Economics 522: Law and Economics **Email: jebecker3@wisc.edu**
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Handout #9: Tort Law Continued

Review

1. The Calculus of Negligence

- Precaution is about tradeoffs: Namely, the tradeoff between the *deterministic* costs of taking precaution and the *expected value* of harm when precaution is not taken.
- Efficiency requires us to take precaution when the cost of doing so is less than the expected value of harm averted.
- In 1947, Judge Learned Hand used this logic to say that a party should be considered negligent whenever:

$$\underbrace{B}_{\text{Cost of Precaution}} < \underbrace{L}_{\text{Cost of an Accident}} \times \underbrace{P}_{\text{Probability of an Accident}}$$

  This has come to be known as "The Hand Rule."
- If agents are risk-neutral (that is, if they only care about the expected cost of an action), the Hand Rule encourages agents to take precaution exactly when it is efficient to do so.
- Two problems with applying the Hand Rule:
  (a) Courts tend to include only risk to others when calculating negligence, but it should *also* include risk to self.
  (b) *Hindsight Bias*: Subjective assessment of risk is often overinflated by proximate harms.

  Fortunately these two problems work in opposite directions.

2. Relaxing Assumptions: Our models often correctly predict the direction of effects in law, but poorly predict the magnitude of effects. This is partially due to the following unrealistic assumptions we've made about how the legal system works:

(a) Rationality: Agents act to maximize their expected utility (subject to consistent risk-preferences) based on accurate assessments of risks.

Objection: Two objections to rationality:
1. *Risk Perception:* People systematically misperceive the value of probabilistic events: overestimating exotic risks and underestimating mundane risks.
2. *Risk Preferences:* People are willing to take small-probability gambles, but not proportional larger-probability gambles.

(b) Full Damage Payment: Damages are paid in full, and so injurers fully internalize the value of all harms.

Objection: Agents are often liquidity-constrained and incapable of paying damages in full.

(c) No Regulations: There are no regulations in place aside from liability rules.

Objection: Regulations are ubiquitous, and often function better than tort liability (e.g. judgement-proof injurers; small harms to many parties).

(d) No Insurance: Insurance cannot be purchased to protect from risks, and so involved parties bear the cost of accidents.

Objection: Insurance partially protects involved parties from the cost of accidents, but this can reduce the incentives to take precaution created by liability rules (*moral hazard*).

(e) Costless Litigation: There are no costs (explicit or opportunity-costs from taking claims to court.)

Objection: Costly litigation reduces victims' incentives to bring suits and increases expected costs to potential injurers. Further, the rules about who bears the cost of litigation creates incentives of its own (e.g. the incentive to bring "frivolous" suits designed to elicit out-of-court settlement).

(f) Informed Citizens: Parties have perfect knowledge of the laws which affect them.

Objection: There are numerous laws and parties are often unaware of them, and instead act in accordance with social norms.

3. Errors

- Strict Liability vs. Negligence:
  - Negligence is difficult to prove relative to harm and causation, and so strict liability is increasingly common.
  - When court can assess damages more accurately than standard of care, strict liability is more efficient.
  - When court can better assess standards, negligence rules are more efficient because they lead to fewer trials.
- Mistakes in Assessing Damages: Mistaken damages can be either random or systematic.
  - *Random Mistakes* (or *uncertainty*): Damages may be incorrect in specific cases, but are correct on average. These mistakes have no effect on the incentives of expected-wealth-maximizing agents. [1]
  - *Systematic Mistakes* (or *errors*): Damages are skewed either too high or too low on average.

4. Compensatory Damages and Death

- Perfect compensatory damage returns victims to original level of well-being; this is impossible when the victim dies.
- Compensatory damages are often higher for extreme harm than for causing death.
- For fatal accidents, the value of life is imputed from day-to-day choices involving death risks. Studies estimate the value of a life as being somewhere between 3-7 million dollars.

5. Punitive Damages: Damages that exceed the amount required to compensate victims.

- When an injurer expects to face liability for only some fraction $\alpha < 1$ of harm caused, courts can award victims compensatory damages of $D(x)$ plus punitive damages of R to achieve efficient care. When we do this, the injurer's overall expected liability equal to
$$p(x)\alpha[D(x) + R]$$
Incentives for efficient care are achieved when the injurer's expected liability equals the full expected damages of the victim, or when $p(x)\alpha[D(x) + R^*] = p(x)D(x)$. Solving this equation for R yields
$$R^* = \frac{1-\alpha}{\alpha}D(x)$$
The coefficient $\frac{1-\alpha}{\alpha}$ is sometimes called the *punitive multiplier*.
- Courts typically impose punitive damages that are less than ten times the value of compensatory damages.

6. Vicarious Liability: One party is held liable for the harm caused by another.

- *Respondeat Superior*: Employer liable for torts of employee if employee was acting within the scope of employment. Gives employers incentive to hire and supervise more carefully. Can be implemented via either a liability or negligence rule, but neither is strictly better.
- Accidents involving multiple injurers:
  - *Joint Liability*: Sue all injurers together.
  - *Several Liability*: Sue each one separately.
  - *Joint and Several Liability*: Sue one of the injurers for the full amount.

7. The Legal System

- Broadly speaking there are two costs associated with the legal system:
  (i) Administrative Costs: Direct costs of running the legal system.
  (ii) Error Costs: Indirect costs of errors arising from imperfect implementation.
- *Filing fees* are set lower than administrative costs and deter lawsuits that would not provide benefits (in expectation) exceeding the cost of making a claim. As we raise filing fees, we lower the sum total of administrative costs, but increase the sum of error costs.
- *Class-Action Lawsuits* can provide incentives for injurers to avoid causing low-value harms, but can lead to "nuisance suits" or "blackmail settlements."

8. Torts vs. Regulation

- Regulations partially get around the problem of judgement-proofness and liquidity constrained injurers.
- *Regulatory Capture:* When a regulatory body is captured by the industry it is in charge of regulating, often leading to regulations which protect entrenched interests.[2]
- Liability systems also come with an incentive to avoid paying fines. Under a regulatory system, the incentive to dodge fines is lower than in a liability system, since regulations impose small costs whereas liability systems impose large costs *when* they happen.

[1] Damages being correct on average doesn't mean victims are equally happy with mistakes or no mistakes. As you probably know, and as we'll talk about more with criminal law, people also have preference over risk.

[2] This is a fascinating topic, and if you want to read more, check out:
Carpenter, Daniel, and David A. Moss, eds. *Preventing regulatory capture: Special interest influence and how to limit it.* Cambridge University Press, 2013.
The most fascinating article inside is called "Preventing Economists Capture." by Luigi Zingales.

Problems

1. Common Exam Mistakes: Because we don't upload the problems or solutions, we'll do this stuff on the board.

2. Suppose you are driving to Milwaukee. You know that you will be judged to be negligent if you are involved in a crash and the police determine that you were speeding at the time, but such a determination is necessarily imprecise. However, you know that the faster you are going, the greater the risk of hitting someone.

   You know that

   - there is a 25% chance that it could only be proven in court that you were speeding if you were going more than 10mph over the speed limit;
   - there is a 50% chance that the threshold for proving in court that you were speeding is 5mph over the speed limit;
   - there is a 25% chance that the threshold for proving in court that you were speeding is the speed limit.

   Relative to going 75mph, going 70mph costs you \$2, whereas going 65mph costs you \$4. Going 75mph results in a $\frac{20}{10000}$ probability of a crash; going 70mph results in a $\frac{12}{10000}$ probability of a crash; going 65mph results in a $\frac{11}{10000}$ probability of a crash. If you hit someone, it will destroy \$10000 of value; you will have to pay this amount in damages if you are found to be negligent.

   (a) What is the efficient speed?

   (b) What would be the legal speed limit if we wanted the expected negligence threshold to be equal to the efficient speed?

   (c) At that speed limit, how fast would you go?

Assorted Problems from Miceli's *The Economic Approach to Law* (2004 Edition):

1. Consider a barge owner who is deciding whether to post an attendant on his barge to make sure that it remains properly moored to the pier. The following table gives the total cost of hiring the attendant, the probability of an accident, and the fixed cost of an accident:

	Cost of Care	Probability	Damages
No Attendant Posted	\$0	0.25	\$400
Attendant Posted for 24 Hours	\$94	0	\$400

   (a) Calculate the marginal cost, B, and marginal benefit, PL, of posting the attendant. According to the marginal Hand rule, would the barge owner be found negligent for failing to post an attendant?

   Now suppose that the barge owner had a third option: post the attendant only during the day. The data for this option are as follows: Cost of care = \$50, Probability of an accident = 0.10, and Damages = \$400.

   (b) Assume that the barge owner's only two options are "no attendant" and "post an attendant during the day." In this case, would the owner's failure to post an attendant be judged negligent by the marginal Hand rule?

   (c) Assume that, prior to the accident, the owner had posted an attendant during the day. Suppose that the victim claims that the owner is negligent for not having posted the attendant for 24 hours. Use the marginal Hand rule to evaluate the merits of this claim.

   (d) For each of the three options: "no attendant," "attendant during the day," and "attendant for 24 hours," calculate total expected costs (costs of care plus expected damages). Which option minimizes this total? Reconcile the result with your answers to (a)–(c).

2. Show that the comparative negligence rule results in an equilibrium in which both the injurer and victim take efficient care. To do this, first show that if the victim chooses due care of y^*, the best thing for the injurer to do is to choose x^*, and then show that if the injurer chooses x^*, the best thing for the victim to do is to choose y^*.

3. Using the theory of punitive damages, answer the following question:

   Suppose that an injurer causes \$500,000 in damages to a victim, but only faces a one-in-three chance of being found liable.

   (a) Calculate the punitive multiplier.

   (b) Calculate the amount of compensatory damages and the amount of punitive damages that a court should award if the victim brings suit. What is the injurer's overall liability?