

# THE POLICY SCIENCES CENTER, INC.

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September 17, 2011

Dr. Nina Fedoroff, President  
Dr. Alice Huang, Chair - AAAS Council  
1200 New York Ave., NW  
Washington, D.C. 20005

Dear President Fedoroff, Dr. Huang, and Colleagues:

This letter forwards a (draft) plan for the **Scientific Integrity Board**. The attachments explain the case for the Board and document the problems that it is intended to correct. I hope that the AAAS Directors will develop the plan and present it to the Council. America places great trust in the self-governance of science. We have a responsibility to recommend needed improvements.

I also attach a copy of Kenneth Prewitt's editorial in Science (August 5, 2011), "Social Science, Spared Again." Prewitt references his similar editorial in Science, published thirty years ago in 1981. Today, in 2011, AAAS's splendid leadership has organized the InterSociety Letter and support by 140+ scientific and academic institutions. The foundation has been laid to move beyond mere survival, to build rapid learning systems for the most challenging problems that we face, and (in the terms of the AAAS mission) to advance science "for the benefit of all people."

It is regrettable that, across the arc of the past thirty years, so few people and agenda-setting institutions have been willing to stand against the Republican political and lobbyist pressures. At NSF - alongside a justly honored peer review system for individual grants - a range of devices, especially at the program and budget levels and appointments, continue to kill all new social science research initiatives and data systems of scientific merit that Republicans view as socially disruptive, politically challenging, or that might be used to advocate a more activist government role in the economy.

## **The National Science Board: A Medical Malpractice Standard**

The current system has not been self-correcting. And this still is true, even after the catastrophic failure of the NSF Economics program. This failure of science and stewardship illustrates the brutal human cost, worldwide, when the National Science Board/NSF system knowingly abandons scientific integrity and statistical controls and excludes classes of variables and causal pathways from scientific data systems and investigation. At this point, I apply the standard of medical malpractice, which I hope the new **Scientific Integrity Board** (supported by AAAS and 140+ partners) also will apply.

## **Urgency and Exciting Opportunities to Design Rapid Learning Systems**

It is urgent that we solve these problems of integrity and begin to build rapid learning systems:

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The Center was founded in 1948 by Myres S. McDougal, Harold D. Lasswell, and George Dession. It may be contacted c/o Prof. Michael Reisman, Chair, 127 Wall St., Room 322, P. O. Box 208215, New Haven, CT 06520-8215. (203)-432-1993.

URL: <http://www.policyscience.net>

1.) **Economic Recovery and Growth**. We are missing too much data. NSF must move quickly, here and with scientific partners in other countries, to understand the missing variables and improved data systems that are needed to accelerate GDP/capita and jobs recovery and secure a 1% annual GDP/capita increase, above baseline, worldwide.

- Remembering the effects of economic hardship during the Depression, we are running out of time. It is urgent for the scientific community to be confrontational about the comfortable, pro-Republican accommodations of the National Science Board under the leadership of Dr. Ray Bowen (George W. Bush's appointee - now in his second term, a mechanical engineer and the former President of Texas A&M). The levels of youth unemployment in Western Europe, and UDCs (including in the Arab world) and even Black youth unemployment in some US cities are at levels that predict to demagogic, messianic, angry and fear-driven political movements with new, agitational leaders; to political instability, greater violence and terrorist recruitment; and to the potential for ethnic scapegoating. Also, the brutal debt repayment burdens and wholesale abdication of government obligations in Western Europe are just getting underway: There will be political consequences.<sup>1</sup>

There is an extraordinary upside potential, but we should be more scared than we are.

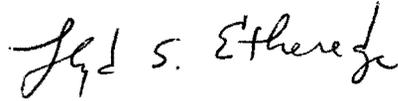
2.) **Neuroscience and Resistant Societal Problems**. The exciting advances in neuroscience cannot produce breakthroughs in our approaches to many resistant social problems affecting lower status populations until NSF builds a rapid learning system that expands beyond the politically safe "cognitive" applications. For example, it is time to test human predictions - e.g., of the hierarchical psychodrama paradigm concerning unrecognized inhibitions and a submission/ followership mechanism (including endocrine effects) that operates implicitly and automatically, without conscious or rational choice, via the visual cortex in related animal species. Yet despite its public endorsement of transformative science, the NSF/NSB system is suppressing progress by unwritten rules - undisclosed in NSF publications and to Congress, and probably illegal - that have protected White racism and its effects [in addition to Republican ideas] from scientific investigation at American research universities.

3.) **International Relations**. We are in an exciting new historical era with an extraordinary upside potential for international cooperation. There are many - delayed - lines of investigation that can foster rapid learning, here and abroad, to achieve this potential.

One of many areas for rapid learning is obvious: America is enmeshed in a new era of wars being fought - for many years and at the cost of many lives (Americans and foreigners) and trillions of dollars - according to behavioral science assumptions. Even Henry Kissinger - viewing similar problems across four wars - now agrees that America has a problem of nonlearning.<sup>2</sup>

Intense hardball players on the political Right who want to dominate national security policy and to strangle the possibility of political competition and reactivating the anti-War, campus-based activism of the 1960s, have successfully scared the NSB/NSF system. They will continue to threaten attack and use political pressure to neutralize the role of universities. As a countermove, public accountability and a Scientific Integrity Board will help to strengthen political backbones in the NSF system and the defensive wall.<sup>3</sup>

Yours truly,



Dr. Lloyd S. Etheredge

cc: AAAS Board and Council; COSSA Board; Dr. Holdren

#### Enclosures

Kenneth Prewitt, "Social Science, Spared Again" Science, August 5, 2011.

LSE, "The Bill of Rights for Scientific Freedom - # 1. The Need for a Scientific Integrity Board," w/ a cover letter to the U. S. House Committee on Science, Technology and Space, 9/13/2011.

#### Endnotes

1. Scientists cannot upgrade NSF Economics and achieve rapid learning without preparing for political warfare: After WWI, the unwillingness of wealthy and powerful Germans to pay higher taxes to meet Germany's debt/reparation obligations increased national economic hardship and political instability. Honest NSF research will give support to some reformist policies (like tax increases) that the Republican lobbying machine will fight to the last billable hour. They have been better funded and more effective than AAAS and COSSA.

2. In a recent (June 7, 2011) Op Ed column in The Washington Post. He notes that this (Afghanistan) war is the fourth American War that the US government has entered with a nonlearning baseline of overconfidence, and without a clear understanding of the foreign peoples and circumstances involved; where an unexpectedly prolonged war is being fought to unsatisfactory results at an enormously high and unanticipated cost; and where - next - the processes of political settlement and exit are hasty and without learning.

Cycles of non-learning involving hundreds of thousands of military and civilian deaths and trillions of dollars in American costs are a grim and outrageous price to pay for a weakened NSF/academic system of social science that cannot do its job of diagnosis, analysis, learning, institutional memory, and steady improvement. Kissinger's views are discussed online in "Memorandum 270. Red Team Update: Kissinger on Four Wars with Non-Learning and a Missing Theory," online at [www.policyscience.net](http://www.policyscience.net) at II.D. September 5, 2011.

3. Re national security research: it also may help to create a peace treaty with enough of the Republican leadership if - on the model of the Michelson-Morley experiment in physics - the National Science Board and NSF assure that all theories and points of view are evaluated honestly, to our best scientific abilities. The domino theory, for example, has never been tested to acceptable scientific standards and we are seeing, in the Arab Spring, the possibility of a Leftist-contagion version of this theory. The DNI system spends \$80 billion/year so it is prudent to have at least a small fraction of this amount available for independent scientific analysis and fresh thinking at universities.



Kenneth Prewitt is a professor at the School of International and Public Affairs at Columbia University and president of the Consortium of Social Science Associations. E-mail: [kp2058@columbia.edu](mailto:kp2058@columbia.edu)

## Social Science, Spared Again

LAST MONTH, A U.S. CONGRESSIONAL COMMITTEE WISELY DECIDED NOT TO CUT FUNDING OF SOCIAL science research by the National Science Foundation (NSF), despite an attack that cleverly framed the discipline as “good, just not good enough for NSF.” This claim was rebutted across the political spectrum, by physical and biological as well as social scientists, and in the business sector. In May, Senator Tom Coburn (R-OK) issued a report arguing that NSF-funded social science should be eliminated. Oddly, however, his report endorsed such funding by other agencies, where, one supposes, it meets a priority test. Indeed, the Departments of Agriculture, Commerce, Defense, Education, Health and Human Services, and the Congress itself hire, consult, fund, and contract with social scientists in great number. The senator acknowledged that the country needs social science, just not at NSF. This makes no sense. If the country needs social science at all, it needs NSF-supported fundamental research. NSF funds frontier science in physics that underpins more-applied research supported by the National Aeronautics and Space Administration and National Oceanic and Atmospheric Administration. This intelligent division of labor works equally for the social sciences, making continued funding by NSF of the highest priority.

The battle waged against the social sciences is a familiar one. In the 1940s, Vannevar Bush, the director of the Office of Scientific and Research Development, declared social science insufficiently “scientific” to warrant inclusion in NSF. He won the battle but lost the war. Yes, NSF excluded social science, but the nation, as it had during the Depression years and the war years, needed social science. When, in the 1960s, Congress wanted to learn whether policies were working as intended, it did not ask the natural sciences. It issued requests for proposals to the social sciences. Congress even discovered the “human dimensions” in policies that were largely technical in nature, such as disposing of toxic waste or building a space station. The nation needed a science of social behavior and structure. NSF funding for social science started gradually in the 1960s, and by 1975 NSF welcomed a social scientist, Richard Atkinson, as its director, under whose leadership the agency steadily funded basic methodological and theoretical research that underpinned the growing use of social science across the government and in America’s businesses.

But in 1981, the Reagan Administration, initially missing the point, returned to the attack, though with a new rationale: Social science was too successful! The field had helped design Great Society domestic programs that the Reaganites intended to end. In a backhanded compliment, defunding at NSF was a step toward disempowering social science. Wiser heads stepped in. In substantial amounts, private money flowed into neoconservative think tanks, leading to outstanding work by excellent scholars who understood that social science is not inherently pro-market or pro-government. It is a science of social consequences, no less useful for designing market solutions than government policies. In fact, documenting the unintended and costly consequences of the latter justified the former. Thanks to social science, America’s businesses benefitted from operations research, market surveys, employee testing, cost/benefit analysis, and risk assessment. Lobbyists cited social science research to advance anti-tax and deregulation policies. As a result, government-funded social science, NSF included, increased in the Reagan years, from \$197 million [in fiscal year (FY) 1982] to \$373 million (FY 1989).

In 1981, I hesitantly submitted a version of this editorial to *Science*,\* doubting that it would be accepted, and was uncertain whether natural scientists, conservative social scientists, or business leaders would support the usefulness of the social sciences. Times have changed. In 2011, *Science* invited this editorial.

– Kenneth Prewitt

10.1126/science.1210207

\*K. Prewitt, *Science* 211, 659 (1981).



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September 13, 2011

Hon. Ralph M. Hall, Chair  
Hon. Eddie Johnson, Vice-Chair  
House Committee on Science, Space, and Technology  
2321 Rayburn House Office Building  
Washington, DC 20515

Dear Chairman Hall, Ranking Member Johnson, and Members:

I write to bring to your Committee's attention an alarming gap, in two important cases, between reality and the public description of its Merit Review system that the National Science Foundation and the Chair of the National Science Board have given to your Committee.

## **1.) NSF Suppresses the Study of Racism and its Effects**

Earlier in the Obama Administration, pursuant to the announcement of NSF's commitment to transformative research, I met with NSF's Assistant Director (SBE) to brief him about new and possibly transformative research in neuroscience concerning the effect of hierarchical psychology on the brain (including effects on the endocrine system). One of many implications is that unsolved problems of educational attainment and social and economic participation affecting Blacks and other lower status populations in America could reflect unrecognized and primitive followership/submission mechanisms (observed in related animal species) activated through the visual cortex. If so, creative psychologists may be able to produce breakthroughs and a better future for everyone.<sup>1</sup>

I was stunned by his aggressive response: "This is the National Science Foundation! The National Science Foundation does not study [the effects of] racism!" I was not aware that the NSF suppressed research concerning social pathologies.

After the meeting I wrote immediately to the Assistant Director to criticize the policy. I also wrote to Dr. Bowen, the head of the National Science Board, and his staff to ask the NSB - as part of their solicitation of comments to monitor and improve the NSF Merit Review process - to review and change these suppressive policies.

Since, I have searched online: I find no written legal authority from Congress, or notification to your Committee, of NSF/NSB policies and Merit Review criteria that suppress studies of social

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pathologies and better solutions (and *de facto*, censor and change the civic role of our universities). I am told by colleagues that there is indirect evidence (for example, an ethics case at the University of Michigan, involving research by the psychologist, David Winter, in which the current Assistant NSF Director was involved) that NSF's undisclosed suppressive role has been operating for many years, reportedly with an inhibiting effect on applications.<sup>2</sup>

The only public disclosures of criteria that NSF and the National Science Board provide are those contained in official publications - i.e., scientific merit and societal benefit. They are silent about broad, hateful, and deeply controversial categories of suppression based on nonscientific criteria.<sup>3</sup> Dr. Bowen's recent testimony to your Committee may have been a coverup.

## **2.) The Politicization of the NSF Economics Program: The National Science Board's Self-Destruction of Scientific Integrity**

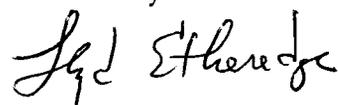
The second case concerns NSF's Economics program. The catastrophic failures that have emerged, with growing costs to Americans and worldwide, can be traced to a set of devices to neutralize honest scientific testing of key Republican ideas. These ideas that have shaped Republican policy thinking since the election of President Reagan were described recently as the "Republican Narrative" by the columnist David Brooks (attached). There have been many serious and failed efforts to restore Merit Review and build a rapid learning system for Economics at NSF and to include these kinds of cultural and psychological variables.

These imposed failures of scientific integrity have changed NSF's traditional Honest Broker role that was part of the intent of Congress when NSF was created as an independent agency (to be supervised by a National Science Board). Merit Review of individual grants has been undermined by devices (including program level decisions) to avoid public controversy arising from socially disruptive or politically challenging lines of investigation at universities.

These growing problems that limit the relevance and effectiveness of NSF's SBE Directorate have a history of thirty years. They are described in more detail, with documentation, in the attached paper concerning the need for a Scientific Integrity Board to supervise the work of the National Science Board, NSF, and their bureaucracies.

Our foundation is committed to the vision of our founders, including the late Harold Lasswell. Our goal is rapid learning and the growth of relevant social science to create a better future for everyone. If I can be of further assistance, please call me at (301)-365-5241.

Yours truly,



Dr. Lloyd S. Etheredge, Director  
Government Learning Project

Enclosures:

Lloyd S. Etheredge, "A Bill of Rights for Scientific Freedom - # 1.) The Need for a Scientific Integrity Board," with supporting documentation. September 11, 2011.

Excerpts from Report to the National Science Board on the National Science Foundation's Merit Review Process. Fiscal Year 2010. (May, 2011). NSB-11-41 online at <http://www.nsf.gov/nsb/publications/2011/nsb1141.pdf>, pp. 21-22, 26.

Excerpt from Testimony of Dr. Ray Bowen Chairman, National Science Board to the House Committee on Science, Space, and Technology, March 11, 2011, p. 4. online at [http://www.nsf.gov/nsb/publications/2011/2011\\_03\\_11\\_testimony\\_space.pdf](http://www.nsf.gov/nsb/publications/2011/2011_03_11_testimony_space.pdf), p. 4

1. These exciting possibilities were outlined in an earlier filing with the President's Council of Advisers on Science and Technology. The filing is archived online at [www.policyscience.net](http://www.policyscience.net) at II. A [concerning neuropsychology and rapid learning systems, January 2010.]

2. The David Winter ethics case involved an application for a national sample with measures of achievement motivation. The University Administration jettisoned the research from a university grant application on the grounds that a government official in Washington, published Merit Review criteria notwithstanding, would imagine that Black-White differences could be computed from Dr. Winter's dataset and, thus, the government bureaucracy would invoke an unwritten rule and quietly kill the entire package if Dr. Winter's research was included. The "no studies of racism" rule apparently has a very wide and chilling application since Dr. Winter's research was not about racism. It is unlikely that the University of Michigan would have turned against one of its distinguished scientists without a reasonable basis to believe that the threat was credible.

3. I attach relevant pages from: Report to the National Science Board on the National Science Foundation's Merit Review Process. Fiscal Year 2010. (May, 2011). NSB-11-41 online at <http://www.nsf.gov/nsb/publications/2011/nsb1141.pdf>, pp. 21-22, 26.

By contrast with what (now) appears to have been NSF's tradition of suppressive practices, the effects of social status on health, even with assurance of equal access to healthcare in the UK, is part of the exciting research network of ideas about brain mechanisms and endocrine effects, for which Marmot (The Status Syndrome, 2004) has been knighted in England.

NSF assures Congress and that public that "All relevant review criteria are described in the program announcement of solicitation" (p. 22). However, the solicitation for transformative research make no mention of criteria related (negatively) to the investigation of social pathologies and better solutions here or abroad, nor prohibitions against socially disruptive or politically challenging ideas.

Across the centuries, the history of science suggests that you cannot support transformative science without (sometimes) being socially disruptive and producing very angry attack from a

conservative/political Right. However, looking back, we are very happy that the scientific investigations were pursued: The history of the Plague shows many centuries of passionate, and even polarized, disagreement between a Right (that believed in foreign sources of infection and quarantine) and a Left (that believed in a miasmatic “bad air” theory, public sanitation, and other societal reforms to improve conditions in the low-lying dock areas inhabited by the poor). Yet we could not solve the problem until scientists - in this case, both social and physical science approaches - could provide the basis for evidence-based (rather than only belief-based) responses.

*P. Y. Testimony of  
Dr. Ray Bowen to the House  
Committee on Science, Space &  
Technology, 3/11/2011*

outstanding administrative staff to support them. The need for first-class scientific review is very high as just in the last year, NSF staff directed reviews of over 55,000 proposals. Each was thoroughly examined to ensure only the highest quality research would be supported. To sustain this excellence in merit review, the Board urges full funding for NSF's AOAM account.

For the National Science Board Office, the Board requests \$4.84 million, an increase of \$340,000, or 6.6 percent, for FY 2012. This proposed increase will allow the Board to continue to strengthen its national and NSF policy role and in oversight for NSF.

### NSB Oversight Role

When Congress established the National Science Foundation in 1950, it defined dual responsibilities for the National Science Board. First, the Board was to oversee the activities of, and establish the policies for, the National Science Foundation. Second, the Board was to serve as an advisory body to the President and Congress on national policy issues related to science and engineering and education in science and engineering. For today's testimony, I'd like to focus on our first responsibility, that of oversight of NSF.

### -Merit Review

As you all know, NSF-funded research and education projects are selected through competitive, merit-based review. This is often cited as the 'gold standard' for funding research, and is emulated by many countries as they develop and enhance their own scientific research efforts. Expert panels rely on two criteria to evaluate proposals: intellectual merit and broader impacts.

Every year, the Board reviews the outcomes of the agency's merit review process. In the latest report (for FY 2009), NSF made nearly 10,000 awards with Omnibus funding. An additional 4,620 awards were supported with the \$3 billion of American Recovery and Reinvestment Act (ARRA) funding. With the ARRA funding, NSF reached a 32 percent funding rate in FY 2009, significantly exceeding the 25 percent funding rate in the previous year.

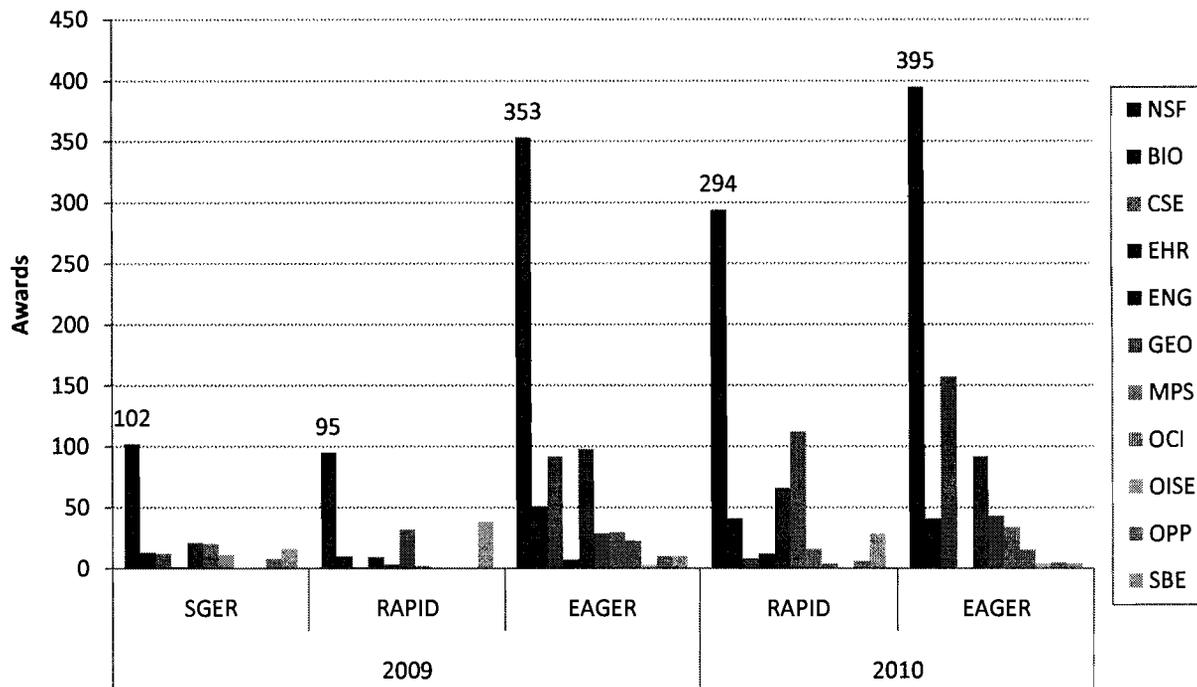
A large number of meritorious proposals are declined each year. Every year, NSF must decline highly rated scientific proposals due to budget limitations. For FY 2009, approximately \$1.3 billion in added funding could have supported the many proposals that merited awards. This represents a substantial lost opportunity in terms of both innovation and job creation.

### -MREFC

The National Science Board has statutory responsibility for the oversight of activities funded from the Major Research Equipment and Facilities Construction (MREFC) account. These are high profile, high cost activities that are unique, meaning that they must often be designed and developed without a template. In my time on the Board, the agency has made great strides in overseeing both the design and construction of these critical facilities. It is a substantial challenge to prioritize and manage MREFCs, and the Board invests substantial efforts to review scientific needs, construction costs, and operations and maintenance costs in the MREFC process.

Future operating costs for facilities are considered when the Board decides whether to approve construction of a new facility under the MREFC account. Projects are repeatedly assessed throughout the planning and construction period to ensure accurate awareness of projected operating costs. Beginning with the NSF FY 2009 budget request, the NSF Director instituted a "no cost overrun" policy requiring that the project cost estimate include adequate contingency funds to cover all foreseeable risks, and that any cost increases not

**Figure 12**  
**SGER, EAGER and RAPID Awards by Directorate**



Source: NSF Enterprise Information System 12/15/10.

Additional information on SGERs, RAPIDs, and EAGERS can be found in Appendix 10.

## V. The NSF Merit Review Process

### A. Merit Review Criteria

In FY 1998, the National Science Board approved the use of the two current NSF merit review criteria, and, in FY 2007, modified the criteria to promote potentially transformative research. The two criteria now in effect are:

**Intellectual Merit.** What is the intellectual merit of the proposed activity? How important is the proposed activity to advancing knowledge and understanding within its own field or across different fields? How well qualified is the proposer (individual or team) to conduct the project? (If appropriate, the reviewer will comment on the quality of prior work.) To what extent does the proposed activity suggest and explore creative, original, or potentially transformative concepts? How well conceived and organized is the proposed activity? Is there sufficient access to resources?

**Broader Impacts.** What are the broader impacts of the proposed activity? How well does the activity advance discovery and understanding while promoting teaching, training, and learning? How well does the proposed activity broaden the participation of underrepresented groups (e.g., gender, ethnicity, disability, geographic, etc.)? To what

extent will it enhance the infrastructure for research and education, such as facilities, instrumentation, networks and partnerships? Will the results be disseminated broadly to enhance scientific and technological understanding? What may be the benefits of the proposed activity to society?

Careful consideration is also given to the following in making funding decisions: 1) *Integration of Research and Education* and 2) *Integrating Diversity into NSF Programs, Projects, and Activities*, as is indicated in the *Grant Proposal Guide*<sup>9</sup>. Programs may have additional review criteria specific to the goals and objectives of the program. All relevant review criteria are described in the program announcement or solicitation.

Effective October 1, 2002, NSF returned without review proposals that failed to separately address both merit review criteria within the Project Summary. The number of proposals returned without review for failing to address both NSB merit review criteria had been steadily decreasing since 2003. There was a departure from that trend in 2008 and 2009, with a slight increase in the number of proposals returned without review for failing to address both merit review criteria. However, in FY 2010 the number of proposals returned without review decreased and the percentage fell to a historical low of less than a quarter of one percent.

**Table 11**  
**Proposals Returned Without Review for Failing to**  
**Address both Merit Review Criteria**

<b>Fiscal Year</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>
<b>Number of Proposals</b>	236	176	134	117	124	147	131
<b>Percent of all Proposals Decisions</b>	0.54%	0.42%	0.32%	0.26%	0.28%	0.33%	0.24%

Source: NSF Enterprise Information System 10/01/10.

## **B. Transformative Research**

The March 2007 NSB report *Enhancing Support of Transformative Research at the National Science Foundation* (NSB 07-32) has been instrumental in informing NSF's efforts to promote and support potentially transformative research. The statement of the Intellectual Merit review criteria was modified effective January 5, 2008 to reference explicitly transformative research. An Important Notice No. 130 was sent on September 24, 2007 from the NSF Director to presidents of universities and colleges and heads of other NSF grantee organizations to inform the community of the changes in the merit review criteria and NSF's effort to promote and support potentially transformative concepts.

All NSF programs encourage and support potentially transformative research proposals. This attention to promoting potentially transformative research proposals has been increased through efforts such as:

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<sup>9</sup>The National Science Foundation *Grant Proposal Guide* can be accessed online at: [http://www.nsf.gov/pubs/policydocs/pappguide/nsf08\\_1/gpg\\_index.jsp](http://www.nsf.gov/pubs/policydocs/pappguide/nsf08_1/gpg_index.jsp).

years. COVs examine the integrity and efficiency of merit review processes and the results from the programmatic investments.

- NSF directorates and offices have advisory committees (comprised of scientists, engineers, and educators). One of the tasks of these advisory committees is to review COV reports and staff responses in order to provide guidance to the Foundation. The COV reports and NSF responses are publically available on the NSF website.
- An external contractor performs an independent verification and validation of the programmatic performance measurements, which include aspects of the merit review process.

Additional information about COVs, and NSF Advisory Committees, is provided in **Appendix 11**.

#### **D. Program Officer Award/Decline Recommendations**

As noted above, the narrative comments and summary ratings provided by external reviewers are essential inputs for program officers who formulate award and decline recommendations to NSF senior management.

NSF program officers are experts themselves in the scientific areas that they manage. They have advanced educational training (e.g., a Ph.D. or equivalent credentials) in science or engineering and relevant experience in research, education, and/or administration. They are expected to produce and manage a balanced portfolio of awards that addresses a variety of considerations and objectives. When making funding recommendations, in addition to information contained in the external proposal reviews, NSF program officers evaluate proposals in the larger context of their overall portfolio and consider issues such as:

- Support for potentially transformative advances in a field;
- Novel approaches to significant research questions;
- Capacity building in a new and promising research area;
- Potential impact on the development of human resources and infrastructure;
- NSF core strategies, such as 1) the integration of research and education and 2) broadening participation;
- Achievement of special program objectives and initiatives;
- Other available funding sources; and
- Geographic distribution.

#### **E. Review Information to Proposer and Appeal Process**

Proposers receive notification of the award/decline decision, copies of all reviews used in the decision with reviewer-identifying information redacted, and a copy of the panel summary (if panel review was conducted). A "context statement" is also sent that

# **The Bill of Rights for Scientific Freedom: # 1 - The Need for a Scientific Integrity Board**

by  
Lloyd S. Etheredge <sup>1</sup>

This paper discusses the destroyed scientific integrity of NSF's Economics program that has proven deeply damaging to our country and to the world. It uses the case to illustrate why it is essential that, as a deterrent, the new Bill of Rights for Scientific Freedom include a Scientific Integrity Board with assured public hearings, full disclosure, and accountability.<sup>1</sup>

## **I. How the National Science Foundation Killed Scientific Integrity: The Republican “Nanny State” Model**

For thirty years the Republican “Nanny State” Narrative, described in the attached column by David Brooks, has been untested because a creative array of suppressive devices was deployed by the National Science Foundation and the country’s scientific Establishment. For example, concerning Economics: These Republican ideas differ from the assumptions of autonomous, rational individuals with fixed motivations enshrined in the economic models and limited national data systems developed by Kuznets et al. beginning in the 1930s. Since President Reagan’s election, Republicans have drawn upon their own scientific ideas about cultural and psychological variables to boost economic performance and remedy a wide range of social problems. While political parties unite diverse groups with many motives, and ideological claims are believed and used for a variety of reasons, a core Republican policy logic has this moral and psychological purpose to restore (in their conception) strong, healthy, self-starting and responsible individuals.

The National Science Foundation/National Science Board system was created, by federal law, to be an independent scientific agency. whose integrity the nation could rely upon. Traditionally, it has

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<sup>1</sup> Director, Government Learning Project at the Policy Sciences Center Inc., a public foundation with headquarters in New Haven, CT. URL: [www.policyscience.net](http://www.policyscience.net); Contact: [lloyd.etheredge@policyscience.net](mailto:lloyd.etheredge@policyscience.net) (E-mail) ; (301)-365-5241.

played an honest-broker role and, as it should, makes awards on the basis of scientific merit as determined by independent peer reviews. However an attack on NSF's scientific independence (and the independence of our nation's research universities) began with a pre-emptive strike by President Reagan's first OMB Director, David Stockman. The story of what happened after he threatened to zero-out all behavioral science funds in the federal budget has been told, in greater detail, elsewhere.<sup>2</sup> For purposes of this letter it is relevant that Stockman - while his political threats would have been legal if he was still a member of Congress - probably violated the law by seeking, as the OMB Director, to suborn the functioning of an independent agency. There has been no legal obligation of the National Science Boards, NSF Directors, the National Academy of Sciences and a national science Establishment to surrender to this *juvenilia*. (If they appear to have been suborned, or decided to surrender rather than fight, it was - as Stockman's lawyer might argue - their choice).<sup>3</sup>

The suppression entailed knowing destruction of the scientific integrity of the NSF Economics program. Here is why: Macroeconomics models are estimated by regression methods applied to time series data. When sets of variables are missing and uncontrolled - for example the cultural and psychological variables and pathways of Republican ideas - the linear regression methods incorrectly distribute variance across the (remaining) measured variables and make mistakes about the size, and perhaps even the arithmetic sign, of coefficients. Every social scientist learns the basic scientific logic: either control for variables statistically or experimentally or you are not doing science: and disciplines that use regression analysis methods always teach that uninterpretable results are caused by missing variables.

By now, at a time of national emergency when a successful GDP/capita and jobs recovery need reliable equations, they are not available; the historical data are unavailable to repair the damage. The conventional wisdom ("more stimulus is better") probably is still true but with the biases already introduced into equations (i.e., weighted by the 120 quarters with missing variables since 1981) the cumulative mathematical effects are beyond the ability of scientists to correct. Instead of rapid learning to improve economic performance and reduce the range of political polarization by evidence and thoughtful analysis, NSF's secret accommodations to a very small and vocal group of zealots made it complicit in Republican mindlessness and blocked the progress in evidence-based democratic decision making that NSF was created to support.

Concerning reliable data: NSF and the National Academy of Sciences obediently imposed a “Not Unless Requested to Do So” rule and, by aggressively silencing policy-relevant social science initiatives, they also killed required quality improvements in standard government data systems.<sup>4</sup> Typically, NSF supports the standard for accurate and reliable scientific measurement that physical scientists seek to achieve. [For example: In August NASA announced the discovery of a Jupiter-sized gas giant planet, TrES-2b (with a surface temperature of 980 degrees Celsius) that is orbiting a star 750 light years away.] But the aggressively obedient NSF neutralized the Committee on National Statistics (NAS/NRC) for which it provides core funding - i.e., the Committee being a standard route to bring scientific requests and standards to the federal data system. And it refused to include funds for innovative, interdisciplinary, and improved R&D data systems and new measures in its infrastructure planning: instead, NSF and the National Science Board covered-up the growing problems in Reports to Congress and in their five-year plans, even after scientists filed formal complaints with the NSF Inspector General and (with support from Dr. Reischauer and others) assured that the suppressive decisions were known, and being made, at the highest levels of NSF and the National Science Board. As the recent front page story by Binyamin Applebaum in the New York Times (August 16, 2011 - attached) illustrates, even the conventional parts of the national scientific data system are unacceptable for scientific and policy work - and the problems are much wider than reported.

For current purposes, may I emphasize four observations from this history:

## **II. Four Lessons**

A.) Physical scientists were to blame. Recently, the social sciences were attacked publicly (by Republicans in Congress) as “not scientific enough” for funding by NSF. In truth, the decisions to jettison the scientific and civic integrity of the SBE sciences were made and enforced by physical scientists who served as NSF Directors, filled almost all of the voting positions on the National Science Board, served as Presidents of the National Academy of Sciences and other positions as *seigneurs* of America’s science Establishment.

B.) The real battles across three+ decades have not been with Republicans but were elite battles within the science Establishment and (in the early years) they often were Cambridge-based. It was Frank Press from MIT who came to Washington, became head of the National Academy of Sciences,

and played a leading role to surrender to Republican demands and betray a national trust in the integrity of science. My friend Bruce Mazlish, a psychohistorian and former Dean of Humanities at MIT, believed that suppression was statesmanlike stewardship because the American people “weren’t ready” to move beyond the technocratic benefits of science to a world of evidence-based, rational public policy. David Hamburg MD, a distinguished psychiatrist (and formerly a member of Harvard’s faculty) was a leader on the other side - for maintaining scientific integrity, the independent role of university-based research and evidence-based social, economic and foreign policy. He organized the off-the-record elite meeting with the wrongdoers that - as it turns out - now establishes *prima facie* evidence of their legal culpability and knowledge that they did not have a consensus for what they were doing to the social sciences and to America, where people would need reliable Economic models in the years ahead. (Today, the same test of scientific integrity is on the desk of NSF’s Director, Subra Suresh from MIT.)

Later many others were involved. Donald Kennedy (an ex-President of Stanford) emerged as a key player, using (misusing, in my view) his office as Editor-in-Chief of Science to suppress reporting even as the NSF Economics program unraveled further and scientists urged him to reconsider (his response is enclosed). On the pro-integrity side, the late Carl Sagan published The Demon-Haunted World: Science as a Candle in the Dark (1996) although there is no evidence, on the public record, that the National Science Board considered his thesis about the necessity to fight cultural wars. Robert Reischauer, an economist, an expert and former head of the Congressional Budget Office and one of the seven members of the Harvard Corporation wrote a splendid and refreshingly honest letter (attached) and tried to help.

C.) The long reign of the suppressionists has been deeply destructive. It will take many years to repair national capacities and morale. The suppressive policies have, by now, changed the nature of the SBE sciences and the national civic role of our universities. Few of today’s macroeconomists, for example, are concerned with problems of forecasting and public data systems: More than two decades ago economists reached the point of diminishing returns from perpetual re-analysis of the stagnant government datasets and capable people moved on to problems where they could do first-rate science. One of the obvious initiatives for new R&D data systems - measures of hierarchical psychodrama to test part of the Republican Narrative - produced such intense hostility that few other people from

other disciplines were willing to waste their time with similar ideas for lines of transformational research that could be censored as socially disruptive or politically challenging without an evaluation of scientific merits: Across the past two+ decades, at these higher, strategic and program levels I have never seen a single piece of paper evidencing an honest and independent evaluation of scientific merit before the writs of execution and suppression were issued.<sup>5</sup>

D.) These breakdowns were possible, and uncorrected, because of secrecy. At the top, our national scientific Establishment operates with strong social pressures for in-group secrecy. Secrecy, in turn, has allowed and encouraged dysfunctional arrogance, top-down manipulation, evasion, and breakdowns of legal rights and of wider civic and ethical obligations. The combination of egregious scientific secrecy and government (NSF/NSB) secrecy blocked a clear, well-informed, and timely recognition by the victims (social scientists and the American people) about what was being done by people they trusted.

### **III. Quis Custodiet Ipsos Custodes?**

As a deterrent, the scientific community and the nation need an independent, supervisory Scientific Integrity Board. that will operate with open hearings and full public disclosure and accountability. Yes, according to Public Administration theory the National Science Board was supposed to fulfill this role in supervising NSF. And Yes, too - if they want to work hard enough, and have sustained political control in Washington, Republican zealots and lobbyists eventually may be able to bully and suborn even the Scientific Integrity Board. However, the only really critical barrier appears to be the testing of ideological truth claims. And a rapid learning system could make the required breakthroughs before Republican lobbyists organize against the new defensive wall.

The suppressive policies have been continued by the recent Bush-era National Science Board even after the catastrophic failure of models and data systems. By the standard of medical malpractice there was not a great deal of innocence during the era of Republican mindlessness.

The 140+ scientific organizations and universities that signed the recent InterSociety letter to support NSF and the NSF budget did so with the belief that NSF supports scientific research on the basis of scientific merit as determined by peer reviews. This defense was overdrawn and all universities and the national science budget - and America and the world - have paid a very large and growing

price for the unexpected NSF/NSB failures of scientific integrity and stewardship and the coverup. The magnitude of the betrayals and the costs make it one of the extraordinary scandals in the history of American science and higher education; and possibly a source of many teachable lessons.

September, 2011

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Enclosures:

- David Brooks, "The Vigorous Virtues," The New York Times, September 1, 2011. Editorial page column.
- Lloyd Etheredge, "President Reagan's Counseling" from Political Psychology 5:4 (1984), pp. 737-740.
- Appeal from Lloyd Etheredge to Duncan Luce, co-Chair of the National Academy of Sciences *en masse* restructuring project for the next decade, re breakdowns of scientific integrity for economics research and the future of non-learning. July 31, 1992.
- Letter from Robert Reischauer, December 23, 2002. Dr. Reischauer, an economist, was part head of the Congressional Budget Office and one of seven members of the Harvard Corporation.
- Letter from Donald Kennedy, Editor-in-Chief of Science, declining to hire an investigative reporter to inform AAAS members and other readers of the sharp intra-Establishment disagreements about abandoning scientific integrity (the Hamburg/Lederberg/Carnegie Commission meeting, that he already knew about). Even in the face of worsening performance of economic models. August 4, 2006
- Lloyd Etheredge, "Better Science and Economic Recovery: Four Areas Where Rapid Improvement is Possible," with a cover letter of August 9, 2011 to Dr. Holdren and Lander - Co-Chairs, PCAST. [The supporting letter of Robert Reischauer of December 23, 2002 also is an attachment to this letter.]
- Binyamin Applebaum, "On Economy, Raw Data Gets a Grain of Salt," The New York Times, August 16, 2011, p. A1.

## Endnotes

1. Economics is not the only NSF-caused stagnation, but it is easiest to demonstrate. Alongside killing the scientific integrity and learning rate of Economics, the scientific Establishment also betrayed the legacy of such extraordinary social scientists as Harold Lasswell and Donald Campbell. Their traditions were killed without regard to the scientific merits and potential value of analyzing the full range of new Republican policy ideas as informative experiments for rapid learning. A good dustup about the nature of reality would have been an extraordinary vehicle for undergraduate teaching.

2. For example, the background filing with the Department of Justice, “Breach of Contract, Conspiracy, Fraud, and Coverups Affecting NSF Programs,” (September 2007). Tab 3 includes the earlier background filing for the NSF Inspector General, “A Breakdown Crafted by Silences” (2002). Reference copies are online at [www.policyscience.net](http://www.policyscience.net) at II. A. I wrote the DOJ filing after incomplete investigations by the NSF Inspector General were conducted by a mid-level investigator who was not an economist or expert in social science.

3. The national scientific Establishment and NSF probably violated both legal and ethical principles. They became involved, without legal authority, in a conspiracy to violate the rights of individual scientists and grant applicants to honest evaluations based on scientific merit. An analogy would be the compliant hanging of innocent Black defendants by Southern judges and juries with the rationale that the defendants would be lynched by a mob anyway.

4. Another dimension of NSF data problems is that the world has changed, which should require new and competing R&D Economic models and new R&D interdisciplinary data systems funded by NSF (that have not been available). For example if a new international economic paradigm of predator-prey models (based on the Lotka-Volterra equations) is tested and accurate, the same group of actors will try to continue and repeat their (i.e., from their perspective) success. From the late 1970s until 2003 there were 117 systemic banking crises in 93 countries and in 27 of the earlier financial crises in the world system the national taxpayers were stuck with public debt equal to or greater than 10% of GDP. The new, competing paradigm is that we are not observing old-fashioned “irrational exuberance” but a growing *modus operandi* of alpha predators in a system with asymmetries of brainpower and wealth. It is another paradigm-transformative idea worth testing.

Testing the “Nanny State” model is only the simple beginning of the challenges that our NSF and the National Science Board have to meet if they want transformative science.

5. The last round before the catastrophic failure is at Tab 2 at “NSF Recommendations: Fresh Thinking for the 21<sup>st</sup> Century. Selected Recommendations for NSF’s Five-Year Plan (2006-2011),” March 2007. Online at *ibid*. An FOIA filing indicated that the case was never circulated for evaluation of the scientific merits of taking corrective action during 2006-2011.

The new hierarchical psychodrama/neuroscience paradigm and measures for testing ideologi-

cal truth claims are an independent dimension of the story and outside the focus of this discussion. The new paradigm was vetted with the Group for the Advancement of Psychiatry when I was Ittelson Consultant to that organization: the connect-the-dots mappings across disciplines and narratives are in several online documents on the Website: e.g., “Wisdom and Public Policy” in Robert Sternberg and Jennifer Jordan (Eds.) A Handbook of Wisdom: Psychological Perspectives (NY: Cambridge University Press, 2005), pp. 312-314 and the diagram “In Plato’s Cave” and pp. 319-321, online (ibid.) A further set of applications and predictions for rapid learning and potential breakthroughs about a range of societal problems, integrating findings by Robert Sapolsky, were outlined for PCAST in the second filings of Recapitalization ideas from 2010, also at II. A.

The hierarchical paradigm really is worth testing: intense resistance and evasion can suggest, to a psychologist, that we are observing a key area for learning.

The New York Times. September 1, 2011

## **The Vigorous Virtues**

By DAVID BROOKS

There's a specter haunting American politics: national decline. Is America on the way down, and, if so, what can be done about it?

The Republicans, and Rick Perry in particular, have a reasonably strong story to tell about decline. America became great, they explain, because its citizens possessed certain vigorous virtues: self-reliance, personal responsibility, industriousness and a passion for freedom.

But, over the years, government has grown and undermined these virtues. Wall Street financiers no longer have to behave prudently because they know government will bail them out. Middle-class families no longer have to practice thrift because they know they can use government to force future generations to pay for their retirements. Dads no longer have to marry the women they impregnate because government will step in and provide support.

Moreover, a growing government sucked resources away from the most productive parts of the economy — innovators, entrepreneurs and workers — and redirected it to the most politically connected parts. The byzantine tax code and regulatory state has clogged the arteries of American dynamism.

The current task, therefore, is, as Rick Perry says, to make the government “inconsequential” in people's lives — to pare back the state to revive personal responsibility and private initiative. There's much truth to this narrative. Stable societies are breeding grounds for interest groups. Over time, these interest groups use government to establish sinecures for themselves, which gradually strangle the economy they are built on — like parasitic vines around a tree.

Yet as great as the need is to streamline, reform and prune the state, that will not be enough to restore America's vigorous virtues. This is where current Republican orthodoxy is necessary but

insufficient. There are certain tasks ahead that cannot be addressed simply by getting government out of the way.

In the first place, there is the need to rebuild America's human capital. The United States became the wealthiest nation on earth primarily because Americans were the best educated. That advantage has entirely eroded over the past 30 years. It will take an active government to reverse this stagnation — from prenatal and early childhood education straight up through adult technical training and investments in scientific and other research. If government is “inconsequential” in this sphere, then continued American decline is inevitable.

Then there are the long-term structural problems plaguing the economy. There's strong evidence to suggest that the rate of technological innovation has been slowing down. In addition, America is producing fewer business start-ups. Job creation was dismal even in the seven years before the recession, when taxes were low and Republicans ran the regulatory agencies. As economist Michael Spence has argued, nearly all of the job growth over the past 20 years has been in sectors where American workers don't have to compete with workers overseas.

Meanwhile, middle-class wages have been stagnant for a generation. Inequality is rising, and society is stratifying. Americans are less likely to move in search of opportunity. Social mobility has been flat for decades, and American social mobility is no better than European social mobility.

Some of these problems are exacerbated by government regulations and could be eased if government pulled back. But most of them have nothing to do with government and are related to globalization, an aging society, cultural trends and the nature of technological change.

Republicans have done almost nothing to grapple with and address these deeper structural problems. Tackling them means shifting America's economic model — tilting the playing field away from consumption toward production; away from entitlement spending and more toward investment in infrastructure, skills and technology; mitigating those forces that concentrate wealth and nurturing instead a broad-based opportunity society.

These shifts cannot be done by government alone, but they can't be done without leadership from government. Just as the Washington and Lincoln administrations actively nurtured an industrial economy, so some future American administration will have to nurture a globalized producer society. Just as F.D.R. created a welfare model for the 20th century, some future administration will have to actively champion a sustainable welfare model for this one.

Finally, there is the problem of the social fabric. Segmented societies do not thrive, nor do ones, like ours, with diminishing social trust. Nanny-state government may have helped undermine personal responsibility and the social fabric, but that doesn't mean the older habits and arrangements will magically regrow simply by reducing government's role. For example, there has been a tragic rise in single parenthood, across all ethnic groups, but family structures won't spontaneously regenerate without some serious activism, from both religious and community groups and government agencies.

In short, the current Republican policy of negativism — cut, cut cut — is not enough. To restore the vigorous virtues, the nanny state will have to be cut back, but the instigator state will have to be built up. That's the only way to ward off national decline.

PRESIDENT REAGAN'S COUNSELING

May, 1984

Lloyd S. Etheredge

[Research Note published in Political Psychology, 5:4 (1984), pp. 737 - 740.]

For decades, economic policy has been the territory of economists, governed by their idea that we are a nation of rational choices. President Reagan has changed the assumptions. He is using ideas familiar to psychoanalysts and clinical psychologists to diagnose the problems of the American economy and design a course of treatment. He has posed a set of problems which political psychologists can solve with great benefit to the intelligence of national policy.

The President's idea is simple. He says our economy's lack of vitality is produced because government has become a powerful, substantial presence "above" us here in America. Over the past thirty years as, in our national imagination, government became "bigger," we grew subjectively smaller to develop a national dependence. There was a "zero-sum" effect on each person's mind: as "it" (government) assumed more responsibility in national life, "we" (the people) took less. The work ethic disintegrated; productivity increases stopped; the economy stalled.

The President's economic policy follows logically. It is intellectually serious and urgent: he must provide national psychotherapy for a depressed, passive nation that expects its therapist to have a prompt and magical solution.

To effect the change he desires, our President-psychiatrist has designed a national psychodrama to inspire us, to create open space, and to reduce our idealized illusions. He is warm and supportive. He is cutting taxes and expenditures to make government above us "smaller." It may not be a cure we like, and there will be painful withdrawal symptoms, but we must again take responsibility for our own lives.

From personal experience, Dr. Reagan knows he is right. The dire predictions of his theory, made thirty years ago, appear correct to him. And in his autobiography, Where's the Rest of Me?, he sketches how he, too, was once dependent, in his case on the Hollywood studio system. He was well paid but unhappy, reading scripts written by others, never getting the leading dramatic roles he wanted to play. But then he became more

assertive, struck out on his own. Once he became his own man, life started to work for him. He made a successful

second marriage. Speaking his own ideas, he was elected Governor of California. Now, he has the leading role in the country.

Other aspects of the President's life and experience confirm the same intuitive truth. He enjoys exhilaration, and a sense of freedom, when he rides the open range on horseback, the experience of the open range for free entrepreneurship he has told us we will regain in our national psychology by cutting back that "big government" in the sky. When he escapes to California from Washington and clears brush on his ranch, he feels recharged. He knows we will feel that way too, as the American Congress "stays the course" to effect the psychological transformation he wants.

To be sure, this is a closed system of beliefs. Evidence is always interpreted in the light of what the President calls his "basic principles." If the economic recovery is slow, it only means problems of dependency and addiction to big government are deep in our national psyche. So he is under an even greater obligation to persevere until we regain our independence and self-confidence and restart the economy. He has no choice.

From the President's perspective there is likely a second cause of a slow recovery, a cause psychoanalysts and clinical psychologists often cite: we are resisting. To an unprecedented degree American news media refuse to discuss a national problem in the language a President uses. He has been stonewalled. CBS News runs nightly news stories about the sufferings imposed by Reaganomics but has not yet discussed the real national problem, our psychology of dependency. It is as though the Eastern liberal news media are so addicted to the drama of an activist government, so psychologically dependent, so accustomed to demand that the President do something, that they will never admit even the possibility he could be profoundly right.

If Reagan is right, these skeptics slow the cure. The President can cut taxes and expenditures; these are actions in physical reality. But the stakes are psychological reality. For the therapy to work we must agree - that the diagnosis of dependency is right, that big government is receding, that the therapist knows what he is doing.

It is also possible our actor-President is wrong. A powerful bond to government may be true of only 2% of the population: actors, intellectuals, reporters, the people who give money to political causes or end up in Washington. How can we tell?

The President has profoundly challenged the discipline of economics. His idea about how the economy works does not come from the hundreds of complex equations of their mathematical models. The basic problem, in his view, is simple: the economy is deeply political; we orient ourselves dependently toward government in a larger-than-life drama.

Lacking objective evidence, we now are adrift and debates about economic policy are decoupled, without intellectual integrity. Administration economists have given no evidence to support the intuitive psychological ideas about the economy the President uses to set policy. They have developed no national indicators for the substantiality of images of a "big" government in the sky, for changes in achievement motivation, for the alleged zero-sum allocations of responsibility.

Now, as we "stay the course," we navigate blind, on faith alone. Congress has applied no rules of evidence. The Report of the U.S. government's Council of Economic Advisers is intellectually irrelevant; it would be rejected as a test of the President's theories by any psychology department.

If the President is right, good national psychological indicators will tell us. And, refining our understanding, they might improve the President's policy. John F. Kennedy cut taxes and the economy leaped ahead - but Kennedy also talked about achievement - a New Frontier, a man on the moon by 1970. If psychodrama is needed, perhaps these are

the themes to emphasize.

The President is not speaking in metaphors. He believes he is talking about our reality: solid, strong constituents of individual's imagination so powerful in their effects as to destroy the health of a multi-trillion dollar economy and our national spirit. His theories reflect ideas many psychologists have voiced seriously in the past: psychoanalysts have told us that, via transference, many people related to government authority, in our "mass psychology," the way as children they regarded their magically powerful parents; David McClelland of Harvard explained the economic rise and fall of civilizations by changes in the imaginations of citizens.

Currently, empirical evidence bearing upon the President's fundamental assumption is indirect and inconsistent. Self-report measures seem to deny his model: Americans say they blame themselves for economic hardship. Yet macro-level studies of election results, and individual-difference measures of self-interested and "socio-tropic" voting suggest Reagan is correct and responsibility for management of the economy is assigned to the party in power.

Such measures of attitudes and voting are open to different interpretations as reflecting either rational and secular or psychodramatic processes. Alone, they cannot dispel the fog. The deeper question is the psychological nature of American government, and what is needed is that our public debates begin to be informed by evidence, from appropriate, clinically-derived measures, of the location and substance of citizens' experience of government.

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July 31, 1992

Dr. Duncan Luce  
School of Social Sciences  
University of CA, Irvine  
Irvine, CA 92717

Dear Dr. Luce:

Thank you for your two letters and advice.

My basic criticism of the National Academy of Sciences arises because your panels serve key gatekeeper roles. They are believed to give the best advice of our most distinguished scientists on such matters as the creation of new national indicators and funding priorities for behavioral science. They give a degree of endorsement - and political protection - that can shape the decisions of foundations and government agencies. Any new line of investigation that depends upon new data series and significant funds to challenge orthodoxy - e.g., to evaluate and learn lessons from such quasi-experiments as Reaganomics - is dead without this support, especially as your panels and commissions give preferential endorsement for government and foundation funding to other (apolitical, to use your adjective) priorities.

I think we agree that your organization does not truly represent the best scientific advice of its members. Surely, as scientists, most of your members believe the Republican experiments to alter the modal personality of the American people and foster economic growth (reduce dependency, increase self-confidence and the work ethic, etc.) should be evaluated by the development of appropriate indicators.

I appreciate your organization's preference to avoid unnecessary political controversy. But there are creative ways to proceed, just as Surgeon Generals have moved, steadily but incrementally, to develop scientific studies concerning the effects of smoking on health. Or you could be oblique about raising critical questions, as in your new and inspired edited collection by Breslauer and Tetlock, Learning in U.S. and Soviet Foreign Policy.

I still think my original suggestion - of a sponsored competition to design new indicators and Michelson-Morley tests of a full range of untested ideological ideas - would be good for the country and science, fun, greeted with enthusiasm, and produce sufficiently long-term arguments about construct validity, data interpretation (etc.) to prevent a sharp and definitive political

challenge; and that there is only a low probability that John Ferejohn (for example) would be sent to the guillotine if he directed the project for the National Academy.

A team assembled by John Ferejohn probably could nail these questions by the end of the decade. I believe it would be a wise investment, and I hope you and other national leaders in the social sciences can bring it about.

Political independence - telling the truth without fear or favor, letting the chips fall where they may - will be healthier for science and the nation. A politically-neutered National Academy of Sciences is unworthy of free men and women.

May I suggest a nightmare scenario? Perhaps, all along, Congressional leaders and the public have truly wanted the best forthright, honest, and politically-independent advice of our best scientists? As a nation we go to great length to support the intellectual integrity of scientific institutions. The members of the Academy have academic tenure and are elected for life. Its institutional integrity is guarded by mechanisms stronger than we provide even our judges - rights to elect your members and officers. The Academy may acquire funds for projects, and its advising role, without a requirement to rely upon government appropriations. Yet our best political and social safeguards have failed. And perhaps, after a decade, the leaders of Congress, the public, and the social science community (and even President Bush) deeply wish that you had played a more independent role.

Congress cannot require honesty and forthrightness from the Academy. But if Congress wishes independent scientific advice, perhaps this entire matter needs to be reviewed by its oversight committees. Not to assign blame for the fierce price the nation may have paid for a decade of unnecessary ignorance and self-created scientific silence, but to consider what changes might assure intellectually independent advice and a brighter decade ahead, with improved economic growth.

I hope we have a chance to meet in the future, and under less contentious circumstances.

Yours truly,

LS

(Dr.) Lloyd S. Etheredge

cc: Kenneth Arrow  
John Ferejohn  
James Q. Wilson

**ROBERT D. REISCHAUER**  
President

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December 23, 2002

Dr. Lloyd S. Etheredge, Director  
Government Learning Project  
The Policy Sciences Center, Inc.  
P. O. Box 208215  
New Haven, CT 06520-8215

Dear Dr. Etheredge:

Thank you for your letter and thoughtful attachment. I am in complete agreement that the economic data we collect has significant deficiencies that limit our ability to understand the economy's problems and chart future policy.

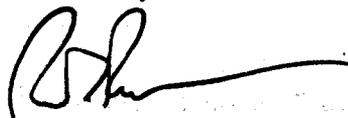
We don't collect some information that is needed and gather much that we could do without. We collect other data in insufficient detail and almost always take too long to release the data for it to be useful in policy decisions.

As you know better than I, there are many reasons for this situation. What we collect and how we collect it reflects the forces at play in the first half of the last century and those forces do not want to give anything up. Congress has little interest in devoting more scarce budget resources to collect new and better information. Few economists who use the data appreciate its limitations. They have been raised on certain data sets and treat them as if they are part of the underlying environment, not subject to change. They put a premium on continuity and don't want discontinuity in the data sets they know and use.

I don't think I would be as critical as you are about CNSTAT/NCR. I don't think they would have much of an impact even if they had done the studies and made the recommendations you think warranted. Nor do I think universities (Yale or Harvard) or the Fed could make much of a dent in the problem. Rather, I think a presidential or congressional study commission is called for—one with a clear mandate and a promise that added resources will be devoted to strengthening the statistical system based on the commission's report. Unfortunately, the prospects for such an initiative rising to the top of policymakers' lists of things to do is very, very low.

Nevertheless, I wish you well in your efforts.

Sincerely,





August 4, 2006

Dr. Lloyd Etheredge, Director  
Government Learning Project  
The Policy Sciences Center, Inc.  
127 Wall Street, Room 232  
P.O. Box 208215  
New Haven, CT 06520-8215

Dear Dr. Etheredge,

Thanks for your letter of July 11 and for several <sup>additions</sup> ~~editions~~ that have followed. I've known for some time, both because of my service on Dave Hamburg's Commission and because you've written me from time to time, of your concern about the social, behavioral, and economic sciences at NSF and at the Academies. I don't think this is an area in which the AAAS, through its elected Board of Directors is likely to take a position. On the other hand, the News department at *Science* is always interested in issues relating to how the scientific community is served (a being treated by government or by other entities). I'm forwarding a copy of your letter to Colin Norman, the news director, so that his staff can be made aware of this concern.

With best regards,

Sincerely yours,

Donald Kennedy  
Editor-in-Chief

DK/jw

# THE POLICY SCIENCES CENTER, INC.

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August 9, 2011

Drs. John Holdren and Eric Lander, Co-Chairs  
Presidents Council of Advisers on Science and Technology  
725 17<sup>th</sup> St., NW - Room 5228  
Washington, DC 20502

Dear Dr. Holdren and Dr. Lander:

Economics is an unreliable science, but we have the brainpower and technology to do much better. I recommend that you convene a high-level panel of distinguished scientists and experienced practitioners to review and improve upon the unreliability of the models and data systems used by Dr. Summers et al. to design our economic recovery package.

When the space shuttle Challenger exploded, or when a bridge collapses, we know the proper scientific response.

The panel will be tasked to answer the question: Where did the science go wrong and how can we do better? The job will have two components: 1.) an urgent assignment to design and deploy R&D data systems to learn the sources and causes of scientific unreliability in the recovery process equations; 2.) a long term assignment to develop an R&D rapid learning system to improve models and data systems as a foundation to raise the rate of GDP/capita (by 1%/year) above the pre-crisis baseline.

I attach a discussion of four areas where rapid scientific improvement is possible.

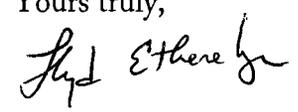
This is the second collapse of a bridge using the same models, methods, materials, and consulting engineers. The science - generously supported for many decades by NSF - also was supposed to be sufficiently in contact with reality to keep us from awakening to discover the worst global economic crisis since the Depression. We can stipulate that Dr. Summers et al. were brilliant and did the best that they could: we should test the hypotheses that the underlying science should be improved.

The Policy Sciences Center Inc. is a public foundation.

The Center was founded in 1948 by Myres S. McDougal, Harold D. Lasswell, and George Dession. It may be contacted c/o Prof. Michael Reisman, Chair, 127 Wall St., Room 322, P. O. Box 208215, New Haven, CT 06520-8215. (203)-432-1993.

URL: <http://www.policyscience.net>

Yours truly,

A handwritten signature in black ink, appearing to read "Lloyd S. Etheredge". The signature is written in a cursive style with a large initial "L" and "S".

Dr. Lloyd S. Etheredge

August 9, 2011

To: Drs. John Holdren and Eric Lander, Co-Chairs - PCAST

From: Dr. Lloyd Etheredge - Project Director <sup>1</sup>

Re: **Better Science and Economic Recovery: Four Areas Where Rapid Improvement is Possible**

PCAST members may believe that somewhere - for example, at the National Science Foundation - academic scientists are being funded for creative, multi-disciplinary work that quietly, but continually, is improving macroeconomic models and data systems as quickly as possible. This image is false. The NSF system is dysfunctional. If there were to be an independent, blame-oriented panel it would quickly discover a legacy of blunt and angry and ignored communications, including by former CEA Chairs from both Democratic and Republican Administrations (who questioned whether there was something mentally wrong with NSF's Republican-era leadership). The scientific warnings extend back almost a decade to the enclosed letter from Bob Reischauer, former head of CBO, who began to warn in the late 1990s that older forecasting models, data systems, and methods were scientifically, eroding. In no other serious scientific field would an NSF Director be unresponsive to such a problem. The current head of the Social, Behavioral, and Economics Directorate - a legacy from the Republican/Bement period - is a historian experienced in light analysis of demographic data and with other agendas and interests.

Here are ideas in four areas where we can do better, and a high-level panel can get us moving:

**1.) Coefficient estimation.** We need faster and better ways to estimate coefficients. Traditionally, national datasets were expensive and economists accepted quarterly data. However, since the profession estimates coefficients by regression equations this method updates too slowly when the world is changing.

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<sup>1</sup> Government Learning Project, Policy Sciences Center. Contact: lloyd.etheredge@policyscience.net; 301-365-5241 (v). URL: www.policyscience.net

**2.) Better and Faster Data.** Several retrospective studies have identified that the greatest source of error in government macroeconomic forecasting arises from an astonishingly large degree of unreliability and error that are typical of the government's own data that are supplied for the forecast. Government economic data evolve across a cycle of estimates and revisions that can extend up to three years. In the current recovery, the latest revisions show a typically large error (20%, 5% drop v. 4% drop) in starting numbers that informed the design of the recovery package.

We should be more outraged about this component of unreliable science. Today, the banking system uses electronic transactions and clears most of the transactions of the entire economy reliably within a few days. Wal-Mart has terabytes of data and sales results from all stores and products, worldwide, updated every 24 hours. We can do better. We need an independent evaluation and a high-level panel to provide a roadmap and priorities and to tell people to get moving.

### **3.) The Psychology (etc.) of Downturns and Recoveries**

Much of econometric forecasting is designed to estimate normal periods and trends: the methods are not good at forecasting turning points, which is when new measures and refined analysis methods must be designed and deployed quickly to shape public policies. We need to set aside the hope that recessions are behind us and develop, instead, emergency measures that can be deployed to understand the psychology and other features of the decline and recovery processes. We resort to broad, general psychological terms ("confidence") and guess (probably correctly) that fiscal stimulus should be high and interest rates low. But even if confidence is the key term, we do not yet have a good theoretical model of how to do better than we are doing. The null hypothesis is that we are doing the best that we can and that nothing will make much difference - but this hypothesis and state of mind needs to be challenged.

A related point: We do not have a large N of these recessions/catastrophies. We should be capturing a lot more data that could help us, and other countries worldwide, in the future.

### **4.) Double-Value Recoveries**

The Obama Administration has provided bold leadership to think about double-value recovery policies - how should a stimulus package be structured to buy new infrastructure investments with

extra long-term benefits? The Journal of Economic Literature has a recent review article on productivity research which suggests another path to a better and faster recovery. There appear to be large variations in the productivity of firms in each business category: a plant at the 90th percentile in each category produced twice the output, for the same measured inputs, as a plant at the 10th percentile.<sup>2</sup> This suggests that, with timely information about best practices (which can be available) many companies that now have growing profits and retained earnings could be guided to make new, smart investments - from these funds or by borrowing at the very low interest rates - that both stimulate the economy and increase their own performance in the long run. A modest amount of additional data could be a catalyst to an exciting new dimension for the recovery process. [Jack Grayson would be an excellent consultant: his [www.apqc.org](http://www.apqc.org) initiative is mapping best practices across industries.] The panel can acquire the additional data that it needs and establish priorities for a rapid outreach program that is future oriented, confident, exciting and about creating a better future for each company.

### **Drawing Upon Financial Sector and Other Expertise**

There are several reasons to ask leading scientists from several fields and practitioners to constitute this panel, rather than academic economists alone. Three brief comments:

1.) Scientists in other fields, like meteorology or biology, are accustomed to modeling complex, adaptive systems with even more advanced models and equations than are standard in macroeconomic forecasting. Scientists in these fields also will be shocked and outraged at the unreliability and lags in acquiring data and will be a strong voice to upgrade data systems quickly.

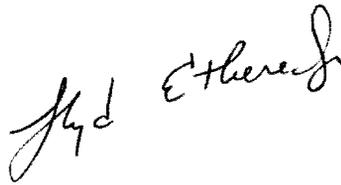
2.) Most academic economists left the field of macro-economic forecasting years ago. Government datasets have been stagnant and eroding in a changing world: there were just too many diminishing returns to continual reanalysis and - a much longer story - to fighting with an uninterested NSF and others. You will find fewer bold and creative specialists to recruit from the academic world than you might imagine: Dr. Summers did the best that he could.

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<sup>2</sup> Chad Syverson, "What Determines Productivity?" (June, 2011). The same mechanisms (+ low current interest rates) could stimulate recovery globally: Syverson reports data of even larger variations (e.g., 5:1) for China and India.

3.) We have brilliant people in the financial sector, with a fierce and rigorous respect for data - and able to make billions of dollars in highly competitive markets. We ought to ask them what additional data, processed how quickly, they would want if they were designing a state-of-the-art data and decision making system for a maximum-rationality national policy? Dr. Shaw may be able to advise you about their potential interest. It could be a brilliant package: Nobody will object to abundant financial-sector billionaires if their brainpower also is deployed on the side of speeding and sustaining GDP growth for everyone; and they probably will benefit from raising GDP/capita growth, in the US and worldwide, by 1% above the pre-crisis baseline, too.

Attachment: Letter from Bob Reischauer

A handwritten signature in black ink, appearing to read "Jy d Etherish". The signature is written in a cursive, somewhat stylized font. The "Jy" is written with a large, looping initial, and "d Etherish" follows in a more fluid, connected script.

**ROBERT D. REISCHAUER**  
President

Direct Dial: 202-261-5400  
Fax: 202-223-1335  
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December 23, 2002

Dr. Lloyd S. Etheredge, Director  
Government Learning Project  
The Policy Sciences Center, Inc.  
P. O. Box 208215  
New Haven, CT 06520-8215

Dear Dr. Etheredge:

Thank you for your letter and thoughtful attachment. I am in complete agreement that the economic data we collect has significant deficiencies that limit our ability to understand the economy's problems and chart future policy.

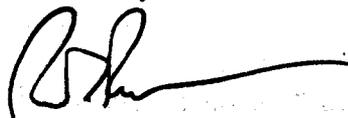
We don't collect some information that is needed and gather much that we could do without. We collect other data in insufficient detail and almost always take too long to release the data for it to be useful in policy decisions.

As you know better than I, there are many reasons for this situation. What we collect and how we collect it reflects the forces at play in the first half of the last century and those forces do not want to give anything up. Congress has little interest in devoting more scarce budget resources to collect new and better information. Few economists who use the data appreciate its limitations. They have been raised on certain data sets and treat them as if they are part of the underlying environment, not subject to change. They put a premium on continuity and don't want discontinuity in the data sets they know and use.

I don't think I would be as critical as you are about CNSTAT/NCR. I don't think they would have much of an impact even if they had done the studies and made the recommendations you think warranted. Nor do I think universities (Yale or Harvard) or the Fed could make much of a dent in the problem. Rather, I think a presidential or congressional study commission is called for—one with a clear mandate and a promise that added resources will be devoted to strengthening the statistical system based on the commission's report. Unfortunately, the prospects for such an initiative rising to the top of policymakers' lists of things to do is very, very low.

Nevertheless, I wish you well in your efforts.

Sincerely,



August 16, 2011.NYTimes, p. A1.

## On Economy, Raw Data Gets a Grain of Salt

By BINYAMIN APPELBAUM

WASHINGTON — When the government announced in April that the economy had grown at a moderate annual pace of 1.8 percent in the first quarter, politicians and investors saw evidence that the nation was continuing its recovery from the depths of the financial crisis. The White House called the news “encouraging” and the stock market extended its bull run.

Three months later, the government announced a small change. The economy, it said, actually had expanded at a pace of only 0.4 percent in the first quarter.

Instead of chugging along in reasonable health, the United States had been hovering on the brink of a double-dip recession.

How can such an important number change so drastically? The answer in this case is surprisingly simple: the Bureau of Economic Analysis, charged with crunching the numbers, concluded that it had underestimated the value of vehicles sitting at dealerships and the nation’s spending on imported oil.

More broadly, politicians and investors are placing a great deal of weight on a crude and rough estimate that has never been particularly reliable.

“People want the best information that we have right now. But people need to understand that the best information that we have right now isn’t necessarily very informative,” said Tara M. Sinclair, an assistant professor of economics and international affairs at George Washington University. “It’s just the best information that we have.”

The growth rate that the government announces roughly one month after the end of each quarter — news much anticipated in Washington and on Wall Street — has been off the mark over the period from 1983 to 2009 by an average of 1.3 percentage points, compared with more fully analyzed figures released years later, according to federal data.

The second and third estimates, announced at subsequent one-month intervals, are no more

reliable. The first quarter this year offers a typical example. The government estimated the annual growth rate at 1.8 percent in May and 1.9 percent in June before issuing its most recent estimate of 0.4 percent.

Perhaps more important, the government underestimated the depth of the recession by a wide margin, initially calculating that the economy contracted by an annual rate of 3.8 percent in the last quarter of 2008. It now estimates the contraction rate at 8.9 percent. Instead of an annual growth rate of 0.2 percent from the fourth quarter of 2007 through the first quarter of 2011, the government now estimates that the economy contracted at an annual rate of 0.2 percent during that period.

The basic problem is easy to understand: More than half of the ingredients in the first estimate are based in whole or in part on projections from past months. The government doesn't actually know how much people spend on their cellphone bills or how much companies spend on construction. It simply makes an educated guess based on past spending. Even in the third estimate, 22 percent of the data still comes from projections.

If basic assumptions start changing rapidly — business failures during a recession, start-ups during a recovery — the estimates can quickly lose touch with economic reality.

“When we most want timely information is when they're least able to give it to us,” said Professor Sinclair. “That's exactly when those historical patterns are breaking down.”

The Bureau of Economic Analysis, an arm of the Commerce Department, makes some efforts to warn users about these problems. It emphasizes transparency and is uncommonly open to public questions. It says it provides a valuable public service, but that the data reflects only the best available information. But policy makers, investors and the public continue to treat the data as highly significant.

“These are really not much more than educated guesses and yet the marketplace puts enormous weight on them because financial markets are high-frequency trading places based on immediate data,” said Madeline Schnapp, director of macroeconomic research at TrimTabs Investment Research.

A growing number of economists say that the government should shift its approach to measuring growth. The current system emphasizes data on spending, but the bureau also collects data

on income. In theory the two should match perfectly — a penny spent is a penny earned by someone else. But estimates of the two measures can diverge widely, particularly in the short term, and a body of recent research suggests that the income estimates are more accurate.

Justin Wolfers, a professor of business and public policy at the Wharton School of the University of Pennsylvania, publicly predicted earlier this summer that the government would sharply reduce its estimate of first-quarter growth, simply by looking at the income estimate buried inside the bureau's initial release.

The income data also captured the depth of the recession much sooner.

“It is appalling how little attention we economists pay to measurement issues,” Professor Wolfers said. “The expenditure data looked bad but not dreadful. The income data was dreadful. And it subsequently turned out the absence of urgency among policy makers was largely a result of looking at faulty data.”

Professor Wolfers said that in his native Australia, the government estimates growth by averaging the two techniques with a third, related approach. Private firms use similar methods.

Officials at the bureau have said that measuring expenditures has proved to be a more reliable methodology. The estimates are very accurate in one important respect: it is exceedingly rare for the bureau to estimate that the economy is shrinking when it is actually growing, or that it is growing when it is actually shrinking. The bureau meets that standard 98 percent of the time.

What went wrong in the first quarter?

The largest change was because of an annual event. The Census Bureau completed an estimate of the value of vehicles awaiting sale in 2010, based on data collected directly from dealers.

Until July, the bureau had relied on an estimate from a private company, Ward's, which counts vehicles but estimates their values. Based on that data, the bureau estimated that inventories had declined by \$30.3 billion in the fourth quarter as sales outpaced the arrival of new cars.

Last month, based on new data, it concluded that inventories fell by only \$17.9 billion.

The bureau estimates that inventories shrank by an even smaller amount in the first quarter —

although it won't get equally accurate data until next July — but the effect of the revision was to reduce the difference between the two quarters, and thus to reduce the rate of growth.

The bureau estimates that this change alone is responsible for nearly half the difference between its initial estimate of 1.8 percent first-quarter growth and its current 0.4 percent estimate.

A second major change involves the value of imported oil. The bureau announced a permanent change to its methodology last month to improve the way that it calculates the value of oil, and it concluded that spending on imported oil was higher than it had originally estimated. The details are byzantine but the result is clear enough: roughly 0.5 percentage points of growth vanished.