



THE ROLE OF SCIENCE IN RULEMAKING: FEDERAL AGENCY CAPACITY*

Richard B. Belzer, PhD
President
Regulatory Checkbook

HISTORY

- The supply of and demand for science and economics were minimal until Executive order 12,291 (economics) in 1981 and the NAS Red Book (risk assessment) in 1983. For simplicity I combine both into the term “regulatory risk analysis.”
- EO 12866 made government-wide what President Carter did piecemeal through the Regulatory Analysis Review Group.† Thus, regulatory risk analysis owes its existence to Jimmy Carter and Ronald Reagan—possibly the only thing on which these men agreed.
- Both the supply of and demand for regulatory risk analysis have increased dramatically, but the quality of regulatory risk analysis has increased only incrementally. Why is that?
 - Risk analysts say it’s because these fields are technically very complex, and millions more taxpayer dollars need to be invested. This is highly self-serving, of course. Is health, safety and environmental regulatory risk analysis more complex than information technology, understanding the human genome or developing nanotechnology? Why has *financial* regulatory risk analysis not suffered these impediments to progress? Is there any area in *financial* regulatory risk analysis where it’s acceptable to select an informed but arbitrary point of departure and divide by ten?
 - Political scientists say it’s because of institutional barriers within government bureaucracies and the paralyzing effects of interest groups. (Perhaps. And it might help if agency risk analysts were bureaucratically independent of regulatory program offices.)

* Center for the Study of Rulemaking, American University. May 9, 2006.

† See <http://www.thecre.com/ombpapers/RARG.htm>.

- An economist would say it's because of a lack of competition, as regulatory agencies control the supply and use of regulatory risk analysis. Agencies are at least as agenda-driven as private interests and NGOs. They are inherently conflicted in the assessment of risk, and in the estimation of the benefits and costs of risk reduction. *This used to be disputed by some agencies and some stakeholders, but we hear this infrequently today. See, e.g., EPA's 2004 staff report in risk assessment principles and methods.)*

OIRA REVIEW

- It's inherently threatened by conflict of interest because OIRA is accountable to the president, and presidential always have agendas. *Conflict is not inevitable; sometimes, the president's agenda is consistent with the principles set forth in Executive order 12,866 [or 12,221].*
- Where significant conflicts do not arise, its effectiveness remains limited. Why? Some competing explanations:
 - (1) Partisanship: Benefit-cost analysis is widely, albeit incorrectly, perceived as "conservative" or Republican. This ignores the fact that a majority of economists are politically liberal. The intensity of criticism directed at OIRA is vastly greater during Republican administrations, even though its stated principles have changed very little since 1981.
 - (2) Separation of powers: Congress generally dislikes it when the president exercises authority over the Executive branch. Although never as large a burr in OMB's side as John Dingell, David Macintosh tried to be.
 - (3) Staffing constraints: In the early 1980s, OIRA had about 75 professional analysts. It was down to under 40 when I left in 1998, and it has increased by a few slots since then. Meanwhile, OIRA's workload has grown by leaps and bounds. There remain just a handful of SES positions, so prospects for career advancement are very limited.
 - (4) Process defects: The world has changed a lot since the Carter administration, but centralized regulatory review has changed very little. It has at least the following three process defects:
 - (a) OIRA's review is too late: Review occurs far too late in the regulatory development process, long after scientific and economic data have been collected, analyzed and shoehorned into regulatory risk analysis, and after agencies have made their risk management decisions.

- (b) OIRA review is too focused on economics: Science and risk assessment are critical inputs into RIAs, but OIRA’s scientific capacity has always been limited.
- (c) OIRA lacks authority: Its only real authority is to say “no” to a risk management decision, and then only temporarily. *In Bush 41 Administrator Jay Plager invented the authority to suspend review pending the delivery by an agency of a complete submission. In Bush 43 Administrator John Graham invented the “prompt letter.” Both are small marginal process changes.*

THREE-PART STRATEGY FOR FIXING AGENCY SCIENCE CAPACITY

- *First, here are some reforms that are unlikely to be successful:*
 - Reliance on scholarly peer review. *Scholarly peer review has two related purposes:*
 - (1) *to allocate scarce pages in journals*
 - (2) *to decide which junior faculty to tenure*

Neither of these purposes has anything to do with regulatory risk regulation. It was a mistake for OMB to grant a rebuttable presumption of objectivity in its 2002 Information Quality Guidelines. The limitations of scholarly peer review are becoming more apparent the closer people look at it. For an example, see Lawrence Altman’s May 2 NY Times article.

- Reliance on government-sponsored peer review. *Government-sponsored peer review has two entirely different purposes:*
 - (1) *build external legitimacy for agency work products such as risk assessments*
 - (2) *reduce the likelihood that the government would be sued, and increase the government’s likelihood of winning those suits*

Neither of these purposes has anything to do with “ensuring or maximizing” the quality of information disseminated by federal agencies. OMB’s recent peer review bulletin may make this worse.

A senior EPA staff member once told me that if he could pick the members of a peer review panel and write their charge, he could get any answer he wanted. I agree.

Peer review is useful if it’s applied early in the process and used to weed out poor quality data and analyses. Its value declines precipitously thereafter as policy matters spill in. Scientists can

ably judge the relative quality of science; limit them to this role and they will be very helpful.

- More Congressional oversight: *It's hard to imagine an institution less capable of removing politics from the process, or more likely to oversimplify complex ideas.*
- More funding for government risk analysis: *For every \$1 million of additional spending on government risk analysis, the most likely result is less than \$1 million more of dubious quality government risk analysis.*

- Here's my three-part solution:

- (1) Get scientists out of making policy, and get policy-makers out of doing science.
 - Everybody knows that policy-makers make bad scientists. But scientists also make bad policy-makers. *Science is quickly losing its legitimacy as scientists are increasingly asked to opine on policy.*
 - Scientific knowledge and understanding are very helpful for policy-makers, but that doesn't mean sensible policy-making requires extraordinary scientific expertise. People on both the left and right complain about the politicization of science. If we really want to end this, policy-makers need to keep scientists at arms' length and scientists need to refrain from kissing up to policy-makers.
 - We should remove policy-driven assumptions from regulatory risk analysis everywhere it's feasible to do so, and make them painfully transparent where it isn't.
- (2) Make policy-driven assumptions a genuine last resort. Regulatory agencies often state a preference for scientific evidence over policy-driven assumptions, but they do not reveal preferences consistent with these stated preferences. They refuse to provide clear, consistent and reliable guidance concerning what kind of scientific evidence, or how much of it, is sufficient to overcome policy-driven defaults. That creates huge uncertainty. It reduces, and in some cases, eliminates entirely, the informational value of scientific research. If this trend continues, agencies' scientific capacity won't matter because science will be largely irrelevant in regulatory decision-making.
- (3) Instill competition in the generation of regulatory risk analysis. Competition works elsewhere to reduce costs, increase

output, improve quality, and stimulate innovation and creativity. Are any of these things undesirable when it comes to the analysis and management of risk?

WHY COMPETITION IN RISK ANALYSIS IS ESSENTIAL

- The fundamental problem is monopoly power.
 - As I stated at the outset, since 1981 federal regulatory agencies have had monopoly power to decide what science and economics is used to describe the effects of regulatory alternatives. Regulatory agencies are inherently conflicted because they are, quite reasonably, advocates for what they do.
 - We know that monopolists produce too little output at too high a price and at too low a quality. They have no incentive to do otherwise.
 - In contrast, competition increases output, lowers price, improves quality, and motivates innovation. Each of these things is desirable.
- Monopoly power is contrary to the public interest.
 - For every industry trade association that objects to how some agencies conduct chemical risk assessment, there is an environmental NGO that objects to how another agency writes biological opinions and recovery plans for endangered species.
 - For every industry trade association that objects to how some agencies estimate the benefits from human health risk reduction, there is an environmental NGO that objects to how another agency estimates the benefits from building dams, levees and highways.
- Competition benefits everyone.
 - It permits all stakeholders to participate constructively. No one needs anyone else's permission to participate. No one is excluded for lack of legal standing. No one needs to hire a lawyer!
 - What's needed is a mechanism for sorting out the competing work products and deciding which best represents the best that risk analysis can do.
 - That mechanism creates the market in which competition can thrive.
- Who makes the market? This is the big question, for whoever gets to decide can control the outcome. When independent parties are asked to

decide, then the power to choose the independent parties is tantamount to the power to decide.

FINAL OFFER ARBITRATION

- My answer is *final offer arbitration*, but it's commonly known as "baseball-style arbitration" because it was popularized by Major League Baseball as a way to resolve the thorny question of how much a veteran ballplayer deserved to be paid.
- What are its essential features?
 - First, there is a relatively straightforward decision that needs to be made. In the regulatory context, it's NOT what regulatory risk management decision ought to be made. Rather, it's what we should tell the public are the likely effects, both good and bad, both intended and unintended, of each option we are considering.
 - Second, there is an arbitrator who must choose from among the competing risk analyses. The arbitrator does not mediate a settlement and cannot compromise, but must instead choose the best risk analysis from all the risk analyses available.
 - The arbitrator cannot be the regulatory agency responsible for making the risk management decision. That would kill the market in its crib.
 - I am partial to OIRA because within the Executive branch it is the agency with the broadest view of the public interest.
 - I realize that others will disagree, and in anticipation of that I propose that OIRA build a roster of competent and independent arbitrators and select one for each major proposed rulemaking. If that isn't enough independence from the politics of the reigning administration, then OIRA can select an arbitrator at random from the roster.
 - Third, there must be pre-established criteria for the arbitrator to use, and the arbitrator must actually use them.
 - The criteria set forth in OMB's information quality guidelines and Executive order 12,866 provide a great foundation.
 - The EO criteria were established and implemented by a Democrat president and have been accepted and implemented by a Republican president. The information

quality criteria are policy-neutral. We are unlikely to do any better if we start from scratch.

- To be eligible for service on the roster of arbitrators, one must accept the information quality criteria and EO 12,866 as sole authorities for selecting the best analysis.
- What are the pros and cons of final offer arbitration?
 - First, on the pro side it would virtually eliminate incentives for all stakeholders, including the regulatory agency, to exaggerate. Exaggeration is the fastest way to lose in final offer arbitration. On the con side, it could put a lot of consultants and spinmeisters out of business, and vastly increase the unemployment rate in Washington.
 - Second, on the pro side it would reduce controversies to the most salient (and usually very boring) technical issues. On the con side, Cindy Skyrzycki would have to work very hard to make very complex issues simple enough for Washington Post readers to understand.
 - Third, on the pro side it would help reach a conclusion with minimal political interference. Of course, this being Washington, that is also the con side as well.

SCIENCE

- Why do scientists choose to work for government?
 - Personal risk aversion (government employment is equivalent to tenure).
 - Relatively low quality (can't get good university jobs).
 - Policy entrepreneurship (want to change the world)
- People in the second and third categories can be dangerous.

ECONOMICS

- BCA is not controversial, despite many efforts to make it so.
 - *Damming the West* and *Priceless* both proceed from a public interest perspective, but they cannot be reconciled except insofar as whose ox is gored has changed
- Federal regulatory agencies are inherently conflicted estimating costs and benefits.
 - Benefits are systematically overstated because of embedded biases in risk assessment, which cannot be reformed as long government is the agent of reform. See above for inherent conflict of interest.
 - Some analysts (e.g., Adam Finkel) are going around saying that costs are wildly overestimated, but these claims are based on selective data and an erroneous definition of cost (i.e., expenditures, not opportunity cost).
- Contrary to myth, cost is harder to estimate than benefit. Why? Because cost = benefit foregone. Thus, federal BCA is systematically biased to understate cost and overstate benefit.
- OMB reports to congress on benefits and costs are inherently unreliable and invalid because they rely almost exclusively on flawed input data. (What would happen if OMB's reports were challenged under its own IQG?)