

## **Chapter \_\_. Accidents and Tort Law**

### **(early draft)**

Poor countries are the most dangerous places in the modern world to drive, work, or consume. Why do poor countries have more accidents than rich countries? Poor countries spend less money to prevent accidents, just like they spend less on medical care, education, and housing. All countries, rich or poor, must strike a balance, and spending more money on safety leaves less to spend on other goods. A rational society balances the harm from accidents against the cost of avoiding them. When the best balance is struck, the “optimal number of accidents” – that’s the economist’s phrase – rich countries spend more than poor countries on safety. As poor countries become richer, they will buy more safety, just as they will buy more medicine, education, and housing.

Wealth differences, however, are not the only causes of differences in accident rates and insurance across nations. Every country, rich or poor, could decrease accidents significantly without spending more money on prevention. A rough estimate found that more stringent U.S. regulatory standards for unvented heaters that burn kerosene (“space heaters”) would cost society approximately \$100,000 per life saved. In contrast, relaxing the regulatory standards on industrial formaldehyde would save \$72,000,000,000 per life lost.<sup>1</sup> If these estimates are remotely accurate, more stringent standards on unvented heaters and less stringent standards on formaldehyde could save many American lives without the nation spending any more on safety. Like the U.S., every country in the world is unnecessarily dangerous because of irrational regulations on preventing accidents.

Irrational regulations, however, are not the only cause of unnecessary accident risk. Beside regulations, the tort liability system provides incentives for

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<sup>1</sup> Viscusi, W. K. (1996). "Regulating the Regulators." *University of Chicago Law Review* 63: 1423-1461, Table 1, pages 1432-1435. We believe that the pattern of irrationality revealed by these figures depicts reality accurately, although we have little confidence in the exact numbers.

precaution against injuries much as markets provide incentives for production. Tort liability systems have unmistakable signs of irrationality that show up when contrasting one nation to another.<sup>2</sup> Removing irrationalities from the liability system would make the world safer at no extra cost.

Two characteristics of poor countries undermine the efficiency of the liability system. First, Compared to rich countries, many more people in poor countries lack the wealth or the insurance to pay a liability judgment. Accident victims cannot collect damages from people who cannot pay for the harm that they cause. These “judgment-proof” people have weak incentives to avoid injuring others. Judgment-proof injurers mostly work in the informal sector, outside the reach of licenses and regulations. Second, courts are expensive to use, so poor people have little access to them. If the victim has no access to the courts, the injurer need not fear having to pay a liability judgment. Wealthy or insured injurers who could pay a liability judgment have weak incentives to avoid injuring poor people who cannot collect liability judgments.

We have explained that injurers in the informal sector of poor countries cannot pay liability judgments, and victims in the formal sector often cannot collect liability judgments. These two causes of accidents in poor countries need special solutions that we summarize briefly. To cope with judgment-proof injurers, accident law should de-emphasize liability in the informal sector. Instead of liability, the law should try to bring informal businesses under realistic regulations, which apply before accidents occur. The law should also use criminal sanctions in the informal sector. To increase accessibility to courts, laws concerning accidents in poor countries should emphasize precise standards that make outcomes easier to predict. More predictability will lower the cost of using legal processes and courts.

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<sup>2</sup> Signs of inefficiency in tort liability law include significant differences in compensatory damages for the same injury in different countries of similar wealth, unpredictable decisions about liability and damages from one case to another (“liability disparity”), and large differences in the cost of litigation in different countries.

Another characteristic of poor countries is that many people have no insurance. Insurance compensates accident victims, with or without tort liability. Uninsured people have more reason to fear accidents more before they occur, and they suffer more afterwards. When people are uninsured, tort liability becomes more important as a source of compensation for injuries. Insurance is uncommon in the informal sector and common in the formal sector. To offset the lack of insurance among relatively poor people, the state should hold people in the formal sector strictly liable for the harm that they cause through accidents.

This chapter develops these claims, beginning with a description of the facts concerning accidents in poor countries, proceeding to the rational and irrational causes, and finally turning to the legal solutions that could increase safety.

### **Facts: The Accident Problem in Poor Countries**

We turn to the facts about three kinds of accidents with special relevance to law: roads, work, and consumer product defects. The number of road fatalities per 10,000 motor vehicles is around 2 in Western Europe and Northern America. It is around 17 in Asian countries and as high as 26 in Latin American countries. The total number of road fatalities worldwide was estimated at 543 thousands in 1999, of which 99 thousand occurred in highly motorized western countries and all others in developing and transition countries.<sup>3</sup> If we considered injuries, the gap would widen many times, because 30 to 45 injuries occur for every fatality.

Work accidents also cumulate in developing and transition countries.<sup>4</sup> For the year 2002 the International Labor Office estimated the number of fatal work accidents at 351,000, of which only 16,000 occurred in Western industrialized countries, and all others in developing and transition countries. The number of

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<sup>3</sup> All figures from Investors Services, Fact book 2000, Estimating global road fatalities. WHO, World Health Statistics, various issues. If one corrects these figures for the underreporting bias they increase only insignificantly for Western countries but in the order of 200-300 thousands for developing countries. The World Health Report 2000 arrives at a much higher number of fatal road traffic accidents (1.23 Mio for the world and 129 thsd. for Europe, see stat. Appendix, Table 3 p. 168

<sup>4</sup> ILO, Background Paper, World Day for Safety and Health at Work, 2005,

work related diseases is 4 times as high, which increases the total number of work related fatalities to 2.2 million per year worldwide. Asbestos kills around 100,000, the use of chemical fertilizer and pesticides another 70,000 and the hazards of construction work another 60,000 people. These fatalities concentrate in poor countries. The number of work accidents causing 3 or more days of absence is estimated at 264,000,000 for 2002. Of those only 5 percent occur in Western industrialized countries. These numbers increase in most developing countries, especially those with high industrial growth rates (but not India<sup>5</sup>).

Man made disasters like the Bhopal catastrophe concentrate in poor countries too. Between 2000 and 2004, 1725 disastrous man made accidents occurred around the world, most of them industrial or transport accidents. 90 percent of these man made disasters occurred in developing countries and in transition countries. Figure \_1 indicates the number of man-made disaster for the most dangerous countries. (The data is explained in a footnote.<sup>6</sup>)

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<sup>5</sup> cite. India is a noticeable exception to these results, presumably because of its superior legal and regulatory system relative to many developing countries.

<sup>6</sup> Calculated from EM-DAT: The OFDA/CRED International Disaster Database [www.em-dat.net](http://www.em-dat.net) - Université Catholique de Louvain –Brussels- Belgium. For a disaster to be entered into the database at least one of the following criteria must be fulfilled: 10 or more people reported killed, 100 or more people reported affected , declaration of a state of emergency, call for international assistance. The five countries with the largest number of man made disasters during the period 2000-2004 are

Figure 1.1 Countries with the largest number of Man Made Disastrous Accidents

Country	Number of man made disasters per 10 million inhabitants, 2000-2004
Nigeria	10.76
Iran Islam Rep	9.23
Egypt	6.96
Turkey	5.14
Zaire/Congo Dem Rep	4.42
Russia	3.53
Philippines	2.72
Thailand	2.65
Bangladesh	2.60
Indonesia	2.30
China P Rep	2.24
Pakistan	2.19
Brazil	2.09

Source: Calculated from EM-DAT: The OFDA/CRED International Disaster Database [www.em-dat.net](http://www.em-dat.net) - Université Catholique de Louvain –Brussels- Belgium.

The safety of water, pharmaceuticals, and processed food is a special problem in developing countries. Often producers of these products operate in the informal sector, which escapes any health and safety regulation. Traditionally people distrust packed or canned food. The safety of a product is often unobservable before the buy. Given the informal character of these industries, we have no comparative data on the frequency of consumer product injuries in poor countries.

Providing efficient incentives to reduce accidents is one aspect of the accident problem. The other is risk spreading. As individuals are usually risk averse, welfare increases, if large costs of accidents are distributed among many instead of hitting one person. A risk averse person is willing to pay a premium for risk spreading, which exceeds his expected damage. This leads to the profitability and emergence of insurance markets and other forms of risk spreading and risk pooling institutions.

Now we turn from accidents to insurance against them. “Uninsured out-of-pocket costs” refer to the victim’s expenditures caused by the accident minus

compensation from the insurer. A poor person has a small cushion to pay uninsured out-of-pocket costs. Even so, people in poor countries pay a larger fraction of accident costs out of their pockets. In rich countries most accident risks are either covered by first or third party private insurance or by social insurance. In poor countries such risk spreading institutions are undeveloped and confined to government employees, members of the armed forces, employees of state owned corporations and the workforce in large companies. The rural population and the population in the informal sector mostly lack insurance.

The out of pocket expenditures as a percentage of total health expenditures is a good indicator for the level of risk spreading in the medical sector in any country. In low-income countries the average out-of-pocket share to cover the costs of injuries is high and extremely variable. For health spending it is 20–80% of total national health expenditures<sup>7</sup>. A panel study in Indian villages shows that high out of pocket expenditures for illnesses and accidents are a principal cause for a downfall into absolute poverty<sup>8</sup>. From the World Health Report it is quite obvious that in poor countries risk spreading by private or social insurances, by donators or by the state is lower than in rich countries and consequently the vulnerability of tort victims.

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<sup>7</sup> P. Musgrove, R. Zeramdini G. Carrin, (2002) Basic patterns in national health expenditure, Bull World Health Organ vol.80 no.2 , p. 134-146 . World Health Report,2000 WHO, CH. 5 Who pays for Health Systems? pp. 93.

<sup>8</sup> A. Krishna (2004), Escaping Poverty and Becoming Poor: Who Gains, Who Loses, and Why? World Development Vol.32,1pp. 121-136.

Figure 1.1. Out of Pocket Medical Expenditures as a Percentage of Total Medical Expenses in Selected Countries (1997)

Country	Expenditure	Country	Expenditure
UK	3.1	South Africa	46.3%
Germany	11.3	Indonesia	47.4
USA	16.6	Philippines	49.1
Canada	17.0	Mexico	52.9
Japan	19.9	Brazil	54.6
France	20.4	Nigeria	71.8
Russia	23.2	China	75.1
Italy	41.8	India	84.6

Law and economics literature on tort law focuses on the deterrence effect of accidents, rightly so for rich countries. As insurance coverage is available the main problem to tackle is to reduce harm and keep the system cost effective.

In low-income countries not only the average insurance coverage is comparatively low. Access to insurance is also asymmetric. For many accidents, especially transport and industrial accidents tortfeasors have access to insurance and victims have not. This asymmetry has consequences on the optimality of the tort system in poor as compared to rich countries. The availability of third party insurance and the non-availability of first party insurance must lead to differences of substantive tort law as well as insurance law.

The unavailability of first party insurance is partly offset by traditional forms of risk spreading among family, friends and clans as well as local moneylenders, who provide credits with an insurance component. But these forms of risk spreading evolved to cope with risks of pre-industrialized societies. They are ill conceived to solve the hazards of industrialized production and modern traffic. As long as insurance markets are weak and access to insurance is asymmetric, and third party insurance might be available whereas first party insurance might be unavailable it is advisable to make better use of existing

methods of risk spreading. This can be achieved, as we discuss later, by shifting more liability to the party with the easiest access to risk spreading institutions.

### **Safety, Rationality, and the Optimal Number of Accidents**

Relatively high in poor countries are partly a consequence of rational choices that societies make. It is often impossible or inadvisable to devote the same amount of resources to reduce fatal or bodily injuries in poor countries as in rich countries. In the high mountains like the European Alps, roads have to be protected against rockslides, usually by steel nets. Such investment would consume too much of the state's money in a country like Afghanistan. The number of cars hit by falling rocks is therefore higher on the road from Kabul to Peshawar through the Hindu Kush than from Torino to Basle through the Alps. This is an inevitable consequence of the efficient use of scarce resources in a poor country.

Health expenditures illustrate the same point. The World Health Report of 2005 shows that in 2002 the USA spent 14.6%, of the GDP on health<sup>9</sup>. With a GDP per capita of more than \$27,000, these health expenditures are higher than the gross domestic product per capita in most Asian and African countries, and higher than the gross domestic product per capita of India and China taken together.

There is a rational way to determine the appropriate investment for avoiding fatal accidents and bodily harm. If social choices are based on individual preferences, the investment preferred by society in a social decision should follow the decisions of individuals who can avoid a fatal accident only by their own investment or avoidance behavior. A house owner can invest to reduce the risk of a fatal accident in his house, for instance by installing smoke detectors, safety switches and safety cables. Each of these investments reduces the probability of a fatal accident. The house owner does not spend his whole income on safety investments but prefers to live with a certain risk as the general

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<sup>9</sup> World Health Organisation, World Health Report 2005, Stat. Annex 5 p. 198

risk of life. We can attach to the preferred investment level ( $I^*$ ) the corresponding probability of a fatal accident  $q$ . This allows calculating how the person, who chooses this investment level as his preferred safety level implicitly values his own life. If at this level ( $I^*$ ) one dollar of investment reduces the probability of a fatal accident by 1/10.000 of a percent, this individual investment behavior implies the willingness to spend at the margin 1 million dollars to save one statistical life.

Such investment choices reveal valuable information for judges and regulators who set safety standards. Using individual expenditure on safety as a guide, it follows that one statistical life is worth less in Afghanistan than in Switzerland or Italy. That is why it is irrational for Afghanistan, and rational for Switzerland and Italy, to install steel nets to protect mountain roads from falling rocks.

How do individuals value their own life as defined above? Empirical studies are based on individual choices such as private safety investment, on differences in the prices of houses in residential areas with high and low traffic and on wage differentials between high and low risk work<sup>10</sup>. These studies assess the value of a statistical life at 3-9 million dollars for rich countries with a GNP per capita between 25-30 thousand Dollars. Viscusi has estimated the income elasticity for the optimal investment to save statistically one life at 0.5-0.6. If income increases by 1 percent, individuals are willing to increase their safety investment by 0.5-0.6 percent<sup>11</sup>. For Taiwan,<sup>12</sup> the statistical value of life was estimated at 0.43 Mio (in 1990 Dollars) based on Data of the 1980ies, for South

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<sup>10</sup> W.K.Viscusi, J.E.Aldy, 2003. The Value of a Statistical Life: A Critical Review of Market Estimates throughout the World," *Journal of Risk and Uncertainty*, Springer, vol. 27(1), pages 5-76.

<sup>11</sup> The related function between optimal safety investment ( $I$ ) and per capita income ( $y$ ) would then be  $I=725y^{0.6}$

<sup>12</sup> Liu/Hammit/Liu (1979) Estimated hedonic wage function and value of life in a developing country, *Economic Letters*, Vol 57,3 pp. 353-358

Korea at 0.8 Mio (in 2000 Dollars). Various estimates for India vary between 1 and 4 Mio (2001 Dollars).<sup>13</sup>

Similar considerations hold for any safety investment, which reduces the probability of accidents with bodily harm or the probability of diseases. The legal consequence is that regulatory safety standards, environmental standards, standards against workplace accidents and workplace diseases and levels of due care should be substantially lower in poor countries as compared to rich countries. If developing countries imitated safety levels of rich countries, this would lead to welfare losses.

In civil liability this insight has consequences on the fair compensation for pain and suffering. Law and economics scholars have established that compensation for pain and suffering follows a rationale, which is different from the compensation for destroyed property. Conceptually the damage reduces the utility of a person. Damage compensation should aim at restoring the old utility level. Damage compensation should also provide incentives to reduce damages to an efficient level. The optimal damage award is usually the same if the goal is optimal deterrence and if it is the restoration of the old utility level. If a car is destroyed and the damage award is the price of a new car this allows the restoration of the old utility level for the owner of the car. The same damage award gives efficient incentives for the tortfeasor that is to minimize the sum of accident costs and accident prevention costs.

For injuries resulting in pain, suffering or disease this rationale does not hold. Here the level of compensation for pain and suffering, which fully compensates the victim, is higher than the level of compensation, which induces optimal deterrence. The amount of money, which would fully compensate a victim for the loss of an eye –if it exists at all-, is much higher than the optimal investment, which would statistically avoid an accident leading to a loss of an eye. A person suffering from paraplegia can probably not be fully compensated, whatever the amount of the damage award is. But the same person, who could

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<sup>13</sup> See W.K.Viscusi, J.E.Aldy, 2003, op.cit. pp. 27-28, table 4

be compensated ex-post only by an infinitely high damage award, would ex-ante not invest all of his wealth to reduce the probability of such an accident to zero. Instead he would make an investment choice along the same lines as was discussed above for the value of a statistical life.

This has an important consequence on the damage award for pain and suffering. Full compensation leads to over deterrence. It leads to an investment level to avoid bodily harm, which is higher than what a person trying to avoid this harm from him would choose. If therefore compensation for pain and suffering should provide efficient incentives, it should equal the optimal amount of investment necessary to avoid statistically one injury with bodily harm. This level of investment is lower in poor countries as compared to rich countries. The same applies for compensation for pain and suffering aimed at inducing the efficient safety investment. Optimal safety levels and optimal due levels of care aiming at reducing loss of property and income must also be lower in poor countries, as the expected damage in a poor country is lower than in a rich country and as the optimal level of care depends on the expected damage.

These insights lead to some conclusions regarding safety and environmental regulation as well as fixing due levels of care. There is no rationale for an international regime of setting the same safety standards, especially for multinational firms. This would lead to overinvestment in safety in some countries and to underinvestment in others. Also, there is no rationale to legally force multinational corporations from OECD countries to extend the safety standards and care levels of the legal system of their headquarters to subsidiaries in poor countries. Apart from practical problems this would usually lead to overinvestment in safety in poor countries. There is especially no reason for courts in rich countries to extend their legislation to poor countries extraterritorially and open their forum for victims from poor countries, for the only reason that safety standards are substantially lower in these countries. As different levels of wealth require different levels of safety, all this would do a disservice to people in poor countries.

The adverse effects of overly stringent health and safety standards can be observed in many developing countries. Such standards lead to a safety level for which a willingness to pay does not exist. This creates incentives to produce these goods in the informal sector, where producers escape any health and safety regulation. Most of the food and water consumed in the developing world is informal. “One of the root causes of this type of informality are ill-designed product standards which end up doing more harm than good. Egypt, for example, continues to try to impose obsolete quality (as opposed to minima health) standards on food products – resulting in more than 80% of the food being produced informally by low productivity small-scale providers”<sup>14</sup>.

We have explained national differences in accident rates by different levels of wealth and rational choices. In most countries, including poor countries, expenditures on safety also suffer from irrationalities. An especially important cause of low expenditure on preventing accidents in poor countries is weak, slow, and corrupt enforcement of law. Weak legal enforcement can remove the threat of liability for causing accidents. Thus oil-producing firms sometimes operate in countries almost without law, so they cause tremendous harm during production and transport, especially by oil spills.

For those cases international codes of conduct for multinational firms set by the UN or the ILO, which also may refer to safety, health and the environment can play an important role<sup>15</sup>. If international firms operate in a legal environment, which gives them no incentives and if they grossly violate such codes of conduct, Western courts should open forum but should use standards, care levels and damage awards appropriate for low-income countries, when granting compensation. Even though international codes are soft law and have no binding force, their gross violation could open the access to Western courts if

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<sup>14</sup>V. Palmade (2005), *Why Worry About Rising Informality? The Biggest and Least Well Understood Impediment to Economic Development*, Washington D.C. (FIAS), Working Paper.

<sup>15</sup> See K. Tapiola, *UN Global Compact and other ILO instruments*. (OECD, Paris, 2001), R. Blanpain., M. Colucci , *The Globalization of Labour Standards - the Soft Law Track*, Kluwer Law International, 2004

headquarters of multinational firms are located in a Western country. English<sup>16</sup> and US-courts have considerable discretion in deciding on the extraterritorial extension of their private law. In the USA the Alien Torts Claim Act (ATCA) of 1789 regulates access to American courts but is seldom used. A new development has been the recent efforts to use ATCA to sue transnational corporations for torts committed outside the US. If these suits are allowed to proceed, ATCA could become a tool to increase corporate accountability in countries without law.

### **Obstacles to Incentives for Safety in Developing Countries**

Next we consider two obstacles to developing incentives for safety in developing countries.

#### ***Judgment Proof Problem***

In poor countries the judgment proof problem is more pronounced than in rich countries<sup>17</sup>. If damage compensation cuts into the bankruptcy constraint only part of the damage is compensated. For the potential tortfeasor the expected damage compensation then becomes lower than the expected damage. This might lead to under-deterrence. Under a strict liability regime the tortfeasor reaches the expected private cost minimum of the sum of his costs of care and the expected damage compensation at an inefficiently low level of care. Under negligence, under-compensation leads to under-deterrence, if the wealth constraint is very pronounced<sup>18</sup>.

Low wealth per capita does not per se cause more judgment proof cases. If wealth is low in the average it is more likely that a given damage award cuts

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<sup>16</sup> English courts have opened the forum to plaintiffs from developing countries in damage claims against multinational firms. See f.i. *Lubbe and Others v. Cape Plc.* [2000] 4 All ER 268, in an asbestos case with an English mother company as defendant and citizens from Namibia as plaintiffs.

<sup>17</sup> S. Rose-Ackerman (2003), *Establishing the Rule of Law*, in R. Rotberg, Ed, *When States Fail, Causes and Consequences*, Princeton NJ: Princeton University Press.

<sup>18</sup> Assume that the efficient due costs of care are  $x^*$  and the wealth of the tortfeasor is  $w$ . Then negligence results in under-deterrence only if  $w < x^*$ . If  $w$  is smaller than the damage award but larger than the efficient due level of care, optimal deterrence prevails even though the victim is not fully compensated. Under strict liability underdeterrence occurs whenever  $w < D(x^*) + x^*$ .  $D$  is the damage.

into the bankruptcy constraint than if wealth is high. However this effect is partly or totally offset by the fact that a tortuous act usually causes a lower damage in a poor country as compared to a rich country. Low wealth therefore is not per se a reason that tort law loses part of its deterrence effect.

The bankruptcy constraint has a more serious effect on the efficiency of tort law in poor countries, because more people live below or slightly above the poverty line. Absolute poverty is characterized by a purchasing power of less than a dollar a day. The World Bank estimates the quota of people living below this line at 22 percent of the population in developing countries and the quota of people living on less than 2 dollars a day at 54 percent of the population in 2001<sup>19</sup>. In OECD countries the quota of people living in relative poverty, with an income less than half of the average income was about 10 percent<sup>20</sup> in the year 2000. The resulting judgment proof problem is therefore more widespread in poor countries, where larger parts of the population are unable to pay any damage compensation.

In developing countries poor people are often self employed and engaged in petty trading or production in the informal sector of the economy. The damages they cause could not be covered by civil liability, even if all other problems as court delays or the under-enforcement of legal norms were solved. Therefore civil liability cannot play any role for a large section of people in developing countries. The resulting consequence is that tortfeasors take too little and victims take too much care.

Law and economics scholars have argued<sup>21</sup> that regulation of safety is a way to alleviate the judgment proof problem. Under safety regulation the violation of a safety standard leads to a fine regardless of whether an accident happens. Under liability a payment is only triggered by the damage itself. Consequently a fine can be much lower than damage compensation to provide efficient

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<sup>19</sup> World Bank (2005) World Development Indicators, Table 2.5.

<sup>20</sup> See M. Förster, M.M. D'Ercole, Income Distribution and Poverty in OECD Countries in the Second Half of the 1990s, OECD, 2005, Table 7.4, p. 74.

<sup>21</sup> S. Shavell s. Rose Ackerman

incentives to tortfeasors. If for instance a negligent act increases the probability of a damage of 100 by 1 percent a fine of 1 would be enough for efficient deterrence in the absence of enforcement errors. Even if the enforcement error would be 50% a fine of 2 would be enough to guarantee deterrence. It is therefore obvious that a person with a wealth of 10 would be under deterred in a liability system, as his expected liability is not 1 but only 0.1 due to his bankruptcy constraint. The same person could however be efficiently deterred by a fine under regulatory law. Therefore the scope of liability is smaller and the scope of regulation is larger in poor countries with a relatively large part of their population living on or below the absolute poverty line. Many of those might be able to pay a moderate fine. For others jail sentences might be the only way to achieve deterrence. Consequently a country, which can eradicate poverty can also reduce the scope of criminal law to regulation and of regulation to civil liability without destroying deterrence.

Regulation is however often not an easy way out of the judgment proof problem. In developing countries 38 percent of the GNP is produced in the informal sector or shadow economy<sup>22</sup>. This sector employs around 70 percent of the workforce. The informal sector escapes tax law, labor law and regulatory law altogether. This includes health and safety regulation as well as intellectual property law and trade mark law. Irregular payments reduce the incentives in the regulatory system to curb the informal sector.

### ***Inaccessible Courts***

Poverty not only adds to the judgment proof problem. It can also exclude victims from damage compensation, if they lack the financial resources for a lawsuit and have no access to credit. In poor countries in many damage categories the injurer is more likely to be in the high-income group and has more means to defend himself than the victim. This holds for traffic accidents, especially motor vehicle accidents and for industrial and workplace accidents.

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<sup>22</sup> For a comprehensive study see F. Schneider (2005), Shadow Economies of 145 countries all over the World, Estimation Results over the Period 1999-2003, C:/ShadEconomyWorld145\_Est.doc

Legal aid as well as contingency fees can reduce this problem. Legal aid is usually state funded and bureaucratic or provided by donators and non-profit organizations. Often it does not reach people outside the urban centers and suffers from the general weakness of the public service. Contingency fees on the other hand provide incentives to lawyers to identify victims and file lawsuits irrespective of the victims' wealth. The plaintiff shifts the financial risk of litigation to the lawyer. He pays a fee only in case of success and dependent of the recovery, which the lawyer realizes for the benefit of the client. The fee is high, a third or more of the award. It must be high, as it covers the costs of unsuccessful litigation for other plaintiffs. Contingency fees are often criticized and in civil law countries they are often prohibited. In India, where contingency fees are widespread, lawyers specializing on accidents are sometimes contemptuously called cadaver-hunters. This critique is unjustified. For the poor, contingency fees are in many countries the only key to the courtroom.

This does not imply that contingency fees lead to first best outcomes. They create principal-agent problems between client and attorney. The probability of winning a case is dependent on the lawyer's effort. If the lawyer acts in the best interest of his client, he will increase his effort to a level where the cost of one unit of effort is equal to the expected gain from a higher probability to win the case. This benchmark will not be reached because the client cannot observe the effort of the attorney and monitor him. And the attorney tries to maximize his own wealth rather than that of his client. The attorney might chose a low effort level and agree on a settlement with a low recovery for the client and a high income per hour worked. Or alternatively it might be profitable for the lawyer to work with low effort but still insist on high damage compensation and take the risk that a settlement offer is rejected and that later on the case is dismissed. If the probability to win the case even with low effort is high enough this strategy might maximize the lawyer's expected gain even tough this is not in

the interest of the client<sup>23</sup>. With contingency fees high enough this might still be a profitable strategy for lawyers. It reduces the chances of plaintiffs to win compared with the first best outcome, in which the lawyer is a perfect agent of his client. Under these conditions a large number of ill prepared cases will be brought to court in a kind of lottery game.

There is, however, little alternative in poor countries if contingency fees are the only way to bring in suit. Therefore they should not be prohibited, but be generally permitted for tort law litigation. The adverse effects can be alleviated if mandatory rules give clients a free choice between contingency fees and other fee systems and if attorneys must inform clients about the possibilities of receiving legal aid enabling them to pay upfront expenses as well as court fees. This would allow for more competition between legal aid and contingency fees.

## **Solutions**

Having discussed special obstacles to reducing accidents in poor countries, we turn to some special solutions.

### ***Standards in Tort Law***

We have already shown that simple routines, per se norms and precise rules rather than vague and mission oriented legal standards are preferable in many poor countries due to two reasons. First, they allow for swift decisions without collecting and processing much information. Therefore they decrease the costs of the judicial and administrative system and can reduce the epidemic problem of court delays in poor countries. Simple decision routines are of special importance if judges lack the training and expertise to take mission oriented

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<sup>23</sup> A. M. Polinski and D. L. Rubinfeld (1002) A note on settlements under the contingent fee method of compensating lawyers, Intern. Rev. of Law and Economics, [Vol. 22, 2](#), 217-225

decisions based on vague legal standards. Second, simple decision routines are easy to monitor from above. A judge who applies standards and is disloyal to the law can often hide this behind subtle arguments. If however the same judge has to take routine decision and does not follow the required routine the deviation can be easier observed and hence he has fewer incentives to deviate. These observations have consequences on how tort law should be structured in poor countries with low training of judges, with low budgets for the judicial system and with problems of corruption within the judiciary. There should be a general preference for easy decision making over complex decision making, as long as this does not lead to huge adverse effects.

*Negligence versus strict liability:* Under negligence rule the court must collect information about what the defendant did to avoid the accident and then see whether the observed level of care was equal or higher than the due level of care. In addition, if precedent does not inform him properly about the due level of care or cannot be reasonably used for the case, he has to decide, whether the defendant has actually done enough to reduce the danger of damage. Interested parties provide the information. Moreover the court has to process the information balancing costs and benefits of care. This can lead to lengthy procedures and to wrong decisions. Incentives to take care are then destroyed due to two reasons. First, the lengthy procedures and resulting court delays can deter victims to bring in cases, which again reduces the tortfeasor's incentives to take care. Second, if ill trained judges cannot properly process information they commit a large quota of type 1 and type 2 errors. They might often regard an efficient care as too little or an inefficient level of care as sufficient and grant compensation when this is not reasonable or deny compensation when it is reasonable. If tortfeasors know this ex-ante, deterrence is destroyed. Then the tortfeasor knows that he has to pay with a large probability, even if he behaves carefully and must not pay with a large probability even if he was careless.

Under strict liability, however, damages are based on causation alone. It has been argued in the law and economics literature that strict liability is a superior system, when the optimal amount of damage is dependent on the level

of activity as well as on the care level. The reason is that usually a due level of care is observable but a due level of activity is unobservable by judges. Good car maintenance might be observable, but it is not observable, whether it is socially inefficient, when a driver drives more than a given number of miles per month. This observation can be generalised. Whenever it is difficult to find out what behaviour is socially efficient, strict liability socially dominates negligence as the preferable liability regime. If one agrees that in poor countries information gathering and processing is more difficult as compared to rich countries, strict liability is the preferable system.

This proposition applies for so called unilateral damages, when the tortfeasor, but not the victim can reduce damages. In cases of bilateral accidents when tortfeasor and victim can both reduce the danger, the defence of comparative or contributory negligence is necessary to avoid over-deterrence of the tortfeasor. In that case however, the court must decide, whether the victim was negligent. In those cases high information costs are unavoidable, even in a system of strict liability.

*Fixed formulas for damage compensation:* The amount of damage compensation is usually fixed by a court decision. This is sometimes difficult, for instance when judges assess lost earnings or lost profits. Therefore, damage awards can be standardized if a more precise calculation needs subtle information processing causes court delays and gives discretion to courts, which might be misused. Or certain injuries might not get compensated at all because the informational problems seem to be intractable. Even in a highly developed country like Germany judges are not entitled to grant any damage compensation for psychic pain and for the loss of sentimental value. The legislator has preferred to accept the adverse effects of this rule rather than to expose the legal community to a large quota of court errors.

Some developing countries have introduced flat rate compensation without proof of damage. In India the motor vehicles Act of 1998 grants flat rates (Art. 140) in case of death and permanent disablement. The Act also includes

fixed sums for funeral expenses, loss of consortium, medical expenses, pain and suffering and loss of income. This was explicitly introduced to avoid long drawn out litigation and delay in payment for victims and their heirs who are in need for quick relief. Fixed formula compensation exists also in other developing countries for instance in Brazil, where a solatium for grief is paid as a flat rate. In Art. 142 the Indian motor vehicles Act also provides not only a definition but also a comprehensive list of injuries, which are regarded as leading to permanent disablement. The Indian motor vehicle act is a good example of how statutory law can alleviate the low training level and disloyalty of judges. Central decision-making through precise statutes can compensate for the scarcity of human capital at the level of the judiciary. A disadvantage is the inflexibility of statutes.

In the case of fixed formulas for damage compensation it would be better to regularly update them not through fresh legislation but by another less complicated decision procedure. Otherwise they might soon become outdated and useless, especially in countries with high inflation rates.

However, In the case of a catalogue of injuries defining permanent disablement this problem with statutes does not arise, because an appropriate definition does not change much over time.

Generally speaking, precise statutory norms are preferable, if they regulate decisions, which should not change much over time. Otherwise decision procedures to update precise norms should be more flexible. But these procedures can still lead to precise catalogues, which can lower the decision costs of courts and lead to speedier jurisdiction. It would be possible that parliament enacts a statute, which grants fair compensation, and that a parliament entitles a committee of experts to translate this into fixed formulas, which are updated year by year

To base jurisdiction in poor countries more on statutory rules than on judicial discretion and precedent might lead to an unintended consequence. Law and economic scholars have argued that decisions of judges are more in line with general values and with the public interests than statutory rules. The

argument is that legislators benefit from serving private interests whereas judges benefit from serving the public interest<sup>24</sup>. It is relatively easy for private interest groups to influence parliament. It is more difficult to influence independent and decentralized court decisions. Statutes therefore often have a private interest group bias whereas jurisdiction has not or to a lesser degree. If statutory rules become very precise and leave little space for judicial discretion, this bias becomes more pronounced. In tort law the interest group bias of statutory law is observable in many legal orders. Statutory norms often restrict liability to gross negligence or intentional behavior, when courts would apply a normal negligence standard. They impose liability caps or compulsory insurance caps with no other purpose than to save costs to industries and to externalize them to victims. They introduce negligence, when strict liability is the more efficient regime. Therefore even though precise rules and statutes have an advantage over judicial discretion in poor countries and in countries with a corrupt judiciary, it depends on the particular country, whether this advantage is or is not offset as a consequence of statutory legislation in the private interest.

### ***Fewer Defenses, More Insurance***

When the typical tortfeasor has access to insurance, but the typical victim has no access, the comparative negligence defense should be restricted to intentional or gross negligent behavior of the victim. To illustrate: Assume that the producer of highly toxic insecticides establishes a distance zone around the plant to protect potential victims against the most serious effects of a potential gas leak. Slum dwellers build their dwellings on the distance zone despite requests to leave and despite warnings. Later a gas leak kills and seriously affects many of them. Should damage compensation to victims be denied or reduced because the victims were negligent? The comparative negligence defense would destroy the potential benefits of the third party liability accessible to the tortfeasor. Unlike in a rich country most of the victims would not have access to first party liability.

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<sup>24</sup> P.H. Rubin (1999), Judge Made Law, International Encyclopedia of Law and Economics,.....

What are the consequences on deterrence, if substantive law denies the comparative negligence defense to the tortfeasor? Under a negligence regime there would be no adverse effect on deterrence at all. It is a well-established theorem of the economic analysis of tort law, that deterrence effects are the same under a negligence rule with and without the defence of contributory or comparative negligence. Assume there exists no defence of contributory or comparative negligence. Then, if the level of due care is fixed and the tortfeasor knows this ex-ante, he has incentives to reach this level to escape liability altogether. If the potential victim knows this he has an incentive to reach the efficient level of care too. He knows that otherwise in case of an injury he would bear the costs of part of them even if the other side were negligent

Under strict liability the consequence would be different. The victim, if fully insured has too little incentives to take care. This again leads to a more than optimal level of care and a less than optimal level of activity of the tortfeasor. Here a trade-off arises between the benefits of more insurance and the benefits of optimal deterrence.

Assume that –with the defence of comparative and contributory negligence- courts fix an efficient level of care for the victim. Then optimal deterrence results, as potential victims have every incentive to reach this level in order not to lose the damage claim in case of an injury. But if they are not well informed or make errors and fail to reach their due level of care they suffer large costs from not being insured. Therefore –in the absence of insurance coverage- this solution is not efficient.

Now assume that in a regime of strict liability the victim's level of due care is treated as a continuous variable and is continuously reduced below the level, which is efficient for deterrence. Then the gains from additional insurance increase less than proportional and the costs of incentive distortions increase more than proportionately. Now assume that the social gains of better insurance from a small deviation from the first best level of care of the victim are higher than the adverse effects of less deterrence. Then there exists a due level of care

for the victim, which maximises welfare. This level is below the level of care, which induces optimal deterrence.

In legal terms this welfare maximising level of care can be called gross negligence, as it is lower than the first best due level of care. It is therefore in line with economic arguments to restrict the defence of contributory or comparative negligence to cases of gross negligence and intentional behaviour. This recommendation is restricted to asymmetric accidents, if it is likely that the tortfeasor but not the victim has access to insurance coverage, especially for transport and industrial accidents. If typically neither the tortfeasor nor the victim has access to insurance, this rule would distort incentives without the effect of better insurance coverage.

The asymmetric nature of transport accidents and industrial accidents leads to second guess the efficiency of the defense of comparative or contributory negligence in poor countries. In other words the *potential tortfeasor is more likely to have access to insurance than the potential victim*. For victims the probability is high that they have no access to private or social insurance. With a large probability they live and work in the informal sector or in absolute poverty. In such cases the social motive of risk spreading can override the deterrence motive if the overarching goal is efficiency or –to put it in Calabresi's terms- to minimize the sum total of primary, secondary, tertiary costs of accidents plus the costs of care.

### ***Insuring Against Unidentified Injurers***

Compulsory insurances reduce the judgment proof problem for firms and holders of vehicles. As a general rule such insurances should cover the costs of a large accident. Low caps would allow tortfeasors to externalize accident costs to victims, who are often –unlike in rich countries- uninsured.

Victims should be protected against hit and run injurers. If the tortfeasor remains anonymous this leads to an enforcement error and reduces his incentive to take care. This can be corrected by punitive damages. If damage

compensation to the victim is corrected by the enforcement error this equalizes the expected damage with the expected damage compensation and therefore avoids under-compensation and under-deterrence. But this does not help uninsured victims injured by an anonymous tortfeasor, as punitive damages over-compensate some victims and leaves others with no compensation at all. In poor countries third party insurances for firms or owners of motor vehicles are easier to obtain than first party insurances for pedestrians or victims of industrial accidents.

Therefore in poor countries another method is preferable to punitive damages. Insurance premiums for the compulsory third party insurance should be calculated not on the basis of expected damage compensation paid by the insurance company. Instead they should reflect all expected accident costs within a damage category like transport accidents, including those caused by anonymous tortfeasors. In that case each insurance company receives an income from premiums which is above its own pooling costs and which can be disgorged to a fund. The premium should be high enough to compensate all victims whose tortfeasors remain anonymous. This would reduce under-compensation as well as under-deterrence and would alleviate the problem that victims have little access to first party insurances. Such funds exist in many countries. Sometimes (in Germany) they are organized by contractual arrangements between insurance companies. The fund pays damage awards *ex gratia* without having any legal obligation to the victim. Another solution is regulation, which imposes a legal obligation to finance the fund. Victims, who would otherwise remain uncompensated, should have a legal claim against the fund.

Sometimes tortfeasors can avoid compensation for accidents strategically. They can organize hazardous activities in undercapitalized subsidiaries or subcontract with judgment proof firms operating in the informal sector. The easiest way to cope with this problem is to impose a legal duty to the holding company to fully insure these risks. The equivalent duty should be imposed on firms contracting with a judgment proof firm. The violation of this duty could

trigger liability of the parent company as well as director's liability. Often large firms contract with small judgment proof firms for the disposal of hazardous waste. They pay prices, which signal, that this waste will be illegally disposed with hazards for instance to drinking water quality and causing high cleanup costs for public authorities. If such signals are recklessly overlooked, this again should trigger firms' as well as directors' liability. Piercing the corporate veil is another, well established method to destroy incentives to externalize accident costs.

## **Conclusion**

Before the industrial revolution, the law of torts and the regulation of safety in Europe did not play an important role in law or the courts. The Code Civil, which France enacted in 1804, devoted only two sections to the law of torts. The modern law of accidents grew quickly in Europe with the process of industrialization and rising living standards. Developing countries have transplanted much of their accident law by borrowing the civil code, common law, and regulations from developed countries. As we have stressed repeatedly in this book, written laws can be transplanted, but institutions that make written laws effective laws must develop through time. The two major obstacles to effective accident law in poor countries are the informal sector's inability to pay liability judgments and inability of poor victims to collect liability judgments from the formal sector.

To meet these obstacles, tort law should be somewhat different in poor countries than in rich countries. First, the amount of damages for equivalent injuries or death should be substantially less in poor countries than in rich countries. Second, accident law should rely more on clear standards than vague rules. Clear regulatory standards that are practical and reasonable should extend to the informal sector. These regulatory standards should apply before accidents occur, so they do depend on administrative enforcement and criminal sanctions, not liability judgments. For the formal sector, strict liability should

apply not only because it is simpler, but also because it extends insurance to uninsured accident victims.