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From: Lloyd Etheredge <lloyd.etheredge@policyscience.net>

Subject: 242. Red Team: New Measurements & Better NSF Performance

Dear Dr. Fischhoff, Dr. Atkinson, Dr. Slaughter, and Colleagues:

There is a conventional, mistaken view that the National Science Foundation is a well-run agency that is doing an outstanding job. A Red Team/National Academy of Sciences project can produce an historic upgrade in the contributions of social science to government learning rates. The new project should follow up the DNI's specific requests [my suggestion # 240, archived online at www.policyscience.net at II.D] and request new annual measures of NSF performance and accountability in the areas affecting the DNI's responsibilities. This memorandum explains the logic of this Red Team/National

Academy project and illustrates, in three areas, (draft) ideas of what new NSF performance measures might look like.

- An axiom of organizational behavior is that the measured variable improves. But the process may be painful or challenging: These new measurements of NSF learning rates, linked to national performance and the work of the DNI and other NSF stakeholders, will clarify quickly that NSF must be restructured and upgraded. <1>

- The new NSF Director may be open to this level of fresh thinking and civic responsibility. The new Five Year strategic plan (that I forwarded over the weekend) recognizes NSF's vital role in determining what kind of future we can create:

Also: There is a compelling civic and scientific case, now that Democrats have won the Presidency, to create these performance/accountability measures and make the urgent investments to restart the social, behavioral and economic (SBE) sciences. The data systems and infrastructure for rapid learning in the SBE sciences were quietly killed by the NSF/NSB system during the years of Republican mindlessness - when Republicans had reached "the end of history" and knew that free markets, democracy, and traditional American values (to be enforced via "culture wars") were the answers. Thus, there is a very large backlog and NSF should make up for lost time. <2>

Three Examples

This new project requires high-level participation and careful thought by the Red Team and National Academy of Science advisers. I have touched upon many issues related to rapid learning during the Fischhoff process (archived at www.policyscience.net at II.D) - e.g., the measurement of power. Here, from these discussions, are three illustrations of the kinds of new measures that might be recommended:

1.) Economics: [Goal: Upgrade the GDP/capita growth rates by at least 1% above the pre-crisis baseline].

The critical NSF performance measures should be our national economic performance

itself, for which NSF should be intellectually accountable (both for better economic policy and the rate of scientific innovation in the physical sciences). Improvements in government (domestic and global) economic forecasting and 1%+ improvements in GDP/capita growth, above baseline, for the US and other market economies, are a good place to start.

Economic forecasting should be evaluated by the Shell framework which - beyond single-point guesses - identifies, monitors, and provides timely alerts about a range of upside and downside (including catastrophic) scenarios, etc. Their assignment also would require the NSF Director and the National Science Board to create, and publish for scientific and public review, their honest self-reflective post-mortem about why NSF failed - i.e., why the government data systems and macroeconomics models, and unidisciplinary theorizing and research that NSF supported for many decades in the academic world, failed so catastrophically to be in touch with reality at home and beyond the water's edge.

2.) Partnerships for Evidence-Based Policy

A second high-priority area for measurement and strategic planning is progress in evidence-based government policy, especially reducing the range of political conflicts and the number of policy disagreements that can be addressed by NSF-supported research + evidence.

This civic learning/honest broker role implies two initiatives and areas of measurement: first, a major research program, modeled on the Michelson-Morley experiment in physics, to provide rapid, rigorous, and honest-broker evaluations of ideological and other strongly contested truth claims about domestic and foreign policies. (The measure: Make a prioritized list, and report the annual rate of progress in answering the questions. Allow anybody - including the Republican and Democrat Parties - to submit these "hot button" questions.) A second long-term initiative would create a network of Evidence-Based Partnership Centers to receive researchable questions from state and local officials, citizens and civic groups, and NGOs, whose answers will be used to inform policy

decisions and program choices in the government and non-profit sectors. These Centers, whose research programs will be created by advisory committees that rank the questions, will be a core of a SBE rapid-learning program across many of the domestic and international areas that were ignored during the Republican era.<3> <4>

3.) Measuring the Cross-Cultural Validity of NSF-supported Research.

The DNI should ask NSF to establish mechanisms for easy global, multi-cultural, scientific testing. And - next - to use these capabilities and a ranking of priorities established by the Red Team/National Academy panel, to measure and report its rates of progress and discoveries about the true universality v. cross-cultural variability/pluralism of what psychologists and other behavioral scientists (via textbooks for American undergraduates) present as universal. [See also # 12 on October 15, 2009, archived on the www.policyscience.net Website.]

For example: the DNI has a legitimate concern that America is a strongly individualist and educated society, with egalitarian norms, a democratic polity, and many unique and changing aspects to its culture. Thus, there may be alarming biases in the SBE sciences (including political psychology) built upon near-universal and convenient use of U.S. undergraduate subject pools for experimental subjects; also models of voting and political participation based on the psychology of American voters in the last half of the 20th century. These unrecognized biases might affect both the education of graduates that the DNI system hires and the contribution of behavioral science to the DNI's work of understanding a world beyond the water's edge. [For example, I have suggested that, without hierarchical psychodrama models, there could be much about the outer world - including the Islamic world and China - and perhaps some features of American life with which NSF does not have a deep scientific connection.] Historically, there always has been a tendency for imperial powers to imagine that the rest of the world is an earlier version of themselves - "closet Americans, waiting to emerge" as the diplomatic historian Robert Dallek might say. But if NSF has, with extra Republican-induced complacency, been reinforcing the complacent *hubris* of an imperial power, we should move beyond these limitations.

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<1> The needed SBE restructuring is along the lines of NIH, where independent Institutes are headed by scientists of remarkable abilities and strong research credentials (at times, Nobel Prizes). NIH's strategic planning (which operates alongside peer-reviewed individual grant systems) uses advisory panels, for each separate area, of the nation's best research scientists.

This is the right time to do the restructuring. The NSF budget is increasing. And there are alarming and obvious deficiencies in strategic planning and data systems in so many SBE areas whose success can make vital contributions to the nation's future and to a better and safer world beyond the water's edge.

<2> By contrast, our "Big Science" physical science and engineering programs have a universe of well-funded lines of research, Centers with critical masses of researchers, and large investments in data systems. Allocating new NSF budget increases to these disciplines will fund applications that are at the margin - i.e., those that have been ranked below a large quantity of the most important, productive, and funded research that already will be funded.

<3> Many Foundation Boards and NGOs would like to see research + measurement that establishes, and improves, the effectiveness of their international programs. (Often, the needed research is a "public good" that exceeds the resources of individual organizations.) These new Centers could improve the entire NGO system. For example, the Gates Foundation has learned to manage effective HIV/AIDS programs in India more quickly than USAID because the senior leadership of this unusual and large Foundation has built a strategy team with a high priority assigned to learning and increased effectiveness. USAID, by contrast, traditionally contracts for isolated evaluation studies in the \$50,000 - \$100,000 range which organize basic numbers and interview people about benefits/problems, but it does not isolate the most active ingredients and cross-fertilize ideas

and best practices across its own and NGO programs with the effectiveness that the Gates Foundation has achieved.

<4> Recommended criteria are discussed in the fresh ideas for NSF's last five year plan, archived online at www.policyscience.net at II. A. [March 2007, section 5].

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