

Two Rules For Decisions: Trust In Economic Growth Vs. Precaution

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Everyone knows the role of law is to control and guide the economy. From law, not economics, springs freedom from slavery, child labor and unreasonable working conditions. Law, reflecting the values we hold dear, governs our economy's infliction of damage to the environment.

Our law contains what might be called an overarching environmental decision rule that implements our social choices. The structure of this decision rule is an intensely political issue, for the people of our democracy must support its far-reaching consequences. Today we (all of us) are rethinking our current environmental decision rule, which our society adopted in the course of the Industrial Revolution.

The "trust in economic growth" environmental decision rule

Our overarching environmental decision rule (which is also prevalent in much of the rest of the world) constitutes a rarely-stated balance of social values that is hard to discern even though it pervades every aspect of our society.

This decision rule relies extensively on cost-benefit analysis and risk assessment, but the decision rule itself is even broader in scope. The foundation of the rule is the assumption that economic activity usually provides a net benefit to society, even when it causes some damage to human health and the environment. (This conception of "net benefit" refers to the effect on society as a whole, and does not trouble itself too much with the unequal distribution of costs and benefits.)

From this assumption, it follows that we should allow all economic activities, except those for which someone can prove the costs outweigh the benefits. This, then, is the prevailing environmental decision rule of our entire legal system: economic activity is presumed to provide a net social benefit even if it causes some environmental damage, and government may regulate (or a plaintiff may sue) only if it can carry its burden of proof to demonstrate that the costs outweigh the benefits in a particular case. Let's call this the "trust in economic growth" decision rule.

The "precautionary principle" environmental decision rule

The "precautionary principle" is equal in scope to the "trust in economic growth" decision rule, but incorporates a profoundly different judgment about how to balance environment and economic activity when they come into conflict. Under this principle, damage to the

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environment should be avoided, even if scientific uncertainties remain. This rule implements a judgment that we should presumptively avoid environmental damage, rather than presumptively accept it as we do under the "trust in economic growth" rule.

The role of "cost-benefit" analysis

"Cost-benefit" analysis is a subsidiary tool of both decision rules. However, it is used in very different contexts under the two rules. It can sometimes be employed under the "precautionary" decision rule as a way to compare and decide among alternatives. But under the "trust in economic growth" decision rule, cost-benefit analysis appears as the only major issue and often masquerades as the decision rule itself. This is because most of our laws implicitly incorporate the unstated presumption that economic activities should be allowed even if they cause environmental damage. By and large, our laws silently bypass that unstated presumption and start out at the point of instructing government to develop only regulations that pass a cost-benefit test.

Thus, the foundational presumption of the "trust in economic growth" decision rule is simply accepted as a received truth and is rarely examined or even identified as supplying our law's overarching context for cost-benefit calculations. Almost all economists probably agree with it (except those few who are concerned with the global human footprint and are trying to do full cost accounting for the economy as a whole).

The role of "sound science"

How does science, particularly "sound science," relate to all this? Science supplies a critical factual input used by governments and courts in implementing environmental decision rules. Science is employed differently by the two decision rules, but science does not constitute or supply a decision rule itself. Like cost-benefit analysis, science is a subsidiary tool of the decision rules and so cannot properly be placed in "opposition" to either decision rule. A claim that the precautionary principle, as an overarching environmental decision rule implementing a complex balancing of social values, is in "opposition" to science is a senseless claim.

The phrase "sound science" represents the proposition that a scientific fact should not be accepted by the legal system unless there is a high degree of scientific certainty about it. It is a term used by industry in regulatory and legal contexts and is not commonly used by scientists while doing scientific research. However, it resonates within much of the scientific community because it is a call to be careful and rigorous.

"Sound science" also represents a brake on the legal system's acceptance of emerging science, of science that cuts across disciplines, and of science that diverges from the established traditions and methodologies that characterize many specific disciplines of science. "Sound science" encourages scientists who are concerned about the world to remain in their silos, to avoid looking at the world from a holistic viewpoint, and to avoid professional risks.

But, why does it work for industry? The call for government and law to rely only on "sound science" when they regulate is a call for them to narrow the universe of scientific findings that they will consider to those that have a high degree of certainty.

This serves industrial interests under our prevailing "trust in economic growth" decision rule because it restricts the harms to human health and the environment that can be considered by government and law to those that are sufficiently well established to constitute "sound science."

Because the burden of proof is on government, requiring government to rely only on facts established by "sound science" reduces the scope of possible regulatory activity by making it harder for government to carry its burden to show that the benefits of regulation (avoidance of damage to health and environment) outweigh the costs to industry. Exactly the same dynamic is at play when plaintiffs try to carry their burden of proof to establish legal liability for environmental damage.

Shifting the burden of proof would shift the effect of "sound science"

"Sound science" can help industrial interests under a precautionary decision rule, but it also contains a seed of disaster for them.

Precaution is triggered when a threat to the environment is identified, so that the more evidence required to identify a threat as such, the fewer triggers will be pulled. While the precautionary principle is designed to encourage environmental protection even in the face of uncertainty, those opposed to environmental protection urge that the threshold for identification of threats should require as much certainty as possible, and preferably be based only on "sound science."

The seed of disaster for industrial interests is this: the burden of proof can be switched under the precautionary principle (so that when a threat to the environment is identified the proponent of an activity must prove it is safe -- just as a pharmaceutical company must prove that a drug is safe and effective before it can be marketed). When that happens, a call for "sound science" actually would cut against such proponents rather than for them. This is because proponents of an activity would have to provide proof of safety under a "sound science" standard. In other words, the call for "sound science" creates higher burdens on those bearing the burden of proof. In fact, while debates about "sound science" masquerade as debates about the quality of science, the positions that different actors take are actually driven entirely by the underlying legal assignment of the burden of proof.

Why precaution? Because of cumulative impacts.

One of the reasons for adopting the precautionary principle, rather than the "trust in economic growth" decision rule, is "cumulative impacts."

The foundational assumption of the "trust in economic growth" rule (that economic

activity is generally to the net benefit of society, even if it causes environmental damage) is further assumed to be true no matter how large our economy becomes. To implement the "trust in economic growth" rule, all we do is eliminate any activity without a net benefit, and in doing this we examine each activity independently. The surviving economic activities, and the accompanying cost-benefit-justified damage to the environment, are both thought to be able to grow forever.

Not only is there no limit to how large our economy can become, there is no limit as to how large justified environmental damage can become either. The "trust in economic growth" decision rule contains no independent constraint on the total damage we do to Earth -- indeed the core structure of this decision rule assumes that we do not need any such constraint. People who think this way see no need for the precautionary principle precisely because they see no need for the preferential avoidance of damage to the environment that it embodies.

But, as we now know, there is in fact a need for a limit to the damage we do to earth. Unfortunately, the human enterprise has now grown so large that we are running up against the limits of the Earth -- if we are not careful, we can destroy our only home. (Examples abound: global warming, thinning of Earth's ozone shield, depletion of ocean fisheries, shortages of fresh water, accelerated loss of species, and so on.)

And it is the cumulative impact of all we are doing that creates this problem. One can liken it to the famous "straw that broke the camel's back." At some point "the last straw" is added to the camel's load, its carrying capacity exceeded. Just as it would miss the larger picture to assume that since one or a few straws do not hurt the camel, straw after straw can be piled on without concern, so the "trust in economic growth" decision rule misses the larger picture by assuming that cost-benefit-justified environmental damage can grow forever.

Thus, it is the total size of our cumulative impacts that is prompting us to revisit our prevailing decision rule. This is why we now need a decision rule that leads us to contain the damage we do. It is why we now must work preferentially to avoid damage to the Earth, even if we forego some activities that would provide a net benefit if we lived in an "open" or "empty" world whose limits were not being exceeded. We can still develop economically, but we must live within the constraints imposed by Earth itself.

Ultimately, the conclusion that we must learn to live within the capacity of a fragile Earth to provide for us, painful as it is, is thrust upon us by the best science that we have -- the science that looks at the whole biosphere, senses the deep interconnections between all its parts, places us as an element of its ecology, recognizes the time scale involved in its creation and our own evolution within it, and reveals, forever incompletely, the manifold and mounting impacts that we are having upon it and ourselves.