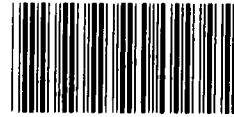BY THE COMPTROLLER GENERAL

Report To The Chairman, Subcommittee On Science, Research, And Technology, House Committee On Science And Technology

OF THE UNITED STATES

Better Communication Could Help Clear Up Confusion Over "Silly" Research Grants

National Science Foundation grants to support social science research are often termed "silly" because the reason for the research is not made clear. The Foundation needs to do a better job of communicating to the Congress and the public why these grants are awarded.

The Foundation should require each Program Award Recommendation for a social science research grant to explain, in clear, simple language, why the project is important and what long-term benefits may result. Summaries of Completed Projects should explain the broader social and human implications of the research findings. The Foundation also should clear up the confusion over the proper documents to use in explaining why the grants are awarded.

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PAD-80-46
FEBRUARY 7, 1980

B-197494

The Honorable George E. Brown, Jr.
Chairman, Subcommittee on Science
  Research, and Technology
Committee on Science and Technology
United States House of Representatives

Dear Mr. Chairman:

On July 5, 1979, the Subcommittee asked us to obtain
information on social science research funded by the National
Science Foundation to find out whether the Foundation is
awarding "silly grants" and whether the grants are duplicating
other research funded by the Foundation or other agencies. In
accordance with discussions with your office, we focused our
work on the process the Foundation uses to award social science
grants in the Directorate for Biological, Behavioral, and Social
Sciences, and on the policies and procedures that are intended
to ensure that quality research is funded and awards duplicating
past or ongoing research are precluded. As agreed, we did not
evaluate how well the process or the policies and procedures
ensure that quality research is supported or that duplicate
awards are not made since this would have required an evalu-
ation of the research supported in the grants, and we were not
in a position to provide the appropriate scientific expertise
to do that.

At the Subcommittee's request, social science research
funded by the Foundation's Directorate for Engineering and
Applied Science (formerly Applied Science and Research Appli-
cations, ASRA) was not included in our work. In fiscal year
1979, the Foundation obligated almost $44 million for social
science research through the programs included in our work.

In conducting our work we (1) obtained information on
the grant award process and the policies and procedures
intended to ensure quality research and preclude duplication
used by the Directorate for Biological, Behavioral, and Social
Sciences, and the Foundation to award social science grants;
(2) interviewed key Foundation officials, especially those
responsible for awarding social science grants; (3) reviewed
hearings and House floor debates on the Foundation's fiscal

year 1980 budget submission; (4) discussed with Foundation
officials certain criticisms of social science grants that
claimed to duplicate resea.ch already done; (5) analyzed the
public information documents the Foundation supplied to Members
of Congress for several grants criticized in the Congressional
Record; (6) obtained information on the Foundation's policies
and procedures for its Summaries of Completed Projects; and (7)
reviewed the 1976 National Research Council report, "Social
and Behavioral Science Programs in the National Science Founda-
tion."

We briefed the Subcommittee staff on the results of our
work on November 5, 1979, and were then asked to submit the
briefing information in writing to the Subcommittee. The
Appendix to this letter contains this information. The
Appendix describes the process and policies and procedures
the Foundation uses to award social science grants in the
Directorate for Biological, Behavioral, and Social Sciences.
The Appendix does not contain information regarding the
effectiveness of the process. However, it points out some
problems with the Foundation's efforts to communicate the
reasons why individual social science grants are awarded.
Foundation officials reviewed a draft of the Appendix. They
generally agreed with the actions we recommended that the
Foundation take. They also suggested some minor changes in
the wording of the text, most of which we incorporated.

The Foundation relies heavily on its peer review system
as the main procedure which is intended to ensure that qual-
ity social science research is funded and that duplication
does not occur, although the Foundation has other procedures
in addition to peer review. The Foundation has external
"oversight" advisory committees of scientists who periodically
review the social science programs. A 1976 report by a National
Academy of Sciences' Social Sciences Committee concluded that
while the quality of the Foundation's social science research
was excellent, the Foundation needed to do a better job of com-
municating, in laymen's language, why social science projects
are funded and the benefits that result from them.

During our work, we found a similar problem in the
Foundation's social science grant award process. The problem
appears to be inadequate explanations in, and/or improper
use of, the documents the Foundation prepares that explain
to the Congress and the public why individual social science

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projects are supported and what benefits will be or were received as a result of supporting these projects. Also, some confusion apparently exists among Foundation officials regarding the intended use of the documents that are supposed to explain why social science projects are funded. Inadequate explanations in Foundation documents, and the confusion over their proper use, appears to cause criticisms of certain social science projects. We also found that while individual social science grants are sometimes criticized as "silly" based on their titles alone, Foundation officials believe such criticisms might continue because it is difficult to identify those grants that will sound "silly" to anyone who might read only the grant title.

We believe the Foundation needs better explanations in the documents it uses to justify why individual social science grants are awarded. The Foundation also needs to clear up the apparent confusion over the proper documents to use in explaining why these grants are awarded. Better communication of the reasons why individual social science grants are awarded could lessen the criticisms of certain social science grants.

RECOMMENDATIONS

We recommend that the Director of the National Science Foundation take the following actions to improve the communication of the reasons for funding individual social science grants.

--Require the Program Award Recommendation for every social science grant to contain, in addition to existing requirements, a clear and simple explanation of: (1) why the project is important, and (2) what long-term intellectual and economic benefits may be obtained.

--Require the Summaries of Completed Projects to include, in addition to existing requirements: (1) a statement of the meaning of the research findings for broader social and human concerns, and (2) a list of publications that resulted from the research.

--Clear up the confusion about the purposes of the Project Summary, the Program Award Recommendation, and the Summary of Completed Project. The Project

Summary is a technical abstract prepared for the
Smithsonian Scientific Information Exchange and
other scientists; the Program Award Recommendation
constitutes the program officer's official justifi-
cation for the expenditures of public funds and
should be used to explain to the Congress and the
public why a project was funded; the Summary of
Completed Project is an account of the objectives
of the research, the nature of the findings, and
the meaning of the findings for broader social and
human concerns.

MATTERS FOR CONSIDERATION
BY THE SUBCOMMITTEE

The Subcommittee might want to consider the following
actions which could improve the communication of the Foun-
dation's reasons for funding individual social science
research grants.

--Emphasize during the House floor debates (1) the
purpose of the Project Summary, Program Award
Recommendation, and Summary of Completed Project;
(2) the role of the peer review system in pro-
viding quality control and guarding against dupli-
cative research; and (3) the dual nature of the
peer review system used by the Foundation's social
science programs; i.e., ad hoc and panel reviews.

--Make sure that the Program Award Recommendations
are readily available for every grant that the
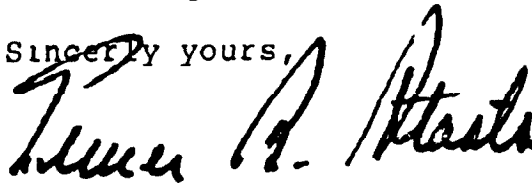Subcommittee believes may be subject to criticism.

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Our recommendations, if implemented, might not totally
eliminate criticisms of individual social science grants
awarded by the Foundation. However, we believe that our
recommendations could lessen the frequency of the criti-
cisms. At a minimum, our recommendations could provide for

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better disclosure of the reasons why individual grants are supported, which might enable more enlighted discussion of the merits of funding social science research.

As you know, section 236 of the Legislative Reorganization Act of 1970 requires the head of a Federal agency to submit a written statement on actions taken on our recommendations to the House Committee on Government Operations and the Senate Committee on Governmental Affairs not later than 60 days after the date of the report and to the House and Senate Committees on Appropriations with the agency's first request for appropriations made more than 60 days after the date of the report.

As arranged with your office, we are sending copies of this report to the following Foundation officials: Dr. Richard C. Atkinson, Director; Dr. Eloise E. Clark, Assistant Director, Directorate for Biological, Behavioral, and Social Sciences; and Dr. Jerome H. Fregeau, Director, Office of Audit and Oversight. Copies will also be available to other interested parties who request them.

Sincerely yours,

Comptroller General
of the United States

Enclosure

BETTER COMMUNICATION COULD HELP CLEAR UP
CONFUSION OVER "SILLY" RESEARCH GRANTS

INTRODUCTION

On July 5, 1979, the Subcommittee on Science, Research, and Technology, House Committee on Science and Technology, asked us to obtain information on the social science research funded by the National Science Foundation to find out whether the Foundation is awarding "silly grants" and whether the grants are duplicating other research funded by the Foundation or other agencies. As agreed to by the Subcommitee, the Foundation's social science research was defined as only those programs in the Directorate for Biological, Behavioral, and Social Sciences' Division of Social and Economic Sciences and the psychological, anthropological, and linguistics programs in its Division of Behavioral and Neural Sciences. At the Subcommittee's request, social science research funded by the Foundation's Directorate for Engineering and Applied Science (formerly Applied Science and Research Applications, ASRA) was not included in our work. For the programs we reviewed, the Foundation obligated in fiscal year 1979 almost $44 million for social science research, $25.4 million in the Division of Social and Economic Sciences, and almost $18.6 million in the Division of Behavioral and Neural Sciences. We briefed the Subcommittee staff on November 5, 1979, on the results of our work and were then asked to submit the briefing information in writing to the Subcommittee. As requested, this appendix contains the information provided at that briefing.

Our work focused on the process the Foundation uses to award social science grants. In conducting our work we:

   --obtained information on the process used by the
     Division of Social and Economic Sciences, the Division
     of Behavioral and Neural Sciences, the Directorate for
     Biological, Behavioral, and Social Sciences, and the
     Foundation to award social science grants, and on the
     policies and procedures that are intended to preclude
     social science grants from duplicating past or present
     research, and to assure that quality research is funded;

   --interviewed key Foundation officials, especially those
     responsible for awarding social science grants;

   --reviewed the House and Senate Appropriations Committees'
     hearings and Senate Appropriations Committee's hearings
     on the Foundation's fiscal year 1980 budget submission,

and the Congressional Record's coverage of the House
floor debate on the Foundation's fiscal year 1980
authorization bill and on the authorization act
conference report;

--discussed with Foundation officials certain criticisms
that claimed social science grants duplicate research
already done;

--analyzed the "public information" documents the Founda-
tion supplied to Members of Congress for several grants
criticized in the Congressional Record;

--obtained information on the Foundation's policies and
procedures for its Summaries of Completed Projects;
and

--reviewed the 1976 National Research Council report,
"Social and Behavioral Science Programs in the National
Science Foundation."

ASSESSING THE PROBLEM

During the discussions which led to the request, the
Subcommittee staff noted that the Committee has experienced
increased criticisms of the Foundation's annual authorization
bill when it is debated on the House floor. It was noted that
some House members criticize the Foundation's bill by referring
to the "silly" sounding social science grants as examples of
waste and an overblown Foundation budget, and that members
allude to the duplication or overlap of social science grants
between the Foundation and other agencies.

Types of criticisms

We reviewed records of the Committee hearings and House
floor debates on the Foundation's fiscal year 1980 authori-
zation bill and found two different types of critics. The
first questioned the value of funding social science research.
The second questioned specific aspects of the Foundation's
social science grant award process; i.e. why specific social
science research grants were funded, the adequacy of the
Foundation's Summaries of Completed Projects, "silly" grant
titles, and whether the Foundation's social science grants
duplicate other research funded by the Foundation or other
agencies.

Assessing the value of federally funded social science research, the issue raised by the first set of critics, is outside the scope of this study. Opponents of federally funded social science research claim that social science research is not objective. Supporters claim the methodology of the social sciences is scientific and that social science research addresses important questions. The philosophical and political question will most likely continue to be debated as long as social science research receives Federal funds. The issue could be put into better perspective by explaining what knowledge has been produced and by providing examples of important research results and benefits that came from federally funded social science research.

The criticisms of the process the Foundation uses to award social science grants fall into several categories. Criticisms of individual grants usually centered on the questions: why is this research important? Why was this grant awarded? The Summaries of Completed Projects--the documents the Foundation requires researchers to use to summarize the results of their research--have been criticized because they were not written in a language understandable by the average citizen. Titles of social science grants that sound "silly" give critics the opportunity to allege that the Foundation is wasting money on frivolous projects. The criticism that the Foundation's social science research duplicates other research was noted recently by one critic who claimed that six out of six randomly selected Foundation social science grants duplicated research already completed. The criticisms are discussed in detail later in this appendix.

Sources of information for the critics

We identified many of the sources of information that congressional critics use to single out the social science programs and grants they criticize. Each Member of Congress receives a daily list of grants and contracts awarded by the Foundation. The list of awards includes the congressional district; the award title; the researcher's name, institution and department; and the amount and duration of the award. Any Member of Congress who requests information from the Foundation on an award is usually provided the Project Summary, the Program Award Recommendation, and the award's budget for the grant. Another source is the Summaries of Completed Projects. These summaries are public information documents that are published by the Foundation after the end of each fiscal year and show the results of grants that were completed during the fiscal year. Upon specific request in particular

cases, the Chairmen of the congressional committees with
legislative responsibility for the Foundation have access
to the peer reviews of individual grants. Members of Congress
also receive information on Foundation awards from the news-
papers, concerned constituents, and from the committee hearings
and floor debates on the Foundation's annual authorization
and appropriation bills.

GAO's approach

   Ideally, the Subcommittee wanted us to evaluate the
worthiness of social science grants; i.e. whether the funds
the Foundation awards result in good science for scientific
purposes. Such an endeavor would have required us to evaluate
the quality of the Foundation's social science grants, and we
were not in a position to provide the appropriate scientific
expertise. We did, however, obtain information on the policies
and procedures the Foundation uses to award social science
grants that are intended to ensure that quality research is
being funded and to preclude awards from duplicating past or
ongoing research (discussed below). This information is to be
considered only descriptive in nature, not evaluative.

THE PROCESS THE FOUNDATION USES
TO AWARD SOCIAL SCIENCE GRANTS

   The process the Foundation uses to award social science
grants and establish funding priorities is essentially the
same as that used by other science areas in the Foundation.
It starts with unsolicited proposals received by the Founda-
tion from researchers in the scientific community. The
Foundation's social science funding priorities are based pri-
marily on the proposals received, advisory panel input, and
contacts with researchers in the field. The Foundation's pro-
gram officers are responsible for evaluating and recommending
whether or not to fund the proposals. The social science
programs use a two-stage peer review system to help the
program officers evaluate the proposals.

Setting program priorities

   According to Foundation officials, each social science
programming office prepares planning documents to highlight
areas of research based on proposal flow (number and quality
of proposals), advisory panel input, and contacts with
researchers in the field. The "highlights" are areas that
are expected to be important in future research efforts.

The research programs respond primarily to the trends revealed
by unsolicited proposals. The priorities reflect what is
happening in the scientific community--that is, the program
officials do not arbitrarily decide what areas to fund, but con-
sider the factors noted above and base their decisons, in part,
on what the community expects to be important areas of research.

Foundation officials said that the planning documents
prepared by each of the programming offices are combined to
form the division's plan. The directorate compiles the
divisions' plans, evaluates them through the zero-base
budgeting mechanism, and submits a comprehensive plan to the
Office of Planning and Resources Management. This Office,
again using the zero-base budgeting mechanism, prepares
material used by the Foundation's Director and the National
Science Board to set the priorities listed in the Foundation's
budget submission to the Congress.

Directorate officials stated that these priorities do
not necessarily limit the range of subjects that might be
supported in the future. Any social science research proposal
that promises to add significantly to scientific knowledge
is considered for funding even if it does not fall into the
identified priorities.

Disseminating program priority information

Information on the areas of social science research
supported by the Foundation is disseminated through the
divisions' fliers, the Foundation's Guide to Programs, and
program officers' contacts with scientific researchers. The
fliers are one-page listings of the types of research supported
by the various programs in each division. The Guide to Programs
summarizes information about the programs and describes the
principal characteristics and basic purposes of each. The Guide
is intended as a source of general information and guidance
for institutions and researchers interested in submitting pro-
posals to the programs. Program officers also provide general
information and guidance when they attend professional meetings
and visit research institutions.

Proposal evaluation process

When the Foundation receives a proposal, it is assigned
to a program officer familiar with the proposal's scientific
field. The program officer is responsible for making sure the
proposal is carefully evaluated and for recommending to
higher management whether or not to fund the proposal. The

program officer can draw on several sources, including peer
review, staff review, consultation with other Federal
agencies, and site visits to help form a basis for his
recommendations.

The peer review system is the heart of the proposal
evaluation process. The Foundation uses the system as a
means of consulting with scientists and educators throughout
the country (generally outside the Foundation) who specialize
in the discipline covered in a proposal. These experts (peer
reviewers), who act as advisers to the Foundation, are selected
by the program officers. Foundation policy requires that, with
certain exceptions, all research proposals receive peer review.

Each social science programming office uses a two-stage
peer review system. In the first stage, individual ad hoc
reviewers provide a detailed technical or expert review
of the scientific significance and specialty area of the pro-
posal. Then a panel of peer reviewers is convened to assess
the ad hoc reviews and to evaluate the proposal's overall
scientific significance. After the ad hoc and panel reviews
are received, the program officer analyzes them and recommends
that the proposal be funded, either in whole or in part, or
that the proposal be declined.

When the program officer recommends that a social science
proposal be funded, the recommendation is sent to higher level
management for further review and approval. This review and
approval involves the section head (only in the Division of
Social and Economic Sciences), the division director, and the
deputy assistant director of the directorate. In addition, an
action review board (discussed on page 11) reviews the proposal.
The deputy assistant director, consulting with the assistant
director as necessary, gives final programmatic approval to
the award recommendation. After this approval, the proposal
file is sent to the Divison of Grants and Contracts where it
is examined for conformance with Foundation policy on fiscal
and administrative details. After the examination, the Division
of Grants and Contracts prepares the award document. Recom-
mended awards of at least $500,000 in a single year or awards
that will result in an actual or eventual total commitment of
at least $2 million are routed from the Division of Grants and
Contracts, via the Director's action review board, to the
Director of the Foundation and to the National Science Board
for approval.

If the program officer recommends not to fund the proposal, Foundation instructions allow the directorates the flexibility to determine who can approve the program officer's decision, although this authority may not be delegated to persons below the division director. The instructions from the Directorate for Biological, Behavioral, and Social Sciences' state that division directors can approve the program officer's decision not to fund the proposal.

POLICIES AND PROCEDURES THAT ARE INTENDED TO PRECLUDE DUPLICATION

Peer review procedure

The most important procedure intended to preclude the duplication of research is the two-stage peer review process used by each social science program. The Foundation also requires that proposals contain a bibliography and a detailed statement of the work to be undertaken. The work statement is to include the objectives and expected significance of the proposed research, its relation to the present state of knowledge in the field, the previous work done on the project, and similar work in progress elsewhere.

The ad hoc reviewers are specialists in the fields of the proposed research. A program officer said that the specialists' criteria for evaluating proposals includes the importance of the topic, its relation to the ongoing work in the field, and the literature that already exists. The researchers are generally aware that their literature reviews will be analyzed by the peer reviewers and, according to one program officer, the researchers usually do a thorough job of reviewing the literature. Another program officer said that if a researcher mentions a published study that includes an area he wants to investigate because he feels more needs to be done in that area, the author of the study usually will be asked to review the proposal.

A program officer said the panel reviewers, who review the proposals after the ad hoc review is completed, represent every major field in the discipline. He said the panel constitutes an additional check on duplication because it can identify studies that could overlap the specialties of the ad hoc reviewers. The panel reviews the proposals as well as the ad hoc reviewers' comments, and provides a forum for discussion of both.

Other procedures

The Foundation has other procedures that are intended to preclude duplication. It requires that researchers show in the proposals other current sources of support and where the proposals are being submitted for funding consideration. Program officers we interviewed said they coordinated with their counterparts in other agencies to ensure that only one agency funds the proposal. They said that they also coordinate informally with other agencies when they are preparing planning documents. Several program officers said their expertise in the area helps preclude duplication because they usually know the discipline and have at least one specialty area within that discipline.

Criticism that the Foundation funded
social science projects that duplicated
other projects already completed

On June 28, 1979, a Member of Congress (who is not a member of the House Subcommittee on Science, Research, and Technology) criticized the Foundation's social science programs for awarding grants that duplicate research already done. The critic stated that this conclusion was based on a random sample of six current Foundation projects, all of which were considered dubious and duplicative.

The Foundation's response

A staff member of the House Subcommittee on Science, Research, and Technology gave the Foundation a list of books and articles that supposedly duplicated the six Foundation grants and asked the Foundation to reply to the criticism. In the Foundation's July 6, 1979, response to the staff member, it vigorously defended its position on awarding the six grants. The Foundation responded that all research proposals are to include a bibliography and a statement of the relation of the research to the present state of knowledge in the field, to previous work done, and to related work in progress elsewhere.

We interviewed the program officers responsible for the six grants criticized who cited many reasons for funding these grants. The two grants discussed at the briefing are described below. One grant was criticized because supposedly five recent books addressed the same subject

area.   The grant was entitled "The Behavior of the Dutch
Labor Market: The Rise and Fall of a High-wage Economy."
The program officer said the listing provided by the
Library of Congress must have been misread.   He explained
that the list contained only four titles, one of which was
a reprint of another, so there were actually only three
titles listed.   The program officer said that none of the
books addressed the same issues as those being addressed in
the study funded by the Foundation.

Another grant, "Conformity, Motivation and Status in
Small Groups," supposedly duplicated work already completed
because the Library of Congress listing showed 38 books and
articles had been completed on this subject in the last 3
years.   The program officer told us that 38 is an under-
estimate and there must be hundreds of publications on this
subject.   However, he said that the grant was awarded because
the researcher was a field investigator who was also skilled
in laboratory techniques and approached the subject from a
different intellectual background.   He emphasized that the
research has the potential for making a unique contribution
to the field.   The program officer said that one peer reviewer
noted that one aspect of the research had already been done.
The program officer said that, as a result, that portion of
the work was not funded.

POLICIES AND PROCEDURES THAT ARE INTENDED TO ENSURE THAT QUALITY RESEARCH IS FUNDED

The policies and procedures intended to ensure that
quality research is funded in the social sciences include the
two-stage peer review system, and the layers of review
between the program officer's recommendation and final
approval by higher management.   It is also Foundation policy
to have each program reviewed by outside experts at least
once every 3 years.   In addition, a 1976 report by the
National Research Council on the social and behavioral
sciences funded by the Foundation commented on the quality
and management of the Foundation's social science research.

Two-stage peer review

All of the social science programs use the two-stage
peer review system (see pages 6 and 7) to consult experts
who specialize in the discipline involved in a proposal.

The division director for Behavioral and Neural Sciences
said that the main advantage of the two-stage peer review
system is that the panel determines whether the proposal
contains an idea worthy of support from public funds.

The program officer analyzes the ad hoc and panel
reviews and recommends that the proposal either be awarded or
declined. If the program officer decides a proposal should
be funded, he reviews the researcher's Project Summary and
completes a Proposal Review Worksheet and a Program Award
Recommendation.

Documenting the award recommendation

These three documents, the Project Summary, Proposal
Review Worksheet, and Program Award Recommendation, represent
the minimum documentation required for every Foundation award
recommendation. These documents, along with the proposal,
peer reviews, and the grant budget form the basis of the
proposal jacket. The proposal jacket is the decision package
used by higher management when they review the program
officer's recommendation. The descriptions of the three
documents that follow are taken from the Foundation's Hand-
for Program Officers and Circular No. 129, "Standardized
Format and Content of Foundation Award Recommendations."

The Project Summary is used to record and submit
information about the project to the Smithsonian Science
Information Exchange. The Circular states that the summary
is a public document and, as such, may be widely circulated.
Therefore, the objectives of the project and the proposed
methodology should be communicated clearly, minimizing un-
explained abbreviations and jargon. The award title should
be meaningful to the relevant scientific community and not
be subject to misunderstanding by the public. The Handbook
notes that the Project Summary should include a statement of
the relevance of the research to the development of its disci-
pline or to the solution of national problems, "as appro-
priate."

The Proposal Review Worksheet is regarded by the
Foundation as confidential and is not available to the
public. The worksheet provides a summary of pertinent
factors leading to the program officer's recommendations.
This summary should specifically address peer reviewers'
ratings and significant comments that conflict with the
program officer's recommendation. In particular, all nega-
tive reviews should be discussed.

The Program Award Recommendation is the program
officer's award recommendation as well as the official
justification for the expenditure of public funds for the
grant. As a public document, the Program Award Recommendation
should contain information easily understood by an intelligent
lay person without further explanation or justification.
According to the Circular, it should contain concise state-
ments covering the significance and scientific merit of the
project's objectives, the adequacy of the techniques for
achieving the objectives, the project's relation to the
Foundation's program objectives, and the name of the program
and the program officer's signature.

Reviewing the proposal recommendation

The proposal jacket containing the program officer's
recommendation is sent to higher level management for further
review and approval as discussed on page 6. We discussed
the review of social science award recommendations with
officials at both the division and directorate levels.

The division director for Social and Economic Sciences
said that the purpose of the review by the higher levels is
to judge whether or not the proposal deserves funding. The
two major questions asked in the review process are (1) was
the review of the proposal adequately handled, and (2) do the
reviews (ad hoc, panel, and program officer) support the
decision to fund the proposal.

Directorate policies and procedures provide a
nonscience-oriented advisory mechanism, the action review
board, to ensure that the award policies of the Foundation
and the directorate are carried out. The action review board
is supposed to focus on conformance to established goals,
objectives, and procedures but not review the scientific
merit of the proposal or the professional competence of the
researcher. For example, the action review board should
review the proposed award for completeness of documentation,
appropriateness of titles and summaries, and the adequacy of
the program officer's rationale.

The deputy assistant director said he gives the final
programmatic approval to the proposal. A division director
described the deputy's review as starting with the assumption
that the grant is silly and that the supporting documentation
in the proposal jacket, especially the Project Summary, Pro-
posal Review Worksheet, and Program Award Recommendation, must
convince him otherwise. The deputy said that he reviews all

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jackets but does not review in detail the administrative
aspects, which are reviewed by the action review board. The
Division of Grants and Contracts conducts the final review of
the proposed awards to ensure consistency with applicable
Foundation policies, regulations, and directives.

Quality control oversight--
post-award process

It is Foundation policy, since 1977, to have outside
experts review each program at least once every 3 years. The
experts, knowledgeable in the program area, comprise an
advisory committee whose purpose is to review the program and
provide the Foundation's management with an advisory appraisal
of the technical, as distinct from the administrative, steward-
ship of the program by the Foundation's program managers.
Advisory committees are instructed to review a sample of pro-
posal files and answer specific questions about the management
of the program. This post-award review should include the
number and selection of reviewers and the program officer's
rationale for or against funding.

As of November 1979, advisory committees reviewed seven
of the twelve social science programs: Economics, Law and
Social Sciences, Measurement Methods and Data Resources,
Geography and Regional Science, Anthropology, Psychobiology,
and Linguistics. In general, according to the committees'
reports, the number and selection of reviewers indicated a
sufficient and appropriate review and the program officer's
rationale for or against funding was cogent and adequately
justified. Two of the committees' reports noted that a more
complete project description in the public information docu-
ments was desirable. Two other committees' reports noted that
the Program Award Recommendations should expand on the
scientific significance of the projects.   .

National Research Council Report
on the Social and Behavioral Science
Programs in the Foundation

At the request of the Foundation, the Committee on the
Social Sciences in the National Science Foundation was estab-
lished in August 1975 by the National Academy of Sciences.
Its purpose was to examine the scope and quality of the
Foundation's programs in the behavioral and social sciences
with a view to recommending possible improvements in both the
substance of the programs and the procedures for managing them.

Quality of research

The Committee said in its July 1976 report that

"* * * the quality of the basic research in the
social and behavioral sciences now supported by
the [Foundation] is excellent * * * [and that]
* * * the Foundation has a generally good reputation
among research scientists for the reasonableness and
fairness of its procedures and for its scientific
judgement in selecting projects for support * * *.
The Committee also rates the research programs very
high in terms of the relevance and potential applica-
bility of the products of the work to the problems of
society * * *."

Procedures for managing the process

The Committee said that one of the main responsibilities
of the staff who manages basic research in the social and
behavioral sciences "* * * is to represent * * * [these]
sciences at the higher administrative levels of the Foundation
and in the Foundation's negotiations with the administration
[sic] and Congress * * *." The Committee concluded "* * *
that this function has not been performed effectively * * *."
For example, the budget submission to the appropriation com-
mittees "* * * did not explain effectively, in lay language,
what knowledge was being produced by the research that was
supported or the significance of that knowledge for society
* * *." The Committee also pointed out that "* * * the recent
Congressional attack on 'silly titles' for research projects
again illustrates that the Foundation has not done a success-
ful and convincing job of communication * * *."

The Committee concluded:

"Responsibility for communicating more effectively
about the content and significance of the research
programs does not rest on the Foundation alone, but
is shared by the research community. The Foundation
can and should require from recipients of its research
grants meaningful reports on the results of their
investigations. In addition to scientific reports
directed to their fellow specialists, it is not
unreasonable to expect accounts, written in language
that is intelligible to lay people, of the objects of
their research, the nature of their findings, and the
meaning of those findings for broader social and human
concerns * * *."

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PROBLEMS IN THE FOUNDATION'S SOCIAL
SCIENCE GRANT AWARD PROCESS

A major problem in the Foundation's social science award process appears to be the documents the Foundation uses to communicate to the Congress and to the public why social science projects are supported and what benefits will be received as a result of supporting them. The Foundation continues to have problems with "silly" sounding grant titles and has had problems with the language contained in its Summaries of Completed Projects.

Problem with the Foundation's
public information documents

We found a major problem with the way the Foundation uses its public information documents to explain why the social science grants were awarded. The Project Summaries and Program Award Recommendations, which are intended to serve this purpose, do not adequately explain why the research is important or why the grants are awarded. Also, some Foundation officials do not appear to understand the purposes of the two documents or how they should be used.

We reviewed the Project Summaries and Program Award Recommendations for three social science grants criticized in recent congressional hearings and House floor debates. Two of the Project Summaries were understandable explanations of the scientific objectives of the research. However, neither explained why the research was considered important or why the grant was awarded. The third Project Summary was written in technical and scientific language and appeared to be an abstract of the research that only other scientists would understand.

The Program Award Recommendations varied in content and language. One was well written, easy to understand, and explained why the research should be funded and the potential contribution the research might make. Another contained only a short statement that did not explain why the research was important or what potential future benefits might result. The third Program Award Recommendation did not explain why the research was important or what the contributions would be, or why they would be important. It stated only that "[the research] promises to make important contributions to our understanding of the relationship between religious change and social change."

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Confusion over the purposes of
the public information documents

During a recent congressional review of several
Foundation grants, a committee member read the Project
Summary of a $45,000 grant and asked how a reasonably well-
informed layman was supposed to understand what the $45,000
was buying when the Project Summary was written in gobbledy-
gook. A discussion ensued on the purpose of the Project
Summary. The Foundation's top management said the Project
Summary is written by the researcher and that the Founda-
tion does not try to make it readable to anyone except
scientists working in the particular fields. The member
responded by noting that the Project Summary is the only
description the Committee can use as a basis for knowing
whether or not this $45,000 is justified until the project
is completed. The Foundation's top management mentioned
the Summary of Completed Project (discussed on page 17)
but the member pointed out that the Summary of Completed
Project is available only after the project is completed.
However, the Foundation's top management did not mention
the Program Award Recommendation, the document which is
supposed to provide the Foundation's justification for
awarding the grant.

A high-ranking Foundation official told us the reason
the Foundation's top managment used the Project Summary in
an attempt to justify the expenditure of $45,000 for the
grant was because they forgot the purpose of the Program
Award Recommendation. One program official, who reviews
proposal jackets, said:

> "There is a conflict within the Foundation regarding
> the use of the Project Summary: is it a technical
> abstract prepared for the Smithsonian Science Infor-
> mation Exchange, thereby necessitating technical and
> scientific language, or a document comprehensible to
> the scientifically literate reader? The Project Sum-
> mary was originally designed to get information about
> research projects to the scientists. However, over
> the years it has been used by the Foundation to in-
> form Congress of the Foundation's activities."

The confusion regarding the Project Summary does not
appear to exist in the Directorate for Biological, Behavioral,
and Social Sciences. The directorate officials we inter-
viewed agreed that the Project Summary is a technical abstract
prepared for the Smithsonian Science Information Exchange.

Furthermore, they said that the Program Award Recommendation
is supposed to justify the reasons for funding the research.
The deputy assistant director said, "I rely on the Program
Award Recommendation as a non-specialist who has to review
the award * * *. The Program Award Recommendation should
show the reason the Foundation believes the research should
be supported and include a statement on the importance of
the research."

Titles are still being criticized

Congressional criticisms of "silly titles" for research
grants indicate that the Foundation has not been totally
successful in eliminating "silly" sounding social science
awards. Each year the public, Members of Congress, or the
press identify, from among the more abstruse social science
grant titles, some they believe show that the Foundation
is wasting taxpayers' money on frivolous or otherwise objec-
tionable research. Such criticism occurred in July 1979
during the House floor debate on the Foundation's fiscal
year 1980 authorization act conference report.

We discussed the problem of "silly titles" with
directorate officials. The assistant director said that
although there is no formal review of grant titles, all levels
of review pay close attention to them: the directorate wants
the titles to be informative but not provocative. The deputy
assistant director said that titles were a problem in 1976
because they reflected the jargon of the discipline. He
believes the Foundation has been successful in getting rid of
the jargon and is now writing titles in simpler language.
He said the directorate is still monitoring titles and that
they are generally pleased with the current situation although
they still believe titles are a surface issue.

The executive secretary of the directorate's action
review board said there are no set criteria for the board's
review of titles. She said the board changes only provoca-
tive titles. The key question is whether or not the title
accurately portrays what the grant is about. The division
directors also said no guidelines exist for reviewing grant
titles, but pointed out that there are no criteria to
identify those factors which cause certain titles to be
tagged as "silly" sounding.

Language and use of the
Summaries of Completed Projects

The purpose of the Summaries of Completed Projects is
to provide the Foundation with the technical information it
needs for program management and to inform the Congress and
the public about research results.

The Foundation requires the summaries to begin with a
topic sentence stating the projects' major theses and to
continue with the objectives and scope, the techniques or
approaches used (only to the degree necessary for compre-
hension), and the findings and implications of the research.
Foundation instructions state that the summaries must be
intelligible to a scientifically literate reader. The
instructions warn authors that the summaries might be used
to answer the inquiries of nonscientists as to the nature
and significance of the research, and therefore scientific
jargon and abbreviations should be avoided.

The standard for the language used in the Summaries of
Completed Projects was a major point of dispute during the
Foundation's fiscal year 1980 appropriations hearings. Some
Committee members wanted summaries to be written in simple
English that everyone would be able to understand. The
Foundation's top management responded by saying that they do
not believe such a standard will ever be achieved, although
they are trying to make the summaries more readable to the
informed public. Foundation officials described the informed
public as those persons who generally understand articles
published in the Scientific American.

In testimony before the same Committee, the Foundation's
top management appeared to be confused about how the summaries
are used in the Foundation. They said, "We now are not fund-
ing renewals until we have received a satisfactory completed
summary for each grant." The Foundation subsequently
corrected that statement for the record, indicating that
it does not currently scrutinize the language of each sum-
mary before making additional grants to a researcher. The
Foundation's top management also said during the hearing that
the Summary of Completed Project "* * * is the most important
criterion we have in determining whether this person should
receive additional funding in the future. Consequently, it
is very cogent to the ongoing support of research." However,
the summary could not be the most important criterion because
it is not available when the funding decisions are made. This
statement was not corrected in the record.

Each year the Foundation compiles the Summaries of
Completed Projects received for that year and publishes
them in a document called "Summaries of Projects Completed."
We reviewed the fiscal year 1977 and 1978 issues of the
Summaries of Projects Completed. In the 1977 issue, the
summaries did not list the amounts of the awards, but did
contain lists of publications resulting from the grants.
In the 1978 issue, the summaries included the amount of the
award, but did not have any lists of publications. The Foun-
dation official in charge of publishing the summaries said the
Foundation changed its grant closeout requirements to allow
researchers to submit the list of publications resulting from
their grants directly to the programs that awarded the grants,
rather than with the Summaries of Completed Projects. This
change was made in 1978 after the Foundation reviewed the
data elements that were required in the Summaries of Completed
Projects and in the Final Technical Reports, both of which the
Foundation required researchers to prepare showing the final
results of their grants. The review indicated that some of
the information required in the two reports was identical or
similar. Accordingly, the two reports were redesigned into
one. Although the Foundation still requires that researchers
submit publications resulting from their grants as they become
available, the publications do not have to be submitted with
the new report since some might not be available at the time
the report is prepared. The Foundation official conceded that
the lists of publications would help show some accountability.

CONCLUSIONS

A major problem in the Foundation's social science
grant award process appears to be in the documents the
Foundation uses to communicate to the Congress and the public
why social science projects are supported and what benefits
will be received as a result of supporting these projects.
The Foundation is continuing to have problems with "silly"
sounding grant titles and has had problems with the language
used in its Summaries of Completed Projects.

The Foundation does not seem to explain adequately to
the Congress or the public why each social science project is
supported. The Foundation uses the Project Summary to explain
why the research should be funded. However, this is not the
function of the Project Summary, which results in much of the
criticism. Since the Program Award Recommendations are the
program officers' justification for the expenditure of public
funds, they are the documents that should be used to explain

why the research was funded. The Foundation requires the
Program Award Recommendations to state concisely the signifi-
cance and scientific merit of the projects' objectives, the
adequacy of the techniques proposed for achieving the objec-
tives, and the projects' relation to Foundation program
objectives. Information regarding the relevance of the
research to the development of knowledge or to the solution
of national problems might appear in the Project Summaries,
but it is not required in the Program Award Recommendations.
If the Program Award Recommendations contained this informa-
tion, they could be used to explain, in clear and simple
language, why the research is important and why the grants
were awarded.

"Silly" sounding social science grant titles might
continue to be a problem, because there is no criteria to
identify those that might sound silly. It is the support
documents that are important--most particularly the Program
Award Recommendation, which should explain the objectives,
importance, and potential benefits of the research. These
documents, if available and written in clear language, could
be used to counter criticisms based on titles alone.

The Summaries of Completed Projects can be used to inform
the Congress and the public about the results of research grants
in clear and simple language. The Foundation appears to be
attempting to do this, although the standard for the language
is not agreed upon. Requiring that the list of publications
(to date) be included with the summaries used in the annual
issue of the Summaries of Projects Completed would show the
Congress and the public some of the products that result from
the Foundation's social science research.

RECOMMENDATIONS

We recommend that the Director of the National Science
Foundation take the following actions to improve the
communication of the reasons for funding individual social
science research grants.

   --Require the Program Award Recommendation for every
     social science grant to contain, in addition to
     existing requirements, a clear and simple explanation
     of: (1) why the project is important, and (2) what
     long-term intellectual and economic benefits may be
     obtained.

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--Require the Summaries of Completed Projects to include,
in addition to existing requirements: (1) a statement
of the meaning of the research findings for broader
social and human concerns, and (2) a list of publica-
tions which resulted from the research.

--Clear up the confusion about the purposes of the
Project Summary, the Program Award Recommendation, and
the Summary of Completed Project: the Project Summary
is a technical abstract prepared for the Smithsonian
Scientific Information Exchange and other scientists;
the Program Award Recommendation constitutes the program
officer's official justification for the expenditures
of public funds and should be used to explain to the
Congress and the public why a project was funded; the
Summary of Completed Project is an account of the
objectives of the research, the nature of the findings,
and the meaning of the findings for broader social and
human concerns.

AGENCY COMMENTS

A draft of this appendix was reviewed by Foundation
officials and we received their informal comments on
January 16, 1980. The Foundation generally agreed with our
proposed actions. The Foundation suggested some minor changes
in wording and most were incorporated in this appendix.

MATTERS FOR CONSIDERATION
BY THE SUBCOMMITTEE

The Subcommittee might want to consider the following
actions which could improve the communication of the
Foundation's reasons for funding individual social science
research grants.

--Emphasize during the House floor debates (1) the
purpose of the Project Summary, Program Award Recom-
mendation, and Summary of Completed Project, (2) the
role of the peer review system in providing quality
control and guarding against duplicative research, and
(3) the dual nature of the peer review system used by
the Foundation's social science programs, i.e. ad hoc
and panel reviews.

--Make sure that the Program Award Recommendations are
    readily available for every grant that the Subcommittee
    believes may be subject to criticism.

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