Determination of Due Care

Three options available to courts or juries to fix the legal (due care) standard for the injurer, i.e., $x^*$:

- Court can determine, the legal (due care) standard for the injurer, on a case-by-cases. However, this option
  - puts huge information burden on courts,
  - So, they end up using reasonable care standard

- Court can use the due care standard provided by the public or regulatory law as the legal (due care) standard.
  - traffic rule, environmental standards, etc.

- Court can use use the care standards practiced by the community of injurers as the legal standards of care
  - doctors, auditors, lawyers, etc.
Due Care and Legal Errors

Courts can make errors in assessment of Due Care.

The Legal Error:

- can be totally random without bias. That is on an average
  - the Due care level is fixed at $x^*$

- systematically biased. For example,
  - Either the expected Due care level can be fixed at level greater than $x^*$
  - Or the expected Due care level can be fixed at level less than $x^*$

As a result, the parities at accident dispute face uncertainty regarding their liability obligations and entitlements.
Due-Care related Uncertainty: RON I

Uni-lateral care accidents:

- Only the injurer can take care; \( x \)
- TAC is \( x + \pi(x)D(x) = x + L(x) \).
- Efficient care level, \( x^* \), is unique. That is, \( x^* \) uniquely solves

\[
\min_x \{ x + L(x) \}, \text{ i.e., } \\
1 + \frac{dL(x)}{dx} = 0 \quad (0.1)
\]

- Let \( z \) be the Due-Care standard opted by the court, i.e.,
- The injurer is liable iff \( x < z \).

However,

- There is uncertainty about \( z \);
Due-Care related Uncertainty: RON II

- $z$ is a random variable with distribution function $F(z)$ such that $F'(.) > 0$.

\[ Prob(x \geq z) = Prob(z \leq x) = F(x) \]

Now the injurer will choose $x$ to solve

\[ \min_x \{ x + \pi(x)[F(x)0 + (1 - F(x))D(x)] \} = \min_x \{ x + (1 - F(x))L(x) \}, \text{i.e.,} \]

That is, care opted by $I$, say $\bar{x}$, will solve the FOC:

\[ 1 + (1 - F(x)) \frac{dL(x)}{dx} - F'(x)L(x) = 0, \text{i.e.,} \]

\[ 1 + \frac{dL(x)}{dx} = F(x) \frac{dL(x)}{dx} + F'(x)L(x). \]  

(0.2)

Note:
Due-Care related Uncertainty: RON III

- The RHS of (0.2) can be positive or negative.
- Therefore, $\bar{x} > x^*$ or $\bar{x} < x^*$ can hold.

**Proposition**

*If legal error about due care level are unbiased, i.e., if $E(z) = x^*$ then*

- The outcome will NOT be efficient. under the RON.
- The injurers will take more than efficient care, especially when they are risk-averse

**Question**

What will be the effect of risk-aversion on the part of the injurer?
Due-Care related Uncertainty: RON IV

Proposition

If legal error are downward biased, i.e., if $E(z) < x^*$ then

- The outcome will NOT be efficient. under the RON.
- The injurers will take less than efficient care, especially if the downward bias is large

Proposition

If legal error are upward biased, i.e., if $E(z) > x^*$ then

- The outcome will generally NOT be efficient. under the RON.
- The injurers will take more than efficient care, especially if the bias is small
- However, if the bias is large, the injurers will take efficient care
Actual Care related Uncertainty: RON I

Assume:

- There is No uncertainty about the Due care level
- But, the courts can make errors in assessing the Actual Harm

Consider, uni-lateral care accidents: Suppose

- There are two care levels; \( x \in \{0, \bar{x}\}; 0 \equiv NC, \bar{x} \equiv C \)
- Probability of Accident; \( \pi(0) = \pi_n \), and \( \pi(\bar{x}) = \pi_c; \pi_c < \pi_n \).
- Suppose \( D(0) = D(\bar{x}) = D \), and

\[
\bar{x} < (\pi_n - \pi_c)D, i.e.,
\]

\[
x^* = \bar{x}
\]

- Let \( z = \bar{x} = x^* \)
Actual Care related Uncertainty: RON II

Legal Errors: Let

- $q_1$ is the probability that court will find an actually Negligent injurer to be Vigilant
- $1 - q_1$ is the probability that court will find the Negligent injurer to be Negligent
- $q_2$ is the probability that court will find an actually Vigilant injurer to be Negligent
- $1 - q_2$ is the probability that court will find the Vigilant injurer to be Vigilant

Assume

$$1 - q_1 > q_2$$
Actual Care related Uncertainty: RON III

Now, if the injurer chooses $\bar{x}$,

- Without errors his costs will be $\bar{x}$
- Under errors his costs will be $\bar{x} + q_2 \pi_c D$

If the injurer chooses 0,

- Without errors his costs will be $0 + \pi_n D$
- Under errors his costs will be $0 + (1 - q_1) \pi_n D$

So,

- Without errors he will choose $\bar{x}$ iff $\bar{x} < (\pi_n - \pi_c) D$, which is true.
- Under errors he will choose $\bar{x}$ only if $\bar{x} < [\pi_n (1 - q_1) - \pi_c q_2] D$
Weak enforcement of liability rules:

- Weak or no enforcement of liability rules
- Judicial delays
- High Litigation costs, especially for the victims
- ‘Judgment Proof’ Injurers

When implementation is poor

- Some implications are predictable
- But there are other implications too!