Breyer

1. Breyer considers the regulatory efforts to decrease the small risks associated with exposure to cancer. The public's fear of cancer drives the system.
2. What are small risks? About 2.2 million who die about 22% or 500,00 die of cancer. Estimates are that pollution and industrial products account for 15,000 and that occupations account for 20,000. Experts believe that under ideal conditions only some cancers are regulatable. (1200 to 6600).
3. Regulation covered by 26 statutes. Risk assessment.
    a. Identification of the problem.
    b. Calculation of dose response curves.
    c. Estimating the amount of human exposure – categorizing the result.

    Problem 1: Tunnel vision or the last 10%. The regulating agencies sets standards so stringent that the costs are very high and benefits very low at the margin.
    a. Toxic waste dump in NH. One private party insisted in cleaning up the last little bit at a cost of $9.3 million. There were no benefits associated with this exposure. How clean is clean or how clean is clean enough?
    b. Asbestos in schools. Dead rate is one in ten million – removing all the asbestos in the nation saves about 1 to 25 people a year at an expenditure of $250 million per statistical life.
    c. Benzene storage vessels save total of 3-4 levels at a cost of 200 per statistical life.
4. Who is to say it is worth the cost? Everyday each of us implicitly evaluates risks to life. We install guardrails on bridges, but it is not worth coating the Grand Canyon in soft plastic.
5. Does it matter if we spend a little too much to get a bit more safety?
    a. Yes, it matters
    b. Resources are not finite.
        1. Estimate of total super fund clean-up 1 trillion
        2. Department of Energy nuclear sites 240 billion.

The money will not be there for better prenatal care, vaccinations, cancer diagnosis, let alone, day care, housing, and education. Vaccinations for influenza cost $68,000 per statistical life.

Problem 2: Random Agenda Selection. Breyer is concerned with systematic biases not random noise. He argues that the priorities of regulatory agencies are unduly influenced by public misperceptions of risk. Expert hazardous waste sites pose medium to low risks, while indoor pollution ignored by the public are high risk.

Problem 3: Inconsistency.
1. Agencies use different methods for estimating the effects of their Regulations.
2. The values of lives saved used to estimate benefits vary between agencies.
3. Ignoring one program's effect on another .A proposal to save 1 statistical life will cause the adoption of alternative process that will cause two deaths. These inconsistencies mean that we treat tiny, moderate, and large risks too much alike. Inconsistencies imply that resources are misallocated both within and between health and safety programs and may lead the public to ignore serious risks.

The Second Lecture

1. Public misperceptions of risks. Breyer appeals to cognitive psychology to explain the difference between public and expert opinion. People have difficulty with the mathematics of probability; they use rules of thumb that are misleading in low probability events. They mistrust the experts and they are exposed to sensational news stories in the media. Unusual events are striking. Most people think dramatically not quantitatively.
2. Congressional reaction to perceive risk and to regulatory process which takes the form of detailed statutory instructions. Congress may distrust the Executive Branch, Congress not well suited to write detailed regulatory instructions. Congress writes one statue at a time, the legislation originates in different subcommittees. Congress responds to public opinion, public finds it different to order risk priorities.

Uncertainty In Technical Regulatory Process

Scientific data difficult to obtain
1. Toxicology embodies as disciplinary canon of erring on the safe side. Divide the safe dose for animals by 100.
2. Linear model. So if you dose if a dose of 5 percent causes tumors in 300 per thousand a dose of 5/100 of 1 percent will cause tumors in 3 rats per thousand. Critics say this equivalent to say that ten thousand persons will drown in 10,000 feet of water, and then one person will drown in 1 foot. There is no consistent rational for assumption a linear relationship.

Also, by exposing the animal to large doses it kills a large number of cells, it brings about quick cell regeneration which entails a risk of cancer causing mutation. Uncertainty also characterizes exposure estimates.

The upshot is a system that may work well for assessing many large, serious risks, but where small risk are an issue, it will generate results based on a host of controversial assumptions. In dealing with a pesticide, EDB Scientists had to admit that large doses cause cancer, but small risks attached to small doses are

uncertain."The truth is we don't know. We are operating in an area of enormous scientific uncertainty.

The Vicious Circle

1. Public perceptions shaped by press reports influence Congress.
2. The agencies because of the regulatory uncertainties make it difficult for agencies to resist congressional or public efforts to set agendas and manage particular results. These uncertainties and scientific statements of doubt give the appearance of subjective decision-making. This appearance encourages outsiders to try to generate congressional interest in particular agency decisions and congressional action will generate public interestThe more outside pressure seems to control agency results, the less confidence the public will have in the agency, and the greater the pressure upon the agency to prove it has erred on the side of safety and the greater the tendency for them to adopt the publics agenda of the moment.Such public pressure may encourage congress to set standards and to supervise agencies by setting agency agendas. Congressional reaction provokes further public concern.