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## THIRD APPLICATION— AUTOMOBILE ACCIDENTS

In both of the applications discussed thus far—nuisance law and breach of contract—it was appropriate to consider the possibility that bargaining among the parties could lead to the efficient solution. Thus, the framework of the Coase Theorem was directly applicable to these kinds of disputes. In the next application that we will examine—automobile accidents involving pedestrians—bargaining obviously cannot lead to the efficient outcome because neither drivers nor pedestrians know in advance with whom to bargain. The Coase Theorem may be helpful nonetheless. Efficient legal rules for dealing with driver-pedestrian accidents still can be derived by imagining what rules a driver and a pedestrian would have chosen if they could have costlessly gotten together before the accident. As in the other applications, the parties would have agreed to remedies that lead them to behave so as to maximize their joint benefits net of their joint costs.

A simple example will be used to investigate the efficiency of different legal remedies in driver-pedestrian accidents. In this example, it is assumed that drivers and pedestrians are risk neutral; the discussion therefore will be in terms of the *expected* accident cost to a pedestrian—the magnitude of the harm if an accident occurs multiplied by its probability of occurrence. It also is assumed initially that only the speed of drivers affects the pedestrians' expected harm. (The example will be extended later in this chapter to include the possibilities that the number of miles driven or the care exercised by pedestrians also affects the expected harm.) The driver has three choices:

TABLE 3  
 Automobile Accident Example—Driver's Care Affects Expected  
 Accident Cost

<i>Behavior of Driver</i>	<i>Total Benefit to Driver</i>	<i>Total Expected Accident Cost to Pedestrian</i>	<i>Total Benefit Minus Total Cost</i>
Drive rapidly	\$120	\$100	\$20
Drive moderately	\$80	\$40	\$40
Drive slowly	\$50	\$20	\$30

drive rapidly, drive moderately, or drive slowly. Each choice results in some benefit to the driver and some expected accident cost to the pedestrian. The driver's benefit from driving faster might be the dollar value he places on saving time. The pedestrian's harm also is assumed to have a monetary value.<sup>23</sup>

The data for the example are described in Table 3. For each choice of the driver, the table lists the benefit to the driver and the expected accident cost to the pedestrian. The efficient outcome requires that the driver act so as to maximize total benefit less total cost. Given the data in Table 3, it is efficient for the driver to drive moderately. Relative to this outcome, driving rapidly is inefficient because it increases the pedestrian's expected losses by \$60 while increasing the driver's benefits only by \$40. And driving slowly is inefficient because it lowers the driver's benefits by \$30 while lowering the pedestrian's expected losses only by \$20.

### The Driver's Care

We will now consider the effects on the driver's behavior of two alternative rules of liability in accident law—*strict*

23. As suggested in note 6 above and in the accompanying text, economic analysis still can be used when the harm is not equivalent to the loss of money (as is the case with pain and suffering). However, the discussion would be considerably more complicated.

*liability* and *negligence*. Under each, the driver will choose the action that maximizes his benefits net of his expected liability payments. Under the rule of *strict liability*, the driver will be made liable for the pedestrian's accident losses regardless of the driver's care. Thus, for each action, the driver's benefit net of his expected liability payments is the same as the last column in Table 3. The driver therefore will choose to drive moderately — the efficient outcome. In essence, the rule of strict liability results in efficient behavior because it forces the injurer — in this example, the driver — to take into account all of the adverse effects of his behavior on the victim — the pedestrian.

For the rule of strict liability to be efficient, the court generally must be able to obtain correct information about the victim's damages. To see why, suppose in the example that the court estimates damages to be one-half of the victim's actual damages. Then, referring to Table 3, the driver's benefits net of his expected liability payments would be \$70 if he drives rapidly ( $\$120 - \$50$ ), \$60 if he drives moderately ( $\$80 - \$20$ ), and \$40 if he drives slowly ( $\$50 - \$10$ ). He therefore would choose to drive rapidly — faster than is efficient.<sup>24</sup> Similarly, suppose the court estimates damages to be twice what they actually are. Then the driver's benefits net of his expected liability payments would be, respectively,  $-\$80$  ( $\$120 - \$200$ ),  $\$0$  ( $\$80 - \$80$ ), and  $\$10$  ( $\$50 - \$40$ ). Thus, the driver would choose to drive slowly — too slow relative to desired driving behavior. In order to focus on other considerations, it will be assumed hereafter that the court has accurate information about the victim's damages.

Under the rule of *negligence*, the driver will be made liable for the pedestrian's accident losses only if the driver does not meet some standard of care. Suppose this standard is determined by the care that would be taken if the driver acted efficiently. In the example, this corresponds to driving moderately. Thus, the driver would be liable for the pedestrian's accident losses only if the driver chooses to drive rapidly.

24. For analogous reasons, the driver also generally would drive faster than is efficient if, given his income or wealth, he does not expect to be able to pay the full amount of the victim's damages.

Therefore, if he drives rapidly his benefit net of his expected liability payments is \$20 [a \$120 benefit less a \$100 expected liability payment]. If he drives moderately, it is \$80 [just the benefit because there is no liability], and if he drives slowly it is \$50 [again, just the benefit]. Consequently, under the rule of negligence with this standard of care, the driver will choose the efficient outcome of driving moderately. In essence, the rule of negligence leads to the efficient outcome because the injurer is induced to meet the standard of care—since liability increases from zero to the victim's damages if the standard is violated—and the standard is selected to correspond to the desired behavior.

For the rule of negligence to be efficient, it is necessary for the court to have enough information to determine the efficient outcome so that the standard of care can be chosen to correspond to it. To see why, suppose in the example that the court mistakenly believes that it is efficient for the driver to drive slowly and therefore makes this behavior the standard of care. In other words, the driver is liable for the pedestrian's losses if he drives rapidly or moderately, but not if he drives slowly. Then, referring to Table 3, the driver's benefit net of his expected liability payments is \$20 if he drives rapidly ( $\$120 - \$100$ ), \$40 if he drives moderately ( $\$80 - \$40$ ), and \$50 if he drives slowly ( $\$50 - \$0$ ). Thus, the driver would choose to drive slowly, an inefficient outcome. Similarly, if the court were to make the standard of care too lenient rather than too strict, the driver would choose to drive faster than would be efficient. In order to focus on other considerations, it will be assumed hereafter that the court has enough information to select the standard of care that corresponds to the efficient outcome.

The discussion thus far illustrates a general principle in the economic analysis of accident law: In accident situations in which the only problem is to induce the injurer to take appropriate care, both strict liability and negligence are efficient, provided that liability equals actual damages if strict liability is used and that the standard of care corresponds to the efficient outcome if negligence is used.