

Western University

Law and Economics

Lecture 6



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## 1. Tort Law: Introduction

- A tort is a legal wrong.
  - from the Latin word *tortus* which meant wrong.
- Tort refers to that body of the law which will allow an injured person to obtain compensation from the person who caused the injury.
  - Accident law



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**Example 1:** Joe Potatoes has been driven to distraction by the escapades of his wife, Joan Potatoes. At the end of a hard night's work at the loading dock, Joe is approached by Jim Bloggs. Suspecting that Jim has been romancing Joan, Joe insults and strikes him, breaking his nose. Bloggs subsequently sues for the injury to his reputation and his nose.



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**Example 2:** Three hunters go into the woods after pheasants. They are spread out in a straggling line about 25 yards apart, walking in the same direction, when the hunter in the center flushes a bird that flies up, its wings pounding. The hunters to his left and right turn toward the bird in the middle and fire. The bird escapes, but the hunter in the middle is blinded by birdshot. One of the two hunters certainly caused the harm, but there is no way to determine which one of them it was. The victim sues both of them.



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**Example 3:** A manufacturer produces automobile fuel additives that demand careful control over quality. If quality control is maintained at a high level, the chemical mixture in the product is correct, and it never causes damage to automobile engines. If, however, quality control is relaxed and allowed to fall to a low level, some batches of the chemical mixture will be flawed. A few of the cars using the flawed batch will be harmed; specifically, the engine will throw a rod and tear itself to pieces. After a rod is thrown, an alert mechanic can detect the cause of the harm by examining the car's fuel and other signs. The manufacturer determines that a high level of quality control costs more than the harm to some automobile engines caused by a low level of quality control, so the manufacturer adopts a low level of quality control. The owner of the damaged car sues the manufacturer and asks for punitive damages.



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## An Economic Theory of Tort Law

- People often harm each other by doing something wrong.
  - automobile accidents,
  - punching someone at bar,
  - a birth-control device causes infertility
- Suppose that the victim in each of these cases initiates a law suit. Under what body of law can the victim sue?



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## Tort law

- The victim cannot sue under contract law, nor under property law.
- We need for a third body of private law other than property and contracts. The third body of law concerns compensable wrongs that do not arise from breach of contract and cannot be remedied by an injunction against future interference -- tort law.



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## Tort law

- For some kind of harm, the costs of bargaining are so high that the parties cannot cooperate together.
    - 1) Difficulty of identifying bargaining partners or too many potential partners:
      - ex) driver vs. drivers, or driver vs. pedestrians
    - 2) Unlikely events: hunting accidents
      - Emotion: punching one's nose
      - Asymmetric information and strategic decision:
        - fuel additives
- \* Tort law concerns relationships among people for when transaction costs of private agreement are relatively high.



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## Economic Essence of Tort Law

- Harms that are outside private agreements are described as externalities.
  - The economic essence of tort law is its use of liability to internalize externalities created by high transaction costs.
- cf. criminal statues, safety regulations and tax incentives.



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## 2. Tort liability rule

- Accident happens and when it does its victims incur costs. Those costs can remain the burden of victims or they can be shifted to others (e.g., the injurer).
- Tort law is one of the institutions political communities develop in order to allow victims the opportunity to shift the costs that befall them to others. Insurance is another such institution.
- The conditions for shifting losses from victim-plaintiffs to injurer-defendants are expressed in '*liability rules*'. Two basic kinds of tort liability rules are '*fault-based liability rule*' and '*strict liability rule*'.




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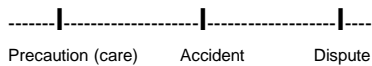
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## Tort liability rule

- Compensation
- Deterrence
  - precaution to lower expected harm from the accident.
- Timing




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Table 8.1: Example of Accidents and Precaution

Accident	Injurer's Precaution	Victim's Precaution
Faulty electric wiring causes house fire	Manufacture wiring more carefully	Fireproof house
Moving car hits parked car	Drive more safely	Park car in safer place
Car hits pedestrian	Drive more safely	Walk more safely
Software fails in year 2000	Better design of software	Back up data at risk
Exploding coke bottle	Improve quality control by bottler	Handle bottles carefully
Medicine causes side effects	Improve warning on medicine	Study warning on medicine




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## Traditional Theory of Tort Liability

- Three elements must be present for recovery by the plaintiff under the traditional theory of torts:
  1. the plaintiff must have suffered harm;
  2. the defendant's act or failure to act must cause the harm; and
  3. the defendant's act or failure to act must constitute the breach of a duty owed to the plaintiff by the defendant.



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## Palsgraf v. Long Island Railroad Co. 162 N.E. 99 (N.Y. 1928)

- A passenger carrying a package, while hurrying to catch and board a moving Long Island Rail Road train, appeared to the railroad's (Defendant's) employee to be falling. The employee attempted to help the passenger and caused a package the passenger was holding to fall on the rails. Unbeknownst to the employee, the package contained fireworks, and the employee's effort to help caused the package to explode.
- The shock reportedly knocked down scales at the other end of the platform (although later accounts suggest that a panicking bystander may have upset the scale), which injured Mrs. Helen Palsgraf (Plaintiff). Palsgraf sued the railroad, claiming her injury resulted from negligent acts of the employee.



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## Palsgraf v. Long Island Railroad Co. 162 N.E. 99 (N.Y. 1928)

- The Court of Appeals reversed and dismissed Palsgraf's complaint, deciding that the relationship of the guard's action to Palsgraf's injury was too indirect to make him liable.
- Cardozo wrote that there was no way that the guard could have known that the package wrapped in newspaper was dangerous, and that pushing the passenger would thereby cause an explosion. . . . Without any perception that one's actions could harm someone, there could be no duty towards that person, and therefore no negligence for which to impose liability.



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## Tort liability rule

- *Three elements of a tort*
  - Wrong: breach of a duty of care
  - Causation
  - Harm
- *Fault-based liability*
  - Negligence rule
- *Strict liability*
  - Dangerous activities, product liability



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## Tort liability rule

- *Strict liability*
  - An injurer must always pay for harm due to an accident that he causes.
- *Negligence rule*
  - An injurer must pay harm caused only when he is found negligent, that is, only when his level of care was less than a standard of care chosen by the courts.



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## 3. Economic model of tort liability

- Assume
  - Victims and injurers are risk neutral.
  - They are strangers to each other.
  - Unilateral precaution case
    - Only injurers can influence risks.
  - Bilateral precaution case



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## Economic model of tort liability

- $x$  injurer's precaution level
- $w$  unit cost of precaution
- $p(x)$  probability of an accident
  - decreasing and convex
- $h$  harm that the accident causes
- $x^*$  minimizes  $SC = p(x)h + wx$ 
  - FOC:  $-p'(x^*)h = w$




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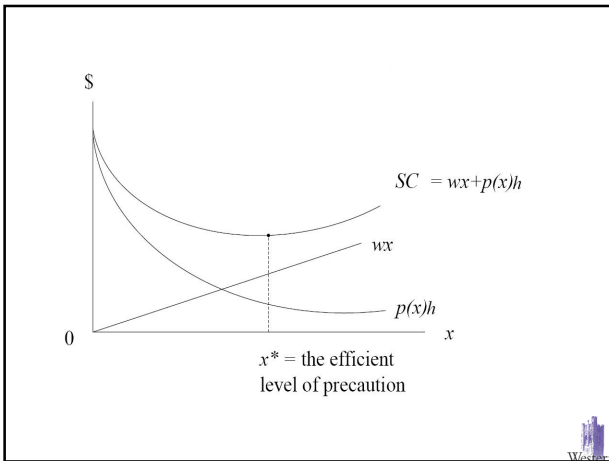
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## Strict liability vs. Negligence

- **Strict liability**
  - Injurers fully internalize external costs
  - Injurers are induced to take efficient care.
- **Negligence rule (with  $x^*$ )**
  - Assume the legal standard of care,  $x^*$ , is set at  $x^*$ .
  - Injurers are induced to take efficient care.




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## Bilateral precaution case

- $x$  injurer's expenditure of care
- $y$  victim's expenditure of care
  - Assume  $w = 1$  for simplicity.
- $p(x,y)$  probability of an accident
  - decreasing in both
- $h$  harm that the accident causes




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## Example

Care level	Cost of care	Probability of accident	Expected accident losses	Total social costs
None	0	15%	15	15
Moderate	3	10%	10	13
High	6	8%	8	14




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## Bilateral precaution case

- $(x^*, y^*)$  minimizes  $SC = p(x,y)h + x + y$

Let  $d$  denote damages payment.

- Injurer ( $x$ ) minimizes  $C^I = p(x,y)d + x$
- Victim ( $y$ ) minimizes  $C^V = p(x,y)[h-d] + y$




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## Bilateral precaution case

- *Strict liability*
  - Assume full compensation ( $d = h$ ).
  - Injurers' incentives are efficient conditional on victims' precaution.
  - Victims choose  $y = 0$ .
- *Strict liability with a defense of contributory negligence*
  - A victim is contributorily negligent if  $y < y^{\wedge}$ .
  - An injurer is liable iff  $y \geq y^{\wedge}$ .
  - There exists a unique Nash equilibrium under which both parties act efficiently.



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## Negligence rule

- An injurer is liable if  $x < x^{\wedge}$ .
- Assume  $x^{\wedge} = x^*$ .
- The injurer takes efficient precaution.
- Given that  $x = x^*$ , the injurer escapes liability, that is,  $d = 0$ .
- Hence, the victim will act efficiently to minimize  $p(x^*, y)h + y$ .



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## Other negligence rules

- *Negligence with a defense of contributory negligence*
  - An injurer is liable if  $x < x^{\wedge}$  and  $y \geq y^{\wedge}$ .
  - Assuming  $x^{\wedge} = x^*$  and  $y^{\wedge} = y^*$ , both parties will act efficiently in equilibrium.
  - Note that liability is either 100% or zero %.



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## Comparative Negligence

- If both parties are negligent, they each bear a fraction of the harm.
- Otherwise, the rule is the same as the contributory negligence.
- Assuming  $x^{\wedge} = x^*$  and  $y^{\wedge} = y^*$ , both parties will act efficiently in equilibrium.



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### *United States v. Carroll Towing Co.* 159 F.2d 169 (2d. Cir. 1947)

- In the early evening on January 3, 1944, in New York Harbor, a bargee moored the barge "Anna C" at the pier along with several other barges. The next day, the tug "Carroll" was sent to the pier to "drill out" another barge at Pier 52. In other words, the "Anna C" was tied to a barge tied to another barge tied to a barge that was eventually tied to the pier.
- The harbormaster boarded the Anna C without permission because there was no captain or deckhand present. During this process, the "Anna C", with six other barges, broke away. The "Anna C" hit a tanker, and then sank.



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### *United States v. Carroll Towing Co.* 159 F.2d 169 (2d. Cir. 1947)

- *Since there are occasions when every vessel will break from her moorings, and since, if she does, she becomes a menace to those about her; the owner's duty, as in other similar situations, to provide against resulting injuries is a function of three variables: (1) The probability that she will break away; (2) the gravity of the resulting injury, if she does; (3) the burden of adequate precautions. Possibly it serves to bring this notion into relief to state it in algebraic terms: if the probability be called P; the injury, L; and the burden, B; liability depends upon whether B is less than L multiplied by P: i.e., whether  $B < PL$ .*



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## Learned Hand Rule

- Judge Hand proposed a test to determine the standard of care for the tort of negligence.
- The owner's duty to provide against resulting injuries is a function of three variables:
  - The probability that she will break away:  $p$
  - The gravity of the resulting injury:  $L$
  - The burden of adequate precautions:  $B$
- Negligence (and thus liability) depends upon whether  $B < pL$ .



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