very often in practical experience. It was well formulated early on by Edwin Chadwick, a social reformer of the mid-nineteenth century and one of the precursors of modern law and economics. He noted how workers were injured during the construction of railways, and how this subjected the local communities to important costs as the workers were treated in local hospitals at public expense and ended up on poor relief. He advocated putting these social costs onto the railway companies, as a liability for accidents. The companies would then make sure that their subcontractor's would attempt to lower risks at work. The advantage of so doing he stated as follows:

'It [liability] dispenses with agencies of inspection, and a priori regulation; it reaches where they would not reach, and renders arbitrary and troublesome interferences unnecessary - it is awake and active when authority and public attention, and benevolence and humanity are asleep or powerless'.⁹

At his time the State apparatus was much smaller than it is today but similar examples can be found today. The present attempt to lower the risks in Danish slaughterhouses provides a modern example. Both

⁸ Personal correspondence. Shavell has studied the choice between safety regulation and liability rules in the following articles: 'A Model of the Optimal Use of Liability and Safety Regulation', Rand Journal of Economics, Summer 1984, Vol. 15, p. 271-280 and in 'Liability for Harm versus Regulation of Safety', Journal of Legal Studies, June 1984, Vol. 13, p. -357-374.

⁹⁹ Quoted from Atiyah: The Rise and Fall of the Freedom of Contract, Oxford 1979, p. 334.

employers and employees have requested that the public agency (Arbejdstilsynet) stop regulating. The two parties wish to solve the safety problems themselves and the public agency has agreed not to interfere. In the words of an organization of employees, 'an injunction which is too inflexible is impossible to work with'.¹⁰ It is clear that employers and employees could lower the level of accidents if they found it economically worthwhile but not only employers have an economic stake in the present situation. Workers are eager to make 300.000 kroner in yearly income in high-powered bonus-systems and the nature of the latter seems an important factor behind the number of accidents. Thus, one firm has achieved a significant decline in the number of accidents by modifying its bonus-system.¹¹ This example illustrates why it is often better to establish monetary incentives for safety than to rely on public safety-regulation.

What Is the Optimal System?

The example of the system of worker's compensation illustrates not only that prevention is important and that the kind of prevention one can achieve through this system may not be equally efficiently obtained through public safety regulation. It also illustrates that one can obtain prevention without jeopardizing the objective of compensating people in need. For example, it is possible to collect a sum of insurance premiums in excess of what is paid out to victims. The amounts paid out could be set so as to create a balance between efficient risk-allocation and some notion of fairness,¹² while the amounts collected could be set either higher or lower so as to create the proper amount of prevention. The imbalance could be taken up by the State. In the example of slaughterhouses the most important policy-step might be the same as that advocated 150 years ago by Chadwick. There is no doubt that the public subsidizes work-accidents in this industry as in other industries when it picks up the bill and that tax-payer's money as well as scarce hospital resources are squandered through lack of internalization of part of the costs of accidents. The internalization could be established by adding some percentage on top of insurance premiums as injury tax.^{13, 14} Such an injury tax would create some distortion in incentives because accidents are not always compensated in proportion to their gravity. Fatal accidents may e.g. evoke no compensation if the employee leaves no dependants.

¹⁰ See Jyllandsposten, Erhvervssektionen, Tuesday August 11, 1998.

¹¹ Op.cit.

¹² Hellner unlike Bo von Eyben sees some basic notions of distributive justice underlying the pattern of compensation for personal injury. My reference to Hellner's views in this respect as being concerned with risk-allocation was admittedly incorrect.

¹³ It is estimated that the public expenditure due to work-accidents totals up to 3.5 billion kroner each year in Denmark, see Betænkning 1282, 1994, Socialministeriet.

¹⁴ For a theoretical and empirical discussion of the injury tax, see Smith, 'The Feasibility of an Injury Tax Approach to Occupational Safety, Law and Contemporary Problems, vol 38 (4), 1974.

Thus, it seems important also to increase the level of fines that firms have to pay when they violate the law (Arbejdsmiljøloven).¹⁵

The choice between all these instruments is complicated and we shall not go any further into this issue.¹⁶ The choice involves such factors as the likelihood that 'claims' will be raised and the importance of who bears the burden of proof. Our main point is that it is wrong a priori to discard the compensation system as an instrument of prevention. There is little doubt that it has a role to play in providing adequate prevention of work accidents. Many accidents are the statistically predictable outcome of economic choices.

It is worth noting, finally, that Danish expert commissions have increasingly acknowledged that experience-rating can have a preventive effect.¹⁷ However, little has been done to create these incentives, and perhaps one reason beside the obvious political resistance is that in Denmark experience rating may not have a very great potential for lowering risks under the present set of rules. It is often stressed that compensations paid are low, not all valid claims are raised and much of the bill is picked up by the social security system and by the public hospital system. Thus, the two Danish commission reports Betænkning 664/1972 and Betænkning 792/1977 both mentioned the fact that premiums to worker's compensation insurance accounted for no more than 3% of the wage-sum, not even in the most dangerous industries. This led them to discredit arguments favoring more reliance on experience rating. In the present Scandinavian system it may be true that the preventive effect of introducing experience-rating is relatively small, but this does not mean that the same holds in a more wisely arranged system.

Other areas of accident law

As sketched in the first article, a similar analysis as that of worker's compensation can be conducted for other fields of accident law. In some areas of activity a careful analysis is likely to reveal that further prevention can only be bought at a too high administrative cost while in others the opposite will be true. The case for a deterrent effect is generally stronger for accidents that occur outside than for those which occur within a contractual relationship for the reason already given: There is an economic motive for diminishing risk within a contractual relationship since it can affect the terms of the contract. The kind of accidents where we would a priori expect the greatest preventive effect is hence such accidents as when a firm causes an oil spill and victims are fishermen or

¹⁵ Recently a Danish entrepreneurial firm was fined for eleven breaches of Arbejdsmiljøloven one of which had caused a fatal accident. The fine was said to be 'record-high'. It amounted to 200.000 Danish kroner (30.000 \$).

¹⁶ See Shavell's discussion in 'Economic Analysis of Accident Law', London, p. 277 ff.

¹⁷ Betænkning nr. 1192 om præmiegraduering i dansk arbejdsskadeforsikring, Socialministeriet 1989 (advocating compulsory self-insurance of a part of the compensation) and Betænkning nr. 1282 om arbejdsskadeforsikring mv, Socialministeriet 1994.

such accidents as when explosions at plants harm other people. When companies are injurers the hypothesis that the injurer worries about liability costs is really quite plausible.

Space will not permit us to go into all areas of accident law, but a few comments, some general and some more specific, can be made with reference to Hellner's discussion.

Hellner quotes Bo von Eyben's study of the Danish system of personal injury compensation,¹⁸ as showing that the 'social security system meets the most essential needs which according to von Eyben is the primary function of tort law'. This is somewhat misleading. Bo von Eyben's main finding is that compensations actually paid out to victims of personal injury are quite small, especially to those who suffer major injury and that the social security system does not compensate more than 40 % of actual pecuniary losses. The other sources of compensation: first party insurance, liability insurance and worker's compensation do not, in combination with social insurance, create full compensation. Too few people raise claims mainly because they do not know their rights. If they do raise their claim, they face a battle with insurance-companies or public authorities (which tends to embitter them) and they end up heavily under-compensated if their pecuniary loss is large (but over-compensated if their loss is small). Von Eyben concludes that the present system is seriously inadequate and something needs to be done to revise the whole system,¹⁹ especially to make sure that claims are automatically raised. It is clear from von Eyben's study that there is ample room for increasing compensation levels and for either making sure that people become aware of their rights or for ensuring that claims are raised automatically. This is likely to improve both deterrence and risk-allocation.

Concerning traffic accidents, Hellner notes that Sweden has few casualties, compared with countries that have a traditional tort system. But first, this argument does not take into consideration other factors such as the countries' traffic safety regulation, speed limits etc. The latter instruments are obviously very important and may account for the alleged low rate of accidents in Sweden but this does not mean that liability cannot have a role to play. Second, I admitted in the first article that the incentive effects of experience-rated bonus-systems may not be very large, though most empirical evidence points to some effect. Again, internalization of the costs of hospital-treatments etc. may be worthwhile.²⁰ When, as Hellner notes, in Sweden the bonus is tied to the protection which a particular brand of car affords against personal injury, this may induce some people to buy safer brands, perhaps also by informing them of their better safety, and thus have a preventive effect.

Hellner is skeptical of the preventive effect in the area of product liability. He stresses the importance of a producer's reputation. The market will e.g. punish design flaws in cars, he maintains. As in the case of worker's compensation, reputation provides an important but far from perfect incentive for avoiding product defects. Both work-accidents and

¹⁸ For an overview, see Von Eyben's article in *Nordisk Forsikringstidsskrift*, 3, 1989.

¹⁹ *Op.cit.* p. 151.

²⁰ See Bladini, *Trafik och arbetskadur, et reformforslag utifrån läran om ekonomisk prevention*, *Svensk Juristtidning*, 1994, p. 632.

product-accidents occur, at least to some extent, within a contractual relationship. However, while some product defects come to be known by many more people than the victim of the accident this is very far from being true of all defects.

Hellner mentions the problem of 'economic losses'. Should a producer be able to sue another producer for having ruined a product's reputation? This question is discussed by Shavell in 'Economic Analysis of Accident Law', p. 135. He concludes that a conservative approach to compensating economic losses appears best, since the losses to one producer may be outweighed by increased sales by other producers. Hence, social losses will often be smaller than private losses, and when this is the case it may lead to excessive care from a social viewpoint to compensate for economic losses.

On Method, Commensurability and Measurability

Concerning the economic method of analysis and its applicability to the study of law, Hellner holds the view that economic theory is based on a set of causal mechanisms that may not apply in the tort context. The assumptions of economics are so general that they apply only in special cases, he maintains, and he warns against believing too dogmatically in their applicability. Furthermore, he sees profound problems of measurability and commensurability of costs and benefits that enter into the economic analysis. How can the costs of taking more care be weighed against the loss of a human life? And how can the value of a human life be ascertained in a personal injury compensation system?

We shall discuss first method and next commensurability and measurability.

On the economic method

Hellner states that the economic approach is 'not a generally useful tool for the development of law' (p. ?), that it relies on unverified causal relationships, and that the 'economic hypotheses do not have greater validity a priori than other hypotheses'. He writes further: 'Most importantly the law and economics approach applies a set of hypotheses which are not only insufficiently verified but are of such general character that they are useful only under special circumstances'. It is unclear to me to which hypotheses Hellner is referring. The assumptions underlying the economic approach, which may even be dispensed with to some extent, are that people (tend to) act rationally in their own interest, i.e. as best they can given their knowledge. These assumptions are certainly not only valid under special circumstances. They seem to be sound assumptions or first-approximations in the analysis of business transactions as well as in many other spheres of life. In my interpretation, Hellner must refer to the assumption that tort law serves a preventive role. However, as is clear from the above, this is not an underlying assumption of the law and

economics approach. Whether or not there is a preventive effect of tort law is in the end an empirical matter.

There are at least two main issues in the discussion of the economic method. The first is the use of deductive reasoning and modeling. The other is the emphasis on efficiency, and more exactly the use of Kaldor-Hicks-efficiency as criterion (to be explained below). In the following, I will argue in favor of applying the deductive method of economics in the study of law, but in disfavor of using only Kaldor-Hicks-efficiency as the sole criterion of an optimal rule.

On Economic Modeling

It may be worth stating the merits of the economic method in the understanding of economists themselves. Economics is to the trained economist more a method of inquiry and a language than a set of established truths or assumptions. Keynes labeled it 'an engine for discovery of concrete truth'. The theoretical part is built around model-building and is as such deductive in nature. To analyze any given social system, it starts from a description of the salient elements of the system and from certain assumptions about people's behavior within this system. This establishes a model, i.e. a simplified understanding of the social system, and this model is then analyzed. This means that it is analyzed how the behavioral assumptions and the assumptions of what constitutes the salient element interact. For example, it may be asked whether some of the goals which one would like the system to fulfill are in fact fulfilled. This activity of model-building is a feature of economics that distinguishes it from other social sciences, including law, and it is to an important extent from this method economists hope to contribute to the study of law. Economists' experience is that the careful study of the implications of basic assumptions about the social system leads to insights easily missed in a less systematic inquiry. The fact that the model does not accurately portray the real world in all its complexity is not a valid criticism, of course, since the power of abstraction lies exactly in ignoring inessential complexity. It follows that the economic method can be used to study whether a social system fulfills other criteria or goals than economic efficiency narrowly defined. These alternative goals include e.g. fairness or equity. Equity-theory is a branch of economics that studies equity using the deductive method just described.²¹ How far the issue of equity can be studied with the help of economic theory remains to be seen, however. This methodological account is relevant to the view put forward by Hellner that the theory of tort law as developed in the States does not apply to Scandinavia. Naturally, the institutional differences between Scandinavia and the States must be reflected in the establishment of separate models for the analysis of Scandinavian tort law. As Hellner recounts, especially

²¹ See e.g. Peyton Young, *Equity, In Theory and Practice*, Princeton, 1994.

the systems of litigation are different, and there may also e.g. be a difference in people's propensity to sue in Scandinavia compared with the United States. But while these differences affect the final results of the analysis, they are not fundamental in the sense that they affect the usefulness of the economic method or the usefulness for the Scandinavian context of the basic models constructed mainly by American law and economics scholars. When Hellner expresses doubts about the extent to which insurance companies react to changes in tort rules or expresses doubt about the size of the preventive effect of liability rules these doubts do not really have much bite for the discussion of the usefulness of economics. Hellner's insights and views are interesting hypotheses worth examining by the use of theoretical modeling and empirical testing.

On the limits of (Kaldor-Hicks) efficiency as a criterion

Hellner thinks that the law and economics approach is one-sided and that it does not acknowledge the limited nature of arguments based solely on the aim of efficiency. In the end, this criticism of Hellner's is in my view perhaps the most important. The utilitarian way of thinking has, so it seems, the answer to all questions, but where exactly lies its limits? Where e.g. does ethics based on 'rights' enter? The economic arguments often take the following form. A 'right' is to be given either to 'A' or to 'B'. 'A' would be willing to pay 100 for the right and 'B' would be willing to pay only 75 for the right. Ergo, 'A' should be given the right (assuming that the two parties cannot bargain about the right in which case one can trust them to allocate the right efficiently and the issue becomes irrelevant according to the Coase-theorem). Allocating the right to 'A' maximizes 'social wealth'. In some cases this reasoning is valid. It is certainly interesting in contract law to look for the rule that maximizes the size of the economic pie since this rule would under certain assumptions be the one which the two parties would have incorporated in their contract had they foreseen the contractual dispute. The same applies to company law. In my view, as is clear from the above, it is also more than interesting to look for the rule which is economically efficient in this sense (referred to as Kaldor-Hicks-efficiency) when the issue is tort law. However, the same efficiency-principle is less valid in property law and has no validity when the right to be allocated is that e.g. of not being raped. Hellner criticizes Landes and Posner's example of rape.²² Landes and Posner are in fact not arguing that if a rapist is willing to pay more than the cost to the woman raped there should not be liability or punishment. They are arguing the opposite. But they argue this on the ground that it would be difficult to find the very rare such examples and not on grounds of the absurdity of comparing willingness to pay in such cases. The fact that the utility gain to the rapist as expressed in willingness-to-pay may be greater than the utility-loss to the victim is simply irrelevant. For one thing, certain rights

²² Landes and Posner, *The Economic Structure of Law*, Cambridge, Mass. 1987, p. 157-158.

are equal for all and should not be made contingent on willingness to pay that is in large part conditioned by ability to pay²³.

Shavell uses, in the context of tort law, the notion of socially illicit utility and he might say that rape is an example. But this, in my opinion, only raises the question what kind of utility is 'socially illicit', and does not 'save' the utilitarian calculus. As I understand Hellner's critical remarks on the mental attitude of law and economics scholars, he is criticizing a lack of understanding of the limitations of the utilitarian calculus in the context of law, and the dogmatism that follows therefrom. In my view, the law and economics approach will have to take these intuitions and warnings seriously.²⁴ Other social welfare functions (criteria) than those based on wealth-maximization must come to play a more important role in the economic analysis of law than is the case at present.

Commensurability

Social choices often involve a trade-off between risks to human life on one side and economic costs on the other side. How much society spend to avoid traffic accidents, salmonella-infections which can be lethal, or pollution? Or: to what length ought a producer to go to prevent a small risk of fatal accident? From any such choice one can calculate an implicit price attached to human life. The issue of commensurability in the context of social choice often amounts to whether 'prices' should be made explicit or remain implicit. I claimed that the Swedish traffic authorities evaluate a human life at 13 mio Swedish kroner, and Hellner would like to know my source. A report published by SIKA (Statens Institut för Kommunikationsanalys) 'Översyn av samhällsekonomiska kalkylvärden för den nationella trafikplaneringen 1994-1998' (Samplan, nr. 1995:13) recommends evaluating a human life at 13 mio. kroner and the production loss at 1 mio Swedish kroner. Such evaluations are routinely made by the traffic-authorities also in Denmark. There is a large economic literature on this question how to evaluate the cost of risks to human life. It is not possible to ask a human being what he would be willing to pay to avoid the loss of life since most people would not at any price, of course, accept the loss of life. However, it is possible to see how much compensation people require to take a small chance of dying. As mentioned above, one can find empirical evidence of this in the market place. In the end, however, there is likely to remain disagreement about how to calculate this value, also because people differ in their preferences. The question then becomes what the legal system should do in this situation. Is the number attached to a human life too arbitrary to be part of a compensation/penalty system, and too arbitrary to be part e.g. of a

²³ Posner now agrees with this view. I recently met him at a conference and he said that in former times he put too little emphasis on rights and too much emphasis on wealth-maximization.

²⁴ Ideally, one would hope to see more models or thought-schemes that account for the limitations of Kaldor-Hicks-efficiency as a normative principle, and which take seriously the notion of 'rights'. Admittedly, such hopes are easy to express and difficult to fulfill.

verdict on negligence? My answer would be no. The legal system could in my view under certain circumstances well operate with e.g. the same number as that used by traffic authorities. When fatal accidents can be avoided through a properly designed compensation scheme it must be important to attempt to reach a level of prevention that stands in some relation to people's preferences. Exactly how one could do this without jeopardizing other aims of law than prevention cannot be discussed here. At the very least the widespread notion that the 'loss to society' of a fatal accident consists of the victim's lost earnings would be discredited if a value was somehow attached to human life itself, as traffic authorities do.

The Problem of Measurability

Hellner mentions the related problem of measurability (p.). How can you compare the cost of erecting a fence against the costs of traffic-accidents involving personal injury that could have been avoided if the fence had prevented animals from running unto the road? In practice you end up with imponderables, Hellner claims. But this observation, that many costs and benefits are not observable with any accuracy by a judge, constrains the efficacy of law generally and is not a problem of the economic approach. On the contrary, the latter stresses exactly the existence of unobservabilities of this kind. Thus, an argument in favor of strict liability is that when many dimensions of people's actions, as well as costs and benefits, are not observable to a judge it is difficult to prove negligence. Proof of negligence would logically require showing or rendering likely that the benefits to erecting a fence justified the costs of building a fence. What else would negligence mean in this context if we assume that no public regulation exists? A similar issue arises in contract law where the rule of expectation damages faces the well-known difficulty that not all benefits are verifiable in court. This unobservability is incorporated both in legal and economic thinking on breach of contract. The problem of measurability is a problem inherent in the application of many legal rules including the negligence rule. It is not a problem inherent in the economic approach.

There is another aspect: when the economic analysis starts from the assumption that all variables are observable the aim is to create a benchmark, and there is no presumption that this is a realistic assumption. The really interesting question is which rule is optimal given the unobservabilities of the real world. However, when analyzing this question it is highly useful to know which rule is optimal if everything were observable.

Conclusion

As I hope to have made clear, I think that the economic approach to law is very useful in some contexts, including tort law, while in other contexts models are inadequate that build on the concept of Kaldor-Hicks-efficiency

as normative criterion. Economic theory contributes a more systematic study of incentive- and risk-allocation effects than legal scholars have usually undertaken as well as highly useful empirical evidence.

There is little doubt that the incentive-based thinking of law and economics is gaining ground at present. Let me end by attempting to put this into historical perspective. The classic utilitarians held many of the same views as modern economic tort scholars. They emphasized that tort rules must be judged on the basis of the normative principle of maximization of the sum of people's utilities and that criminal law and tort law should be geared towards prevention. The conflict between 'fairness' or equity and efficiency they did not hold to be important, since what was conducive to the happiness of people was, in their view, also ethically correct. John Stuart Mill went so far as to view moral issues as long term efficiency issues; what was judged to be the morally right rule of conduct, he stated, was simply that rule which if followed in the long run would lead to socially beneficial behavior. Later utilitarianism lost ground and it is an interesting question why this happened. One reason may be that the utilitarian viewpoint is simply philosophically untenable. Modern philosophers generally do not hold utilitarianism in high regard. But it may be argued that the philosophical objections to utilitarianism really are not that damaging in a field such as tort law. Another explanation can be found in Atiyah's work.²⁵ What happened was, he argues, that 'the age of principles' became a pragmatic age, not believing that people should be subject to general rules. The application of principles of justice to any particular case and to any particular individual involved in a case seemed more consistent with notions of the welfare state the main goal of which was to make sure that nobody were treated unfairly and that everyone was protected against ill-fate. In a spiritual climate in which redistribution and fairness are the most important aims of the State and where incentive issues are to some extent ignored it is not surprising that the incentive issues of tort law and compensation systems (i.e. the utilitarian approach) were also given relatively less attention. At present when welfare-states are reformed to take incentives better into account it is predictable that the law and economics approach will become influential also in Scandinavia. And this development will be sound also from an ethical perspective. If legal scholars and economists together can find better ways of preventing especially personal injuries we shall have done well.

²⁵ In 'The Rise and Fall of the Freedom of Contract', Oxford, 1979, p. 330 ff.