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WHAT COUNTS? ANALYSIS COUNTS

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Neatness Counts.
But Not As Much As Spelling.
—Sign on fifth-grade bulletin board,
Bentley School, Berkeley, California

Every fifth grader knows that A's call for both neatness and spelling. But not in equal measure. Government policy has this much in common with the fifth grade. In the design and execution of policy, leadership counts. So does organization. But not as much as analysis.

The Importance of Analysis

At least two activities, or perhaps two stages of the same activity exemplify "analysis;" first, analysts gather information so as to reduce uncertainty about the consequences of alternative decisions; and, second, they interpret the data so assembled under agreed upon rules to facilitate choice among alternatives. The first activity might loosely be called "forecasting," whereas the second is a generic "cost-benefit analysis."

The analyst's ability to forecast makes her indispensable to any rational decision maker, whether decisions are ultimately made by cost-benefit analysis, by strong ideological leadership, or by government agencies with private agendas. This is a prima facie reason that analysis matters. Analysis in the service of far-sighted leaders or well functioning organizations ought to matter since an accurate understanding of a policy's consequences is essential to achieving a goal. Good analysis leads to better informed decisions, whoever makes them.

Structured policy analysis can be useful not only in guiding decision making, but also in evaluating decisions after the fact. Indeed, it is a tautology that if leaders and organizations make decisions that turn out ex post to serve the public interest, the leaders or organizations were "good at" making those decisions. But when a decision turns out ex post to be inferior to a rejected alternative, how do we evaluate the ex ante decision? A good prior decision can be tarnished by later bad luck, as well as vice versa. Structured policy analysis lets us evaluate public decisions without relying only on
20/20 hindsight, i.e., whether the chosen policy turned out to be better than some alternative.

Our colleagues argue that wise leaders and responsive organizations lead to good public decisions. We agree that public decisions are best made by wise leaders and responsive organizations. But what if leaders are unwise or unscrupulous? What if bureaucratic rigidities foreclose options? The very independence of policy analysis is an important safeguard against misguided leaders or tyrannical organizations.

In order for policy analysis to be independent of the leaders and organizations with direct responsibility for a decision, it must proceed according to published rules and methodologies that (1) are established prior to, and independent of, the policy issue at hand, and (2) can therefore be replicated by outsiders. Because the analytic methodology can be replicated by outsiders, it imposes a necessary discipline on leaders and organizations that might abuse their power for personal or ideological ends, or might simply be lazy or incompetent.

Cost-benefit analysis is the most systematic analytic tool that is brought to bear on policy issues. It has defects. For example, it may be manipulable, and it does not decide redistribution issues very well. These deficiencies are fair game for critics who agree on the basic methodology, but who can further their own partisan interests by publicizing the alleged abuse of its application. If outside review is possible, however, the marketplace of ideas and two-party system works wonders. It may not insure the ‘proper application’ of the agreed-upon methodology, but it can sharply limit abuse.

The examples that follow illustrate two important roles for policy analysis: first, to focus attention on the importance of gathering information so as to reduce uncertainty and make informed decisions ex ante and second, to show how outside review can discipline an irresponsible or unthoughtful (or evil) bureaucracy to make decisions in the public interest. Some examples also show the particular virtues of cost-benefit analysis as a policy tool.

Reducing Uncertainties

Release of Bioengineered Organisms. For the past decade, the scientific community has been stewing over whether researchers (employed by private industry or academic institutions) should be permitted to test bioengineered organisms in the field. Much of the debate has pitted ecologists against molecular biologists. Ecologists often extrapolate from real disasters like the unthinking introduction of gypsy moths, kudzu, and starlings into foreign habitats. They argue that the introduced organisms could displace native organisms that serve a crucial role in the local ecology, with dire repercussions. Molecular biologists reply that bioengineered organisms, not tempered by natural selection, are ‘fragile’ and will therefore die out without replenishment. They also suggest that society should vest molecular biologists with the sole authority to decide such matters, since only they have a rarefield knowledge to make intelligent decisions. (‘If only ecologists were smart enough to be molecular biologists, ecologists would agree.’)

The debate within the scientific community fueled the public’s fear of mad scientists generating mutant freak creatures.

As a result of pressure from outside analysts who saw no reason for haste, decision makers in EPA and other agencies chose the cautious approach of
mandating only limited field testing. By now the public fear has largely subsided, and a scientific consensus is emerging that these organisms are not harmful.

Are the molecular biologists thereby vindicated? Did decision makers in EPA make a bad choice in requiring testing? To say so would ignore the importance of delay for information gathering. With better information, it is becoming clearer that the ecological fears are largely unfounded. But the crucial point is that no one knew that in advance. The proper course was probably to wait for more information from the field test. Professional analysts in EPA and in outside organizations realized that, where the benefits of new technology are moderate, delay is worth the benefits of information. This is true even when it turns out that if we "had known then what we know now," we would have done otherwise.

*Star Wars*. A decision to build the Strategic Defense Initiative (SDI) any time soon would be a triumph of starry-eyed leadership and politically powerful organization over dispassionate analysis. Serious consideration of production and deployment is only possible because some advocates have failed accurately to project the consequences of such an investment.

Two key uncertainties determine the potential effectiveness of SDI: Is it technically feasible? And, would it reduce the probability of a first strike if it were deployed? Take the second first. Irrespective of whether SDI is technically feasible, the strategic consequences of deploying such a system are unknown. Consider one argument: SDI is meant to deter a first strike by making it futile. But given an operative SDI shield, the response to a first strike might be a defensive attack on an incoming missile, rather than a counterstrike. Since the cost of a first strike is therefore lower, a first strike is more likely. Without passing judgment on whether SDI would be destabilizing, we merely point out that this uncertainty is real and cannot be decided by strong ideological leadership. If SDI would be destabilizing, its technical feasibility is irrelevant—deploying it would be a bad decision even if it were easy to build.

The discourse about destabilization itself represents something of a triumph of independent analysis. Formal consideration of strategic political consequences is comparatively new and owes much to the abstract and dispassionate investigation of researchers in the 1950s at the Rand Corporation. In particular, Herman Kahn's *On Thermonuclear War* considered explicitly the strategic consequences of developing the capability of a first nuclear strike. This work, a social science or game-theoretic discussion of whether first-strike capabilities would be destabilizing, provoked outrage from the scientific community at the time, which questioned the role of social scientists in scientific affairs. (Kahn met the outrage head-on with a second book, *Thinking About the Unthinkable in the 1980s*.) It is a victory of the "outside analyst"—outside the inner circle of the scientific and weapons community—that serious discussion of first-strike deterrence now focuses on strategic issues of possible destabilization, rather than merely on the technical issues preferred by members of the "organization," the scientific and weapons community, or our "leaders" in the political administration.

**Facilitating Outside Review under Agreed-Upon Rules**

*The Challenger disaster*. The space shuttle Challenger blew up because a single set of components, the O-rings, became brittle and broke when chilled below
the design specifications. This flaw was flamboyantly demonstrated to Congress when Richard Feynmann immersed an O-ring in cold water. It should have been known before lift-off was decided. Worse, verified reports showed it was known and was simply ignored.

Why? The failure was organizational. Although engineers complained of the seemingly obvious defect, no organizational ear would listen. Would outside "analysis" have helped? One presumes that if technical aspects of the space shuttle had been accessible to the public, or if the dissenting engineers could have publicized their skepticism in a scientific forum, caution would have won out. Unfortunately, outside review undermines secrecy. Organizations that are exempt from outside review according to prescribed standards very much need channels for dissent. So NASA has learned, at a high price.

Safey violations at nuclear weapons plants. Recent allegations of safety violations at the nuclear weapons plants in South Carolina, Ohio, and Washington bring into sharp focus the insidious consequences of secrecy, or the absence of outside review. In contrast, a powerful and effective lobby has challenged commercial nuclear power plants. Without debating whether the outside review has been excessive (it has shut down several plants), note that one hears no reports of comparable safety violations at commercial nuclear power plants. Independent analysis has an important role to play, even at the highly secret weapons plants owned by the U.S. Government.

Victories and Defeats for Systematic Analysis

In contrast to the examples emphasizing independence and verification, we turn now to several less glamorous examples, from issues in transportation. In many cases a policy clearly in the public interest could be ascertained by cost-benefit analysis. Sometimes the good guys armed with analysis win, sometimes not. Take the wins first.

The SST. Two decades ago, the administration was asked to subsidize the development of a supersonic transport aircraft for commercial purposes. Largely on the basis of a rigorous and well-celebrated study, the administration and Congress decided not to pursue such a policy. Often the supposed benefits of a decision not to proceed are highly speculative. In this case, however, we can observe the results of the UK–French decision to develop an operational SST. At a cost variously estimated to be $8 to $12 billion, the Concorde provides huge transport subsidies to the narrowest slice of the market.

Airline and trucking deregulation. One decade ago, on the basis of solid theoretical reasoning supported by empirical evidence, major bureaucratic reforms scrapped the traditional regulation of the ICC and the CAB. These reforms forced truckers and air carriers to compete on price as well as performance, ultimately saving consumers billions of dollars in lower prices for personal transportation and for goods transported. The average cost per mile of air travel is down by about 30% compared to the estimated cost given no deregulation, and passenger miles are up by about 30%. Annual aggregate savings to airline passengers are estimated to be $6 billion (in 1977 dollars), with only two-thirds as many accidents in 1988 as in 1978.

While the political and ideological climate for deregulation was encouraging, the impetus for deregulation came largely from outside cost-benefit
studies conducted by independent policy analysts in academia, in research institutions, and in other private agencies.

Next, ponder the defeats for analysis. For parity, we give two examples.

*Airport takeoff and landing slots.* Airport policies heavily favor small private aircraft at the expense of large commercial carriers by charging very low fixed prices for takeoff and landing slots. The prices charged are practically never related to the social costs imposed on the travelling public by an aircraft which occupies a slot in the queue, but rather are related to some standard of equality between large aircraft carrying hundreds of people and small aircraft carrying politically influential people.

*Auto quotas.* Finally, the imposition of automobile quotas in 1981 (so-called "voluntary restraint" by Japanese auto manufacturers) is a classic case of overriding analytical conclusions by political leadership. Although it is no longer surprising that free trade in finished goods is under attack, the notion that a quota is preferred to a tariff is still quite difficult to swallow. Estimates suggest that the gains to firms and auto workers from this policy amounted to less than half of the losses to consumers. Estimates like this were available before the policy was undertaken in both the academic literature and the daily press.

If, somehow, these transportation examples were atypical of government policies and programs, then we would have little reason to conclude that "analysis counts" in the promulgation and evaluation of government programs. Casual empiricism suggests, instead, that the examples drawn are broadly representative of analytical input into government policies. The examples of failure could easily have come from many other areas of government: agriculture (price supports), housing (rent control, tax subsidies), to name a few.

**Some Quibbles**

We have staked out a strong position in this article. Someone might even find it extreme. To reiterate: All public decisions should be made by some broad variant of cost-benefit analysis. This conclusion is easier for some people to swallow if decisions about individual programs are sufficiently independent of one another so that, on average, redistributive effects are minimal—even though the costs of each program are diffusely borne while the benefits are concentrated. We take this to be a rough description of reality.

Designing programs on the basis of a leader’s hunches or bureaucratic imperatives can offer no systematic advantage over systematic analysis. In any other decision process, the incentive for rent seeking through government action is strong, and thus, the decision-making process will often fall prey to interest groups.

In the presence of great uncertainty, program choice can only be made paying great attention to the forecast of outcomes (and of their variability) which arise from the application of dispassionate analysis. To proceed otherwise, for example, to rely on the great leader (or his wife’s astrologer), is to turn one’s back on the scientific revolution itself.

Given great uncertainty, some decisions will turn out to be wrong after the fact. But this is simply *not* an argument against analytical methods, for the alternatives are worse.
To be completely fair, the above description needs to be modified, if only slightly. First, in some cases the analysis itself does not reveal clear distinctions among the consequences of alternative courses of action. In these cases, either due to great uncertainty or because the more precisely estimated consequences of alternatives are rather similar, the results suggest that the decision be made on other grounds; cost or megalomania, for instance. But, of course, in these cases the conclusion itself arises directly from the analysis.

Second, the entire discussion neglects the costs of conducting the analysis. These costs are obviously not trivial and, as we have noted, they may include significant time delays. Henry Aaron once speculated on how the course of government policy in the Great Depression could have been changed if decision makers had insisted on completion of a controlled experiment before funding the WPA.8

Third and most important, in some cases analytical conclusions are subordinate to strongly held moral and ethical views. Does the case for a volunteer army hinge only upon issues of comparative finance? Does the case for public funding of abortion turn on health care costs? Is there a stronger imperative? In these cases, analysis has a role to play, but it may be sharply limited by other criteria.

Finally, lest we overstate the case: There is an important interplay between leadership, organization, and analysis in the formulation of policy. The scope and range of analysis is determined, or at least conditioned, by the leader and the organization. The converse is equally important: analysis itself can shape the leader’s agenda. For example, Michael Harrington’s insightful analysis of American poverty, delivered in gripping and readable prose, greatly influenced the chief executive.9 Less dramatically, technical reports on the income maintenance experiments influenced anti-poverty policy. Analysis may be seized upon and translated by clever leadership into a program, a crusade, or a world conquest.

In sum, analysis has clear advantages over less systematic decision making. Results can be reproduced (if not verified). Reasoning can be checked. Assumptions can be identified. Key issues of fact and interpretation can be isolated. Leaders can be forced to confront the likely consequences of actions. Analysis focuses the argument, and decisions are then more likely to be “correct” when viewed retrospectively. More important than the correctness of any single decision, however, is the cumulative effect of careful marshalling of evidence. Decision making improves only if there is a memory of cause and effect—of actions that have “worked” in some sense in particular circumstances. It is only by understanding how “if” relates to “then” that, over time, government decisions can hope to serve better the public interest.

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NOTES


6. "Physical import quotas . . . were shown to lead to the choice of an inefficient unit quality content and to generate excess welfare costs (as compared with the tariff)", Carlos Alfredo Rodriguez, "The Quality of Imports and the Differential Welfare Effects of Tariffs, Quotas, and Quality Controls as Protective Devices," Canadian Journal of Economics 12 (1979): 449.

7. "(import restraints) surely the most exorbitantly inefficient job creation program in our history" . . . "trade protection would reduce the industry's incentive to improve quality, trim production costs, moderate wage increases, and develop the well built, fuel-efficient cars that American consumers want," "Don't Curb Car Imports," Stevenson, Adlai, Chairman of Subcommittee on International Finance, New York Times, December 10, 1980.


HOW ORGANIZATION COUNTS: INCENTIVES AND INSPIRATION

John E. Brandt

For now organization counts more than leadership and analysis. A new theory, needing work but very promising, is emerging to explain how organization affects policy outcomes. Leadership and analysis remain less available, less usable, because no corresponding theory exists for how they influence events.

I begin with a reminder that standard bureaucratic implementation ordinarily is faulty. The emerging theory attributes this flawed organizational behavior to the aggregated actions of self-interested individuals who make up an organization. The prognosis remains in flux; the new theory has