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Managerial Evaluation of Social Programs

A DISSERTATION .

SUBMITTED TO THE GRADUATE FACULTY

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RICHARD M. GORTON

Norman, Oklahoma

1974

PROGRAM MANAGERS AND EVALUATION:

A CONCEPTUAL MODEL FOR CONDUCTING

MANAGERIAL EVALUATION OF SOCIAL PROGRAMS

APPROVED BY

DISSERTATION COMMITTEE

TO THURMAN WHITE

who has done so much to make it possible
for me--and others like me--to enter
the world of higher education
in mid-career

ACKNOWLEDGEMENTS

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CHAPTER I

OVERVIEW OF THE STUDY

A. Introduction

This study addresses the subject of federal social pro-
gram evaluation as a function of federal social program mana-
gers. The primary objective of the study is to develop a
conceptual approach to social program evaluation as a tool of
management. Its secondary objective is to assess the potential
for practical application of this approach. Ancillary objec-
tives are (1) to produce recommendations for content material
to be included in future public administration courses in
evaluation; (2) to produce practical recommendations for the
guidance of program managers; and (3) to produce recommenda-
tions for further research in the field of social program
evaluation.

Motivation for this study came from the fact that the
evaluation of federal social programs is generally considered
to be far from satisfactory, and that for this reason there
is great uncertainty--and disagreement--about their overall
effectiveness. This is recognized as a growing national prob-
lem, in view of the fact that these programs constituted some

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43 per cent of the FY-1973 federal budget--up from 27 per cent a decade ago.[1] Social programs have achieved top place in the federal budget during the 1970s, pulling ahead of the combined defense-space-foreign affairs sector, which dropped from 53 per cent in FY-1963 to 34 per cent in FY-1973.[2] In actual dollars the social programs grew from $30.1 billion in FY-1963 to $110.6 billion in FY-1973, reflecting the fact that their increased share is of a vastly increased total budget ($111.5 B in FY-63; $256.3 B in FY-73).[3] With this kind of money at stake, it is not surprising that we find mounting pressure from the Congress, the press, the academic world, and the general public to (1) find out which of these programs are working, and which are not; (2) determine the relative effectiveness and efficiency of those which are working; and (3) increase the effectiveness of those which are to continue to receive funding.

Two general kinds of program evaluation are needed to meet the three demands just noted. The first is policy-oriented evaluation, to assist in high-level decision making about which programs to expand, which to decrease, which to redirect, and

[1]Charles L. Schultze, et al., Setting National Priorities: The 1973 Budget (Washington, D.C.: The Brookings Institution, 1972), pp. 10-11.

[2]Ibid.   [3]Ibid.

when and how to initiate new ones. The second is management-oriented evaluation, to assist program managers in making existing programs more effective. The first relates to public policy making, while the second is a matter of public administration. As already indicated, this study deals with the public administration aspect of the problem, i.e., management-oriented evaluation.

For purposes of this study it is assumed that program managers do not normally establish the policies that give rise to their programs; they are seen simply as professional public administrators who desire to manage their programs as effectively as possible in pursuit of Congressional mandates and basic goals. It is further assumed that these managers can, indeed, act in a managerial capacity--that they can control their programs in meaningful ways, utilizing received information to make decisions which will influence program strategies, tactics, and outcomes. In short, it is assumed that federal program managers are in a position to make effective utilization of evaluation results.

In developing a conceptual approach to evaluation as a management instrument, programs have been viewed as "systems." Local projects have been seen as "subsystems," as have general communication networks, evaluation activities, and the

management process itself. The conceptual approach takes the
form of a "model," developed by synthesizing concepts extracted
from several different fields and disciplines. Major contribu-
ting fields include general systems theory, cybernetics,
operations research and systems analysis, management theory,
organization theory, and evaluation research. The end product
is a diagram supported by a series of explanatory statements.

To investigate the potential for making practical
application of the model, a questionnaire and interview survey
has been made of program and project managers in Washington,
several regional locations, and the central Oklahoma area.
Since it was considered impractical to attempt to describe the
model itself to these managers, they have been asked a series
of questions designed to assess their knowledge of--and atti-
tudes toward--program evaluation in general and several com-
ponents of the model in particular. Their answers have led to
tentative conclusions regarding the potential practical appli-
cation of this type of conceptual approach, as well as to
recommendations for incorporating it in future public adminis-
tration courses, publications, and special seminars for working
program and project managers.

The remainder of this Chapter will describe the general
climate surrounding program evaluation and some of the ways in

which this affects the program manager. First, it will review
the mounting national demand for assessment and improvement of
public social program effectiveness. Next, it will discuss
the difficult position of the program manager within the
Congress-to-client program chain. Third, it will note the
apparent paucity of public administration literature addressed
to program evaluation, and will comment on some of the types
of literature which are available. Finally, it will describe
the tendency toward conflict which exists in many manager-
evaluator relationships, and which has colored the largest
available body of literature on social program evaluation. The
Chapter closes with a number of general definitions of pertinent
terms.

B. Demands for Program Assessment

As more and more of the federal government's resources
are channeled into social programs, questions about the effec-
tiveness of such programs are being raised in many quarters.
As stated in the Brookings Institution's report on the 1973
budget:

> . . . the public is asking harder questions about
> federal programs, both new and old. It is asking
> whether they work. It is no longer enough for poli-
> ticians and federal officials to show that they spent
> the taxpayers' money for approved purposes; they are

now being asked to give evidence that the programs are producing results.[4]

Some of the reason for this is given by Thomas Morehouse, who describes:

> . . . the pervasive mood of discouragement that fol-
> lowed within a few years after the outpouring of
> federal "great society" programs in the mid-1960s--
> those programs established to organize the poor and
> fight poverty, plan and develop regional economies,
> train the jobless and underemployed, strengthen the
> public educational system, improve health services,
> create "model cities," and so on. Unfortunately, most
> of these efforts have come nowhere near fulfilling
> expectations, and the signs of failure and political
> backfire appeared all too soon.[5]

Faced with "signs of failure and political backfire," the pru-
dent thing is often to fall back and regroup. Allen Schick,
writing in early 1971, declared this to be the case:

> The current period seems to be one of pause and stock-
> taking, with few major social initiatives on the
> drawing boards. Evaluation, together with management
> improvement generally, has become a keynote of the
> Nixon Administration, and the focus has shifted to a
> reckoning of the costs and effects of existing programs
> and to an examination of what works and what doesn't
> in our vast sociopolitical enterprises.[6]

Howard Freeman and Clarence Sherwood agree with Schick:

---

[4]Ibid., p. 449.

[5]Thomas A. Morehouse, "Program Evaluation: Social
Research Versus Public Policy," Public Administration Review,
Vol. XXXII, No. 6, Nov/Dec 1972, p. 869.

[6]Allen Schick, "From Analysis to Evaluation," The
Annals, Vol. 394, March 1971, p. 58.

The multi-billion dollar "War on Poverty" has inten-
sified the demand for a concerted attempt to undertake
broadscale action-research demonstrations, and to
engage in knowledge-seeking efforts evaluated in terms
of effect--rather than merely in terms of whether or
not the program proves workable administratively or
whether or not so-called "experts" approve of it.
Certainly, without efforts in this direction, literally
billions of dollars may be spent without anyone knowing
what works and, what is perhaps more frightening, with-
out our being any better equipped to contribute to the
next round of mass change efforts.[7]

The opinions of such people as Morehouse, Schick, Freeman and

Sherwood, buried as they are in scholarly books and journals,

could perhaps be ignored in the hurly-burly of American poli-

tics. But the citizens at large--the voters--are getting the

same message via the nation's press. For example, there is

this recent staff article in Business Week:

A decade of pell-mell, hodgepodge welfare legislation
has turned the conservative cliche of 1963 into the
objective reality of 1973: Welfare is a genuine career
choice for many who would fare worse if they worked.
This is the message of a study made public last week
by Representative Martha Griffiths (D. Mich.), chair-
man of the Joint Economic Committee's subcommittee on
fiscal policy. Undertaken with the aid of the Gen-
eral Accounting Office, the study of benefit records
of sample households in six poverty areas documents for
the first time the widely suspected fact that some
families can get more out of the $100-billion non-
system of federal, state, and local benefit programs
than they could possibly earn--and more than many of
their neighbors do earn. In one Eastern city, the

[7]Howard E. Freeman and Clarence C. Sherwood, "Research
in Large-Scale Intervention Programs," in Readings in Evalua-
tion Research, ed. by Francis G. Caro (New York: Russell Sage
Foundation, 1971), p. 263.

study found that a family headed by a woman, benefit-
ting from five or more programs, can collect taxfree
benefits worth $426 a month--vs. $371 earned by the
average employed woman in the same neighborhood.[8]

This Business Week item can be matched by hundreds of similar

articles from newspapers and magazines, and one can suspect

that like sentiment has been evident in Congressional mail.

The publications of influential quasi-official organi-

zations have also given much attention to the effectiveness of

our social programs, and in these there is a definite call for

program evaluation. The Committee for Economic Development

provides illustration of this:

> Improving the process by which federal programs are
> developed, financed, and managed is a challenging task.
> The complex nature of our political system and the
> stubborn resistance to change inherent in a giant
> governmental bureaucracy pose formidable obstacles.
> Nevertheless, the magnitude of federal spending for
> public programs--totalling an estimated $230 B or
> about 22% of gross national product in the current
> fiscal year--makes such improvement essential for
> defining the optimum level of those expenditures and
> for getting the most out of the money spent.
>
> . . . .
>
> The federal government lacks adequate means for estab-
> lishing and executing programs and for evaluating the
> contributions they make relative to their cost . . . .
> . . . improvement can be achieved through better per-
> formance of the following five basic steps: 1. Formu-
> lating Program Goals and Objectives . . . . 2. Choos-
> ing Among Alternatives . . . . 3. Translating Program

---

[8]"How Welfare Keeps Women From Working," Business Week,
April 7, 1973, p. 51.

Decisions into a Plan for Action . . . . 4. Execu-
ting the Program . . . . 5. Monitoring Program
Execution.[9]

This attitude is paralleled by statements emanating from the

Urban Institute, of which the following is a sample:

> How well do federal programs for treating urban prob-
> lems succeed in their aim? This question constantly
> recurs to city officials, Congress, and specialists
> in urban affairs. It is raised most keenly, perhaps,
> by just those federal agencies that conduct the pro-
> grams. To learn the answer to that question, one
> needs a system for measuring what is working and what
> is not. Without the ability to gauge performance,
> criticisms are uninformed, solutions largely guess-
> work. The men who are charged with making and execu-
> ting policy know this. At the same time, many of them
> have the uncomfortable feeling that the art of evalu-
> ating programs and managerial practices is a neglected
> one.[10]

Thus we have the scholars, the popular press, and the presti-

gious organizations all questioning the efficacy of our bur-

geoning social programs--and the government is beginning to

respond. This is the "climate" for program evaluation, which

is nicely summarized in this paragraph:

> To some extent, all programs of planned social change,
> whether educational, economic, medical, political, or

---

[9]Research and Policy Committee of the Committee for
Economic Development, _Improving Federal Program Performance_
(New York: Committee for Economic Development, 1971), pp. 7-10.

[10]Joseph S. Wholey, John W. Scanlon, Hugh G. Duffy,
James S. Fukumoto, and Leona M. Vogt, _Federal Evaluation Policy:
Analyzing the Effects of Public Programs_ (Washington, D.C.:
The Urban Institute, 1970), p. 5.

religious, are required to provide "proof" of their legitimacy and effectiveness in order to justify public support. The demands for "proofs of work" will vary depending on such factors as degree of faith in authority and competition between opposing programs or objectives. The current proliferation of new types of social intervention which challenge traditional approaches to health, education and welfare and which compete for both public and financial support are under constant pressure to show that they are better than established programs and deserve a larger proportion of available resources. There probably comes a time in the development of any new approach to a social problem when, after an initial outburst of enthusiastic activity, a breathing period of evaluation sets in.[11]

In brief, a review of a rather broad spectrum of literature

suggests that our propensity to launch social programs has far

outstripped our ability to assess their effectiveness. And

because of this deficiency in evaluational competence, our

ability to manage these programs and to make policy decisions

about them is impaired.

C. Program Managers and Program Assessment

The program manager stands squarely in the middle of

the evaluation problem. In the first place, he would like to

be able to provide positive responses to questions from his

agency chiefs and other concerned parties about the

---

[11]Edward A. Suchman, "Evaluation for What? A Critique of Evaluative Research," in The Organization, Management and Tactics of Social Research, ed. by Richard O'Toole (Cambridge, Massachusetts: Schenkman Publishing Company, Inc., 1971), p. 99.

effectiveness of his program. If he cannot do so his funding

may be reduced, his career threatened, his ability to serve

his clients curtailed. Second, he is a professional in his

field and would like personal assurance that his program is

accomplishing what it is supposed to accomplish. But as things

stand, few managers of social action programs are in a posi-

tion to assure anyone that their programs are achieving sub-

stantial results.

In many cases, the manager's problem begins with the

fact that the goals of his program have never been clearly

stated:

> The most clear-cut evidence of the primitive state of
> federal self-evaluation lies in the widespread failure
> of agencies even to spell out program objectives . . .
> there is no standard against which to measure whether
> the direction of a program or its rate of progress are
> satisfactory.[12]

In some instances this dearth of specified objectives is the

fault of the manager himself, because--as will be argued later

in this study--one of the manager's basic responsibilities is

to translate his Congressional/agency mandate into measurable

goals and objectives. In other cases, however, this is an all

but impossible task; whatever the manager does, he is apt to be

wrong. In these programs, of which there are many, the original

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[12]Wholey, et al., _Federal Evaluation Policy_, p. 15.

mandates are so broad and complex as to defy systematic imple-

mentation. This rather bitter description of the Teacher Corps

program will serve as illustration:

> The Teacher Corps program is an archetypical model
> for all federal programs. First, it is global in
> scope, its reach being no smaller than the totality of
> all possible goals of education. Second, though it
> pretends to a special target--the improvement of edu-
> cation of disadvantaged children--it prefaces, sur-
> rounds, and supports that target with so many
> ancillary ones that it ends up as a multipurpose,
> diffuse complex of targets. Third, while it specifies
> a group with special needs to serve, it invokes the
> need for total reform of all connected agencies and
> institutions if those needs are to be met. Finally,
> while it is phrased in the ennobling, rolling
> rhetoric of the modern language of "identity" theory,
> there are frequent reassuring references to more
> traditional goals of education.[13]

In programs as broadly aimed as Teacher Corps, the manager also

has to contend with conflicting pressures from a variety of

constituent groups, and may spread his resources too thin

while trying to please everyone.

One problem for many program managers is that their

activities were launched before evaluation came into vogue, and

adding it at this point becomes a matter of major modification.

Evaluation at its best is not a very well developed science,

and to get the most from it one should build it into the

---

[13]From an introduction by Melvin M. Tumin in Ronald G.
Corwin's Reform and Organizational Survival: The Teacher
Corps as an Instrument of Educational Change (New York: John
Wiley & Sons, 1973), p. ix.

original program plan. As noted by Harry Hatry and colleagues:

"Evaluation must be planned before program implementation.

One reason is so evaluation data collection can be made

routine."[14] Related to this problem of late-start evaluation

is the fact that within operating programs, many of the clas-

sic techniques of evaluation cannot be applied at all:

> Only rarely if ever, for example, will it be possible
> in the evaluation of ongoing social action programs to
> arrange for the random assignment of subjects to
> experimental and control groups; and time pressures
> will often make it necessary to forego longitudinal
> measurements. Of course, such compromises involve
> risks and the greater the compromises the more likely
> it is that results will be in error.[15]

In view of these difficulties, and considering that in most

programs the evaluation facet will be "grossly underfunded,"[16]

it is not surprising that so few program managers have been

able to show impressive evaluation results.

The foregoing discussion has related mainly to the

manager's problems if he tries to do his own evaluation. He

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[14]Harry P. Hatry, Richard E. Winnie, and Donald M. Fisk,
Practical Program Evaluation for State and Local Government
Officials (Washington, D.C.: The Urban Institute, 1973), p. 72.

[15]Edward L. McDill, Mary S. McDill, and J. Timothy
Sprehe, "Evaluation in Practice: Compensatory Education," in
Evaluating Social Programs, ed. by Peter H. Rossi and Walter
Williams (New York: Seminar Press, 1972), p. 182.

[16]Committee for Economic Development, Improving Federal
Program Performance, p. 56.

has other problems, of course, if the evaluation is to be con-

ducted by outsiders:

> Program and project managers in general do not like to
> be graded. It is a bit disconcerting to find out that
> one's program has a benefit-cost ratio of .3, and this
> is hardly the kind of information the aspiring manager
> wants brought to public attention (unless, perhaps, he
> inherited his job from someone whose last score was
> minus .3). Nor are program people likely to stand in
> awe of an evaluation statistic, but instead may well
> do battle either to thwart a proposed evaluation or to
> call into question the validity of a completed study.[17]

A complete reading of Rossi and Williams (authors of the above)

suggests that--as professional research specialists--they do

not feel any great amount of kinship for program administrators,

but their summary of this particular attitude is probably close

to the mark. Additional reason for this lack of enthusiasm on

the part of managers for "outside" evaluation is provided by

Hatry, Winnie, and Fisk:

> Poor program performance according to an evaluation
> should not, in itself, imply poor performance by the
> program manager. A program manager who alters his pro-
> gram or suggests its reduction or termination when
> evaluation shows ineffectiveness should be rewarded.
> This is, of course, idealistic and current "reward"
> systems generally do not operate this way. Realisti-
> cally, it will be difficult to avoid the idea that pro-
> gram evaluation is a threat to program personnel,
> particularly when the study is conducted by persons
> outside the agency.[18]

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[17]Peter H. Rossi and Walter Williams, _Evaluating Social
Programs: Theory, Practice, and Politics_ (New York: Seminar
Press, 1972), p. xv.

[18]Hatry, et al., _Practical Program Evaluation_, p. 113.

In other words, while program managers are certainly profes-

sionals, they are also human and are subject to the pleasure-

pain principle. Further, they are politically astute, as this

comment by Donald Campbell indicates:

> It is one of the most characteristic aspects of the
> present situation that <u>specific reforms are advocated
> as though they were certain to be successful.</u> For this
> reason, knowing outcomes has immediate political impli-
> cations. Given the inherent difficulty of making sig-
> nificant improvements by the means usually provided
> and given the discrepancy between promise and possibil-
> ity, most administrators wisely prefer to limit evalu-
> ations to those the outcomes of which they can control,
> particularly in so far as published outcomes or press
> releases are concerned.[19]

This has, indeed, been the stance of most program managers--

and probably still is. But as demands for "proofs" keep mount-

ing, the managers are being drawn into the evaluation arena

whether they like it or not. And the position taken in this

study is that they should learn to "like it" well enough to

assume the focal point in it.

D. The Literature of Evaluation

Professional people in all walks of life are apt to

turn to books and other literature when faced with a need to

expand their skills, and it is fair to assume that program and

project managers are not exceptions. This section of this study

---

[19]Donald T. Campbell, "Reforms as Experiments," in
<u>Readings in Evaluation Research,</u> ed. by Caro, p. 234.

therefore comments on three general fields of literature which
are considered to be pertinent to the subject of managerial
evaluation. The first is the literature of public administra-
tion, which logic suggests should have a natural concern with
every aspect of public programs. Next is the literature of
evaluation research, written mainly by social scientists who
specialize in social program evaluation. Finally there is the
literature of management, which--while historically oriented
toward the business sector--is now increasingly concerned with
any managerial milieu.

The status of evaluation in the literature of public
administration can be summarized in a few words: it hardly
has one. This is unfortunate, because if the writers/resear-
chers/teachers in this field had devoted more of their attention
to social program evaluation over the past five years, the
state of that art might be further advanced. Their general
lack of interest is suggested by a survey of the Public Admin-
istration Review from January 1968 through May/June 1973, which
reveals only five articles and three reviews dealing with the
subject. Of the five articles, only two actually delve into
program evaluation itself;[20] a third is a tongue-in-cheek

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[20]Morehouse, "Program Evaluation," (previously cited),
and David C. Caputo, "Evaluating Urban Public Policy," Public
Administration Review, Vol. XXXIII, No. 2, Mar/Apr 1973, pp.
113-119.

discussion of why evaluation studies aren't used very much;[21]

a fourth simply argues that more evaluation should be done in

all organizations;[22] and the fifth is addressed completely to

why public administration ignores evaluation.[23] This last

article--by Orville Poland, of the Graduate School of Public

Affairs, State University of New York at Albany--first offers

evidence that evaluation _is_ being neglected, then suggests

reasons for this neglect. In reviewing the shortcomings of

PPBS, he says ". . . one of the most serious problems was

program evaluation--a process critical to the implementation

of PPBS. The focus upon evaluation has called attention to

its neglect by the field of public administration."[24] He goes

on to say:

> The difficulty with program evaluation so evident in
> the PPBS experiments focuses attention on a major pro-
> cess of administration not adequately covered by the
> field of public administration. For while the econo-
> mists assumed the problem easier to deal with than it

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[21]Fred Baldwin, "Evaluating Evaluators: The LIAR Model."
Public Administration Review, Vol. XXXII, No. 1, Jan/Feb 1972.
pp. 122-134.

[22]Aaron Wildavsky, "The Self-Evaluating Organization,"
Public Administration Review, Vol. XXXII, No. 5, Sep/Oct 1972.
pp. 509-520.

[23]Orville F. Poland, "Why Does Public Administration
Ignore Evaluation?" _Public Administration Review_, Vol. XXXI,
No. 2, Mar/Apr 1971, pp. 201-202.

[24]_Ibid._, p. 201.

is, the public administration field has largely ignored it.[25]

An examination of four widely used textbooks in public administration indicates that none includes a chapter on evaluation. Only two have references to evaluation in the index and in both cases this refers to personnel evaluation.[26]

. . . the blunt fact is that public administration has expressed very little interest in evaluation.[27]

The political science discipline, which has been so influential in public administration, tends to focus on politics and political influences rather than policy objectives. These and other concerns have tended to downgrade a concern with outputs and hence with policy evaluation.[28]

This writer has followed Poland's lead and examined books, journals, dissertation abstracts, major indexes, etc., and can confirm that his findings are still generally valid. One objective of this study, therefore, is to produce a modest contribution to public administration literature in an area perceived to be relatively lacking in depth.[29]

The paucity of public administration literature dealing with evaluation is in marked contrast with the very considerable

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[25]Ibid.

[26]Ibid.

[27]Ibid., p. 202.

[28]Ibid.

[29]A significant literature on evaluation has been produced by school administrators and other personnel who might technically be thought of as "public administrators," but in this paper "public administration literature" refers to that produced within the field itself.

body of publications to be found under the general heading of evaluation research. Quite a great amount of these writings have come into being as a result of the steps taken by Congress and federal agency chiefs in response to the aforementioned demands for objective assessments of social program effectiveness. In some instances, the Congress now writes requirements for periodic evaluation into its enabling legislation.[30] In other cases, top agency personnel have established their own evaluation policies.[31] Under either circumstance, evaluation frequently takes the form of a one-time major study by a team from a research institute or a university,[32] conducted after a program has been in operation for a few years and directed toward the measurement of program impact on its target clientele(s).

Many sociologists, social psychologists, psychometrists and the like have participated in these "scorecard" evaluation research studies. In doing so, they have encountered common problems (and occasionally, common successes) involving research designs, data collection, relations with program administrators, relations with client groups, and so forth. From these experiences there has emerged a growing stream of

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[30]Wholey, et al., _Federal Evaluation Policy_, p. 54.

[31]_Ibid._, p. 62.   [32]_Ibid._, p. 42.

literature addressed to social program evaluation. Unfortu-

nately, at least from the viewpoint of the working administra-

tor/manager, the great bulk of this literary effort is addressed

to <u>other evaluators</u>.

> Although administrators are frequently perplexed by
> decision-making problems concerning evaluation, most
> books on evaluation are written for evaluators. These
> are concerned with logical and practical procedures in
> the conduct of evaluation studies. Often they include
> sections pertaining to the administrative context in
> which evaluation takes place, and discussions of
> potential barriers to evaluation which emanate from
> conflict between program and evaluation personnel. But,
> typically, little attention is devoted to the problems
> of administrators or program directors in deciding
> when and what kind of evaluation is needed and how to
> utilize the results for making programmatic decisions.
> Consequently, the administrator who searches the
> literature is likely to find that it is of little use
> to him in making the kinds of evaluation decisions he
> has to make.[33]

In short, most of the available literature on social

program evaluation is definitely not "program manager oriented."

Further, as indicated just above, this literature consistently

reflects a seemingly inherent conflict between the administra-

tor/manager and the professional evaluator. A fundamental

reason for this, of course, is that the research designs of

evaluators are best satisfied when there are no changes in

program procedures, while program managers logically feel that

---

[33]Tony Tripodi, Phillip Fellin and Irwin Epstein, <u>Social Program Evaluation</u> (Itasca, Illinois: F. E. Peacock Publishers, Inc., 1971), pp. 4-5.

evaluative research findings should be immediately utilized to

effect program improvements. Beyond this basic technical

incompatibility there are a number of other potential sources

of conflict, and Francis Caro has described some that apply

especially to "inside" evaluators:

> Social scientists often demand preferential treatment,
> creating resentment among other employees. Social
> scientists often want direct access to top decision
> makers, thereby threatening by-passed bureaucrats.
> Furthermore, the extra-curricular involvements of
> social scientists, such as writing, teaching, and lec-
> turing are also resented. At the same time, adminis-
> trators interested in evaluative research have often
> found it difficult to recruit and hold qualified be-
> havioral scientists. Like other scientists, behav-
> ioral scientists often prefer to be oriented toward
> the general-scientific community rather than the needs
> and goals of the organization that employs them.
> Scientists typically wish to do research that will con-
> tribute to a scientific body of knowledge. Adminis-
> trators, on the other hand, typically expect that sci-
> entists on their payroll will do research that
> contributes directly to the goals of their organiza-
> tion.[34]

Another example of what program people find when they

examine evaluation literature is provided by this excerpt from

an article by William H. Form:

> The researcher faces the most difficult problems when
> his host is a single organization, such as a bureaucracy.

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[34]In this paragraph, Caro uses the terms "scientist" and
"scientific" ten times and the term "bureaucrat" once. This
may be an example of the perceptual gap that can exist between
evaluative researchers and program personnel. Francis G. Caro,
ed., Readings in Evaluation Research (New York: Russell Sage
Foundation, 1971), p. 10.

Here a great deal of daily communication occurs among the members of the constituent units, and the units stand in a clear power relationship to one another. The research, irrespective of its content, will be perceived as having some effect on the internal relations of the organization. Therefore the researcher will experience more difficulty in gaining access to do the study and he will be blocked from studying important problems of power.[35]

Carol Weiss offers what is perhaps a more understanding view of the administrator's position vis-a-vis the evaluation research specialist:

Interpersonal frictions are not uncommon between evaluators and practitioners. The practitioners' roles and the norms of their service professions tend to make them unresponsive to research requests and promises. As they see it, the imperative is service; evaluation research is not likely to make such contributions to the improvement of program service that it is worth disruptions and delays. Often, they believe strongly in the worth of the program they are providing, and see little need for evaluation at all. Furthermore, the judgemental quality of evaluation research means that the merit of their activities is being weighed. In a sense, as they see it, they are on trial. If the results of the evaluation are negative, if it is found that the program is not accomplishing the purposes for which it was established, then the program--and possibly their jobs--are in jeopardy. The possibilities for friction are obvious.[36]

The natural tendency toward conflict between administrator and

evaluator should not be overstated, but it is nevertheless

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[35]William H. Form, "The Sociology of Social Research," in The Organization, Management, and Tactics of Social Research, ed. by O'Toole, p. 10.

[36]Carol H. Weiss, Evaluation Research: Methods of Assessing Program Effectiveness (Englewood Cliffs, New Jersey: Prentice-Hall, 1972), p. 7.

there and must be reckoned with. It must be dealt with because program managers need the services which evaluative researchers can provide, and because they need to access and understand more of the available literature on evaluation. But while this literature is studded with thinly-veiled warnings about not revealing early findings to the administrators, because they will want to use them to initiate program changes and thereby upset research designs, some of it may irritate the managers more than it enlightens them.

Program and project managers can, of course, employ this literature to learn useful concepts about evaluation in general and the assessment of social impact in particular. In fact, it is recommended here that they do so. But they are warned in advance that (1) they may not like the implied attitudes of some of the authors; (2) in sorting out the things they can use, they will sift through a lot of material on experimental designs and research designs and the like which they cannot use; and (3) most of what they read will be oriented toward the assessment of client impact, and they will find little to guide them in the evaluation of inputs and processes.

The third field of literature to be mentioned in this section is that of management theory. This field is analyzed

in some depth in Chapter IV of this study, along with general

systems theory and a few other fields deemed potentially use-

ful to program managers, so attention to it here will be brief.

At this point it is sufficient to note that under such rubrics

as "management by objectives," "management information systems,"

and "organizational concepts," much work has been done that can

be of value to the manager in understanding and performing his

role in evaluation. As noted by Orville Poland, while the

field of public administration may have ignored evaluation, the

field of management has not:

> The O and M analyst and organizational consultant are
> increasingly concerned with evaluation. From systems
> theory they have begun to incorporate feedback systems
> into organizational procedures. These consist of
> institutionalized procedures to feed information from
> the output of an agency back to a control function.
> At that point the information must be evaluated so that
> subsequent changes in input or the operations can be
> made. On more routine operations this can even be
> automated into the control system, through devices such
> as management by exception.[37]

This literature increasingly reflects the results of practical

applications in business and government, and program and pro-

ject managers are encouraged to peruse it assiduously.

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[37]Poland, "Why Does Public Administration Ignore Eval-
uation?" p. 202.

E. Explanation of Terms

A review of publications addressed to federal program evaluation makes it clear that many of their more commonly used terms have different meanings as employed by different authors. Additionally, the literatures of general systems theory, cybernetics, operations research, and management and organization theory--all of which are cited frequently in this study--utilize a number of terms which have special meaning in these contexts. So, for several such terms that are used frequently in this study and for some others that are considered especially interesting, the following descriptions are offered:

1. "Programs" and "Projects"

In the literature, "social program," "public program," and even "program" are often used interchangeably. Whatever form used, the reference is to the kinds of programs conducted by HEW, HUD, OEO, LEAA, DOL, NEH[38] and other agencies engaged in "social" activities. Major examples of "programs" are Headstart, JOBS, Threshold, Community Action, Job Corps, Teacher Corps, Model Cities, WIN, and Medicare. One way or

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[38]Department of Health, Education and Welfare; Department of Housing and Urban Development; Office of Economic Opportunity; Law Enforcement Assistance Administration; Department of Labor; and National Endowment for the Humanities.

another, these programs aim at the betterment of some sector of our society. Ordinarily, as used in this study, "program" does <u>not</u> refer to such materialistic activities as highway construction programs, soil reclamation programs, or programs for the acquisition of hardware. (Some social programs <u>do</u> involve construction, as in welfare housing. But evaluation as discussed herein still would not be as concerned with the construction itself as with the <u>effects</u> of the construction.)

"Program" normally refers to an activity of the federal government, which—at the state and local level—may include many "projects." In fact, the grass-roots implementation of most federal programs is done by "project" offices operated by people who are <u>not</u> federal employees. They may be employed by a state, a city, a county, a university, a permanently established non-profit agency, a non-profit agency established solely for purposes of the project, or even by a company or corporation. The project office normally operates on federal funds, although "matching" funds may be required.

2. "Program Manager" and "Project Manager"

In this context, "program manager" refers to a line-management employee of the federal government. He will have been assigned to manage a program already outlined by Congress and/or the agency (or department) for which he works. While

he is not at the "policy" level, it is assumed that he has a
fair amount of leeway in establishing specific goals and
objectives, selecting strategies, and providing direction to
subsidiary project offices.

Similarly, "project manager" refers to the line-manage-
ment chief of a field project office--usually but not neces-
sarily the employee of some entity other than the federal
government. Project managers operate within guidelines estab-
lished by program managers, and most of them are also respon-
sible to different employing/sponsoring agencies, e.g., a
university or a city government. It is assumed that they
exercise significant prerogatives in the area of local stra-
tegies and tactics. And they, not program managers, have on-
going contact with clients and with other field operating
groups.

3. "Effort," "Inputs," "Process," and "Impact"

"Effort," "inputs," and "process" usually refer to
things within the program, while "impact" refers to the effects
of the program on its clientele(s). Funding allocations, the
assignment of staff, and legal authorization are all "inputs."
Contacting clients, conducting training programs, and issuing
welfare checks would be called "effort." The whole business of
operating the program and its projects is frequently subsumed

by the term "process"—used by many writers as the obverse of "effects." For example, we have "process-oriented evaluation techniques," aimed at evaluating activities <u>within</u> programs, and we have "effects-oriented evaluation techniques" which treat the program as a "black box" and look only at its "impacts" or "effects."

4. "Effectiveness" and "Efficiency"

To some writers on evaluation, "effectiveness" applies only to how successfully a program impacts its clients. To others, program effectiveness also involves how well the program operates internally, i.e., whether or not it is well managed, its people competent, and so on. In this study (except in cases where a specific author is quoted, who may have his own more limited meaning), program "effectiveness" will refer to both the internal operation and the success of its impact on clients. This study is oriented toward the functions of program and project managers, who—to do the best job possible—must evaluate both internal activities and external impacts.

This study will not directly concern itself with program "efficiency," but the term may be seen in some of the quotations it incorporates. "Efficiency," as used by many writers, refers to the ratio between program <u>inputs</u> and desirable

program <u>effects</u>. When a dollar value can be assigned to both, and some writers try to do this, the term can become quite useful; unfortunately, many "effects" do not lend themselves to the assignment of monetary values. By way of clarification, it is readily possible for a program to be quite "effective" while being extremely "inefficient," in terms of resources expended for results achieved.

    5. "Benefits"

In connection with public programs, use of the term "benefits" is normally a reference to whatever their clients receive that is deemed to be of value. Morehouse says that federal social and economic programs may be classified as either "maintenance programs" or "opportunity programs" and that their "benefits" may be described as follows: Maintenance programs provide tangible goods or services--e.g., money or food--to a particular population, and the commodity itself would be the "benefit." Opportunity programs, in contrast, are intended to increase a group's capabilities or opportunities to acquire goods or services (or even status and power) for themselves, in which case increases in opportunities/ capabilities become the "benefits."[39]

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[39]Morehouse, "Program Evaluation," p. 872.

6. "Mandates," "Goals," "Proxy Goals," and "Objectives"

For purposes of this study, a "mandate" is defined as whatever official authorization stands behind a federal program. In most cases this will take the form of Congressional legislation and/or federal agency directives, and will be quite broad and indefinite. Mandates almost never exist in quantitative terms, and must be translated into something more specific by program managers. In the past, "mandate" has not been a commonly used term, because most writers have used the word "goal" so freely and imprecisely in describing intent at this and all other levels. Now, however, it is coming into wider usage as the evaluation field gains in sophistication.

One dictionary definition of goal is: "a point toward which effort or movement is directed; the objective point or terminus that one is striving to reach; the end aimed at: the goal of one's ambition."[40] This is about as good a definition of "goal" as one could hope to find for use in connection with the evaluation of public programs. For instance, there is strong implication here that one would know when he had reached a goal--that a goal is something finite, and thus describable in factual terms. This is what really

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[40]"Goal," The Britannica World Language Dictionary (Chicago, Illinois: Enclopedia Britannica, Inc., 1964), Vol. 1, p. 541.

differentiates a goal from a mandate, i.e., mandates are most

apt to ordain a level of effort and a direction of thrust, and

do not usually specify a point at which the effort will be

considered completed. Ideally, specific and measurable program

goals should be formulated on the basis of the mandate, and

progress toward these goals should then be reportable in quan-

titative terms. Unfortunately, however, stating the basic

goals of many social programs in measurable terms--even though

technically possible--would be an exercise in futility. This

is because their full achievement is so far in the future that

the amount of progress toward them in any one year would be a

meaningless measurement. (For example, the elimination of

poverty for several million people, or the life-time employ-

ment of one person.) Two tactics are commonly used to cope

with this problem. In the first one, some arbitrary time frame

is brought in--e.g., one year--and a "short-term" goal is

established for that period only. This is often done even

when it is expected that the program will continue for many

years and has a much more extensive basic goal. An example

might be a short-term goal of providing eyeglasses to a speci-

fic number of disadvantaged children in one year. The second

tactic is employed when the basic goals of a program cannot

actually be directly attacked, as in the case of trying to move

unemployable persons <u>permanently</u> into the work force. In this case the manager might adopt the "proxy goals" of providing measurable amounts of vocational training and job placement services, while relying on causal processes to take care of the real goal of long-term employment.

Returning to the dictionary, one is forced to go well down the list of definitions of "objective" before finding one that can explain the way the term is frequently used in the literature of program evaluation. A good dictionary will note that "objective" has a special meaning in military parlance, wherein it refers to a result or a point to be reached in a military action. It appears that program people (and their evaluators) have borrowed heavily from the military definition and then added something of their own, because they regularly use "objective" in two ways: (1) in reference to some milestone point or step enroute to a goal, or (2) as a direct synonym for goal. In this study it is also used in both of these ways.

7. "System"

Older usages of the term "system" (except perhaps in physiology) have tended to imply any orderly arrangement of parts into a whole. Since about the time of World War II, however, in certain contexts the term has taken on a rather

special meaning, with overtones of <u>control</u>, or of management.

The "control" orientation grew out of World War II electro-

mechanical systems for positioning such things as radar anten-

nas and guns, and has given rise to the new science of cyber-

netics. The "management" orientation is essentially an

extension of the control orientation, and has its most specific

applications in such things as the U.S. Navy's "Polaris" system

and NASA's "Gemini" and "Apollo" systems. When the word "sys-

tem" is used in reference to highly sophisticated radars,

nuclear submarines, or space vehicles, there is always a strong

suggestion of purpose; these systems are goal-oriented. Further,

there is implication of a high degree of built-in self-regula-

tion, based on feedback principle, and of an associated suscep-

tibility to precise control by human managers. This study

proposes that federal programs be approached as "systems," with

the term to have all the special connotations just described.

8. "Black Box"

This term appears frequently--and often without explan-

ation--in several of the fields of literature incorporated in

this study. The first "black box" was very real and contained

unspecified electronic circuitry, but the black boxes of today

are purely conceptual. The original was used to train techni-

cians and engineers, who were required to deduce the content

of the box by applying various electronic signals to its input

terminals and then measuring what appeared at its output ter-

minals. Or conversely, it was used as a short-cut in training

on complex equipments, in that students were permitted to by-

pass the study of certain complex components, i.e., to treat

them as "black boxes," and to judge their performance solely

on the basis of their outputs. The term has come to have

widespread usage in the social sciences, and has application

in program evaluation to the extent that many evaluators treat

the program itself as a "black box."

9. "Sensor" and "Effector"

Both these terms are now being used regularly in

modern management texts, and have long been used in cybernetics

and operations research. And originally, of course, they came

from physiology and the physical sciences. As used in manage-

ment, and for purposes of this study, the term "sensor" refers

to any procedure or device for monitoring particular organiza-

tional (or program) activities or outputs. Whenever this term

is used, there is an implication that the monitoring is more

or less "automatic." There is a further implication that data

picked up by the sensor will enter a feedback information

channel, to be used in self-regulatory processes and/or mana-

gerial control activities. An "effector" is the counterpart

of a sensor, with the term applying to any instrument or pro-
cedure whereby corrective orders are issued fairly automatically
in response to irregularities detected by a sensor. "Effector"
is also--but less frequently--used in reference to the instru-
ments or procedures whereby managers implement innovative
organizational/program change. Both of these terms have
applications in management-oriented program evaluation, because
this type of evaluation is based on the feedback principle, and
feedback can be said to derive from sensors and to be used to
actuate effectors.

CHAPTER II

PERSPECTIVES ON PROGRAM EVALUATION

A. Introduction

Before trying to come directly to grips with the task

of formulating a conceptual approach to evaluation as a tool

for program managers, it is deemed advisable to consider some

of the semantic and situational difficulties associated with

current usage of the term. Program evaluation is still a

relatively new field of activity, and no real consensus has

yet developed about what it should encompass. In fact, strong

disagreement about this is evident in the publications of gov-

ernment agencies, prestigious organizations (e.g., the Urban

Institute and the Committee for Economic Development), and

individual practitioners and theorists. This disagreement

carries over into the area of assigning responsibilities for

evaluation, and has further impact on the question of how and

by whom evaluation should actually be performed.

A wide-ranging review of evaluation literature suggests

that approaches to the subject are beginning to coalesce into

two general groupings. The first sees evaluation as concerned

almost exclusively with the effects a program has on its clients, while the second would extend evaluation to include virtually every facet of program activity. The "effects only" approach is oriented toward the making of policy decisions; that is, decisions related to increasing or decreasing program funding, or perhaps to the actual elimination or survival of a program. It appears that professional social researchers generally prefer to participate in this type of evaluative activity, because (1) it lends itself to stable research designs, and (2) it permits them to retain a posture of "scientific detachment" toward the internal administration of the program itself. It is not surprising, therefore, that the great bulk of publications by research specialists falls into the "effects only" category. A much smaller group of writers supports the view that it is just as important to evaluate the processes by which effects are achieved as it is to evaluate the effects themselves. This group recognizes that (1) while a program remains in existence, evaluation results can be used to improve it, and (2) some programs are, for all intents and purposes, "immune" to policy evaluation--they are so entrenched that their continued funding is guaranteed.

Since the basic thrust of the conceptual model presented in Chapter IV of this dissertation reflects an endorsement of

one of these conflicting views and rejection of the other, this

Chapter will provide representative examples of both approaches

in an attempt to explain the choice. First, it will present

some of the divergent definitions of evaluation--and of its

targets--that are now in use, and will draw these into a broad

dichotomy based on "processes" and "effects." Next, it will

illustrate the existing disagreement about where certain types

of evaluation responsibilities should lie. Finally, it will

set forth and endeavor to justify a description of evaluation

as it should be used by program managers--that is, as a multi-

purpose tool of management.

B. <u>Some Problems of Definition</u>

Much of the disagreement over a definition of "evalua-

tion" derives from the considerable semantic perplexities

associated with the defining of goals and objectives. Some

writers--and some administrators--think in terms of a "hierarchy"

of objectives, with each succeeding level dependent upon

achievement of the one below it. For example, an early (low

level) objective of a health services program might be to re-

cruit a competent field staff, a higher level objective might

be to bring this staff into contact with clients, then a still

higher objective could be to deliver a particular service, and

so on up to one or more ultimate objectives related to

increased feelings of physical well-being and increased longe-

vity for a broad clientele group. To these people, the "hier-

archists," there is a logical need for evaluation at every

level. But to other authorities, the only truly evaluatable

objectives in this program would be those at the highest level,

i.e., those involving the physical well-being and longevity of

clients. And to yet another authoritative group, evaluation

would focus on a level of objectives just below the ultimate,

where the program's services are actually delivered to its

target clientele. Edward Suchman sums up the situation:

> Much of the difficulty in communication about evalua-
> tion has occurred because of confusion among these
> different levels of objectives. Some evaluators have
> felt it sufficient to evaluate a training program by
> noting that the student has learned his lesson well.
> Others insist it must first be proven that this
> learning has actually resulted in the trainee doing a
> better job. . . . both approaches are right, even
> though one may be more desirable than the other; they
> merely evaluate objectives at different levels.[1]

Much--but not all--of the conflict apparent in the definitions

cited in the remainder of this Chapter can be explained by

this difference of attitude toward objectives.

An additional percentage of this definitional conflict

can be explained by lack of consensus about the meaning of the

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[1]Edward A. Suchman, *Evaluative Research: Principles and Practice in Public Service and Social Action Programs* (New York: Russell Sage Foundation, 1967), p. 53.

two terms: "goal" and "objective." Many writers use these

terms interchangably, while to others they have distinctly

different connotations. Harley Hinrichs and Graeme Taylor,

for example, offer this set of definitions:

> Aims: A generic term for all words used to describe
> the end purposes of government. Goals and objectives
> are individual kinds of aims.
> Goals: The broadest aims of government, relatively
> timeless, normally not quantifiable, usually associ-
> ated with the top level of a program budget structure.
> Objectives: The specific aims of programs, similar
> to goals but not timeless or broad, capable of quan-
> tification; usually associated with lower levels of
> a program structure.[2]

Conflict with these definitions is immediately apparent in the

demands by other authorities that program "goals" be stated in

"measurable terms." Incidentally, Hinrichs and Taylor are

among the few writers who offer any definition of goals and

objectives. Most simply add to the confusion by assuming that

their readers will understand what they mean--when they may or

may not have even defined these terms for themselves.

Tony Tripodi, Phillip Fellin and Irwin Epstein, who

tend to be oriented toward the needs of program and agency

administrators, offer this description of evaluation:

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[2]Harley E. Hinrichs and Graeme H. Taylor, _A Primer on
Benefit-Cost Analysis and Program Evaluation_ (Pacific Pali-
sades, California: Goodyear Publishing Company, Inc., 1972),
p. 150.

. . . the systematic accumulation of facts for pro-
viding information about the achievement of program
requisites and goals relative to efforts, effective-
ness, and efficiency within any stage of program
development. The facts of evaluation may be obtained
through a variety of relatively systematic techniques,
and they are incorporated into some designed system
of values for making decisions about social programs.[3]

These writers evidently espouse Suchman's notion of a hierarchy

of objectives, to which they add the dimension of "effici-

ency"--which will be taken up later in this section.

The Urban Institute, in the persons of Joseph Wholey

and colleagues, takes a somewhat different view in this opera-

tional description of evaluation:

Evaluation (1) assesses the _effectiveness_ of an _on-_
going program in achieving its objectives, (2) relies
on the principles of research design to distinguish a
program's effects from those of other forces working
in a situation, and (3) aims at program improvement
through a modification of current operations.[4]

The Institute goes on to distinguish four major types of evalu-

ation: program impact evaluation, program strategy evaluation,

project evaluation, and project rating. (By "program" they

mean something like the national Head Start program, which is

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[3]Tony Tripodi, Phillip Fellin and Irwin Epstein, _Social_
Program Evaluation (Itasca, Illinois: F. E. Peacock Publishers,
Inc., 1971), p. 12.

[4]Joseph S. Wholey, John W. Scanlon, Hugh G. Duffy,
James S. Fukumoto and Leona M. Vogt, _Federal Evaluation Policy_
(Washington, D.C.: The Urban Institute, 1971), p. 23.

composed of many local Head Start "projects.") They describe

these four types:

> Program impact evaluation is assessment of the overall
> effectiveness of a national program in meeting its
> objectives, or assessment of the relative effective-
> ness of two or more programs in meeting common objec-
> tives. The usual objective of program impact evalua-
> tion is to assist policy makers in reaching decisions
> on program funding levels or on possible redirection
> of a program.

> Program strategy evaluation is the assessment of the
> relative effectiveness of different techniques used in
> a national program. The usual objective of program
> strategy evaluation is to inform program managers of
> the relative effectiveness of the different strategies
> or methods used by projects in the national program.

> Project evaluation is assessment of the effectiveness
> of an individual project in achieving its stated objec-
> tives.

> Project rating is assessment of the relative effective-
> ness of different local projects in achieving program
> objectives.[5]

The Institute then declares that managerial "monitor-

ing, reporting systems and cost analysis are three evaluation-

related activities that all have one thing in common, differ-

entiating them from evaluation: They focus on program inputs."[6]

These are described thusly:

> Monitoring is the assessment of managerial and opera-
> tional efficiency of programs through periodic site
> visits and other management techniques. The usual
> objective of monitoring is to give program managers
> impressionistic data about how their projects are

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[5]Ibid., p. 25. [6]Ibid., p. 27.

going, to see if they are being run efficiently, if they are following program guidelines, if they have competent staffs--in general, to do a management assessment of the soundness of individual projects.

Reporting systems, which provide routine reporting from state and local level, are not evaluation but may furnish useful data on services provided, populations served and costs of providing services.

Cost analysis is a means of obtaining information for program managers on the cost of providing services through a program.[7]

Obviously, to the Institute, evaluation is end-goal oriented and does not involve looking at program "inputs " although inputs--or "effort"--are considered to be related. Tripodi, Fellin and Epstein see this differently, and would have program effort considered as a major subject of evaluation:

> Essentially, then, there are three basic objectives of program evaluation: 1. To provide descriptive information about the type and quantity of program activities (program effort). 2. To provide information about the achievement of the goals of the current stage of program development (program effectiveness). 3. To provide information about program effectiveness relative to program effort (program efficiency).

> Program effort can be documented in any development stage. Essentially, this quantitative, descriptive information is an indication of the extent to which staff and program are active. Obviously, this says nothing about how well the tasks are being done, or, more importantly, whether or not the program's overall goals are obtained.[8]

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[7]Ibid.

[8]Tripodi, et al., Social Program Evaluation, p. 44.

Tripodi and his colleagues are oriented toward on-going program management as much as toward the one-point-in-time scorecard of program impact, or end results. Their assumption appears to be that end-result program failure can be caused as readily by poor implementation of a good theory as by a fallacious basic conceptual approach. From the program manager's viewpoint this seems axiomatic; it doesn't really help him to learn merely that his program isn't effecting its desired impacts—he needs to know why. Carol Weiss handles this by envisioning a causal process[9] that intervenes between the program manager and long-term program impact, and which can include management processes along with other near-term program activities. (Among these other activities she includes "proxy"

Successful Program	Program	set in motion →	"Causal Process"	which led to →	Desired Effect
Unsuccess-ful Program	Program	set in motion →	"Causal Process"	which did not lead to	Desired Effect
Unsuccess-ful Program	Program	did not set in motion	"Causal Process"	which would have led to →	Desired Effect

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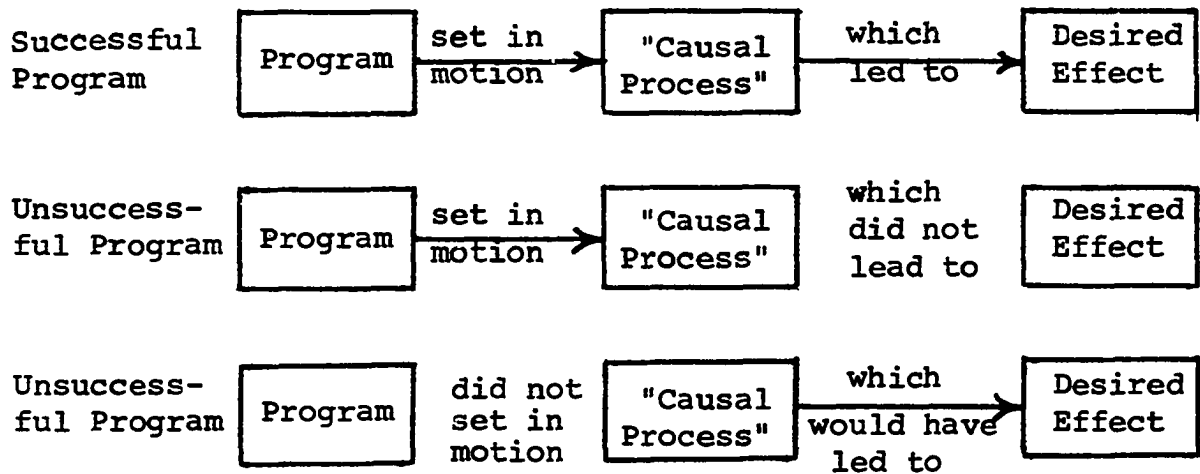
[9]Carol H. Weiss, Evaluation Research: Methods of Assessing Program Effectiveness (Englewood Cliffs, New Jersey: Prentice-Hall, 1972), p. 38.

objectives, used because the real changes that a program wants to produce may lie far in the future.) She has developed the diagram above to illustrate this concept.[10] In sum, the manager needs to know at which point in the chain his "unsuccessful" program went astray, and by use of good intermediate-stage evaluation techniques he may be able to learn whether his problem is <u>organizational</u> or <u>conceptual</u>.

We noted earlier that "efficiency" is sometimes considered to be a proper subject for evaluation; to Tripodi, for example, it is one of the three things which are <u>always</u> evaluated. The Urban Institute, on the other hand, regards cost analysis--the method by which efficiency is measured--as only "related" to evaluation. This writer is inclined to adapt Suchman's comment about what objectives should be included in evaluation, and to declare that either approach to efficiency is correct: it can be included in the evaluation plan or not, depending upon needs. If the evaluator is concerned with comparing alternative ways of achieving a goal, as in choosing between two programs or in rating two field projects within the same program, he may very well desire to evaluate their respective efficiencies. If he does, he will need to engage in "cost-effectiveness analysis" and/or "cost-benefit analysis,"

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[10]<u>Ibid</u>.

both of which have been described by Hinrichs and Taylor as

follows:

> A cost-effectiveness analysis attempts to provide
> answers to the following sort of question: For a
> fixed level of achievement of an objective, what are
> the costs of each alternative method of achieveing that
> level ("equal-effectiveness" analysis)? For a fixed
> cost, what level of achievement of the objective can
> each alternative produce ("equal-cost" analysis)?
> A cost-benefit analysis goes one step further. It
> attempts to answer this question: How much benefit to
> the people of the state will be produced by a certain
> expenditure on each of a number of alternatives?
> (Either: How much benefit for a given cost? or How
> much will it cost to produce a given benefit?)[11]

To accomplish the former, he obviously needs to be able to

accurately measure program output, or effects. In some cases

this is readily possible, as for example in measuring trainee

achievement based on test results. In other cases this can be

quite difficult, as when program objectives involve attitude

changes. But in any case, cost-effectiveness is probably

easier to compute than is cost-benefit, which demands that the

evaluator assign a dollar value to the program's effects. The

position adopted in this study is that while some definitions

of evaluation call for the assessment of program efficiency

and while others do not, there is no "best" definition in this

regard. Individual evaluators should consider their own

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[11]Hinrichs and Taylor, A Primer, p. 146.

particular purposes when deciding whether or not to include
efficiency in their evaluation plans.

C. "Processes" Versus "Effects"

As indicated earlier, it is possible to group most of
the current approaches to program evaluation into two broad
schools. Both schools declare that evaluation must address
end-product program effects, but one school would stop there
while the other insists that evaluation should also be applied
to program processes. (By "processes," we mean "inputs,"
"effort," "efficiency," "means," and so forth. By "effects,"
we mean the impact of the program on the citizens toward whom
it is directed.) Establishment of this dichotomy entails some
risk, because there is overlap between the schools as well as
divergence from them. But to study the dichotomy is heuristic,
so the risk is considered to be acceptable.

For one thing, it is interesting to examine both sides
of the dichotomy to discern some of the assumptions that are
evidently being made. For example, many members of the "effects
only" school appear to take it for granted that alternative
programs are indeed available (or can be made available) for
achieving certain aims, and see their own function as that of
aiding policy makers in a selection process. This outlook
seems to ignore the fact that many social programs, once

established, develop political constituencies which virtually
assure their continued competition-free existence. This
approach may be a logical outgrowth of the Program Planning
Budgeting System (PPBS) movement, which has traditionally been
concerned more with choices <u>between</u> programs than with changes
<u>within</u> them. Supporting evidence for this notion is seen in
the work of the economists, who employed cost-benefit analysis
as a "forecasting" tool for PPBS and who are now applying it
in after-the-fact fashion for evaluative purposes.

Another assumption of the "effects only" faction would
logically have to be that all social programs actually do have
definite goals and objectives. But this assumption, although
it would seem to be axiomatic, has been questioned. Regarding
the innovative "great society" programs, into which have gone
the largest increases in government spending of the past
decade, Thomas Morehouse offers this insightful observation:

> These programs generally are not finished products
> ready to be "tested" by measuring specified effects in
> terms of clear-cut objectives. Instead, they are ex-
> plorations of problems, objectives, and means. They
> are, in this sense, at least as much process-oriented
> as they are results oriented. Thus, a more broadly
> conceived approach to evaluation research may well be
> essential at this time, since so many recent programs
> are efforts to develop new administrative processes
> directed to newly defined problems, rather than full-
> scale commitments of resources designed to achieve

maximum impacts on clearly targeted problem areas and groups.[12]

According to Robert Weiss and Martin Rein, these broad-aim programs are particularly incompatible with the classic "experimental design" approach to impact-oriented evaluation.[13]

The "processes" school also appears to have several assumptions, the primary one of which seems to be that all programs can and should be improved. In other words, this school is oriented toward change. But it advocates a particular kind of change, i.e., managed change, with management's decisions to be based on empirical evidence and logic. Aaron Wildavsky--while knowingly pushing the state of the art of objectivity--describes the proper use of evaluation by a program organization:

> The ideal organization would be self-evaluating. It would constantly monitor its own activities so as to determine whether it was meeting its goals or even whether these goals should continue to prevail. When evaluation suggested that a change in goals or programs to achieve them was desirable, these proposals would be taken seriously by top decision makers. They would institute the necessary changes; they would have no vested interest in continuation of current

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[12]Thomas A. Morehouse, "Program Evaluation: Social Research Versus Public Policy," Public Administration Review, Vol. XXXII, No. 6, Nov/Dec 1972, p. 872.

[13]Robert S. Weiss and Martin Rein, "The Evaluation of Broad-Aim Programs: Experimental Design, Its Difficulties, and an Alternative," Administrative Quarterly, Vol. 15, No. 1, March 1970, pp. 97-109.

activities. Instead they would steadily pursue new alternatives to better serve the latest desired outcomes.[14]

Wildavsky makes it clear that "process" evaluation is aimed at goal change as well as at change in strategies and tactics. This might at first appear to be presumptive, if one thinks of "goals" as being mandated to program managers by policy makers, but Wildavsky is really on firm ground. The mission assigned to a program manager is usually quite broad in nature, and one of the manager's fundamental tasks is to translate his mandate (this is sometimes called "mission") into discrete goals and objectives. _Ergo_, as his program gets underway and a learning process begins to take place, he may very well want to revise his objectives to better accomplish his mission.

Examples of the "process-effects" dichotomy are prevalent throughout the literature of evaluation, and several are offered here. On the "effects only" side of the argument we find:

o Tom R. Houston, Jr.: "To evaluate a social action program is to collect evidence regarding its effectiveness. . . . effectiveness is defined as _impact,_

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[14]Aaron Wildavsky, "The Self-Evaluating Organization," _Public Administration Review_, Vol. XXXII, No. 5, Sep/Oct 1972, pp. 509-510.

the capacity of a program to cause changes in those who are exposed to it."[15]

o John Mann: "Underlying the physical realities of evaluation studies is a clear scientific model. It is so simple that it can be stated in one sentence: In order to perform an evaluation study it is necessary to compare the amount of change experienced by members of two equivalent groups, only one of which is exposed to the behavior-change process."[16]

o Howard E. Freeman and Clarence C. Sherwood: "The multi-billion dollar 'War on Poverty' has intensified the demand for a concerted attempt to undertake broad-scale action-research demonstrations, and to engage in knowledge-seeking efforts evaluated in terms of effect--rather than merely in terms of whether or not the program proves workable administratively or whether or not so-called experts approve of it."[17]

o Harley H. Hinrichs and Graeme M. Taylor: "The purpose of any attempt at performing a program evaluation is to determine the degree to which the program has achieved its objectives. This requires a retrospective or historical audit of program accomplishments."[18]

o Harry Hatry, Richard Winnie and Donald Fisk: "Program evaluation is the systematic examination of

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[15]Tom R. Houston, Jr., "The Behavioral Sciences Impact-Effectiveness Model," in Evaluating Social Programs, ed. by Peter H. Rossi and Walter Williams (New York: Seminar Press, 1972), p. 51.

[16]John Mann, "Technical and Social Difficulties in the Conduct of Evaluation Research," in Readings in Evaluation Research, ed. by Francis G. Caro (New York: Russell Sage Foundation, 1971), p. 175.

[17]Howard E. Freeman and Clarence C. Sherwood, "Research in Large-Scale Intervention Programs," ibid., p. 263.

[18]Hinrichs and Taylor, A Primer, p. 30.

specific government activities to provide informa-
tion on the full range of the program's short and
long term effects on citizens."[19]

In the camp that considers evaluation to include "inputs" and

the processes within programs--in addition to "effects"--we

find:

o   Kenneth E. Eble: "The use of evaluation in improv-
    ing individual performance of teachers is no less
    important [than in rating them]. Here the desired
    condition is to get away from pronouncing judge-
    ment and to use evaluation as we use criticism we
    respect: to provide both the drive and direction
    for improving upon what we do."[20]

o   Edward Suchman: "From an administrative point of
    view, evaluation becomes an ongoing process related
    to all stages of program planning, development, and
    operations. Each step has its own set of objectives
    and means for attaining these objectives which be-
    come subject to separate evaluations. These evalu-
    ations feed back information to the program admin-
    istrator at each stage and permit him to determine
    when and how to proceed from one step to another."[21]

o   George Shipman: ". . . rigorous, disciplined eval-
    uation requires that the impact of the program be
    identified and measured against the objectives
    sought. The unanticipated consequences are equally
    in point. Then, in the framework of the objectives,
    the input of resources, the processes of action, and
    the consequences realized, both intended and

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[19]Harry P. Hatry, Richard E. Winnie and Donald M. Fisk,
Practical Program Evaluation for State and Local Government
Officials (Washington, D.C.: The Urban Institute, 1973), p. 8.

[20]Kenneth E. Eble, The Recognition and Evaluation of
Teaching (Salt Lake City, Utah: The Project to Improve College
Teaching, 1970), p. 16.

[21]Quoted by Caro in Readings in Evaluation Research, p.
47.

unanticipated, the question of effectiveness can be brought closer to disciplined judgement."[22]

o James R. Sanders: "Formative evaluation is the evaluation of a program, process, or product that is in its developmental stages and can be revised in form . . . . Formative evaluation at the school system level may include cross-school comparisons and the development and use of a management information system to provide useful feedback to school and classroom reading programs."[23]

The effects of this split over what evaluation should encompass are widespread. For example, since the federal government has not adopted any standard approach to program evaluation, each agency--and sometimes even each program--is permitted to select its own. It follows that since individual administrators are influenced by different aspects of the literature, and by different authorities in the field, that the various evaluations they sponsor and/or perform are often difficult to compare. This detracts from the usefulness of evaluation results to policy makers, and contributes to the general aura of doubt about the utility of even performing evaluation. From the viewpoint of the program manager, the problem can become intense: if he proposes to emphasize evaluation, what should

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[22]George A. Shipman, "The Evaluation of Social Innovation," (a review), Public Administration Review, Vol. XXXI, No. 2, Mar/Apr 1971, p. 198.

[23]James R. Sanders, "Considerations in Evaluating School Reading Programs," Viewpoints, Vol. 48, No. 5, Sep 1970, p. 18.

he evaluate? Which "authorities" should he believe? What

kinds of consultants should he hire? Section E. of this

Chapter will address this question, and will postulate that

he should opt for the "processes plus effects" evaluation

philosophy.

D. Responsibility for Evaluation

Disagreement about what evaluation should include is

accompanied by divergent opinions concerning where responsi-

bility for various facets of evaluation should lie. Con-

troversy in this area tends to be expressed in two overlapping

formats: in the first, arguments are based on the question of

whether "insiders" or "outsiders" can best perform the task,

while in the second format the debate revolves around questions

of control.

Problems of semantics seem to plague the evaluation

field at every turn. The "insiders vs. outsiders" discussion

is yet another example of this, in that the writers who take

it up have no consensus about just who should be included in

either category. To some, an "insider" is anyone who works for

the agency whose programs are being evaluated. To others an

"insider" is someone actually on the program staff, and an

evaluator working at a higher level of the program's own

agency is considered to be an "outsider." The only clear area

of agreement seems to be that representatives of research

institutes, universities and the like, working on a definite

contract basis, are seen as "outsiders." This particular

semantic difficulty is not so critical as some that have been

noted earlier, but program managers who go to the literature

for guidance should at least be aware that it exists.

Francis Caro--who sees any agency employee as an

"insider"--presents this summary of both sides of the question:

> The following are some of the arguments that have been
> presented in favor of outsiders: (1) they tend to be
> better able to maintain their objectivity; (2) they
> are more likely to be able to include evaluative cri-
> teria that question basic organizational premises;
> (3) they may be able to mediate more effectively where
> there is extensive external conflict; (4) they usually
> are better protected from problems of marginality and
> status incongruity; and (5) they are better able to
> avoid nonresearch tasks.
>
> It has been suggested that insiders have the following
> advantages: (1) they are usually able to develop a
> more detailed knowledge of the organization and its
> programs; (2) they are in a better position to do con-
> tinuing research.[24]

(It is interesting to note that to Caro, "research" and

"evaluation" are practically synonymous terms--which is a

reflection of his academic training and background.) Caro

goes on to point out that outsiders aren't _automatically_ more

objective than insiders, in that they have been known to

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[24]Francis G. Caro, "Introduction," in _Readings in Eval-_
uation Research, p. 17.

"slant their interpretations to accommodate their client's

interests."[25]

This passing comment about the possible biasing of

evaluation results by sponsors is worthy of emphasis. If this

possibility exists, the question of who should be responsible

for what types of evaluation becomes doubly important. William

H. Form declares flatly that the possibility does exist, and

implies that it is presently influencing the thrust of evalu-

ative efforts:

> The financial sponsor can influence the research
> social system not only by exerting financial pressure,
> but also by influencing the research design, general
> methodology, field operations, and publication and
> dissemination of data. In short, there is an
> increasing amount of formal and informal bargaining
> between sponsor and researcher on what research will
> be done, how it shall be done, and how its results
> shall be presented.[26]

These comments of both Caro and Form are taken as supportive

of the notion that program managers should install and operate

their own evaluation subsystems, not only to improve program

effectiveness but also to build a defense against possibly

biased outside evaluations.

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[25]Ibid.

[26]William H. Form, "The Sociology of Social Research,"
in The Organization, Management and Tactics of Social Research,
ed. by Richard O'Toole (Cambridge, Massachusetts: Schenkman
Publishing Company, Inc., 1971), p. 6.

Returning to the "insider-outsider" question, we can turn to Edward Suchman for a summary of the pros and cons when an "insider" is seen as a member of the operating program itself:

> On the positive side, an inside evaluator is more informed about the program and is in a better position to know which aspects require evaluation. He is also more readily accepted by the program staff, especially if the staff view the study as a self-evaluation for their own good. Such a self-evaluation is also more likely to result in an application of the results of the study toward program improvement. On the negative side, it is extremely difficult for an insider in a self-evaluation to maintain objectivity. There is an almost irresistable tendency to focus upon the successful aspects of the program and to overlook the "minor" weaknesses or failures. Certain procedures which have a time-honored validity will rarely be brought into question. From a technical point of view it is also much less likely that the program staff will possess the required research knowledge and skills to conduct a professional evaluation study.[27]

From the viewpoint of the program manager, whose goal is increased program effectiveness, one of Suchman's most telling points must be that "self-evaluation is also more likely to result in an application of the results of the study toward program improvement." What Suchman did not say, in this particular paragraph, is that outside evaluation often has very little chance of contributing to program improvement: its conclusions are apt to pertain only to effects, providing few

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[27]Suchman, _Evaluative Research_, pp. 157-158.

clues as to where internal deficiencies may lie; its results are apt to be published all too belatedly to help the manager in managing; and, as suggested by Caro and Form, its thrust may even have been biased to accommodate the interests of its sponsors.

It was noted above that the question of who should be responsible for evaluation is also debated on the basis of where the control of evaluation should lie. One approach to this topic is provided by the Urban Institute, which recommends that the "OEO model" should become the pattern for all federal agencies. Development of this model--within the Office of Economic Opportunity--is described as follows:

First, evaluation studies were formally classified into three distinct types:

Type I - Program Impact Evaluation: an assessment of overall program impact and effectiveness. The emphasis is on determining the extent to which programs are successful in achieving basic objectives and on the comparative evaluation of national programs.

Type II - Program Strategy Evaluation: an assessment of the relative effectiveness of different program strategies and variables. The emphasis is on determining which program strategies are most productive.

Type III - Project Monitoring: assessment of individual projects through site visits and other activities with the emphasis on managerial and operational efficiency.

Second, there was a reallocation of responsibility for
the different types of evaluation. [Type I to the
Office of Research, Plans, Programs and Evaluation
(RPP&E)._ Types II and III to the individual program
offices.]

Finally, one percent of OEO's total budget was earmarked
for evaluation; one-sixth of one percent going to
RPP&E for Type I evaluation (approximately $3 million
in fiscal year 1969) and five-sixths of one percent
remaining in the program offices for Types II and III
evaluation.[28]

The Institute likes this model for several cogent reasons: 1)

it establishes a common set of definitions for use within the

agency, 2) it assigns definite responsibilities, and 3) it

provides funding. (The assignment of responsibility without

a corresponding allocation of resources usually is, one can

agree, an exercise in futility.) In simplified form, the OEO

model is this:[29]

Evaluation Task	Level of Responsibility
Developing evaluation work plans (overall responsibility)	Agency level
Program impact evaluation	Agency level
Program strategy evaluation	Program level
Project rating	Program level
Monitoring	Program level
Disseminating significant results	All levels
Developing methodology	Agency level

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[28]Wholey, et al., _Federal Evaluation Policy_, p. 62.

[29]_Ibid._, p. 70.

Drawing upon the OEO model, the Institute develops this recom-

mendation regarding evaluation responsibility and control at

the program level:

> Major responsibility for evaluating projects and alter-
> native strategies within programs should rest with the
> operating bureau chiefs and program managers who know
> the program and can have some control over input and
> process variables. On the other hand, operating-level
> plans for experiments and evaluations should be re-
> viewed and approved at agency level to determine
> whether they give adequate attention to gathering the
> kinds of data needed for higher-level decisions.[30]

They would evidently have program managers concentrate on

things internal to their programs, while "impact" evaluations

would be controlled by the agency's central evaluation staff.

The foregoing recommendations of the Urban Institute

seem to be at odds with the approach taken by the Committee for

Economic Development:

> Two basically different kinds of evaluation are needed.
> First, the measurement of program results against the
> objectives for which the program was established and
> funded should become a regular responsibility of pro-
> gram managers. Second, more intensive evaluations of
> program performance and goals are required occasion-
> ally to support major decisions about initiating new
> programs, reorienting existing programs, or renewing
> the authorizations of a particularly important program.
> To support both kinds of evaluation, operating plans

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[30]Ibid., p. 72.

should include a plan for collecting data and other information.[31]

The Committee suggests that program managers should monitor (evaluate) every variable of their programs which might assist them in increasing program effectiveness, and to see impact as simply one of those variables. The Committee's two kinds of evaluation appear to differ more in *intensity* than in direction.

Beyond the Urban Institute and the Committee for Economic Development, a very few of the publications reviewed for this dissertation even considered the question of where--within an agency--specific evaluation responsibilities should lie. In retrospect this seems logical, because most of the other writers were writing *for other evaluators*, as noted earlier. At best, therefore, they consider the degree to which program managers should *become involved* with evaluation--which may, of course, be another way of looking at the question. (There may be a subtle psychological orientation to be noted here: perhaps the professional evaluators see *themselves* as responsible for evaluation, with one or more elements of the agency simply serving as sponsor.) In any event, the program manager must

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[31]Research and Policy Committee of the Committee for Economic Development, *Improving Federal Program Performance* (New York: Committee for Economic Development, 1971), p. 72.

determine where his evaluative responsibilities begin and end, and there is little in the current literature to guide him.

E. Evaluation as a Tool of Management

Before discussing the "proper" relationship between program managers and program evaluation, one should specify what types of programs are being addressed. Under one taxonomy, for example, we can identify "demonstration programs" as something quite different from "operational programs." Demonstration programs will presumably be organized in accordance with rigorous research designs, with random selection of clients, the designation of control groups, and so forth. Operational programs must usually forego such scientific niceties. Given these differences, plus the fundamental differences in the scope and purpose of these two types of programs, it seems fair to expect significant differences between the two regarding manager-evaluation relationships. Assuming these differences to exist, this paper is addressed to operating programs only.

Another assumption being made is that the life expectancy of most of our operating social programs will be based not upon the results of evaluation, but upon political and economic considerations. This being the case, it is postulated that the most desirable evaluation model is one that

feeds a constant stream of evaluation data back into the on-

going program, where it can be used to improve program per-

formance. This attitude is supported by Otto Klineberg, who

defines evaluation as "a process which enables the administra-

tor to define the effects of his programs, and thereby to make

progressive adjustments in order to reach his goals more

effectively."[32] Stanley Bigman carries this further, stating

six main uses of evaluation results:

1. To discover whether and how well objectives are being fulfilled.
2. To determine the reasons for specific successes and failure.
3. To uncover the principles underlying a successful program [or project].
4. To direct the course of experiments with techniques for increasing effectiveness.
5. To lay the basis for future research on the reasons for the relative success of alternative techniques.
6. To redefine the means to be used for attaining objectives, and even to redefine subgoals, in the light of research findings.[33]

While it is noted that Bigman appears to equate evaluation with

research, and this writer would have preferred the substitution

of "evaluation" in place of "research" in statements five and

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[32]Otto Klineberg, "The Problem of Evaluation," _Inter-national Social Science Bulletin_, Vol. 7, No. 3, 1955, p. 347.

[33]Stanley K. Bigman, "Evaluating the Effectiveness of Religious Programs," _Review of Religious Research_, Vol. 2, Winter 1961, p. 99.

six, it is still evident that only a program manager could take

maximum advantage of evaluation findings for the purposes spec-

ified. An example of this is provided by Suchman:

> . . . administrative factors such as personnel, funds,
> and facilities will often dictate how a program may be
> divided into subgoals corresponding to available
> resources and the assignment of separate administra-
> tive responsibility. That which is indicated on the
> basis of existing knowledge may have to give way to
> what is administratively feasible or even traditionally
> acceptable to both professionals and the public.[34]

This is just as true, of course, when "existing knowledge"

derives from evaluation findings as it is when a program is

being initially established.

One of the difficulties in getting program managers to

see evaluation as a "tool" is that they are more inclined to

see it as a threat. Ernest House recognizes this fact, and

argues against it:

> Many administrators see evaluation as potentially valu-
> able but too dangerous for them to try. Nonetheless,
> pressures for evaluation are building up and already
> much is done covertly. It is to the administrator's
> advantage that he be at the center of such activities
> so that he can reap the benefits and prevent the dis-
> asters. Different evaluation approaches can lead in
> quite different directions.[35]

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[34]Suchman, _Evaluative Research_, p. 54.

[35]Ernest R. House, ed., _School Evaluation: The Politics
and Process_ (Berkeley, California: McCutchan Publishing Corpor-
ation, 1973), p. 5.

Tripodi, Fellin and Epstein provide additional reasons for the

reluctance of many managers to initiate serious evaluation

efforts:

> Despite the increasing demand for evaluation from
> outside sources, administrators are often sceptical
> about the merits of program evaluation. Frequently
> they are confused by the claims and counter-claims of
> evaluation consultants representing different schools
> of organizational analysis. Moreover, some program
> directors view evaluation cynically, as simply a device
> which is used by agency supporters to justify current
> operations.[36]

It is contended in this paper that in spite of all these well-

founded trepidations, managers must get into the evaluation

act--and they must control it. As noted by both House and

Tripodi, there is a growing demand for more and better evalua-

tion, and the manager who does not take the initiative will

find himself increasingly on the defensive. David Erlandson

expresses this sentiment in no uncertain terms:

> If the administrator expects to maintain a central role
> in the . . . organization, he must maintain a central
> role in the evaluative process. He cannot let himself
> be frightened or intimidated. This does not mean that
> he must be a technical expert or get involved in all
> the details of evaluation; it does mean that he cannot
> totally delegate evaluation either to subordinates or
> to experts. Many administrative and technical features
> of evaluation he will have to delegate, but he must re-
> tain real control of the process.[37]

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[36]Tripodi, et al., _Social Program Evaluation_, p. 4.

[37]David A. Erlandson, "Evaluation and an Administrator's
Autonomy," in _School Evaluation_, ed. by House, pp. 21-22.

If the foregoing is correct, and this writer considers it to

be so, the program manager must think of evaluation as a tool

in the same way that he thinks of a good personnel system or

an information system as a tool.

Up to this point it has been argued that evaluation

should be viewed as a tool of management because (1) the mana-

ger is in the best position to make use of program evaluation,

and (2) if he does not employ it as a tool for his own benefit,

it may well be employed to his detriment by others. A third

argument can also be advanced, i.e., that evaluation is an

inherent facet of the manager's job:

> Evaluation is an important component of administration,
> whether such evaluation be formal or informal. If we
> view the administrative process as a "cycle" which
> includes the following special activities: (a) deci-
> sion-making, (b) programming, (c) communicating, (d)
> controlling, (e) reappraising, it becomes apparent
> that evaluation is an essential tool of management.
> Since the major focus of administration is the organ-
> ization of resources and activities so as to achieve
> some desired objective, and since we have defined
> evaluative research as the study of the relationship
> of planned activities to desired objectives, we place
> evaluative research at the heart of the administrative
> process . . . . From this point of view, evaluation
> becomes programmatic research whose major function is
> to aid administrators or program operators to plan and
> adjust their activities in an attempt to increase the
> probability of achieving the desired action or ser-
> vice goals.[38]

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[38]Edward A. Suchman, "Action for What? A Critique of
Evaluative Research," in _The Organization, Management and
Tactics of Social Research_, ed. by O'Toole, p. 102.

David Caputo says that when used in this fashion, evaluation should "encourage mid-course corrections and adjustments."[39] Caputo says that evaluation must involve the timely feedback of information for this purpose, and argues that with any other approach, "suggestions for change will come too late to provide benefits for an existing program"[40] He adds that "this may result in reduced effectiveness and little or no positive change on the part of the personnel envolved," and that "scarce resources may be wasted or underutilized."[41] Caputo concludes that "policy evaluation [as opposed to managerial evaluation] may be quite useful, but it is very limited as to its immediate effects on the real world."[42]

As strong as their arguments are, both Suchman and Caputo failed to mention one important utilization of the evaluation tool, i.e., to modify objectives. Since managers are usually given only the broad aims or long-term goals of their programs, and must specify objectives and short-term goals for themselves, they can never be certain that they have specified the best ones. Wildavsky suggests that they turn to evaluation for reassurance:

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[39]David C. Caputo, "Evaluating Urban Public Policy," <u>Public Administration Review</u>, Vol. XXXIII, No. 2, Mar/Apr 1973, p. 113.

[40]<u>Ibid</u>.   [41]<u>Ibid</u>.   [42]<u>Ibid</u>.

> Evaluation should not only lead to the discovery of
> better policy programs to accomplish existing objec-
> tives but to alteration of the objectives themselves.
> Analysis of the effectiveness of existing policies
> leads to consideration of alternatives that juxtapose
> means and ends embodied in alternative policies. The
> objectives as well as the means for attaining them
> may be deemed inappropriate.[43]

No "scorecard" evaluation conducted by outsiders can do this

for the manager, at least not in time to do him any good.

Another compelling reason for having the program manager

deeply involved in evaluation is advanced by Edgar Borgatta.

Borgatta is concerned with the task of collecting evaluation

data, which he sees as being monumental if the manager is not

involved:

> . . . the effective design of research requires an
> intimate relationship between data collection and the
> management of the program itself. If the right kinds
> of records are kept in the agency or program, the
> basic descriptive research . . . could be automatic.
> It would appear that a fantastic amount of generaliz-
> able information is lost because research is not built
> into agency and program data collection. In fact, to
> the contrary, one has to marvel at the amount of
> relatively irrelevant information that is collected
> and accumulated.[44]

Since the manager controls his own information system, he has

the capability of using it to support an evaluation effort.

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[43]Wildavsky, "The Self-Evaluating Organization," p. 510.

[44]Edgar P. Borgatta, "The Management and Tactics of Re-
search," in The Organization, Management and Tactics of Social
Research, ed. by O'Toole, p. 187.

Conversely, as Borgatta suggests, professional consideration of evaluation needs could probably eliminate some of the extraneous data that otherwise tends to clog the system. There is a clear invitation here to the manager to harness evaluation for his own purposes.

Once a program manager espouses the notion that evaluation is one of his natural functions, he may logically raise the question of how he should approach it. Specific answers to this question will, of course, depend upon the nature and circumstances of his particular program, but it can at least be suggested that it will help him to think in terms of _levels_ of evaluation. These levels are based on the levels of activity to be found in any program, and correspond to the program's hierarchy of objectives. Several writers have addressed the subject of evaluation by level,[45] and a summary by Suchman is presented here because it is clearer and more concise than most:

> Objectives are commonly classified according to three
> different levels of generality ranging from immediate
> to intermediate to ultimate. In principle one may
> visualize an unlimited universe of possible objectives
> and sub-objectives corresponding to the various levels
> that make up a total program and arranged according to
> some organizational hierarchy. On the bottom of this

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[45]For example see Tripodi, et al., _Social Program Evaluation_, pp. 52-59; Weiss, _Evaluation Research_, pp. 45-47; and David A. Anderson and Thomas R. Flores, "Implementing Systematic Evaluation Within an Ongoing Educational Program," _Educational Technology_, Vol. XIII, No. 6, June 1973, pp. 43-48.

> hierarchy, we usually find the field personnel whose
> objectives are largely those of delivery of services
> and whose success or failure is measured against the
> immediate criteria of effort expended and quantity and
> quality of services delivered. On the next higher
> level, we may find the supervisory or administrative
> personnel whose objectives are those of program direc-
> tion where effectiveness is evaluated on an intermedi-
> ate level according to the accomplishments or results
> of the efforts of the service personnel. At the top
> of the hierarchy is the central staff whose major
> function is that of program planning and development
> and whose policy decisions guide the performance goals
> of the field personnel and are evaluated on the
> ultimate level of success in meeting the social
> problem under attack.[46]

This suggests that the program manager will establish at least

three evaluation sub-programs. One will address the effort

of the field service personnel; another will address the mana-

gerial capabilities of the field supervisors (e.g., local

project managers); while a third will assess the actual effects

of the program on its clients. With the third sub-program the

manager will to some degree be evaluating his own personal

effectiveness, but this will be blurred by such factors as (1)

the extent of the resources available to his program, (2) the

performance capabilities of his field staff, over which he may

have inadequate control, and (3) environmental factors which

may be working for or against the program. He will be handi-

capped in coping with factor three by the fact that in an

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[46]Suchman, "Action for What?," pp. 113-114.

on-going service-oriented program there is usually no possi-

bility of establishing suitable control groups or of making

meaningful before and after measures.[47]

The foregoing, while heuristic, is certainly over-sim-

plified and incomplete. In actual practice, evaluation is like

any other sophisticated tool in that it can only be mastered

by study, practice, and experience. To encourage program

managers to assume this task, we have this list of contribu-

tions which evaluation may perform for program operation:

1. Determine the extent to which program activities
   are achieving the desired objectives. Measure the
   degree of progress toward ultimate goals and indi-
   cate level of attainment.

2. Point out specific strong and weak points of pro-
   gram operation and suggest changes and modifica-
   tions of procedures and objectives. Increase
   effectiveness by maximizing strengths and mini-
   mizing weaknesses.

3. Examine efficiency and adequacy of programs [and
   projects] compared to other methods and total
   needs. Improve program procedures and increase
   scope.

4. Provide quality controls. Set standards of per-
   formance and check on their continuous attainment.

5. Help to clarify program objectives by requiring
   operational definition in terms of measurable
   criteria. Challenge the "taken-for-granted"
   assumptions underlying programs. Point out incon-
   sistencies in objectives or activities.

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[47]Ibid., p. 105.

6. Develop new procedures and suggest new approaches for the program and for future programs.

7. Provide checks on possible "boomerang" or negative side effects. Alert staff to possible changes to the program.

8. Establish priorities among programs [or projects] in terms of best use of limited resources--funds, personnel, and time.

9. Indicate degree of transferability of program to other areas and populations. Suggest necessary modifications to fit changing times and places.

10. Advance scientific knowledge base of professional practice by testing effectiveness of proposed preventive and treatment programs. Suggest hypotheses for future research.

11. Advance administrative science by testing effectiveness of different organizational structures and modes of operation.

12. Provide public accountability. Justify program to public. Increase public support for successful programs and decrease demand for unnecessary or unsuccessful ones.

13. Build morale of staff by involving them in evaluation of their own efforts. Provide goals and standards against which to measure progress and achievement.

14. Develop a critical attitude among staff and field personnel. Increase communication and information among program staff resulting in better coordination of services.[48]

Truly, a tool which offers the potential for these types of assistance is worthy of much consideration.

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[48]Suchman, Evaluation Research, pp. 140-141.

To summarize: the periodic "scorecard" evaluation-in-depth may well be needed by policy decision-makers, and probably is; someone must make decisions __between__ programs, upon occasion, and about general increases or decreases in their financial support. They may even need to decide to eliminate a program, either because it was poorly conceived in the first place or simply because it is no longer needed. But while a program is in operation, and particularly while it is in its "exploratory" years--which is the case with most of our present social programs--it is incumbent upon the manager to make it as effective as he can. Some programs have better conceptual bases than others, whether derived from Congressional legislation or from agency interpretation thereof, and one can conjecture that at least a few of them have abysmally little chance of ever achieving their ultimate objectives. But one can also surmise that almost every federal program has the potential for accomplishing __something__, and it behooves the manager to maximize that potential. He is responsible for the expenditure of scarce resources, and can be presumed to want to obtain as much return for them as he can. Further, his program may become the target of one of the policy-oriented "scorecard" evaluations discussed above, and he will need to make as good a showing as possible. For all these reasons, the scope of

the manager's evaluation must be as wide as he can reasonably
make it. It must begin during the program planning stage, con-
tinue through the development and implementation processes,
then expand into the area of program impact. It must encompass
all those things normally associated with the term "management,"
broadly defined, and it will also have to delve into such realms
as sociology, social psychology, social welfare, and/or what-
ever other fields are appropriate to ultimate program aims.
The fundamental thrust of the manager's evaluation program must
be to provide a continuous flow of data pertinent to his mana-
gerial prerogatives and responsibilities. In brief, it must
significantly enhance his ability to make decisions about
program operations, strategies, and directions.

CHAPTER III

MODEL DEVELOPMENT, PART 1

A. Introduction

As stated in Chapter I, a major purpose of this disser-
tation is to produce a conceptual appraoch to social program

evaluation as a tool of management. This chapter and the

following chapter develop such an approach, in the form of a

model drawn from the current literature of general systems

theory, cybernetics, operations research and systems analysis,

management theory, organization theory, and evaluation research.

Each field is canvassed for its potential contributions, which

are then synthesized to produce a single diagram and a series

of descriptive statements. The end product--the model--is

intended to be of heuristic value to program managers, project

managers, and academicians in the field of public administration.

This chapter will present inputs from the inherently systems-

based fields of general systems theory, cybernetics, and opera-

tions research and systems analysis. Chapter IV will present

inputs from management theory, organization theory, and evalua-

tion research, plus the model itself.

The model development that follows is predicated on the

belief that a "systems" approach to public social programs

constitutes the best possible meeting ground for managers and theorists in their mutual effort to conceptualize the workings of such programs. A corollary belief is that the systems approach, with its notions of "inputs," "processes," "outputs" and "feedback," offers the best angle of attack on the evaluation problem. Part of the basis for these beliefs lies in the assumption that program managers, professors of public administration--and indeed, all who aspire to understand purposeful organizations--formulate, make use of, and are influenced by mental models. The particular mental model employed will, it follows, direct thinking toward certain types of phenomena and away from others, thereby influencing problem formulation and decisions.[1]

Depending upon who does the categorizing, some four or five major types of organizational models are commonly identified. The earliest of these is the "traditional" model, exemplified by the works of Frederick W. Taylor, Luther Gulick, and Max Weber. Another is the "human relations" model, advanced by such writers as Elton Mayo and Douglas McGregor. A third is the "structuralist" model, personified by Amitai Etzioni. There are also "management science" models, general "behavioral"

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[1]Daniel N. Duncan, "Training Business Managers in General Systems Concepts," in Man in Systems, ed. by Milton D. Rubin (New York: Gordon and Breach Science Publishers, 1971), p. 272.

models, and even "social responsibility" models. (Daniel

Duncan suggests that the industrial organization is variously

seen as "an instrument of personal power, an economic amplifier,

a mechanistic object, a social psychological phenomena, or as

a neighbor in the societal context.")[2]

The "system" model--sometimes called the "organic

system" model--is perhaps the most pervasive conceptual orien-

tation in organization and management theory today. According

to its proponents, with whom this writer agrees, it inherently

retains the more productive aspects of all previous models

while avoiding their limitations and pitfalls. Walter Buckley,

sociologist, has outlined some of the features of the modern

systems approach which make it attractive in his field:

1. A common vocabulary unifying the several behavioral
   disciplines;

2. A technique for treating large, complex organiza-
   tions;

3. A synthetic approach where piecemeal analysis is
   not possible due to the intricate interrelation-
   ships of parts that cannot be treated out of the
   context of the whole;

4. A viewpoint that gets at the heart of sociology
   because it sees the sociocultural system in terms
   of information and communication nets;

5. The study of relations other than "entities," with
   an emphasis on the process and transition

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[2]Ibid., pp. 278-279.

probabilities as the basis of flexible structure with many degrees of freedom;

6. An operationally definable, objective, non-anthropomorphic study of purposiveness, goal-seeking system behavior, symbiotic cognitive processes, consciousness and self-awareness, and sociocultural emergence and dynamics in general.[3]

Other sociologists have echoed (and even quoted) Buckley's statements, while writers in other disciplines have made similar assertions. This is a tribute to the success of the systems movement in partially reversing the trend toward ever-increasing specialization, and in producing truly isomorphic models, principles, and vocabularies.

The systems approach, or model, does not derive from any single "theory," "field," or "discipline." In fact, it is recommended that any new student of the subject might view it at first as simply <u>a way of thinking</u>, or in terms of a "systems movement." Glenn Immegart and Francis Pilecki espouse this view in writing that:

Although there are theoretical aspects of systems thinking—and there is much that approaches theory in the systems movement—there is, in fact, no single, all-inclusive, universally accepted, and well-enunciated body of knowledge that can be accurately called

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[3]Walter Buckley, <u>Sociology and Modern Systems Theory</u> (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1967), p. 39.

systems theory--even though the theory label is often attached to systems thought and processes.[4]

These authors add that among the major approaches to systems thinking are (1) general system theory, (2) cybernetics, (3) holism, (4) operations research, (5) systems design, (6) information theory, (7) systems analysis, (8) systems engineering, (9) output analysis, (10) mathematical programming, and (11) computer science.[5] The present writer would not suggest that this list is all-inclusive, or even that it constitutes the best possible choice of terminology, but because Immegart and Pilecki used it to develop an informative diagram of the evolution of "systems approaches and emphasis," it is included here to illustrate some of the relationships in the model to be developed in this study. The Immegart and Pilecki diagram, which is presented at the top of the following page, depicts some of the linkages between the approaches they have listed and provides a rough chronology of the systems movement since the 1920s:[6]

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[4]Glenn L. Immegart and Francis J. Pilecki, An Introduction to Systems for the Educational Administrator (Reading, Massachusetts: Addison-Wesley Publishing Company, 1973), pp. 4-5.

[5]Ibid., p. 9.

[6]Ibid., p. 11.

Organismic
Wholes   Conceptions   Gestaltists   Universalists

1928   General Systems Theory   Cybernetics

Operations Research   Holism

1950   Systems Design

Mathematical Programming

Information Theory

Systems Analysis

1960   Systems Engineering   Computer Science

Output Analysis
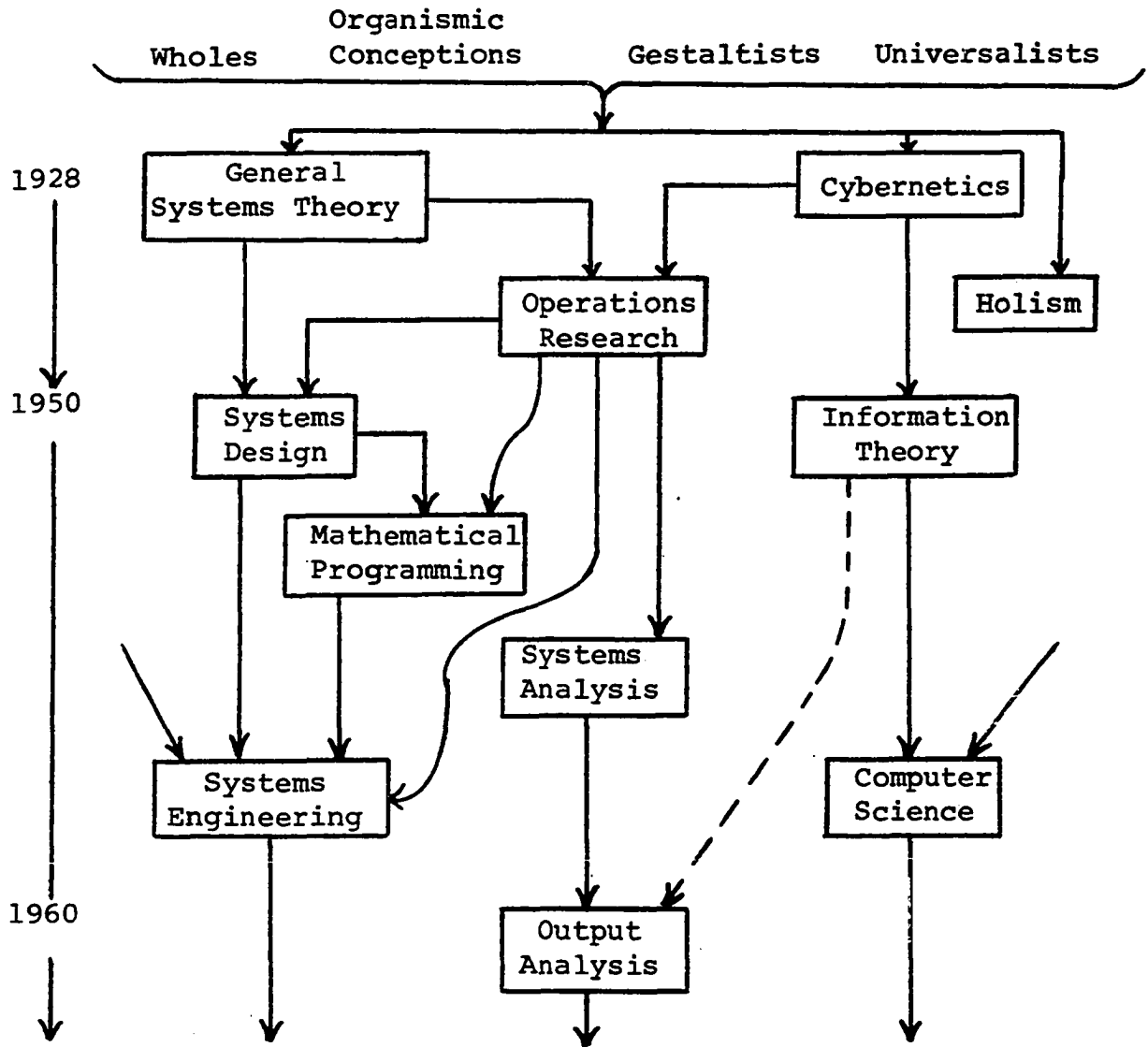
It is felt that a more complete diagram might have included

communication theory, game and decision theory, and--most

importantly--system-oriented management theory and organization

theory. Had it done so, it would have also incorporated lines

and arrows to indicate the generic relationships between gen-

eral systems theory, cybernetics, operations research, organiza-

tion theory and management theory. These relationships are at

the heart of the model developed later in this chapter.

B   General Systems Theory

According to Kenneth Boulding, general systems theory

is "a name which has come into use to describe a level of the-

oretical model-building which lies somewhere between the highly

generalized constructions of pure mathematics and the specific

theories of the specialized disciplines."[7] Ludwig Von Bertal-

anffy introduced general systems theory as a new discipline

some 25 years ago in an effort to reverse the trend toward

ever-increasing disciplinary specialization, and, as he puts

it, to "(1) investigate the isomorphy of concepts, laws and

models in various fields, and to help in useful transfers from

one field to another; (2) encourage the development of adequate

theoretical models in the fields which lack them; (3) minimize

the duplication of theoretical effort in different fields; (4)

promote the unity of science through improving communication

among specialists."[8] Von Bertalanffy goes on to state that the

major aims of general systems theory are indicated by the fol-

lowing statements:

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[7]Kenneth Boulding, "General Systems Theory--The Skele-
ton of a Science," in Readings in Management Strategy and Tac-
tics, ed. by John G. Hutchinson (New York: Holt, Rinehart and
Winston, Inc., 1971), p. 46.

[8]Ludwig Von Bertalanffy, General System Theory (2d ed;
New York: George Braziller, Inc., 1968), p. 15.

1. There is a general tendency toward integration in
   the various sciences, natural and social.

2. Such integration seems to be centered in a general
   theory of systems.

3. Such theory may be an important means for aiming at
   exact theory in the non-physical fields of science.

4. Developing unifying principles running "vertically"
   through the universe of the individual sciences,
   this theory brings us nearer to the goal of the
   unity of science.

5. This can lead to a much-needed integration in sci-
   entific education.[9]

General systems theory has clearly achieved several of

the goals Von Bertalanffy set for it, and especially in the area

of providing common terminologies and concepts. Writers from

such diverse fields as education, political science, sociology,

biology, business management, economics, psychology, physics,

and forensics regularly make use of such terms as "steady

state," "subsystem," "entropy," "inputs," "outputs," "proces-

sing," "homeostasis," "equilibrium," "equifinality," and

"boundary." Further, references to the works of Von Bertal-

anffy, Rapoport, Boulding, and other pioneer proponents of

general systems theory can be found in the literature of all

these fields--and others. And nowhere is the debt to general

systems theory more evident than in modern organization theory

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[9]Ibid., p. 38.

and management theory, which are key to the evaluation model

to be developed in this study.

As Von Bertalanffy's comments would indicate, general

systems theory has evolved in response to a felt need for a

body of concepts which would enable scientists in all fields to

hold intelligent discourse across their disciplinary boundaries.

In this regard, one of the most important concepts developed to

date is that of wholeness. The importance of this to program

management--and therefore to managerial evaluation--has been

succinctly expressed thusly:

> Initially and throughout the solution process, any
> problem of administrative situation is to be seen in
> its broadest light. Once focused on the broad mass of
> the problem, the manager must resist the temptation to
> boil the problem down to an over-simplified cause and
> effect. Considerations of wholeness alert the manager
> to the fact that the five "best" solutions to five
> apparently separate problems may congeal to produce
> unsatisfactory results.[10]

Comparable sentiments have been expressed at a broader, more

theoretical level, by sociologist Alvin Bertrand. Bertrand

uses the term "totality" in place of "wholeness," but he is

arguing the same case when he presents this systems view of an

organization:

> . . . this unit of social structure is a complete en-
> tity in and of itself. True, it is made up of parts,
> but it has distinctive properties which are more than

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[10]Duncan, "Training Business Managers," pp. 300-301.

the sum of its constituent elements. In fact . . . if we look at the parts of systems as separate and distinct phenomena, the system concept is destroyed. This point is emphasized by the observation that an actor-centered approach to the analysis of social organization is distinct from a social system approach. In other words, the system model (with the notion of sub-systems) is not only appropriate but perhaps the most useful approach to the study of types of social organization as complete entities.[11]

This concept of "wholeness," or "totality," will be fundamental to the evaluation model developed herein. Each public program manager must be constantly aware that the effectiveness of his program hinges on the aggregate performance of all its projects, the weak ones as well as the strong ones; that budget management is as important as personnel management, and that the two are interrelated; that client satisfaction is as necessary as agency satisfaction; that long-term goals cannot be slighted to achieve short-term objectives, and so on.

Another general systems concept of basic importance to the evaluation model is that of hierarchy. As expressed by Bernard Brock, "every system is a subsystem of some larger system and is itself made up of a hierarchy, each of which is a system in its own right."[12] In the context of public social

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[11]Alvin L. Bertrand, Social Organization: A General Systems and Role Theory Perspective (Philadelphia: F. A. Davis Company, 1972), pp. 103-104.

[12]Bernard L. Brock, Public Policy Decision-Making: Systems Analysis and Comparative Advantages Debate (New York: Harper and Row, 1973), p. 43.

programs, this notion of a hierarchy of systems and subsystems has two immediate applications: (1) In terms of <u>rank</u>, or perhaps of power, there is the agency-program-project chain in which--if the program is seen as the "system"--each project becomes a "subsystem" and the agency assumes a "suprasystem" role. The chain can be extended both upward and downward, of course, by considering the Congress, the Presidency, the Office of Management and Budget, umbrella agencies such as the Department of Health, Education and Welfare, and--at the bottom level--subprojects carried out at the state and local level. (2) In terms of function, if we again regard the program as the "system," we can identify a "management subsystem," a "personnel subsystem," a "financial subsystem," an "information subsystem," and--hopefully--an "evaluation subsystem," among others. (To Fremont Kast and James Rosenzweig,[13] organizational <u>goals and values</u> also constitute an important subsystem, but to this writer this seems to inject unnecessary confusion. An alternative viewpoint is to see goals as something to be pursued by a purposive system.)

Ervin Laszlo undoubtedly had in mind a systemic hierarchy based on rank when he wrote that:

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[13]Fremont E. Kast and James E. Rosenzweig, <u>Contingency Views of Organization and Management</u> (Chicago: Science Research Associates, Inc., 1973), p. 13.

> If any given thing is to maintain itself in proper
> running condition, it must act as a subsystem within
> the total system which defines its energy supplies.
> It must be so organized that it draws energies from
> its environment, and burns them up in running itself.[14]

This statement provides sharp warning to program and project

managers that they must keep their goals aligned with those

of the larger system, and that if evaluation shows them to be

ineffective, their "energy supplies" may be cut off.

The next major contribution of general systems theory

to the evaluation model involves a whole family of concepts

deriving from its dichotomy of "open" vs. "closed" systems.

Anatol Rapoport defines these in terms of boundary differences:

"A system isolated from its environment is called a closed

system. One that receives inputs from the environment and/or

acts on the environment through outputs is called an open

system."[15] This, of course, calls for a definition of "boun-

dary," one of which is supplied by F. Kenneth Berrien: "The

boundary of a system is the screen or filter through which

inputs must pass to enter the system and outputs must pass to

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[14]Ervin Laszlo, The Systems View of the World (New
York: George Braziller, Inc., 1972), p. 37.

[15]Anatol Rapoport, "Modern Systems Theory--An Outlook
For Coping With Change," in General Systems, ed. by Ludwig Von
Bertalanffy and Anatol Rapoport (Washington, D.C.: Society
for General Systems Research, 1970), p. 17.

be discharged."[16]   (If the boundary constitutes a totally

opaque screen, obviously the system is "closed.") Another

definition of boundary is offered by Immegart and Pilecki, who

write that:

> . . . all systems have boundaries which are more or
> less arbitrary demarcations of that which is included
> within the system and that which is excluded from it.
> The boundary of a system can also be viewed as that
> point, or those points, beyond which the unique aspects
> of the system are no longer distinguishable . . .[17]

"Boundary" is most often depicted as existing between a system

and its general environment, e.g., between the Roman Catholic

Church and the remainder of the world. To keep strictly to

systems terminology, a boundary can be seen as the frontier

between a particular system and all other systems--which in a

societal context, constitute the total environment of that

system. An example of this would be the boundary between the

educational system of a society and the society's governmental

system, economic system, religious system, etc. A special case

of this involves the concept of boundary between the several

levels of a hierarchy of systems (suprasystem-system-subsystem),

as illustrated by the boundary between a government program

and its sponsoring agency. Very important inputs, both

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[16]F. K. Berrien, "A General Systems Approach to Human
Groups," in Man in Systems, ed. by Rubin, p. 121.

[17]Immegart and Pilecki, An Introduction to Systems, p.
35.

informational and energizing, must cross this boundary to reach the program level system. (These are _outputs_, one notes, as seen from the agency-level system, as will be further discussed below.)

Rapoport and Berrien have mentioned "inputs" and "outputs," both of which will be prominent in the evaluation model, and Berrien goes on to discuss these:

> I should like to make a distinction between two kinds of inputs; maintenance and signal.[18]
>
> Signal inputs to a system are those messages or stimuli which trigger the internal processes of the system to perform those functions of which it is capable. This definition requires us to make explicit an assumption, . . . namely that the structure of a system, the attributes of its materials and components are determiners of its functions. A telephone system will not do the work of a cake mixer.[19]
>
> The outputs of a system like the inputs may be divided into two kinds: (a) the outputs for which the system was designed, and (b) wastes or entropy.[20,21]

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[18]Berrien, "A General Systems Approach to Human Groups," p. 122.

[19]_Ibid._, p. 123.   [20]_Ibid._, p. 124.

[21]"Entropy," a term widely used by system theorists, has been defined exceptionally well by Alvin Bertrand: "The process of entropy is one whereby all forms of organization move toward less efficiency and death. It is inalterable in closed systems, but open systems have mechanisms to slow down or arrest this process, and thus have a characteristic of negative entropy. Some open systems with strong negative entropic mechanisms seem capable of fending against the deterioration process almost indefinitely, while others succumb to entropy and cease to exist in a relatively short period of time." See Bertrand, _Social Organization_, p. 99.

. . . the outputs [of] one system may in some cases be useful to another. Those not used by any system add to entropy. It is by this process of producing and selecting appropriate outputs that small systems collaborate to form larger systems . . .[22]

Alvin Bertrand agrees with Berrien's notion of two kinds of inputs, i.e., maintenance and signal, and uses the term "throughput" in describing what happens to them within the system. (In the literature of systems, "throughput," "conversion," "processing," and several similar terms are often used interchangeably.) Bertrand writes:

> Open systems transform, convert, create, process, or train in the interest of a goal. In other words, they perform work that results in the reorganization of some type of input. An example would be the education of students in a school system. The throughput process is often referred to as the transfer function of the system.[23]

Bertrand's comments about outputs are especially appropriate to federal programs, and to their evaluation:

> Open systems export some product to the outside environment, and that product can be detected and related to the system. Outputs represent the functions which systems perform, and justify their existence . . . . Outputs, like inputs, are measurable and provide an empirical referent for the system.[24]

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[22]Berrien, "A General Systems Approach to Human Groups," p. 124.

[23]Bertrand, Social Organization, p. 98.

[24]Ibid., p. 99.

> There is one basic characteristic of output which is
> largely responsible for the continued existence of the
> system. The system's product must be acceptable to the
> suprasystem or larger social unit of which it is a part.
> In this regard, it is of interest to note that the out-
> put of a subsystem may be the input of a suprasystem.
> This is one reason why a system's output must be accep-
> table to its outside environment. If a system can find
> no takers for its output, it has but two alternatives--
> to change its nature and as a consequence its output,
> or to be phased out of existence.[25]

This is a warning that each federal program can survive only so

long as its output--as measured by formal or informal evalua-

tion--is seen as valuable by the suprasystem. As an item of

note, most system theorists tend to assume that open systems

will try to survive, and some of them even see this as a duty:

"Open systems have, therefore, a _dual_ role: to maintain them-

selves and to serve their environment . . ."[26]

A final point to be made about open systems is that they

are held to be _adaptive_; they are capable of intentional inter-

nal change in order to cope with uncontrollable changes beyond

their boundaries--or within them. As Brock puts it, "open

systems undergo constant change, because they _adapt_ to their

environments. All social systems are _open_."[27] Immegart and

Pilecki spell this out in more detail:

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[25]_Ibid._

[26]Kast and Rosenzweig, _Contingency Views_, p. 39.

[27]Brock, _Public Policy Decision-Making_, p. 37.

The key to the existence of an open system is growth
and development of the system from a primitive or em-
bryonic or initial state to a state of mature function-
ality, of increasing order, differentiation, variation,
and complexity. As the open system evolves and draws
on resources, itself, and its environment, the system's
dynamic existence and contribution to itself and the
environment are increased. Such an evolution, through
system activity, ensures openness.[28]

Thus, system activity is rational and purposive as
opposed to random or accidental. It seeks, in the open
system, to maximize the system itself and the system's
function in the larger environment of which it is a
part. Important to the system and its activity are
rationality (purpose), the dynamic exchange relation-
ship existing between the system and its environment
(the steady or life state of the system), and the eval-
uation or assessment of system activity (feedback).
Only as the system engages in energy transformation or
activity which is purposive, dynamic, and feedback-
governed does it counteract entropy and move to a more
open and dynamic state typified by functional variation,
order, differentiation, and complexity.[29, 30]

It is this ability (one might say necessity) of open systems to
adapt which makes them susceptible to management and creates the
basic requirement for evaluation of their activities and outputs.

The next important concept of general system theory to
be associated with the evaluation model is that of "state."

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[28]Immegart and Pilecki, *An Introduction to Systems*, p. 32.

[29]F. K. Berrien, *General and Social Systems* (New Bruns-
wick, New Jersey: Rutgers University Press, 1968), cited by
Immegart and Pilecki, *ibid*.

[30]The term "feedback" has now become widely used in
system-oriented literature. In this study it will be treated
most completely in connection with cybernetics, the field where-
in it was originally developed.

While the "state" of a system might be viewed as constantly varying, standard practice is to "stop the movie" and study the system while it is in a "steady state" condition. One author's description of "steady state" is this:

> The processes previously described [throughput, entropy, boundary maintenance, etc.] function in such a way as to allow an open system to achieve some constancy in input-output exchanges. When such a balance is reached the system is said to be in a steady state. This is not to imply that the system is static—there is a continual dynamics in the exchange of inputs and outputs between a system and its environment, but the relation between the system's parts remain at or near a particular balance. In other words, variations in output are reconcilable with variations in input. Katz and Kahn refer to this phenomenon as dynamic homeostasis.[31]

To some theorists, there is an inherent tendency for open systems to maintain themselves in a steady state. Others would dispute this notion, as being contrary to the laws of entropy. As a compromise, it might be agreed that the managers of an open system will tend to try to keep it in a steady state. One opinion on this subject is as follows:

> The second characteristic of open systems is that the open system tends to maintain itself in a steady state. This means that open systems maintain themselves at a higher level of integration as typified by a dynamic ratio of system components and properties. Dynamic ratio here refers to a life or evolutionary state—an existence that seeks increasing order, differentiation, variation and complexity rather than tendencies toward the randomness and chaos that surround it. Systems do

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[31]Bertrand, Social Organization, p. 100.

this through controlled, adaptive, and synergistic activity . . . [32]

To Ervin Laszlo, this is the meaning of "steady state":

> The particular configuration of parts and relationships which is maintained in a self-maintaining and repairing system is called a "steady-state." It is a state in which energies are continually used to maintain the relationship of the parts and keep them from collapsing in decay. This is a dynamic state, not a dead and inert one.[33]

The concept of steady state can thus be seen to involve structure, function, process—and some notion of equilibrium or balance. In evident fear that their readers will settle on some "too simple" understanding of steady state, system theorists frequently wrestle with semantic aspects of the concept. (And since an understanding of steady state is vital to the understanding of federal programs as systems, we will momentarily wrestle with it here.) Buckley, for example, writes that "one of the central insights . . . is that a <u>system</u>, as a continuous, boundary-maintaining, variously related assembly of parts, is not to be confused with <u>the structure or organization its components may take on at any particular time</u>."[34]

Buckley then considers the applicability of the term

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[32]Immegart and Pilecki, <u>An Introduction to Systems</u>, p. 40.

[33]Laszlo, <u>The Systems View of the World</u>, p. 37.

[34]Buckley, <u>Sociology and Modern Systems Theory</u>, p. 5.

"homeostasis," originally coined by Walter Cannon and prevalent in systems literature. As Cannon put it, in discussing the stability of our physiological processes:

> The constant conditions which are maintained in the body might be termed _equilibria_. That word, however, has come to have fairly exact meaning as applied to relatively simple physico-chemical states, enclosed systems, where known forces are balanced. The coordinated physiological processes which maintain most of the steady states in the organism are so complex and so peculiar to living beings . . . that I have suggested a special designation for these states, _homeostasis_. The word does not imply something set and immobile, a stagnation. It means a condition—a condition which may vary, but which is relatively constant.[35]

A few theorists appear to equate homeostasis to steady state, and one sees the concept illustrated by references to the thermostatically controlled furnace. While the point can be argued from both sides, this writer prefers to reserve the term homeostasis for systems which are less open and adaptive than the typical social system—including federal programs. Karl Deutsch's argument on this point seems convincing:

> . . . homeostasis is not a broad enough concept to describe either the internal restructuring of learning systems or the combinatorial findings of the solutions. It is too narrow a concept because it is change rather than stability which we must account for.[36]

[35]Walter B. Cannon, The Wisdom of the Body (New York: W. W. Norton and Company, Inc., 1939), p. 24.

[36]Karl W. Deutsch, "Autonomy and Boundaries According to Communication Theory," in Towards a Unified Theory of Human Behavior, ed. by Roy Grinker (New York: Basic Books, Inc., 1956), pp. 161-162.

We are left, then, with a concept of "steady state" which--
while it may not lend itself to perfect definition--can at
least be seen as something subtly _more_ than mere "equilibrium,"
"balance," or even "homeostasis." Applying it to a federal
program, we might say that the program is in a particular steady
state when it involves a fairly constant number of projects;
receives a reasonably consistent annual appropriation; pursues
an ongoing set of goals and/or objectives; serves a fairly
regular category of clientele; and experiences no major, irreg-
ular changes in its output. A "transformation" (or "shift") to
a _new_ steady state, then, might be engendered by the assumption
of important new goals, or by a sharp variation in program
funding, or even by drastic innovation in internal program pro-
cesses and procedures. How much variation is required before
a new state (or steady state) can be said to obtain is at best
an arbitrary matter, but we can at least expect that it will
be reflected in almost every program parameter. Perhaps the
most important point to be made here is that the systems-
oriented program manager will not see a "change of state" as
something to be avoided; in fact, he will see it as _inevitable_,
and concentrate on assuring that each new steady state involves
increased program effectiveness--as measured by his evaluation
subsystem. The point is well made by Duncan:

> Traditionally, managers have worked to achieve satis-
> factory balance between organizational ingredients.
> When a balance point was found, the manager attempted
> to lock all variables and thus hold the organization
> in that balanced state. With a machine (excluding
> frictional losses) such can be done. Organizations are
> not machines; they do not achieve a machine-like balance,
> but rather they move toward or away from an organic form
> of homeostasis or steady state.[37]

The final component of general systems theory to be specifically

acknowledged as providing background for the evaluation model

is the principle of "equifinality." This is a deceptively sim-

ple concept, but a vital one. One of the better definitions of

it is this:

> Another characteristic of open systems is an adherence
> to the principle of equifinality. According to this
> principle, two or more organizational systems can
> achieve the same final state or function, even though
> they begin with different conditions and follow differ-
> ent paths. This is similar to the notion of indepen-
> dent invention or to the fact that there are more ways
> than one to achieve a given outcome.[38] An example is
> the various teaching methods adopted by different
> medical schools, all of which share the goal of gradu-
> ating competent physicians.[39]

Perhaps the important thing to remember about equifinality is

that it is peculiar to _open_ systems. Managers who attempt to

operate their organizations as "mechanistic" (closed) systems

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[37]Duncan, "Training Business Managers," p. 301.

[38]Or in the vernacular, "there's more than one way to
skin a cat."

[39]Bertrand, _Social Organization_, p. 102.

are therefore forfeiting valuable flexibility. Kast and

Rosenzweig make this point:

> In mechanistic systems there is a direct cause-and-
> effect relationship between the initial conditions and
> the final state. Biological and social systems oper-
> ate differently. Equifinality suggests that certain
> results may be achieved with different initial condi-
> tions and in different ways. This view suggests that
> social organizations can accomplish their objectives
> with diverse inputs and with varying internal activi-
> ties (conversion processes).[40]

The "traditional" management theory of Taylor, Weber, Gulick

and Urwick were closed system views and lacked a concept com-

parable to equifinality, while modern management theory cer-

tainly has it. It is postulated that this plays an important

part in the increased effectiveness of today's managers.

In summary, general systems theory presents us with an

integrative approach to federal program management—and hence

to program evaluation. As stated by Kast and Rosenzweig:

> Systems theory provides one major conceptual scheme of
> significance to organization theory and management:
> an approach to analysis and synthesis in a complex and
> dynamic environment. It considers parts as subsystems
> and their interrelationships in a suprasystem and also
> provides a means of concentrating on the synergistic
> aspects of the whole system. This conceptual scheme
> allows a consideration of individuals, small-group
> dynamics, and large-group phenomena—all within the
> constraints of an external environmental system.[41]

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[40]Kast and Rosenzweig, _Contingency Views_, p. 41.

[41]Fremont E. Kast and James E. Rosenzweig, _Organization and Management: A Systems Approach_ (New York: McGraw-Hill Book Company, 1970), p. 22.

As a point of view, system theory describes a formal organization--such as a program--in the following terms:

1. A man-resource system in space and time,

2. open, with various transactions between it and its environment,

3. characterized by internal relations of conflict as well as cooperation,

4. a system for developing and using power, with varying degrees of authority and responsibility, both within the organization and in the external environment.

5. a "feedback" system, with information on the results of past performance activities feeding back through multiple channels to influence future performance.[42]

6. changing, with static concepts derived from dynamic concepts rather than serving as a preliminary to them.

7. complex, that is containing many subsystems, being contained in larger systems, and being criss-crossed by overlapping systems.

8. loose, with many components that may be imperfectly coordinated, partially autonomous, and only partially controllable,

9. only partially knowable, with many areas of uncertainty, with "black regions" as well as "black boxes" and with many variables that cannot be clearly defined and must be described in qualitative terms, and

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[42]Technically, this item (5) refers only to "cybernetic systems" and not to "general systems," and will be explored in more depth in the next section of this study.

10. subject to considerable uncertainty with respect to current information, future environmental conditions, and the consequences of its own actions.[43]

This, then, is the "mental model" of a federal program for which the evaluation model will be designed.

C. Cybernetics

The relationship between general systems theory and cybernetics is often a source of confusion, so it may be advisable at this point to endeavor to differentiate between them. Ludwig Von Bertalanffy contributes this:

> Systems theory . . . is frequently identified with cybernetics and control theory. This . . . is incorrect. Cybernetics, as the theory of control mechanisms in technology and nature and founded on the concepts of information and feedback, is but a part of a general theory of systems; cybernetic systems are a special case, however important, of systems showing self-regulation.[44]

George J. Klir provides additional insight with this comment:

> As far as general systems are concerned, two classes of problems can be clearly distinguished. (i) Problems that are irrelevant to the information content of quantities involved; these problems are treated by general systems theory. (ii) Problems in which the information content of the quantities involved is relevant; these are problems in which the application of general systems theory is combined with various aspects of

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[43]Bertram M. Gross, "What Are Your Organization's Objectives?," Human Relations, August 1965, p. 197.

[44]Von Bertalanffy, General System Theory, p. 17.

information theory. This combination constitutes cybernetics as a discipline.[45]

The interesting--but perhaps inconsequential--argument might be advanced that "open" systems are regularly treated as pertinent to general systems theory, and that all open systems are inherently cybernetic, but this will be ignored for the moment. It is sufficient here to establish that cybernetics, "the science of control and communication in the animal and the machine,"[46] is always system-oriented in both theoretical and applied form. To emphasize this point, and to expand our understanding of cybernetics, there is this excerpt from an article by F. H. George:

> Cybernetics is now traditionally the science of control and communication in animals, men and machines, and is especially concerned with systems that are adaptive, capable of feedback, and are also in evolution. The basic idea is that cybernetics is concerned with artificial intelligence, and is concerned with providing models of cognitive systems. The methods it uses involve mathematics, statistics, probability, logic, and natural language. The principle subdivisions of cybernetics are, so it is being suggested, (1) behavioral cybernetics, (2) biocybernetics, (3) mathematical cybernetics, (4) management cybernetics, (5) educational cybernetics and (6) social cybernetics.[47]

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[45]George J. Klir, "On the Relation Between Cybernetics and General Systems Theory," in *Progress of Cybernetics*, ed. by J. Rose (3 vols., London: Gordon and Breach, Science Publishers, 1969), p. 162.

[46]A short definition advanced by Norbert Wiener in 1948.

[47]F. H. George, "Cybernetics and Industry," in *Progress of Cybernetics*, ed. by J. Rose, p. 113.

In actual practice, the six subdivisions which George outlines have a tendency to overlap one another, as when mathematical and/or educational cybernetics are applied to management problems. And if these can be called "vertical" subdivisions, it can be said that the field also has major "horizontal" specialties, such as the study of information or of control.

In sum, as stated by Michael Apter:

> Cybernetics, as it has developed, has no one central part, but consists rather of a number of strands which overlap each other in different ways. These include computer and communication engineering, the mathematics of decision procedures, logic, biology, and psychology, and secondarily a list of numerous relevant areas including semantics, linguistics, psychology, psychiatry, medicine, education, industry, management, economics, physiology, and so on. While it is this very broadness which lends to cybernetics its peculiar excitement, it also contributes an aura of differing emphases which at times seems irreconcilable.[48]

To some readers, mention of cybernetics immediately conjures up thoughts of "artificial brains," "man-machine interface," "intelligence amplifiers" and so forth. To others it evokes notions of statistics, or perhaps of probabilistic approaches to human organizations. All of these reactions are technically correct, as cybernetics is a very broad field. But within the context of this paper, it is intended that the first thought to be engendered in connection with cybernetics will be

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[48]Michael J. Apter, _Cybernetics and Development_ (Oxford, England: Pergammon Press, 1966), p. 2.

about _feedback_. Toward this end, one of Norbert Wiener's clas-
sic illustrations is offered just below. Wiener coined the word
"cybernetics" in 1948, adapting it from the Greek word "kuber-
netes," meaning "steersman." (We derive our word "governor"
from this same Greek source.) Wiener sees control and communi-
cation as essential tools in the fight against entropy, and he
sees feedback as the central factor in their use. One of his
many illustrations of "feedback in action" is this:

> . . . a gun-pointer takes information from his instru-
> ments of observation, and conveys it to the gun, so the
> latter will point in such a direction that the missile
> will pass through the moving target at a certain time.
> Now, the gun itself must be used under all conditions
> of weather. In some of these the grease is warm, and
> the gun swings easily and rapidly. Under other con-
> ditions the grease is frozen or mixed with sand, and
> the gun is slow to answer orders given to it. If these
> orders are reinforced by an extra push given when the
> gun fails to respond easily to the orders and lags
> behind them, then the error of the gun-pointer will be
> decreased. To obtain a performance as uniform as pos-
> sible, it is customary to put into the gun a control
> feedback element which reads the lag of the gun behind
> the position it should have according to the orders
> given it, and which uses this difference to give the gun
> an extra push. It is true that precautions must be
> taken so that the push is not too hard, for if it is,
> the gun will swing past its proper position, and will
> have to be pulled back in a series of oscillations,
> which may well become wider and wider, and lead to a
> disastrous instability. If the feedback system is it-
> self controlled--if, in other words, its own entropic
> tendencies are checked by still other controlling
> mechanisms--and kept within limits sufficiently strin-
> gent, this will not occur, and the existence of the
> feedback will increase the performance of the gun. In
> other words, the performance will become less dependent

on the frictional load; or what is the same thing, on
the drag created by the stiffness of the grease.[49]

Weiner provides a host of other examples of the uses of feed-
back, drawn from areas of physiological, social, electrical,
and mechanical activity. This one was selected partly because
it brings up the possibility of applying too much feedback,
producing a "series of oscillations" and perhaps leading to "a
disastrous instability." In the terms of electro-mechanical
technology, a system in these circumstances is said to be
"hunting," and the problem is usually resolved by repairs or
adjustments of the feedback circuitry. And there are system-
oriented economists in the United States today who would use
the language of cybernetics to describe the oscillation of key
economic indicators in response to adjustments made in fiscal
and monetary policies.

This brings us logically to the fact that feedback-con-
trolled systems are essentially error-controlled systems,
because informational feedback always involves the difference
between what should be and what is. No feedback system known
to this writer is quite capable of predicting what will be; the
mere thought of doing so would be contrary to the "real facts"
basis of the feedback principle. Ross Ashby provides a simple
example:

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[49]Norbert Wiener, The Human Use of Human Beings: Cyber-
netics and Society (New York: Avon Books, 1950), p. 36.

A well-known regulator that cannot react directly to
the original disturbance (D) is the thermostat-con-
trolled water-bath, which is unable to say "I see some-
one coming with a cold flask that is to be immersed in
me--I must act now." On the contrary, the regulator
gets no information about the disturbance until the
temperature of the water (E) actually begins to drop.
And the same limitation applies to the other possible
disturbances, such as the approach of a patch of sun-
light that will warm it, or the leaving open of a door
that will bring a draught to cool it.[50]

Ashby goes on to state that "a fundamental property of the

error-controlled regulator is that it cannot be perfect,"[51]

but that this is of little moment.

To Stafford Beer, this unemotional acknowledgement of

the ubiquity of error is one of the most useful outlooks cyber-

netics presents to the manager. He writes that "cybernetics

has accepted that mistakes, breakdowns and random interferences

occur in any system, and has shown how these things may be

taken care of in the design" of the system.[52] He adds that:

Real life, in contrast with theories about it, whether
in the field of natural or social science, whether in
economics or industry, is likely to reveal error. Real
machinery, in contrast with the blueprints of machinery,
from the typewriter to the blast furnace to the finite
automaton, is likely to go wrong. Orthodox scientific

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[50]W. Ross Ashby, An Introduction to Cybernetics (London:
Chapman and Hall Ltd., 1956), p. 222.

[51]Ibid., p. 223.

[52]Stafford Beer, Cybernetics and Management (2d ed.;
(London: The English Universities Press Ltd., 1967), p. 89.

research is prone to regard these errors as lapses from
its own concept of the ideal. Operational research [to
Beer, a working tool of cybernetics], through its tools
of statistics, has displayed a more valuable approach:
it sees "error" as something quite natural, something
endemic to real-life behaviour. An atypical response
is not so much a lapse (the word "error" itself has
ethical overtones), but a member of a statistical popu-
lation of approximations to a norm. It is this approach
which informs cybernetic thinking on the issues of
imperfection, miscalculation, malfunction and breakdown
in the multifarious machines which it studies.[53]

Conceptually, the cybernetics approach to dealing with error

(miscalculation, malfunction, imperfection, breakdown) is fre-

quently depicted by a "feedback-loop" diagram. The one pre-

sented below is drawn by Walter Buckley, who supports it with

an explanatory paragraph:
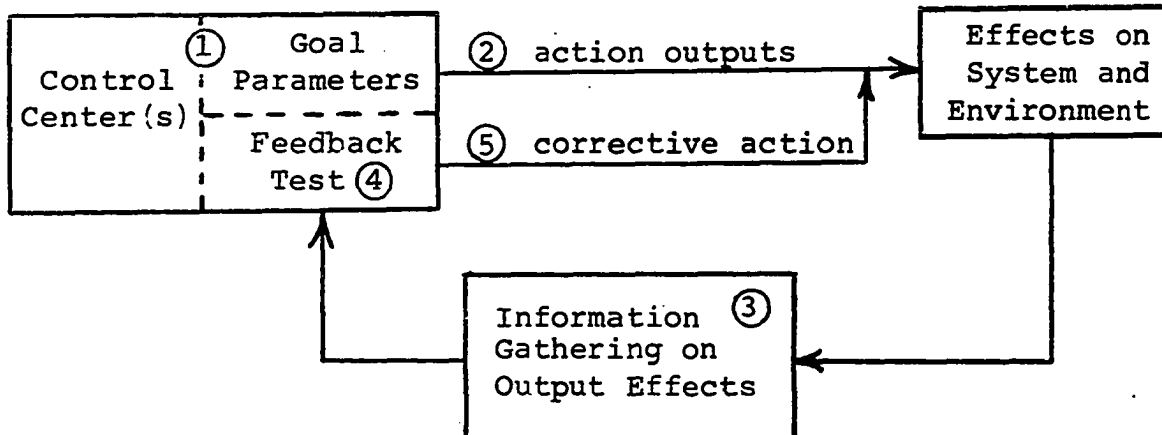
In the general cybernetic model of the error-regulating
feedback system, we may distinguish--though more or less
arbitrarily--five stages: 1) A control center estab-
lishes certain desired goal parameters and the means by

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[53]Ibid., p. 98.

which they may be attained; 2) these goal decisions are transformed by administrative bodies into action outputs, which result in certain effects on the state of the system and its environment; 3) information about these effects are recorded and fed back into the control center; 4) the latter tests this new state of the system against the desired goal parameters to measure the error or deviation of the initial output response; 5) if the error leaves the system outside the limits set by the goal parameters, corrective output action is taken by the control center.[54]

Buckley might have added that ideally, feedback is an on-going process, rather than an occasional thing. He might also have noted that if effects are found to be more than intended, the feedback will be termed negative, and that it will be called positive feedback if effects are less than desired. An interesting point here is that most good feedback subsystems are designed to operate in the negative realm; in an effective system, negative feedback will limit output as the desired effect is approached, and the system will not "over-shoot." If over-shooting does occur, severe fluctuations in feedback will occur and "hunting" may result, with waste of energy a certainty and with damage to the system a distinct possibility.

As management theory is reviewed later in this study, it will be seen that its basic control concepts are derived from the feedback loop diagram of cybernetics. The same can be said for important segments of organization theory, and finally,

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[54]Buckley, Sociology and Modern Systems Theory, p. 173.

the evaluation model of this paper will be built around the
concept of the feedback loop. In short, feedback is <u>the</u> key
concept of this study, and--in some respects--"feedback" will
appear almost as a synonym for "evaluation."

> <u>Feedback is communicated information which is basically</u>
> <u>judgemental in nature. With it a system is able to</u>
> <u>adjust future action and behavior by reviewing its past</u>
> <u>performance in terms of goals or objectives, or in</u>
> <u>terms of system functionality or contribution.</u> In other
> words, by reviewing its output (activities, achievements,
> and outcomes) as perceived both internally and exter-
> nally, a system is in a position to decide whether or
> not its processing of future inputs needs adjustment or
> modification. This is system evaluation.[55]

In view of the central role feedback plays in this study, it
seems advisable at this point to draw upon the literature of
cybernetics for additional comments on it. For example, we
need to know that in complex systems--and <u>all</u> social systems
are complex--there is no <u>single</u> feedback loop.

> In the human body, the motion of a hand or finger
> involves a system with a large number of joints. The
> output is an additive vectorial combination of the out-
> puts of all these joints. We have seen that, in gener-
> al, a complex additive system like this cannot be
> stabilized by a single feedback. Correspondingly, the
> voluntary feedback by which we regulate the performance
> of a task through the observation of the amount by
> which it is not yet accomplished needs the backing up
> of other feedbacks.[56]

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[55]Immegart and Pilecki, <u>An Introduction to Systems</u>, p.
56.

[56]Norbert Wiener, <u>Cybernetics</u> (2d ed.; Cambridge,
Massachusetts: The M.I.T. Press, 1961), p. 107.

This is an important fact to remember when establishing a federal progr evaluative subsystem. For one thing, if evaluation procedu es are to involve process as well as effects--means as well as ends--it will at least be necessary to build feedback circuits from points within the program as well as from the points where program outputs impact its clients. Kast and Rosenzweig (in an essay on information flow) mention that feedback should be obtained from points throughout the operating system--from system outputs all the way back to system inputs:

> Feedback is obtained on the output of the system in terms of quality, quantity, cost, etc. The operating system is monitored in order to maintain process control, and input inspection provides feedback at the earliest stage in the operating system. Information flow is an integral part of the control system because it provides the means of comparing results with plans.[57]

They emphasize the point by adding that "feedback is usually obtained with reference to both ends sought and the means designed to achieve them."[58] Which prompts this writer to note that the entire science of cybernetics--and especially its well-developed concept of feedback--inherently suggests that program evaluation should definitely be process oriented rather than

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[57]Kast and Rosenzweig, Organization and Management, pp. 359-360.

[58]Ibid., p. 469.

being concerned only with program impacts (outputs). This

puts it at odds with the stand taken by the Urban Institute,

and puts it on the side of Edward Suchman, Carol Weiss, and the

viewpoint adopted in this paper.

Another characteristic of feedback which is of impor-

tance to program evaluation is that it often requires a _statis-

tical_ approach. This might not be the case if one were dealing

with a deterministic mechanical system, but animal (in this

case, human) behavior is always "probabilistic" and must be

approached accordingly. Within complex systems, Ross Ashby

relates probabilism to "random coupling"--a term that in itself

suggests something about social systems. Ashby writes:

> Suppose now that the observer faces a system that, for
> him, is very large. How is he to proceed? . . .
> By definition, the observer can specify it only incom-
> pletely. This is synonymous with saying that he must
> specify it "statistically," for statistics is the art
> of saying things that refer only to some aspect or
> portion of the whole, the whole truth being too bulky
> for direct use.[59]

Accepting this description of complex systems, cyberneticians

have made extensive use of mathematical--and especially statis-

tical--tools in their attempts to comprehend them. They have

developed sophisticated measures of performance for use in most

areas of activity, and--taking advantage of the availability of

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[59]Ashby, _An Introduction to Cybernetics_, p. 63.

computers capable of analyzing masses of raw data--they have

designed computer programs to synthesize, reduce, and summar-

ize the data presented to management. As an example of one

approach to the problem of data reduction, we have this state-

ment by Kast and Rosenzweig:

> While all data could conceivably be considered part of
> an organizational information base, it is obvious that
> for any fairly large and complex organization such an
> approach would be impossible. Therefore, most systems
> include exception reporting wherein pertinent informa-
> tion from the various internal data-processing activi-
> ties becomes part of the organizational information
> base when it is brought to the attention of appropriate
> decision makers.[60]

The implication for the federal program manager is that in

developing evaluative feedback information channels, he will be

compelled to resort to a scientific sampling and related sta-

tistical techniques. The _whole_ of his program's activities,

and of its outputs, will be too complex for him to grasp.

While the foregoing suggests a need to _reduce_ the amount

of feedback in the system, another system characteristic demands

that we increase it. This characteristic resides in the commu-

nication subsystem, and involves "noise," "interference,"

"distortion" and the like. Efforts to deal with these problems

have given rise to a whole sub-field of cybernetics called

"information theory." It is founded on the notion that the very

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[60]Kast and Rosenzweig, _Contingency Views_, p. 335.

existence of a complex system hinges on its ability to maintain

adequate information flow, and that information inherently

tends to become degraded.

> Information . . . cannot be conserved . . . easily, for
> as we have already seen, the amount of information com-
> municated is related to the non-additive quantity known
> as entropy and differs from it by its algebraic sign
> and a possible numerical factor. Just as entropy tends
> to increase spontaneously in a closed system, so infor-
> mation tends to decrease; just as entropy is a measure
> of disorder, so information is a measure of order.[61]

To the working program manager, who may not have spent very

much time worrying about an enemy called "entropy," Wiener's

remarks may seem somewhat abstruse. In ordinary language, they

mean simply that there is a powerful natural tendency for infor-

mation to go astray—to diminish in quantity and quality, to

garble, even to become erroneous. This tendency can almost be

called a law, and the program manager must anticipate and com-

pensate for it. And one way he can compensate is to build in

what is called "channel redundancy." This means just what one

might guess it would mean: the provision of more than one path

for the same information, so that if one path fails, the infor-

mation may still get through. In precise applications of this,

the actual number of channels to be provided is determined by

mathematical processes—tempered, of course, by a trade-off

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[61]Wiener, The Human Use of Human Beings, p. 158.

between the degree of certainty desired and what one is willing

to pay to get it. In the following illustration of this pro-

cess, the reader can mentally substitute the words "communica-

tion link" for the word "component":

Single Channel (S_1):
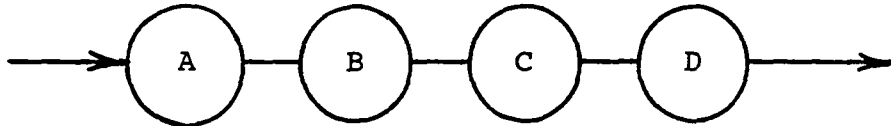
Suppose that a component of type A has a probability
of functioning correctly of 0.9, type B functions cor-
rectly with a probability of 0.7, type C with a proba-
bility of 0.8, and type D with a probability of 0.6.
Since each component is independent, we may determine
the probability that the total system will function
correctly from the following equation:

$$P(S_1) = P(A) \cdot P(B) \cdot P(C) \cdot P(D)$$

$$P(S_1) = (0.9)\,(0.7)\,(0.8)\,(0.6) = 0.3024$$

Two-Channel System (S_2):

We could increase the overall system reliability or
improve the probability that the entire system will
function properly by creating another system identical
to, but independent of, S_1 and placing the two systems
in parallel as shown in Figure 14-3. Thus, the over-
all system S_2 will function properly if either of the
two sub-systems S_1 function properly.[62]

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[62]Rocco Carzo, Jr. and John N. Yanouzas, Formal Organ-
ization: A Systems Approach (Homewood, Illinois: Richard D.
Irwin, Inc. and The Dorsey Press, 1967), p. 444.
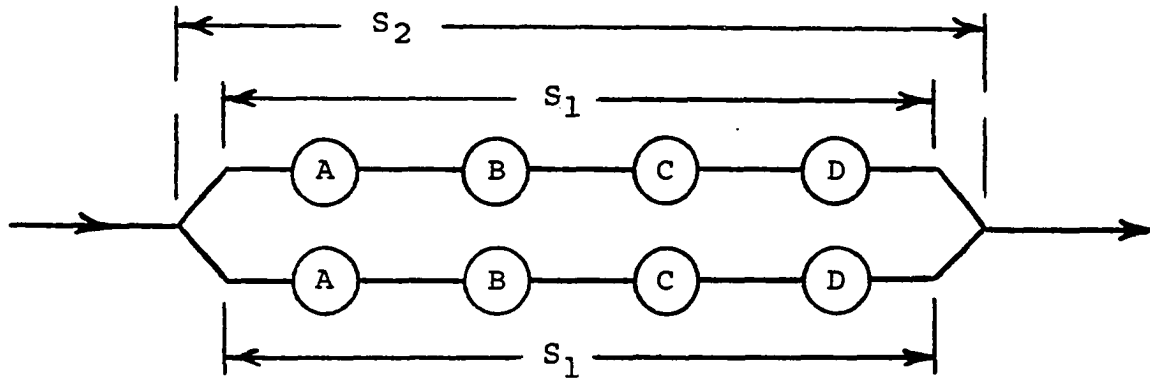
Figure 14-3.

The example just given is more appropriate to electronic systems than to social systems, although it is technically correct in either milieu. Within a federal program, a simple but effective example of redundancy might be the mailing of a confirmation copy of a teletype message. At more sophisticated levels, it is apt to take the form of a request for similar information from two or more sources.

Mention was made earlier of "noise," "interference," and "distortion." These are useful concepts for the program manager, because he must allow for their presence in his evaluative feedback system. (Channel redundancy will cure some-- but by no means all--of this problem.) A. G. Donald provides useful insight:

> At the collecting and measuring point, frequently more information than can be used is obtained, but probably not all the relevant information; or due perhaps to lack of proper sifting, the relevant information once collected may not be well transmitted and may not reach the proper persons. "Noise," as in a bad radio receiver,

may be present in the system so that information may be distorted; important information may be lost and excess unimportant information may come through. What is important is the "signal to noise" ratio, ensuring that for important information, the signal is sufficiently strong or goes on sufficiently long to overcome the interruption. Information is seldom either as accurate or as perfectly transmitted as we would like, but sufficient must be available before control is possible.[63]

Stafford Beer views "noise" in terms of "variety" and "uncertainty," both of which are inimical to control:

A machine[64] in its pristine state is . . . full of uncertainty; its content is chaos. Once the machine begins to operate, however, a degree of _order_ is introduced; and this ordering begins to eliminate the ruling uncertainty. This is what enables us to handle cybernetic systems: it is _information_. Information kills variety; and the reduction of variety is one of the main techniques of regulation--not indeed because it simplifies the system to be controlled, but because it makes it more predictable. "Noise" in the system increases the variety (and therefore the uncertainty) without increasing the information.[65]

These few comments by Ashby will complete our investigation of information degradation within systems:

It must be noticed that noise is in no intrinsic way distinguishable from any other form of variety. Only when some recipient is given, who shall state which

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[63]A. G. Donald, _Management, Information, and Systems_ (Oxford, England: Pergammon Press, 1967), p. 34.

[64]Beer uses "machine" and "system" quite interchangeably.

[65]Beer, _Cybernetics and Management_, p. 44

of the two is important to him, is a distinction between message and noise possible.[66]

It should be noticed that falsification of a message is not necessarily identical with the effect of noise. If a particular transmitted signal always produces the same received signal, i.e., the received signal is a definite function of the transmitted signal, then the effect may be called distortion.[67]

We now come to Shannon's fundamental theorem on the transmission of information in the presence of noise (i.e., when other, irrelevant, inputs are active). It might be thought that when messages are sent through a channel that subjects each message to a definite chance of being altered at random, then the possibility of receiving a message that is correct would certainly be impossible. Shannon however has shown conclusively that this view, however plausible, is mistaken. Reliable messages can be transmitted over an unreliable channel.[68]

In the cybernetic view, information--and its effective communication--is the heart and soul of complex system organization. Further, its effective use in an evaluative feedback sub-system is seen as _the_ key factor in system management and control. But the cyberneticians also know that "nature" works _against_ the probability of effective communication, and expend massive effort in trying to understand and combat this problem. The

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[66]Ashby, _An Introduction to Cybernetics_, p. 186.

[67]_Ibid._, p. 188.

[68]_Ibid._, p. 190. Also see Claude E. Shannon and Warren Weaver, _The Mathematical Theory of Communication_ (Urbana, Illinois: University of Illinois Press, 1963) and Colin Cherry, _On Human Communication_ (New York: _Science Editions_, 1961).

program manager--as well as the scholar in public administration--is well advised to acknowledge the problem, attempt to identify its manifestations within his program, and take all possible steps to solve it.

The literature of cybernetics abounds with paragraphs about the part played by feedback in maintaining homeostasis (or a steady state). For example, Beer states that "the approach to the cybernetic characteristic of self-regulation is through feedback to homeostasis."[69] Ashby says that "small errors are allowed to occur; then, by giving their information . . . they make possible a regulation against great errors. This is the basic theory . . . of the simple feedback regulator."[70] Kast and Rosenzweig remark that "the concept of feedback is important in understanding how a system maintains a steady state."[71] All these comments are correct, but one must guard against tying the notion of feedback too closely to that of maintaining the status quo. As used in the program evaluation model, feedback is to be associated with system change. An assumption will be made that no program manager will be

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[69]Beer, Cybernetics and Management, p. 49.

[70]Ashby, An Introduction to Cybernetics, p. 224.

[71]Kast and Rosenzweig, Contingency Views, p. 40.

entirely satisfied with the operation of his program, and that

he will want to employ evaluation results (feedback) to make it

more effective. For this reason, attention will now be direc-

ted toward the use of feedback in the guidance and control of

change--even to the extent of establishing new objectives.

Immegart and Pilecki introduce this topic:

> Feedback . . . is an obvious and basic determinent of
> system change. Just as evaluative information is
> essential to system regulation and control, so it is
> essential to system modification. As systems receive
> feedback regarding their activities, products, struc-
> tures, processes, components, and effects, they are
> able to ascertain their relevance and utility. Posi-
> tive information (feedback) supports systemic activity;
> negative information (feedback) challenges system
> activity and direction.[72]

Amplification of this statement may be needed: within the

federal program context, _levels_ of activity may be already

established by law, so the positive or negative characteris-

tics of feedback will be used mainly as guides to program

direction. And it is important to note the use of the term

"guides;" human systems usually make less use of "automatic"

controls than do physical systems, relying instead on their

own management subsystems. Immegart and Pilecki also make an

illuminating comment on this point:

> The system processes of learning and memory also are
> determinants of system change. Evaluative information,

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[72]Immegart and Pilecki, _An Introduction to Systems_,
p. 65.

although it contributes to system change, is not in and of itself enough to cause dynamic system growth or adaptation. Systems must also develop memory and learning capabilities in order to be able to profit maximally from, and use appropriately, such information for system good.[73]

These "memory and learning capabilities" and the ability to use them are, of course, embodied in the overall management subsystem. A direct managerial illustration of this point is provided by Kast and Rosenzweig:

> Summary and exception reports are generated by the control system and become a part of higher-level control in terms of adaptation or innovation of goals. Subsequent planning activity reflects such feedback, and the entire process is repeated. Over time, an organization "learns" through the process of planning, implementation, and feedback.[74]

A. G. Donald, who considers feedback to be an essential ingredient of any control system, states plainly that such control implies balance and that this can be either of two types:

> (i) Homeostasis. This includes short-term control adjustments which are part of the programme of the system. These may cause the system to revert exactly to its original position, or may permit certain developments in the system, provided these changes remain within programmed capacity.

> (ii) Innovation. Controls may also permit developments which are outside the present capacity of the system, but within the information capacity of the persons responsible for directing the undertaking, and

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[73]Ibid.

[74]Kast and Rosenzweig, Organization and Management, p. 360.

originating developments of this kind. Such changes may be called controlled innovation.[75]

The implication for the program manager is straightforward enough: he is to use feedback in maintaining the quality of those program processes and outputs which are judged to be effective, and he is to use feedback in planning and directing efforts to improve other program processes and outputs.

Working toward a conclusion to this investigation of the potential contributions of feedback--and of cybernetics--to the evaluation model, a few comments are in order about the several different general categories of feedback. For example, Karl Deutsch has suggested that for a social system to achieve effective self-direction, it needs three distinct types of information, to be acquired through three separate kinds of feedback. The three types of information are 1) about the outside world, 2) about the past, and 3) about itself. The three kinds of feedback involve 1) goal-seeking, 2) learning, and 3) consciousness.[76] Within a federal program, "goal-seeking" feedback would evidently involve the use of externally-derived data to vary program aims, but without major change to program

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[75]Donald, Management, Information, and Systems, p. 28.

[76]Karl Deutsch, "Mechanism, Teleology, and Mind," Philosophy and Phenomenological Research, XII (September 1951-June 1952), pp. 197-205.

structure or process. "Learning" feedback, according to
Deutsch, would mainly involve the use of externally-derived data
to effect _internal_ changes, i.e., in process and/or structure.
"Consciousness" feedback, he implies, would involve the use of
internally-derived data to keep the manager aware of any
changes in the state or components of the program structure
itself.

One writer, expressing himself in terms of "process,"
develops a quite different set of feedback categories:

> 1. _Continuous feedback._ In this type of feedback a
> controlled quantity of evaluative information is con-
> tinuously monitored. More appropriate in electronic
> or mechanical systems as opposed to social systems,
> this type of feedback requires a mechanism designed to
> receive and review constantly all incoming informa-
> tion . . .
>
> 2. _Intermittant feedback._ In this type, evaluative
> information is channeled at certain times which are
> usually, though not necessarily, defined.
>
> 3. _Proportional feedback._ In this type of feedback,
> the quantity of evaluative information is controlled
> proportionate to system needs. In other words, an ad-
> justing mechanism compensates for the desirability and
> utility of the feedback in terms of the actual needs
> of the system at a given time . . .
>
> 4. _Relay feedback._ Here evaluative information is
> either solicited or not. The system channel and pro-
> cessing is either "on" or "off." For example, until
> the principal asks for feedback, and indeed, unless he
> asks, no feedback is desired or processed . . . [77]

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[77]G. Hearn, _Theory Building and Social Work_ (Toronto:
University of Toronto Press, 1958), pp. 47-48, cited in Immegart
and Pilecki, _An Introduction to Systems_, pp. 57-58.

The program manager may very well find needs for all four of these feedback categories. From the viewpoint of the model developer, it is desirable that he at least be made aware of their existence—as concepts—so that he can consciously make decisions about them.

The final excerpt to be drawn from the literature of cybernetic systems pertains to the fact that an important family of system control theory has been developed around the concept of feedback. Since the model to be presented in this Chapter owes much to this body of theory, the following rather lengthy statement is quoted in its entirety:

Feedback theories, emanating from the science of cybernetics, are premised on the thesis that all systems can best be understood through their communication and control activities. These theories posit that system activity, life state, and adaptation are all monitored and evaluated by information about the system and its effects, all of which may be generated either internally or externally. Through feedback, or "evaluative information," the system is able to plan and project future action more wisely as a result of the review and analysis of past effects. Theories of this kind are concerned with the quantitative and qualitative aspects of information, information flow, and its value and affect on the system and system functioning. The perspective of feedback theory for analyzing a system is helpful in determining the control dynamics of the system and the regulation and development of processes used by the system to maintain its relevance. Such analytic frameworks can be used for the surveillance of both the monitoring and evaluative processes of a system or used for survival and service. The focus of feedback theory

is on the system's future on the basis of a rigorous
assessment of the system's past.[78]

The last sentence of the above might be adapted to read: "The

focus of program evaluation--as a tool of management--is on the

program's future on the basis of a rigorous assessment of the

program's past."

D. Operations Research (OR) and Systems Analysis

Within what has been called the systems movement, oper-

ations research might be thought of as the "applied science"

element. In the industrial environment, where it is sometimes

also called "management science" or "mathematical management,"

it is most frequently employed to help cope with special types

of problems outside the normal competencies of management. To

many writers--but not to all--the use of operations research is

roughly equated to the use of mathematical techniques to solve

managerial problems. Arthur Toan is representative of this

school:

> Operations research . . . is a discipline, skill, or
> body of knowledge and experience that believes that it
> is both possible and valuable to use the techniques
> and approaches of the scientific method in order to
> represent most business functions as mathematical models
> or formulas. It believes it is practical to obtain
> useful and realistic values for those formulas and to
> produce answers that will be helpful to executives in

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[78]Immegart and Pilecki, An Introduction to Systems,
p. 46.

planning, in controlling, and, above all, in making
decisions about their business. It relies heavily on
probability, statistics, algebra, calculus, and other
forms of mathematics. Its practitioners rely heavily
on the investigations, analyses, and solution-testing
approaches of the scientific method.[79]

Toan's definitive statement is presented here because it exemplifies the major thrust of operations research literature today. While some writers would put less emphasis on the mathematical aspects, almost all would agree with Toan's reference to models. For example:

At the very heart of operations research is the concept of the model. Very simply, a model is defined to be a representation of some phenomenon, system, or subsystem. It is an abstraction of its real-world counterpart. The models most commonly used by management scientists are conceptual models, mathematical models, and computer models.[80]

To expand upon this, operations research uses two general categories of models: probabilistic and deterministic. Examples of the deterministic type are inventory control models, linear programming models, and PERT. A model of all or part of a federal social program would fall into the opposite category,

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[79]Arthur B. Toan, Using Information to Manage (New York: The Ronald Press Company, 1968), p. 121.

[80]Donald R. Plane and Gary A. Kochenberger, Operations Research for Managerial Decisions (Homewood, Illinois: Richard D. Irwin, Inc., 1972), p. 4.

because it would be designed to deal with probability, statistics, and future uncertainties.[81]

Operations research is an outgrowth of general systems theory and cybernetics, and it looks to the latter for the majority of its models. And since the evaluation model to be presented in this paper is basically a cybernetic system model, this particular relationship between cybernetics and operations research is pointed out to suggest that our model will readily lend itself to the application of OR techniques. Another reason for pointing out this relationship is that it provides an opportunity to present an especially insightful statement by Stafford Beer, who emphasizes the even broader ties between cybernetics, operations research, and management:

> . . . the science of cybernetics . . . offers the OR scientist who understands it a source of models. If a model is required of a control process in conditions of high complexity and high probabilism, it is natural enough to look for one in the discoveries of a science which studies these very matters. And yet this science stands in a special if not unique relation to the management task. For cybernetics is the science of control, and management is the profession of control. It follows that models drawn by the OR scientist from cybernetics have a direct bearing, an immediacy, which models drawn from other sciences lack.[82]

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[81]See Robert J. Thierauf and Richard A. Grosse, Decision Making Through Operations Research (New York: John Wiley & Sons, Inc., 1970), p. 17.

[82]Stafford Beer, Decision and Control: The Meaning of Operational Research and Management Cybernetics (London: John Wiley & Sons, 1966), p. 254.

In summary, operations research emerges as a specialized tool of management which employs cybernetic models--and, commonly, mathematics and even computers--and uses scientific method in the solution of complex management problems.

Unlike the other fields (e.g., general systems theory, management theory) reviewed in this study, operations research is not presented as a contributor to the structure of the evaluation model. Instead, the model itself is designed to be receptive to operations research activities, much as a woodscrew might be designed to receive a particular screwdriver. The reasoning behind this can perhaps be communicated by this series of assumptions: 1) A major federal program is a complex operation, and regardless of the model followed in designing its evaluation system (or subsystem), it will probably not immediately perform as planned. 2) When this is the case, the manager will be faced with difficult troubleshooting tasks. 3) In many cases, he will not even be able to identify the exact source(s) of his problems, which may derive from within the original program structure, from the new feedback channels--or at their points of origin, or from his data-handling processes. 4) He may desire to enlist the assistance of problem-solving specialists, and this can be a problem in itself if he is in doubt about what type of specialists he needs.

5) The manager's overall problem can be simplified by the original use of an evaluation model designed for the application of operations research techniques, because competent OR specialists are readily available.[83]

For several reasons, problems in the control and evaluation of federal social programs are felt to be especially susceptible to solution by OR approaches. For one, these programs frequently serve large numbers of citizens, which immediately suggests a need for statistical handling of "output" measurements. For another, because they usually operate through a diversity of state and/or local agencies, internal communication links tend to be very complex. And for a third, federal agencies are often well equipped with computers, so computerized methods and procedures developed by OR specialists can be continued by program personnel.

As an item of note, the development of a program evaluation subsystem based on the model presented in this paper may engender two separate and distinct potential requirements for

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[83]Thierauf and Grosse, in their Decision Making Through Operations Research, published in 1970, wrote (on page 7) that "today, many of Fortune's 500 largest corporations are using operations research. Several societies have been formed here and abroad to bring OR people together. The number of persons engaged in operations research in the United States has increased from a handful in the early 1940s to approximately 6000 today."

operations research. The first, as mentioned above, may be in troubleshooting and perfecting the evaluation subsystem itself. The second may be in the adjustment of program operations to correct deficiencies pointed out by successful evaluation. Therefore, in view of the potential importance of operations research to the program manager/evaluator, a few excerpts are offered below from Patrick Rivett's An Introduction to Operations Research. The first is a listing of the steps in a typical OR project:

1. The observation of the operation.

2. Understanding the technology of the operation.

3. The collection of basic quantitative data.

4. Sorting and analysis of data.

5. Derivation of a hypothesis.

6. Decision for change.

7. Forecasting the results of change in a quantitative manner.

8. Careful implementation and the check on the validity of the hypothesis.[84]

The second is Rivett's comment on the reason for OR:

The reason for the existence of O.R. is that in decision making, difficulty arises for the decision maker when either the range of choice is overwhelming, or the consequences of a particular decision are obscure or,

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[84]Patrick Rivett, An Introduction to Operations Research (New York: Basic Books, Inc., Publishers, 1968), p. 12.

finally, there is a lack of knowledge about the objectives, or, more likely, there are many objectives and they cannot be stated on a common scale of values.[85]

The last is Rivett's account of how the OR specialist approaches a management problem:

> . . . on starting to study a management situation one is overwhelmed by complexity, either the complexity of the industry, or of the technological factors, or by the whole of the "noise" of the situation. Gradually, however, by probing, by discussion, by gaining understanding of what is going on one sees emerge from out of this surface flesh of complexity, a skeleton of cause and effect. This is the formal structure of the model . . . . The other intriguing point is that a number of types of structure of problem occur very frequently and that seven main structures account for many of the problems with which one is faced in operational research.[86]

Rivett describes these seven common structures as "queuing," "inventory," "allocation," "sequencing," "search," "replacement and maintenance," and "competition." He adds that in practice, these structures usually overlap and/or appear in combination.[87]

The federal program (system) evaluator may also desire to familiarize himself with yet another sub-field of the systems movement, i.e., "systems analysis." This sub-field has grown out of operations research, partly because of a need to evaluate aspects of systems which do not readily lend themselves to quantitative--i.e., totally objective--treatment. Aaron

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[85]Ibid., p. 34.   [86]Ibid., p. 45.   [87]Ibid., pp. 45-55.

Wildavsky says that "the less that is known about objectives, the more they conflict, the larger the number of elements to be considered, the more uncertain the environment, the more likely the approach will be called systems analysis."[88]   He says that systems analysis leans toward judgement and even intuition, while the hallmark of operations research is quantitative methodology. Supporting this view, H. J. Hartley declares that systems analysis tends to be "heuristic," while operations research is "algorithmic" (based on calculation).[89]

There are a number of fairly standard approaches to systems analysis, only one of which will be presented here. This one, developed by Bernard Brock in the form of a model, is selected because Brock expects it to be used by the system manager himself.

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[88]Aaron Wildavsky, "The Political Economy of Efficiency: Cost-Benefit Analysis, Systems Analysis, and Program Budgeting," Public Administration Review, Vol. XXVI, No. 4 (December 1966), p. 229.

[89]H. J. Hartley, Educational Planning-Programming-Budgeting (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1968), pp. 36-37.

Function	Terms	Definitions
Description	Components	The discrete, unique, or constituent parts that compose a system.
	Relationships	The identity that exists between two or more components; the action of a system, that is, the nature or characteristics of the activity that exists between two or more things taken together.
Evaluation	Goals	The stated or operational objectives, designs, aims, or intentions of the men interacting with their environment; the critical decision-making process is designed to maximize or achieve these goals.
	Effects	The assessment, fulfillment, accomplishment, impression, or outcome of a system as a result of certain components interacting in relationships toward certain goals; an evaluation of the elements of the system as measured against the goals of the system.

Figure 2. A Systems Model[90]

Brock provides some explanation of his model, then offers this important caveat:

> As with any model for analysis, the insights and meanings which can be derived from its use depend upon the creativity of the critic. We have viewed a system made up of components, relationships, goals, and effects.

[90]Bernard L. Brock, _Public Policy Decision-Making_, p. 50.

> It is our belief that human interactions can be described and evaluated fairly completely by using these four terms. However, the critic's creativity is the decisive factor. If a critic begins an analysis by looking for things called components, relationships, goals or effects, his analysis will undoubtedly be mundane. If, on the other hand, the critic perceives the four terms as points of view that he might employ in creative ways, then novel, often insightful, analysis will emerge.[91]

Brock recommends the use of functional analysis, on the assumption that certain activities must occur in any open system. He believes that this approach will automatically tie together his four terms. He illustrates his point by listing eight functions which the public policy decision-maker (his intended reader) might look for. These are the production function, the input function, the output function, the monitoring function, the adaptive function, the maintenance function, the public relations function, and the management function. Brock notes that each function may involve the participation of more than one component, and that each component may assist in the performance of more than one function. He also notes that his functions may best be handled by thinking of them as "functional subsystems," and that some of them break down into "geographic subsystems."[92] Brock's model--and his functional subsystems--seem appropriate to the typical federal program.

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[91]Ibid., p. 52.   [92]See ibid., pp. 62-67.

The evaluation model produced in this dissertation, while not directly incorporating inputs from systems analysis, has at least been influenced by the writer's knowledge of the subject. Also, systems analysis (like operations research) has been discussed here in an effort to suggest that the potential utility of <u>any</u> cybernetic system model--including this evaluation model--is inherently enhanced by the existence of systems analysis as a well-developed management tool. For example, while it has been stated in Chapters I and II that the program manager will find little to guide him in the typical literature of evaluation research, it is now claimed that he <u>can</u> find assistance in the literature of systems analysis and operations research. For this reason, before moving on to discussion of organization theory and management theory, one final instrument from the systems movement tool-box will be briefly introduced. This is "output analysis," which exists as a relatively new body of theoretical concepts and approaches developing out of operations research and systems analysis.

Immegart and Pilecki offer a description of output analysis:

> Output analysis, though a highly specialized branch of systems analysis, bears some mentioning since this form of system activity has been clearly developed and effectively applied in the past few years. <u>This form of analysis holds that a system (organization) can best be studied in terms of the results of its actions</u>

(activity). The focus is, therefore, on (1) outcomes
or output, (2) the evaluation of output in terms of
system goals, and (3) subsequent feedback to the system
as to how its operations and processes can be altered
or restructured to better achieve system goals. Impli-
citely, output analysis is premised on the notion that
feedback is the controlling force of systems activity--
and since feedback is derived from outputs, the way a
system operates can most satisfactorily be assessed in
terms of its output.[93]

Contrasting most descriptions of output analysis with those of

systems analysis, a reader might be reminded of the dichotomy

found in the literatures of program evaluation and evaluation

research. There we found a faction declaring that program

evaluation should be concerned only with program effects, while

other writers claimed that it should also be applied to pro-

gram processes. At first glance, it might appear that the

aims of output analysis would coincide with those of the

"effects only" faction, while systems analysis would be more

compatible with those who would include "process" in the

evaluation scheme. There is some truth in this, perhaps, but

one salient difference should be pointed out: while most of

the "effects only" evaluation literature is oriented toward

policy decisions, e.g., decisions between programs, both sys-

tems analysis and output analysis are management oriented.

Suggesting this parallel and then knocking it down may smack

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[93]Immegart and Pilecki, An Introduction to Systems, p.
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of demolishing straw men, but it has been done to draw emphasis to the fact that the _entire systems movement_ is management oriented, as illustrated by its pervasive concern with communication and control. (Note: without effective management, the open system will--by definition--succumb to entropy.)

According to Immegart and Pilecki, output analysis has several important implications for the student of open systems--and hence for their managers. Some of these are of considerable heuristic value in planning for evaluation, and are therefore included here:

> The first implication, and possibly the most important, is that _organizations as open systems must engage in conscious, long-range planning._[94]

If they do not, of course, goals may tend to be hazy and evaluation will be of less than maximum value.

> Another implication that can be drawn from this analytic approach is that _social organizations like schools, which are open systems, must pursue real goals and objectives._[95]

Goals, and objectives, as has been emphasized, are the point of departure for any evaluation of program effects.

> _Relatedly, the organization heeding the relevance of the concept of output mulidimensionality must be concerned with waste reduction and generally adequate allocation and use of all resources and energy._[96]

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[94]_Ibid._, p. 111.

[95]_Ibid._   [96]_Ibid._

An often-overlooked dimension of evaluation pertains to impact

side effects, some of which may be detrimental and thereby

cause a drain on scarce program resources.

> Further, it is implicit in the output analysis mode of
> thought that <u>organizations must continually monitor or
> evaluate the results of their work</u>. This continuing
> assessment and processing of "feedback" is essential
> if the organization is to be cognizant of its outputs
> and contributions as well as trends in its effects.
> Certainly such assessment must go beyond products and
> effects on clients, and include the totality inherent
> in a global output conceptualization. <u>Unless systematic
> monitoring occurs, only conjecture can be made as to the
> real utility, viability, status, and value of an organ-
> ization</u>.[97]

Output analysis, obviously, is compatible with the notion

argued in this paper that evaluation must be a <u>continuous</u> pro-

cess--not the "occasional" or "one-shot" effort suggested by

much of the evaluation literature.

> Finally, <u>the outcome analysis logic suggests that
> organizations should be change-oriented</u> . . .[98]

This statement has a very subtle--and critically important--

implication for the designers of a program evaluation sub-

system: it reminds them that <u>the entire evaluation process

itself can be expected to experience constant change</u>. As eval-

ative feedback information is used by the manager to effect

desired changes in program processes and short-term objectives,

and as environmental factors impose still other program changes,

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[97]<u>Ibid</u>., p. 113.   [98]<u>Ibid</u>.

the evaluation subsystem will require compensatory modification. The old dictum that "you can't step in the same river twice" will be in effect, and as time goes by, the manager will no longer be evaluating the program with which he started.

To summarize this section: operations research, systems analysis, and output analysis should be thought of as the main maintenance tools associated with the evaluation model developed in this paper. They have been presented here because their existence has influenced the design of the model, and to suggest that their availability can enhance its potential usefulness.

CHAPTER IV

MODEL DEVELOPMENT, PART 2

A. __Management Theory__

Theoretical approaches to management are myriad, ranging

from the almost purely economic to the behavioral and humanis-

tic. Some are oriented exclusively toward the business sector,

while others have broader application. The task here has been

to select an approach which would best lend itself to the task

of federal program evaluation, and the first part of this sec-

tion will set forth the background of how this has been done.

First, then, this comment by John Beckett to provide a philoso-

phical setting:

> In earlier years the study of management was the prin-
> cipal, almost exclusive concern of the private or
> economic sector of society--that is, to business prac-
> titioners and to those who studied the process in that
> environment. Now, however, the scope of the study of
> management has been extended far beyond the confines
> of industrial organizations. While interest in the
> study of management of that area continues unabated,
> the activities of all organizations are now well within
> the embrace of management studies. The reasons are
> several. In the first place, the influence of non-
> economic organizations in the life of man and his soci-
> ety has grown in recent years and must be included in
> the scope of management studies. More important still
> is the fact that while general organizational objectives

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differ, the essence of the management process is now
seen to be the same, no matter what organizations are
involved.[1]

Beckett's statement is included here partly to make it plain

that within this paper there is no intentional semantic differ-

entiation between "management" (traditionally used in the bus-

iness sector) and "administration" (traditionally used in the

public sector); "business management" and "public administra-

tion" are arbitrarily merged for the purpose of discussing the

"management" of federal social programs.

In their most recent (1973) book on organization and

management theory, Kast and Rosenzweig review some of the

forces that have been working to modify traditional theory, and

explain why this has led to conflict. Since theoretical approa-

ches to federal programs--and to their evaluation--are caught

squarely in the middle of this conflict, their summary is

included here:

> Many forces, both within organizations and in the exter-
> nal environment, have stimulated change in theory and
> practice. The growth in size and complexity of organ-
> izations has been unparalleled. Technological change
> and improvement have forced many adaptations. Special-
> ization has increased and the generally higher level of
> education has provided people with more advanced intell-
> ectual skills. Participants usually have diverse
> objectives and more refined inducements have been
> designed in order to ensure loyalty to the organization.

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[1]John A. Beckett, _Management Dynamics: The New Synthe-
sis_ (New York: McGraw-Hill Book Company, 1971), p. 5.

The rising aspiration levels for satisfaction of eco-
nomic and other needs have been important factors in
creating change.[2]

Truly, this describes the federal program milieu--its raisons

d'être, its staff, its clients, and its social environment,

Kast and Rosenzweig continue:

> Over the past several decades these and other environ-
> mental and internal changes have caused major modifi-
> cation in traditional theories. It is difficult to
> review all of them; however, two broad categories
> emerge as being fundamental influences: (1) the behav-
> ioral sciences, which emphasize the psychosocial system
> and the human aspects of administration; and (2) the
> quantitative sciences which emphasize quantification,
> mathematical models, and the application of computer
> technology.[3]

The authors go on to explain why these two approaches to man-

agement theory have been difficult to synthesize, and why

divergence has ensued:

> Behavioral and quantitative science endeavors have
> done much to modify traditional organization theory and
> management practice. Ideally, these two approaches
> would be integrated with traditional views to provide
> a unified and clearly delineated modern theory. This
> has not happened for many reasons. There are basic
> differences in values and ideologies; diverse academic
> disciplines are involved; differential emphasis on
> descriptive and normative points of view are evident.
> As many disciplines have become interested in organi-
> zation and management, researchers have brought into
> consideration their own traditional preoccupations with

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[2]Fremont E. Kast and James E. Rosenzweig, Contingency
Views of Organization and Management (Chicago: Science Research
Associates, Inc., 1973), p. 6.

[3]Ibid., p. 7.

certain selected subject matters which necessarily
restricts their perspective. Rather than developing a
simplified, less complex organization theory, the ten-
dency has been in quite the opposite direction--toward
greater complexity and the inclusion of more variables.
Thus the development of a simplified "general theory"
is becoming increasingly more difficult.[4]

After examining the problem in some depth, Kast and Rosenzweig

eventually conclude that there _is_ one fairly new theoretical

approach which is tending to reverse the trend toward diver-

gence and conflict:

. . . in recent years there has emerged an approach
which does offer an opportunity for some convergence
in organization and management theory. The systems
approach provides a basis for integration, by giving
us a way to view the total organization in interaction
with its environment and for conceptualizing the rela-
tionships between internal components or subsystems.[5]

In summation, Kast and Rosenzweig are telling us that systems

theories of management do exist, that they are fairly new, and

that they offer the possibility of bridging several types of

gaps. One of these gaps has existed between theoretical

approaches to the business sector and to the public sector.

Another has existed between "authoritarian" concepts of manage-

ment and the newer behavioral and humanistic concepts. And a

third gap has involved the difficulty of marrying recently

developed quantitative methods to any of the major families of

management theory.

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[4]_Ibid._, p. 9.   [5]_Ibid._

Systems approaches to organizations and their management do, indeed, appear capable of retaining and integrating the best parts of the older theories. Max Weber's concepts of hierarchy and division of labor are not completely ignored, as they have tended to be in certain humanistic theories, but are modified and integrated into the concept of a "managerial subsystem," "production subsystems," and a "communication subsystem." Conversely, while such things as Maslow's "needs hierarchy" and McGregor's "Theory X" and "Theory Y" do not dominate this approach, they can readily be accommodated in the structure of any "personnel subsystem." Finally, opportunity for the employment of quantitative methods is measurably enhanced when the organization is seen as a system of information flow and decision-making. Peter Drucker has advocated this viewpoint:

> . . . authority and responsibility may well be the wrong principles of organization. It may well be that we will have to learn to organize not a system of authority and responsibility--a system of command--but an information and decision system--a system of judgement, knowledge, and expectations.[6]

Since Drucker wrote the foregoing (in the late 1950s), an impressive body of management theory has developed around his

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[6]Peter Drucker, "Managing the Educated," in Management's Mission in a New Society, ed. by Dan H. Fenn (New York: McGraw-Hill Book Company, 1959), p. 174.

notion of "an information and decision system—a system of

judgement, knowledge, and expectations." And it is this body

of management theory which has been selected as a basis for

the evaluation model of this paper.

The new systems-based management theory is oriented

toward control, exercised by means of information subsystems

and placing strong emphasis on that category of information

known as "feedback." In other words, it draws heavily on the

science of cybernetics for its models of structure and process.

Two of its proponents offer this cybernetically-oriented des-

cription of "control" within the management context:

> Control is an important means of coordinating diverse
> activity toward objective accomplishment. The control
> function regulates system output by measuring actual
> with expected performance. The control function is also
> concerned with means as well as ends. Continual feed-
> back concerning how organizational activity is carried
> out is important for long-run stability. Both effec-
> tiveness and efficiency are important. That is, we are
> concerned with whether the system works at all—output;
> and with how well resources are employed—input
> utilization.[7]

It would be an error to equate the type of control described

here to that traditionally associated with Weberian bureaucracy,

wherein orders from the top are supposed to be carried out with

machine-like efficiency. Quite to the contrary, this concept

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[7]Fremont E. Kast and James E. Rosenzweig, Organization
and Management: A Systems Approach (New York: McGraw-Hill
Book Company, 1970), p. 468.

of control is premised on the understanding that organizational

elements all down the line enjoy great latitude in how they

carry out the policies of top management. If they had less

latitude, top management presumably would not need so much

feedback to keep informed. Stanley Young argues this point:

> The control mechanism should prove highly acceptable
> to submanagers because it is essentially noncoercive.
> The mechanism of self-regulation enables the problem-
> solver to correct himself while he devises a solution,
> thereby eliminating top management's intervention in
> his problem solving activities and reducing management's
> pressure upon the middle manager. Submanagers will not
> be confronted with the problem of close, daily, per-
> sonal supervision of their activities by their
> superiors.[8]

This approach to control is especially appropriate to federal

programs, wherein the "middle managers" are apt to be state or

local employees and therefore not even susceptible to "close,

daily, personal supervision" by program managers. Thus the

fact begins to emerge that the total thrust of systems-based

management theory is toward a sort of controlled "looseness,"

with plenty of delegation and with decentralization of decision-

making points.

Young is a strong proponent of the use of management con-

trol models, and he draws them directly from cybernetics. As

therefore might be expected, he says this about their structure:

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[8]Stanley Young, _Management: A System Analysis_ (Glenview,
Illinois: Scott, Foresman and Company, 1966), p. 286.

There are four control elements: the output to be mea-
sured (1), a sensory device (2) that will measure this
output and feed this information back (3) to a control
unit, (x), which will compare the actual and the
expected (or standard) output; if the deviation is too
wide, an activating mechanism (4) will change the
operating system.[9]

Young provides two general models based on this structure, both

of which are patterned after the standard cybernetic control

model. The first, "Model A," furnishes management with infor-

mation about the organization's product and is used in its

regulation. "Model B" works in similar fashion, but is con-

cerned with the internal processes of the organization itself.

Here are the two models:[10]

MODEL A

MODEL B

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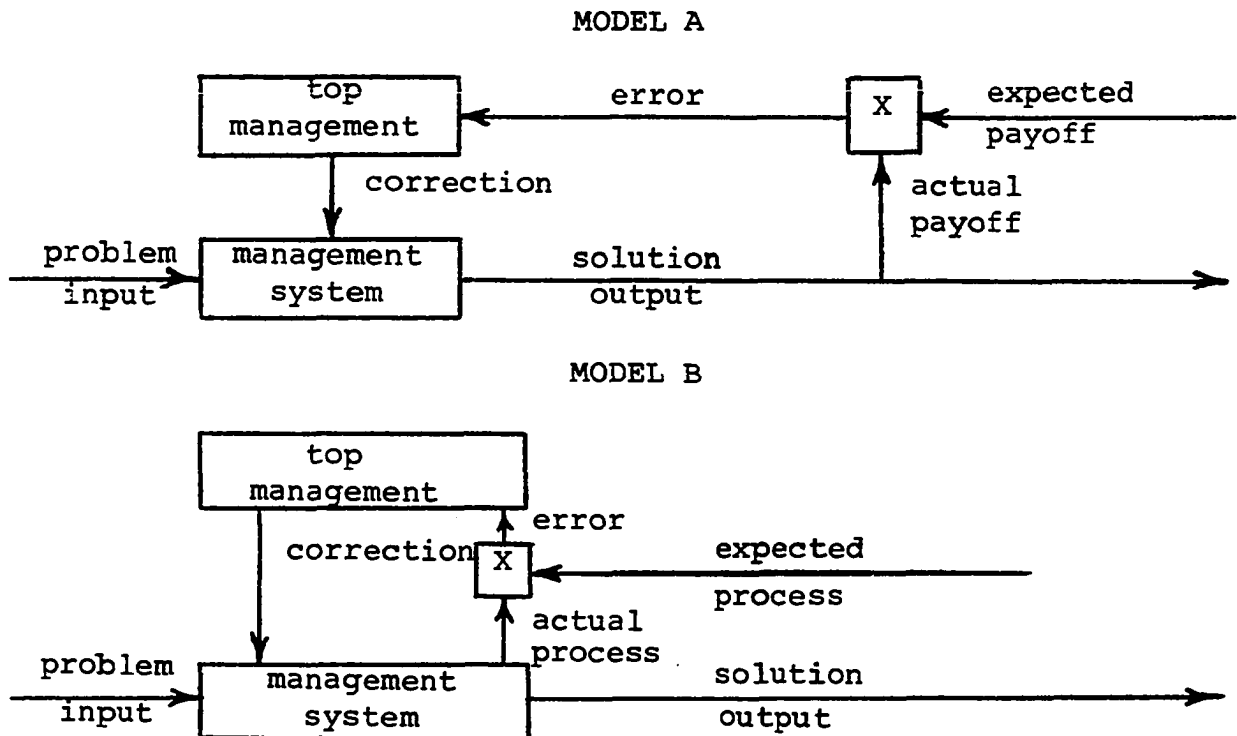
[9]Ibid., p. 27.   [10]Ibid., p. 268.

Incidentally, the fact that Young speaks of "problem input" and
"solution output" is not of particular importance. He could
have substituted "decision" for "problem," or he could have
used simply "input" and "output." That Young himself might
agree with this comment is suggested by his definition of a
management system:

> A management system can be defined as that subsystem
> of the organization whose duties are to receive certain
> organizational problems (inputs) and thereupon to exe-
> cute a set of activities (process) which will produce
> organizational solution (output) for either increasing
> the value or return of the total organizational acti-
> vity (satisficing) or for optimizing some function of
> the total organizational inputs and outputs.[11]

This definition is one of the best this writer has seen, and--
along with Young's two control models--is implicitly incorpor-
ated in the evaluation model.

The control concepts of British theoretician A. G.
Donald closely parallel those of Stanley Young, and some of
Donald's work is now presented (1) to enlarge upon what we have
taken from Young, and (2) to consider a few problems which
Donald presents. First, here is the diagram of his control
model, which goes beyond Young's by noting that there will
always be system inputs which management cannot control, and
outputs which it cannot measure:

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[11]Ibid., p. 15.

Input Parameters

Uncontrolled

Control

Controlled

Feedback

Measure

SYSTEM

Output

Variables

Unmeasured
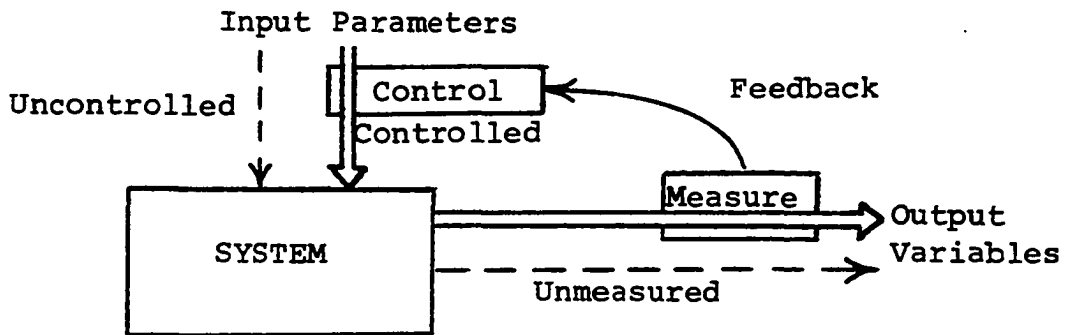
Figure 4.3[12]

Donald's writings express more concern than do Young's with the difficulties inherent in applying models to real-world situations. One of the problems he discusses is of paramount concern to the managerial evaluation of social programs, and involves the question of just what should be picked up at the output of the program and put into the feedback circuit to the manager/evaluator. Many management theoreticians ignore this problem completely, possibly because they are chiefly concerned with outputs which are already in quantified form. For example, if one is dealing with a manufacturing firm, he will be readily able to measure production and inventory in some kind of units, sales in dollars, and so forth. But not all organizations have this advantage, which Donald recognizes:

> For control, measurement of output and subsequent alteration of input parameters is required (Fig. 4.3). The measuring device, known as a sensor, will require a

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[12]A. G. Donald, Management, Information, and Systems (Oxford, England: Pergammon Press, 1967), p. 31.

> unit of measurement in which to work. This in itself
> may pose a problem; often a reason for leaving part of
> a system uncontrolled is that there is no suitable and
> accepted unit of measurement. Other parts of the
> system may not be measured because we do not consider
> it worthwhile, or because it would be too costly to do
> so. Having obtained a unit of measure, the operation
> of the sensor itself requires consideration. Is it to
> measure output as it occurs, or is some element of lead
> or lag to be built into the sensor? Is it to measure
> continuously or at intervals? The sensor must be checked
> in action, it may be defective, and have a bias in its
> readings, or in some other way be recording false infor-
> mation . . . [13]

This problem of sensors, and what they are to measure and feed

back, is perhaps the most difficult aspect of social program

evaluation. Were this not the case, we would hardly need to

consult the literature of evaluation research to complete the

evaluation model--management theory alone might suffice. But

the real outputs and effects of social programs are extremely

hard to quantify, so we will need the advice and assistance of

the evaluation research specialists in designing and placing

output measurement sensors. (This will be discussed in more

depth in Section C of this Chapter.)

As has been indicated, there is a close relationship

between effective management control and the existence of a

good information system. In fact, according to Arthur Toan:

> Information is clearly inseparable from the management
> process. One can, in fact, contend that it is the

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[13]Ibid., p. 30.

life blood of management, for none of the significant
elements of running a business--planning, organizing,
operating, or controlling--can exist in a practical
sense without it. Information helps provide the ans-
wers to two basic questions--"How am I doing?" and
"Where am I going?"--and a number of significant secon-
dary questions with which every executive must be
concerned.[14]

Toan apparently would not, however, rely very much on fully-

automated feedback-controlled decision systems, because he adds

that "it is equally obvious that information is not and cannot

be a substitute for management itself."[15]

The program evaluation model to be presented here is

wholly reliant on the existence of a good information subsystem

within the program, so we must now consider how such subsystems

are developed. A. E. Amstutz suggests some ground rules, while

noting that the task will not be a simple one:

The initial objective of system development is to
establish a management perspective on the decision
environment and to insure that subsequent analysis
focuses on processes influenced by management controlled
variables. The continuing goal is to model, refine, and
validate or reject management understanding of the
decision environment and to relate relevant measures of
behavior and response to management action alternatives.

It is seldom possible to implement a pre-packaged man-
agement information system. There are no generalized
management systems. Each company's management has
unique information requirements; a unique perspective

[14]Arthur B. Toan, Using Information to Manage (New York:
The Ronald Press Company, 1968), p. iii.

[15]Ibid.

on the environment within and outside of its firm;
unique priorities; and a style of management which is
the unique product of the particular personalities
making up the management group. Successful system
development is a matter of evolution.[16]

Given these warnings, the program manager may elect to seek

outside assistance early in the game--perhaps from operations

research specialists. But before he does <u>anything</u>, he may want

to reflect upon the fact that information systems are not

totally shrouded in mystery (as systems jargon sometimes implies

to the newcomer), but consist of some fairly mundane building

blocks. Immegart and Pilecki are reassuring on this point:

> An information support system consists of a number of
> components. It has <u>people</u> (administrators, clerks,
> technicians), <u>machines</u> (typewriters, telephones, card
> sorters, computers), <u>materials</u> (files, filing supplies,
> data cards, memo forms), <u>procedures</u> (keypunching,
> recording, collating) and <u>data</u> (about staff, students,
> buildings, and finances).[17]

These writers also point out some available options, while

underscoring the basic design goals:

> The complete, modern information system, cutting the
> pie another way, may be in part automated, partially
> automated, and nonautomated (hand operation as opposed

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[16]A. E. Amstutz, "The Evolution of Management Informa-
tion Systems," in <u>Readings in Management</u>, ed. by John G. Hutch-
inson (New York: Holt, Rinehart and Winston, Inc., 1971), p.
257.

[17]Glenn L. Immegart and Francis J. Pilecki, <u>An Intro-
duction to Systems for the Educational Administrator</u> (Reading,
Massachusetts: Addison-Wesley Publishing Company, 1973), p.
137.

to machine.) But regardless of the arrangement, extent,
or range (automated vs. nonautomated) of its components,
the information support system ideally serves three
basic functions: 1. Transactions. 2. Control. 3.
Planning.[18]

Arthur Toan has formulated a series of questions designed to

assist the manager in evaluating his information system, and

it is evident that these questions can also serve as guides in

original design. Because Toan's queries are seen as readily

applicable to federal programs, and because his associated

answers are eminently practical, both are quoted here:

Q Does the information fit in well with the respon-
sibilities of management? Does it satisfy the
needs of the management process?

A Management interest in information is largely utili-
tarian and pragmatic. Will the information help in
carrying out the functions management is called upon
to perform? Will it, more specifically, help in
reaching the decisions and taking the actions that
are their responsibility--in planning, organizing,
executing, and controlling operations and in the
successive recycling of the management process as
replanning, reorganizing, reexecuting, and recontrol-
ling occur on the basis of the feedback of results?

Q Does the information system embody a broad view of
what information is, or is the orientation exces-
sively narrow?

A There is a limited yet widely held view which, uncon-
sciously or not, seems to contend that information is
essentially internal (about the company itself), his-
torical (about the past) or financial. It is not
that other types of information--external, present-
and future-oriented, and non-financial--do not exist;

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[18]Ibid., p. 138.

but there is a severe imbalance in favor of the for-
mer stemming from its availability, its accuracy, and
other advantages.

Q Does the information system make use of the various
   means of communication available to it or is its
   approach excessively formal?

A An excessive reliance on formality can sharply reduce
   the value of information; informality should be
   accorded its legitimate place.

Q Does the information system use appropriate bases of
   comparison?

A The difficulties of properly understanding and appro-
   priately using naked data soon lead most users of
   information to insist upon the introduction of one
   or more bases of comparison. The selection of the
   most appropriate basis or bases is the first half or
   perhaps the first quarter of the problem. The
   remainder is whether the bases have the relationships
   for comparison that the user of the information
   believes they do, and therefore whether or not the
   actual comparison made by him is valid.

Q Is the form of presentation appropriate?

A For information to have value it must be used. To
   be used it must be conveyed: it must be heard or
   seen, and understood by the individual executive in
   a way that has meaning. The form and method of pre-
   senting information to management bears importantly
   upon whether it will be understood and used. Sev-
   eral alternative forms of possible presentation
   (alone or in combination) are listed below:

   1. Written--tabulations of figures, charts or graphs,
       narratives, in-depth analyses.

   2. Oral--scheduled presentations, chart-room discus-
       sions, face-to-face reports, telephone or audio
       inquiry devices.

   3. Visual--personal inspection, and visual display
       devices.

In some situations, written reports are best suited for conveying information, making it understood, and obtaining a reaction. The particular form of written report that is most useful depends upon the purposes of the particular information. Narrative reports, for example, are useful for conveying qualitative information that is difficult to quantify. Bar charts or pie charts are frequently more useful than tabulations of figures where comparative relationships are important.

Q Does the information system take into account management's capacity to use information?

A The great variations in management's ability to use information properly in running a business are based on a variety of factors--education, training, occupational experience, the size and complexity of the enterprise, among others. As a consequence, it is quite possible to overproduce or to underproduce information for management, as well as to mismatch information with management's needs in the same situation.[19]

This rather lengthy excerpt has been included for several reasons. For one, it helps to bridge the gap between management theory and practice; systems theory is intended to be used. And as a particularly important aspect of this, it is pointed out that feedback is one of the kinds of information Toan is talking about, so his questions and answers may give the manager/ evaluator a better understanding of just what feedback can be.

Toan's last point is worthy of expansion. One of the commonest pitfalls known to the designers of information

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[19]Arthur Toan, Using Information to Manage, pp. 133-139.

systems involves the generation of <u>too much</u> data for management

use. It must then be winnowed, condensed, and otherwise

reduced, as is stated by Young:

> Because management resources are limited and expensive,
> a series of screening devices is necessary for ensur-
> ing that managers work on problems that have a signi-
> ficant potential organizational payoff; nor should
> managers have the burden of searching through a vast
> amount of data or suggested problems before they can
> determine what they should work upon. The intelligence
> unit therefore screens data and ascertains problem areas,
> and the manager avoids the time-consuming task of re-
> viewing reports, records, and bulletins. Various
> screening devices can be incorporated into the control
> unit to achieve this result.[20]

By "intelligence unit," Young refers to the information system

itself--which of course includes people who act in a decision-

making capacity. In discussing it, Young makes another point

which should be noted by the federal program manager, i.e.,

that not all feedback loops should return to <u>him</u>. Project

managers, for example, also need feedback information, and the

system should provide it:

> . . . an effective intelligence unit will pick up fac-
> tors which will guide the problem-solver in reaching
> appropriate adjustments in his operations via new
> solutions. Not only do loops exist within the subman-
> agement system itself, and between the submanagement
> system and the operating systems, but also between the
> organization and its environment; and all will have
> self-correcting features.[21]

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[20]Young, <u>Management</u>, p. 54.

[21]<u>Ibid.</u>, p. 284.

This notion of multiple feedback loops is directly incorporated in the evaluation model to be presented here.

Kast and Rosenzweig warn that information system design is too critical to be delegated to technical specialists, and that managers--at all levels--must be involved throughout the process. They assert that only management can identify what will be key decision factors, and what types of information should be given advance priority in the system. Conversely, they recognize the importance of certain types of technicians in the design task, and therefore recommend a team approach.[22] The "technicians" to which they refer include operations research specialists, computer programmers, communications engineers, data processing personnel, and so forth. In the case of federal programs, it is submitted that the "technician" list should be expanded to include--for example--sociologists, social psychologists, and psychometrists. These kinds of people will frequently be needed to help determine just what information should be collected about the program's impact on its clients, and in what form to feed it into the information system.

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[22]Kast and Rosenzweig, Organization and Management, p. 363 and p. 370.

One parameter of management information systems that
sometimes leads to confusion relates to how soon a manager can
get needed information. This confusion, when it exists, derives
from the important difference between management access time
and information recency. Data management specialists are never
confused by this difference, but ordinary managers may be.
"Information recency" is not a misleading phrase; it pertains
to the elapsed time between when an event occurs in the system
and the time at which information about it is being reviewed
by interested persons. "Management access time" is altogether
different: this pertains to how quickly a manager can receive
information after he requests it, whether the information
itself has just entered the system or has been in the system
for months. Knowledge of this difference can be important to
the program manager when he is setting up his information
system (which almost equates to setting up his evaluation
system) because it can help determine whether or not--and/or
to what degree--he will desire to computerize the system.[23]

Kast and Rosenzweig offer this conceptual diagram of
information flow in an organization:

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[23]For additional discussion, see Amstutz, "The Evolution
of Management Information Systems," p. 264, and Kast and
Rosenzweig, Organization and Management, pp. 368-369.
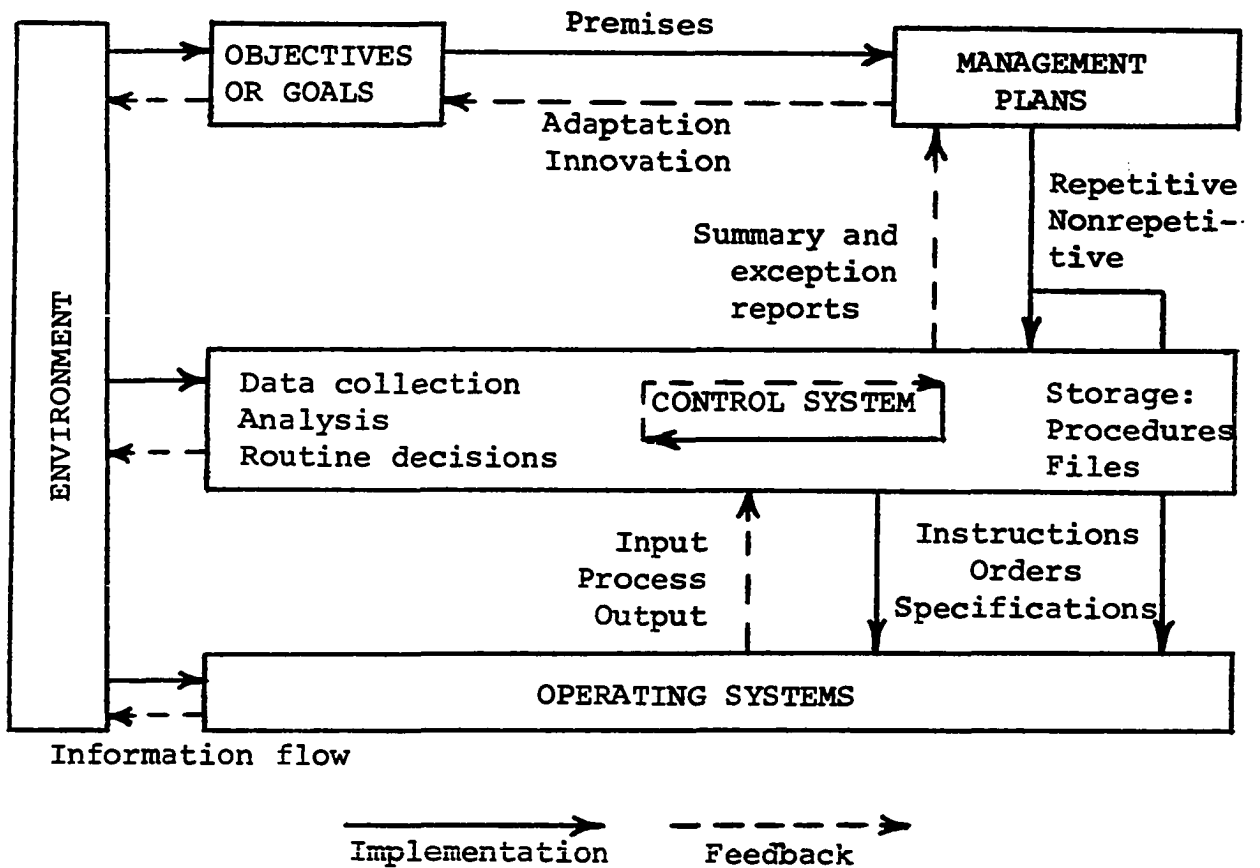
Figure 12-5   Information flow in an organization.[24]

The fact that this diagram associates the information system with such things as the environment, goals, and plans gives it considerable heuristic value.

We have just associated two important elements of systems-based management theory with our evaluation model: its concepts of control and of management information systems. It is now proposed that we pick up one more—management by

[24]Kast and Rosenzweig, Organization and Management, p. 360.

objectives (MBO). While MBO is not an exclusive product of

systems-oriented theory it is completely compatible with it,

and is also able to contribute to the evaluation model. The

common denominator of evaluation and MBO is the notion of mea-

surable goals, which is the keystone of both.

Management by objectives, as a theoretical concept and

as a well-developed body of literature, has several applica-

tions to federal programs and their managerial evaluation. One

of underlying importance is that MBO has traditionally espoused

the notion of coordinated decentralization,[25] which is, of

course, the inherent pattern of any federal program which is

carried out through state and local projects. Accepting

"decentralization" as a fact of life in the large, modern

organization, MBO practitioners approach the "coordination"

part by concentrating on the development and pursuit of a

structure of interlocking, mutually-supportive, managerial

objectives. They adopt a series of formal procedures for set-

ting and periodically updating these objectives, and also for

the regular assessment of their success in achieving them.

This assessment process, incidentally, does not normally

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[25]See Paul Mali, Managing by Objectives-An Operating
Guide to Faster and More Profitable Results (New York: Wiley-
Interscience, a Division of John Wiley & Sons, Inc., 1972),
p. 3.

involve the participation of special evaluation personnel--it

is done by the managers themselves.

Paul Mali, textbook writer and management consultant,

defines MBO thusly:

> Managing by objectives (M.B.O.) is a strategy of plan-
> ning and getting results in the direction that manage-
> ment wishes and needs to take while meeting the goals
> and satisfaction of its participants. In its simplest
> form, <u>it is blending individual plans and needs of
> managers toward a large-scale accomplishment within a
> specific period of time</u>. The primary purpose of such
> a strategy is to simplify and clarify the managerial
> processes operating within the firm. There are four
> basic ingredients to the M.B.O. concept: objectives,
> time strategy, total management, and individual moti-
> vation.[26]

Mali goes on to explain his "ingredients." <u>Objectives</u> are

defined as "events or accomplishments planned and expected to

happen," and as "job or organizational results to be arrived

at."[27] Objectives, Mali declares, must be unambiguous, actually

attainable, and--above all--measurable. <u>Time strategy</u>, he

writes, "is the timetable for blending the activities and opera-

tions of individual managers to achieve long-and short-range

sets of results."[28] Wording it another way, he says time stra-

tegy is "a deliberate coordination of resources with the calen-

dar for signalling individual managers to propose, act,

and accomplish at designated periods of time."[29] <u>Total</u>

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[26]<u>Ibid</u>., p. 1.   [27]<u>Ibid</u>.   [28]<u>Ibid</u>.   [29]<u>Ibid</u>.

management, according to Mali, "refers to a formalized effort
to involve and coordinate the contributions of each individual
manager toward a common goal,"[30] a task which Mali assigns to
"the management system." Individual motivation "refers to the
personal involvement and participation in the objective-setting
process."[31] Mali feels that this involvement is a tremendous
source of motivation.

Mali declares that his four ingredients in turn form
four basic ideas which are the foundation of management by
objectives. These are:

1. Unity of managerial action is more likely to occur
   when there is pursuit of a common objective.

2. The greater the focus and concentration on results
   one wants to achieve on a time scale, the greater
   the likelihood of achieving them.

3. The greater participation in setting meaningful
   work with an accountability for a result, the
   greater the motivation for completing it.

4. Progress can only be measured in terms of what one
   is trying to make progress toward.[32]

Other writers define MBO much as Mali does, although
they sometimes place particular emphasis on different aspects
of it. Jack Fuller's description is now offered, to illustrate
both these points and to pick up on the emphasis he gives to
evaluation:

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[30]Ibid., p. 2.   [31]Ibid.   [32]Ibid., p. 3.

MBO is a systematic and continual process whereby the members of a given management team pursue mutually agreed upon goals of and for their organization. Enroute to manifesting this definition, MBO typically proceeds through the following steps:

1. Institutional goals are established.

2. Individual (managerial) goals are set and pursued.

3. Performance reviews are held periodically to evaluate progress in achieving goals.

4. Appraisal sessions are held at the end of the year to assess and reward accomplishment.[33]

Fuller's "performance reviews" are not the usual reviews of personnel effectiveness; the manager's personal performance _is_ assessed, but even more attention is given to program performance. The fact that an individual manager is not achieving his milestone objectives may not be his fault at all, and performance review may lead--for example--to changes in some other organizational element. Stephen Carroll draws attention to some of the complexities of this type of evaluation:

It is evident that evaluation and measurement require consideration of the means of achieving, as well as the ends sought. Thus, concern must be given to both the objective (number, type, difficulty, and so on) and the manner in which it is achieved (cost, cooperation, time consumed, and the like). Unless this is done, an important opportunity to communicate expectations, to give precise feedback on performance results, and to set effective goals may be lost. It must be fully

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[33]Jack W. Fuller, "MBO Revisited," Adult Leadership, September 1973, pp. 112-113.

understood that evaluation has obvious links to action
plans as well as to desired end states.[34]

Upon encountering the above statement in Carroll's book, this
writer experienced a sensation of _déjà vu_: it echoes the
arguments of Carol Weiss and Edward Suchman that federal pro-
gram evaluation must encompass inputs and process as well as
outputs. From this example, and from the general thrust of the
MBO approach, one can acquire a strong suspicion that many of
the problems of federal program evaluation have already been
covered in the literature and concepts of management by objec-
tives. (And if they have, they also may well have been worked
out in _practice_, because so many large organizations actually
employ MBO.) If this suspicion is well founded, as this writer
believes, then it seems unfortunate that so few of the authors
in the program evaluation field evince any knowledge of MBO.
In the rather extensive list of publications on federal program
evaluation which was reviewed for this dissertation, not a sin-
gle reference to MBO was encountered.

Almost every book and article on program evaluation
draws attention to the fact that programs must have well defined
goals before they can be evaluated, but these publications offer

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[34]Stephen J. Carroll, Jr., _Management By Objectives;_
Applications and Research (New York: The MacMillan Company,
1973), p. 83.

few suggestions to the program manager for defining his goals

and/or objectives. The MBO writers, on the other hand, offer

many suggestions. This example is from Paul Mali:

> Formulating meaningful statements of objectives takes careful thought and analysis. The intention of the objective must be clear and its focus well understood. The formal statement should not only specify the action to be taken but also stimulate it. The following are guidelines to assure careful formulation of objectives:
>
> 1. Defined in terms of results or conditions to be achieved rather than in terms of activities to be performed.
>
> 2. Written so that they can be analyzed and reviewed from time to time.
>
> 3. Limited in time so as to provide milestones of achievement.
>
> 4. Written forcefully, starting out with such terms as achieve, complete by, and replace, which suggest results or performance stretches.
>
> . . . .
>
> 7. Stated in positive terms, that is, in terms of what is to be done rather than in terms of what is to be avoided.
>
> 8. Stated concisely and briefly without complex and elaborate descriptions.
>
> 9. Designed to cover a single end result and not a number of commitments.
>
> . . . .
>
> 16. Assigned a risk factor to indicate the confidence level of completion.
>
> . . . .

18. Written in quantifiable terms that are easily measurable and hence easily reportable.[35]

Mali expands upon many of these, as in this excerpt addressed to the quantification of objectives:

> The following guidelines may be useful in eliminating motherhoods in statements of objectives.
>
> AVOID. Over-simplifications; sensational terms; understated or overstated words; opinions subject to change; exaggerations; inexactness; idealistic terms; terms that can take a range of meanings.
>
> USE. Words that indicate how much; terms that can be proved or demonstrated; precise terms designating actions that can be controlled and measured; terms that lend themselves to clarification by percentages, ratios, numbers, averages, index numbers, correlations, and standard deviations.[36]

It might be unfair to state that most program goals, as described by Congress, fall into Mali's "AVOID" category--but it is not unfair to declare that few of them are expressed in terms such as Mali lists under "USE." One task of the program and project managers, therefore, is to restate program goals into "evaluatable" form, and it is recommended that they access the literature of MBO for assistance in this task.

To summarize this section of this study, it can be said that our evaluation model is indebted to the literature of

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[35]Mali, Managing By Objectives, pp. 111-112.

[36]Ibid., p. 114.

management theory for that theory's well developed concepts of management control, management information systems, and management by objectives. As an aside, it can be suggested that the theory and practice of MBO, if applied effectively to the management of federal social programs, would go more than half way toward solving the overall problem of federal program evaluation.

B. Organization Theory

Organization theory, as a field of study, has contributed more to the evaluation model of this paper than either the model or this section will suggest. A primary reason for this is that much of the work of the organization theorists has already been incorporated into management theory, and made its way into our model via that route. Examples of this would be work in communications, decision making, organizational structure (e.g., centralization vs. decentralization), motivation, and institutional memory. A secondary reason is that this writer acknowledges a special personal debt to the field for whetting his interest in conceptual approaches to organizational processes, including the evaluation task. The field of organization theory is much too rich, however, to have been exhausted by the contributions just noted, and in this section it will be tapped again for its work in three sub-areas of direct

concern to the evaluation model. These are goals and goal con-

flict, organizational effectiveness, and institutionalization.

As an introduction to a book chapter entitled "Organiza-

tional Goals," editors Fremont Lyden, George Shipman and Morton

Kroll make a rather fine distinction between "goal" and "man-

date." Specifically, they wrote:

> When an organization receives a mandate (i.e., a law,
> ordinance, policy, directive, etc.) from its govern-
> ing legislative body, it must translate this communi-
> cation into a form appropriate for mobilizing its
> resources for action. This process is referred to as
> defining the organization's goals.[37]

This observation has instant applicability to federal programs,

where there has been an unfortunate tendency for managers to

simply accept their Congressional/agency "mandates" as their

program goals. This is a common complaint of evaluation

researchers, who write that they frequently have to assume

certain program goals in order to have something to evaluate.

While Lyden and colleagues use the term "mandate," other the-

orists make the same point while using such terms as "mission,"

"policies," and "general goals." In any case, regardless of

what he chooses to call his authorizing directives, the manager/

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[37]Fremont Lyden, George Shipman, and Morton Kroll, eds.,
Policies, Decisions, and Organization (New York: Appleton-
Century-Crofts, 1969), p. 135.

evaluator is admonished to give careful attention to translating

them into a structure of clear and specific goals.

Even if the foregoing is done (and the problem will be

even more serious if it is not done), another type of pitfall

can also readily trap the unwary program manager: the possi-

bility of discrepancy between "official" (stated) and "opera-

tive" goals. Charles Perrow describes this problem:

> Official goals are the general purposes of the organi-
> zation as put forth in the charter, annual reports,
> public statements by key executives, and other author-
> itative pronouncements . . . . This level of analysis
> is inadequate in itself for full understanding of
> organizational behavior. Official goals . . . do not
> indicate two major factors which influence organiza-
> tional behavior: the host of decisions that must be
> made among alternative ways of achieving official goals
> and the priority of multiple goals, and the many un-
> official goals pursued by groups within the organiza-
> tion. The concept of "operative goals" will be used
> to cover these aspects. Operative goals designate the
> ends sought through the actual operating policies of
> the organization; they tell us what the organization
> is really trying to do, regardless of what the official
> goals say are the aims.[38]

Perrow's notion of operative goals as something distinct from

official goals was so insightful that it is now permanently

ensconced in the literature and regularly recognized in prac-

tice. Implications for the program manager are manifold, and

are found at both the program and project levels. He may find,

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[38]Charles Perrow, "Relation of Goals to Technology, Task Areas, and Power Structure," ibid., pp. 140-141.

for example, that while the stated goals of a particular state or local project imply one thing, the policies and/or actions of its managers are making its operative goals something quite different. Or, if he is sufficiently objective, the program manager may even find that he and his immediate staff are doing the same thing. This is an easy trap to fall into, and it probably occurs to some extent in all organizations. (A highly publicized example, taken directly from the federal program sector, involves the "citizen participation" project managers who were widely accused of using their program as a base for mounting political attacks against elected city governments.) The most obvious problem that all this can create for the manager/evaluator, of course, is that if an evaluation subsystem is built to assess progress toward official goals, it will be badly subverted if serious discrepancies exist between official goals and operative goals.

A wide array of organization theorists have recognized the basic ambiguities in most definitions of goals, and most of them have employed individual terminologies in reaching some sort of compromise with the problem. A composite of all their writings might be something like this:

1. Every organization must have one or more basic goals, which generally acknowledge the reason-for-being of the

organization. These goals, though subject to gradual change, are relatively permanent.

2. Every organization will also have another complete set of goals, which--even if not published--can be perceived by an astute observer. These goals will vary widely in specificity and time range, and will in some cases conflict with each other and with the basic goals mentioned above.

3. There is no sharp line of demarcation between the goals described in (1) and (2) above. Furthermore, those described in (2) will tend to blend and blur with yet another set of "organizational goals" pursued by formal subgroups within the organization, e.g., project staffs and/or functional staffs, such as evaluation specialists.

Federal programs are seen as organizations for purposes of this discussion, so the import for the manager is that he should at least be aware that these ambiguities exist. If he cannot totally eliminate them in his program, he can at least try to minimize their possible negative effects. Kast and Rosenzweig suggest one approach he can take:

> Amid the clamor for clarity in organizational goals, it might be wise to consider the possible virtues of vagueness. Clear-cut goals and mechanistic programs for achieving them may discount the human element and lead to a sterile environment which stifles individual initiative and results in under-utilization of human resources . . . . In an environment of multiple objectives it is impossible to focus on more than a few at

> a time. When concentrating on one particular objective, other goals in the system must of necessity be relatively vague. The same is true for different periods of time. Short-range goals may be rather explicit, while medium- and long-range goals are more vague . . . If goals are stated in general terms, there is room for organizational participants to fill in details according to their own perception and to modify the pattern to their own liking . . . . Vagueness makes it possible to work toward goals by many different means . . . . Unclear objectives facilitate compromise on the part of the participants with diverse value systems.[39]

This may appear as a head-on rebuttal of "management by objectives," but is not intended as that by either the authors or this writer. Rather, it is a warning to the manager that MBO, like all other approaches to management, is not something he can use mechanically; he must use judgement, and frequently-- to borrow Herbert Simon's word--accept objectives which merely "satisfice." It is also a warning to the manager that because total program aims can probably never be expressed completely in terms of specific, measurable objectives, neither can his evaluation subsystem ever be made entirely "automatic." It, too, will always require judgemental interpretations.

Early studies of organizations tended to view them as "closed" entities, with all control levers operated from the top. To the extent that goals were considered at all, they

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[39]Kast and Rosenzweig, Organization and Management, pp. 441-442.

were commonly pictured as being formulated by top managers almost as though the organization existed in a vacuum. More recent studies of organizations as social organisms, or as systems, tend more toward simultaneous consideration of the organization and its environment. The systems movement, in particular, with its notions of such things as interface points and feedback loops, has almost forced consideration of the environment of any organization (system) being examined. From this point, it has been equally logical to consider the impact of the organization's environment on the organization's goals.

The environment can impact an organization's goals at several levels, e.g., at the levels of the total organization (we can read "program"), its sub-units (to us, "projects"), and its individual members. And wherever it impacts, the environment is likely to evoke changes in goals and/or approaches to goals, for the simple reason that the environment itself is in a constant state of change. This is one of the main reasons why organizations are frequently described as "adaptive," and why they must always be capable of accommodating to outside influences. An exceptionally complete analysis of this subject has been done by William R. Dill of the Carnegie Institute of Technology, who suggests that insight into

organization/environment interaction can be gained by conceptualizing the organization as an information processing system. In relating this to organizational goals he writes:

> Once information from the environment has entered the organization's communication system, the next step is usually to ascribe meaning or relevance to it. Few environmental inputs provide clearly defined prescriptions for organizational action. Instead, they provide cues which members of the organization can interpret in many different ways. A major organizational function, which has so far received relatively little attention in organizational research, involves evaluating, interpreting, and combining inputs into formulations of tasks for the organization to perform. Tasks are the organization's own statements of the goals that it wants to achieve and of the means by which it hopes to achieve them.[40]

The literature of management information systems has already told the program manager that he must have links to the environment. Professor Dill is now adding that it is not enough simply to react to received inputs on a piecemeal basis--the manager must synthesize them to form coherent goals. Dill offers a diagrammed approach to doing this, at least on a short-term basis:

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[40]William R. Dill, "The Impact of Environment on Organizational Development," in Concepts and Issues in Administrative Behavior, ed. by Sidney Mailick and Edward Van Ness (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1962), p. 98.

| Individual and organizational programs for attending to and storing information | Individual and organizational programs for interpreting inputs | Individual and organizational programs for scheduling activities |

ENVIRONMENTAL INPUTS

THE SEARCH AND RECORDING STAGE
Perception and storage of inputs from the environment.

THE INTERPRETATION STAGE
Interpretation of some inputs as tasks for the organization.

THE ACTION STAGE
Performance of some of the tasks.

Short-Run Patterns of Environmental Influence[41]

Internal activities can also lead to goal changes, as

the organization learns. These changes can be short-range and

tactical, or long-range and strategic, or both. Ernest Dale

(whose primary concern is the business sector) says that

organization growth is probably the biggest single (internal)

cause of goal change, partly because it leads to successive

reorganizations.[42] Factors involved in growth may include new

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[41]Ibid., p. 100.

[42]Ernest Dale, Organization (n.p.: American Management Association, 1967), p. 189.

products, new technologies, new clients, diversification, and

so forth. In the case of federal programs, of course, growth

is often tied directly to funding levels, so the distinction

between "internal" and "external" causes becomes ambiguous.

Dale points out that goal change is perfectly alright,

and is, in fact, to be expected, but that it should always be

consciously done. It should result from the formal decision

process, not from drift. His following comment on this is

aimed at the business firm, but is equally appropriate to the

federal realm:

> Fundamentally, . . . the decision to change should be
> based on evidence of organizational shortcomings,
> which may be due to growth or other changes, internal
> or external. For example, there may be evidence that
> the fundamental objectives of the company are no
> longer clear to many of the executives, either because
> the objectives have changed over the years or because
> growth has produced so much distance between the top
> and the lower executives that the latter have become
> confused about just what they should be trying to do.
> Or, although the general company objectives are clear
> to everyone, many executives may be confused about the
> objectives of their own work or the extent of their
> responsibility and authority.[43]

An immediate application of this to federal programs might

involve the case where the Washington-based (or regional head-

quarters-based) manager has accepted new mandates which modify

his perception of the overall program goals, but where these

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[43]Ibid., p. 192.

changed perceptions have not been fully communicated to the

field project staffs. A situation like this can drastically

skew the results of an on-going evaluation effort.

Organization theorists have done much work in the area

of goal conflict, from which program managers can profit gen-

erally and from which they can gain new insights into the

evaluation problem. Goal conflict, in one form or another,

exists in a variety of places within any organization: between

the organization and its formal sub-groups (or subsystems),

between the sub-groups themselves, between individuals and the

organization and/or its sub-groups, between the formal authority

structure and what is known as the informal authority structure,

and so forth. A. K. Collins draws on Cyert and March to for-

mulate a comment on this:

> Cyert and March have proposed a different conception of
> organizational goals which recognizes that conflict of
> goals is never fully resolved within organizations. In
> their model the organization is viewed as a coalition
> made up of a number of sub-coalitions. Goals arise
> from a process of bargaining among members of the sub-
> coalitions.[44]

This conception obviously disregards any imposed "official"

goals the organization may have and deals directly with what

Perrow has labeled "operative" goals. The federal program

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[44]A. K. Collins, The Dynamics of Organization (Melbourne,
Australia: Sun Books Pty Ltd., 1968), p. 39.

manager/evaluator is thus warned--again--that he cannot effec-

tively evaluate field projects simply on the basis of what his

policy directives _say_ they should be doing.

A final input from the goal-theorists relates to cate-

gories of goals. If the program manager thinks of evaluation

in terms of progress toward goals--which, in part, he should--

it may be helpful for him to realize that they are sometimes

grouped into taxonomies. The International Encyclopedia of the

Social Sciences suggests one form of grouping:

> To provide some order in this subject area and to
> illustrate the work on goals that has been done, we
> shall distinguish six categories of goals, recognizing
> that the number could be smaller or larger. Three
> have _external_ referents--society, the public in con-
> tact with the organization, the investors--and will be
> referred to, respectively, as _societal_ goals, _output_
> goals, and _investor_ goals. The other three have _inter-_
> _nal_ referents, that is, to the organization and its
> members. They are _system_ goals (survival, growth, etc.),
> _product_ goals (the defining characteristics of the
> product such as quality, availability, styling), and
> the somewhat residual category of _derived_ goals (those
> which make use of the power the organization generates
> in the pursuit of the other goals.)[45]

Relating these to our previous declaration that program evalu-

ation should relate to _process_ as well as _effects,_ most of them

will be recognized as process goals. It is questionable that

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[45]Charles Perrow, "Organizational Goals," in _Interna-_
tional Encyclopedia of the Social Sciences, ed. by David L.
Sills (Vol. 10, n.p.:   The Macmillan Company and the Free
Press, 1968), p. 306.

all these types of goals can be expressed in "measurable" terms, but this may be acceptable to the manager if he first realizes that he cannot possibly evaluate everything--that the resources he can devote to evaluation will certainly limit its scope. On the other hand, knowledge of these theoretical categories of goals may help him to make better choices of what he does evaluate, which can lead to more productive use of whatever resources he has.

The work of the organization theorists on goals is closely related to their work on organizational effectiveness, to which we now turn. And as we do, a now familiar dichotomy emerges once again, in that the writers on this subject can readily be categorized into those who are goal oriented and those who are process oriented. This being the case, one might now make a quantum leap and expect to find almost total duplication here of the work of the evaluation specialists-- and one would be in error. There is quite a bit of overlap between the two fields, but there is also a great amount of difference. For example, we will find the organization the- orists concerned with such things as organizational morale, but while program staffs must certainly have high morale, program evaluation writers do not normally concern themselves with this.

Amitai Etzioni opens the argument against a limited

goals achievement standard by which to measure organizational

effectiveness:

> Another reason for the invariant discrepancy between
> goals and social units . . . is that all social units,
> including organizations, are multifunctional units.
> Therefore, while devoting part of their means directly
> to goal activities, social units have to devote another
> part to other functions, such as the recruitment of
> further means to the goal and the maintenance of units
> performing goal activities and service activities.[46]

This statement <u>might</u> have been in a book on program evaluation,

because it is directly pertinent to the manager's evaluation

task, but it is not; it is in a book addressed to organizational

effectiveness. The literature of evaluation almost never men-

tions this sort of thing, possibly because its authors are

chiefly interested in social problems and/or social research,

and are not oriented toward either organization or management.

But to return to Etzioni and his cause, we have this additional

argument against limiting performance assessment to looking at

progress toward goals:

> Some organizations are found gradually to increase
> their effectiveness by improving their structure and
> their relations with the environment. In other organ-
> izations effectiveness is slowly or rapidly declining.

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[46]Amitai Etzioni, "Two Approaches to Organizational
Analysis: A Critique and a Suggestion," in <u>Assessment of
Organizational Effectiveness</u>, ed. by Jaisingh Ghorpade (Pacific
Palisades, California: Goodyear Publishing Company, Inc.,
1971), p. 34.

> Still others are highly effective at the initial
> period, when commitments to goals are strong, and less
> effective when the commitment level declines to what
> is "normal" for this organization. These few examples
> suffice to show that the goal model may not supply the
> best possible frame of reference for effectiveness.
> It compares the ideal with the real, as a result of
> which most levels of performance look alike—quite
> low.[47]

The "outside" evaluator, concerned with producing a recommen-

dation for some policy-making body, might find little to inter-

est him in Etzioni's foregoing comments. To him, goals were

either achieved or they were not achieved. But to the manager/

evaluator, Etzioni's words have import: they tell him to watch

for trends in what his feedback is telling him about the im-

pact his program is having, and they suggest things for him to

consider when he spots one.

Having satisfactorily demolished what he calls the

"goal model" of organizational effectiveness, Etzioni offers a

presumably better one: a "system model." He says that it will

be a model of a multifunctional unit, and that it will assume

the allocation of means to such non-goal functions as service

and custodial activities, "including means employed for the

maintenance of the unit itself."[48] As one of his arguments for

the system model, he sets forth a paradox:

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[47]Ibid., p. 35.

[48]Ibid.

> Paradox of Ineffectiveness: An advantage of the system
> model is that it enables us to conceive of a basic form
> of ineffectiveness which is hard to imagine and impos-
> sible to explain from the viewpoint of the goal model.
> The goal approach sees assignment of means to goal
> activities as functional. The more means assigned to
> goal activities, the more effective the organization is
> expected to be. In terms of the goal model, the fact
> that an organization can become more effective by
> allocating less means to goal activities is a paradox.[49]

Etzioni goes on to explain that the system model will fre-

quently point out a need to allocate higher percentages of

available resources to supportive functions within the organi-

zation, which will make it more effective, and which will--in

the final analysis--improve its goal-achievement performance.

Etzioni's overall argument supports the position taken

in this paper, i.e., that from the manager's viewpoint, program

evaluation must look at all the things that go into producing

the program's ultimate product--client impact. It also implies

that while designing his evaluation subsystem, the manager

should try to build in sources of feedback about factors which

affect the health and welfare of his program as an organization.

Other scholars in the field of organization effectiveness say

similar things, as evidenced by this comment on the establish-

ment of criteria for effectiveness:

> Clearly, effectiveness criteria must take into account
> the profitability of the organization, the degree to

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[49]Ibid., p. 41.

which it satisfices its members, and the degree to
which it is of value to the larger society of which it
is a part. These three perspectives include system
maintenance and growth, sub-system fulfillment, and
environmental fulfillment. Each is obviously composed
of several related components, and each component is
hypothetically related to each other.[50]

Relating this to the design of a program evaluation subsystem

might entail this sequence: (1) Taking as a criterion of

effectiveness the statement that an organization must satis-

fice its members, the manager can (2) endeavor to identify (or

create) suitable indicators of member satisfaction (morale),

and then (3) place "sensors" where they will provide him with

feedback on this subject. Feedback of this type can be con-

tinuous, but is more apt to be of the "exception" variety,

since the manager may only have time to deal with serious

morale problems. Also, such feedback may have to be mainly

subjective in nature, since quantifiable data in this area is

difficult to obtain except perhaps in very large organizations.

Unfortunately, there is a large gap between recognizing

the need for criteria of organizational effectiveness and the

actual establishment of same. Here, most organization theorists

have been long on philosophy but short on workable applications,

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[50]Frank Friedlander and Hall Pickle, "Components of
Effectiveness in Small Organizations," in Assessment of Organ-
izational Effectiveness, ed. by Jaisingh Ghorpade, p. 192.

as is spelled out in this discouraging comment by Daniel Katz
and Robert Kahn:

> There is no lack of material on criteria of organiza-
> tional success. The literature is studded with refer-
> ences to efficiency, productivity, absence, turnover
> and profitability--all of these offered implicitly or
> explicitly, separately or in combination, as defini-
> tions of organizational effectiveness. Most of what
> has been written on the meaning of these criteria and
> on their interrelatedness, however, is judgemental and
> open to question. What is worse, it is filled with
> advice that seems sagacious but is tautological and
> contradictory.[51]

Acknowledging part of this problem, but desiring to take
advantage of some of the useful work that <u>has</u> been done in the
area, James Price has attempted a form of consolidation. He
has established a group of standards, expressed as propositions,
and endeavored to test them against an inventory of fifty
studies done by other scholars. Price is basically a "goals"
man, in that he says "<u>effectiveness</u>, the dependent variable of
this inventory, may be defined as the degree of goal achieve-
ment,"[52] but he believes five other "sub-variables" should also
be considered. These are <u>productivity, morale, conformity,</u>

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[51]Daniel Katz and Robert L. Kahn, "The Concept of Organ-
izational Effectiveness," in <u>Assessment of Organizational
Effectiveness</u>, ed. by Jaisingh Ghorpade, p. 52.

[52]James L. Price, <u>Organizational Effectiveness: An
Inventory of Propositions</u> (Homewood, Illinois: Richard D.
Irwin, Inc.), pp. 2-3.

adaptiveness, and _institutionalization_.[53] Here are three

examples from the extensive list of propositions which Price

feels are verified by the fifty studies:

> Proposition 3.4. Organizations which have the maximum
> degree of centralization with respect to strategic
> decisions are more likely to have a high degree of
> effectiveness than organizations which do not have the
> maximum degree of centralization with respect to stra-
> tegic decisions.[54]

> Proposition 5.1. Organizations which have a high de-
> gree of sanctions are more likely to have a high
> degree of effectiveness than organizations which have
> a low degree of sanctions.[55]

> Proposition 6.1. Organizations which have a high
> degree of communication are more likely to have high
> degrees of effectiveness than organizations which have
> a low degree of communication.[56]

Price's "verified" propositions, _in toto_, are instructive about

where a manager/evaluator might profitably look while evaluating

the overall configuration, operating rules, and "style" of his

program.

Another writer whose work has been similar to that of

Price is Wolf Heydebrand, who has made direct empirical studies

of many organizations in an attempt to learn more about what

most influences their effectiveness. Heydebrand's point of

departure is this:

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[53]_Ibid_., p. 5.   [54]_Ibid_., p. 60.

[55]_Ibid_., p. 138.   [56]_Ibid_., p. 163.

> Organizational effectiveness will be defined here in
> terms of quality, volume, and efficiency of goal
> attainment, as well as in terms of adaptability. All
> of these elements of effectiveness are closely tied to
> the specificity and complexity of the goals, objectives,
> and tasks of an organization. Effectiveness in per-
> forming a series of tasks as defined by certain objec-
> tives involves the consideration of the means relative
> to the ends, the "realistic" assessment of "operational
> goals," and the definition of the quality of problem
> solving in terms of optimal, "satisficing solutions,
> rather than maximizing ones."[57]

Heydebrand, also, is goal-oriented, but--like Price--he wants

to examine a variety of organizational factors which influence

the extent of goal achievement. Price and Heydebrand are both

mentioned here to illustrate that organizational effectiveness,

as a field of literature, has considerable depth and is a

potentially fruitful area of study for the student of program

evaluation.

The final facet of organization theory to be touched

on in this section is its concept of <u>institutionalization</u>.

Phillip Selznick is generally credited with having first con-

ceptualized institutionalization and with developing its basic

outlines,[58] but many writers have now built on that foundation.

The subject can be approached by visualizing a continuum, with

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[57]Wolf V. Heydebrand, ed., <u>Comparative Organizations:</u>
<u>The Results of Empirical Research</u> (Englewood Cliffs, New Jersey:
Prentice-Hall, Inc., 1973), p. 19.

[58]See Phillip Selznick, <u>Leadership in Administration</u>
(Evanston, Illinois: Row, Peterson, 1957).

"mere organization" on one end and with "institution" on the
other. One task of leadership is to move the organization
toward "institution" status. Selznick sets up four tests to
identify the "institutionalized" organization:

a) Institutions have <u>duration</u>, or <u>permanence</u>. They
   are <u>stable</u>. Mere organizations may be temporary
   and/or unstable.

b) An institution has characteristics which distin-
   guish it from other organizations of its type. It
   has <u>uniqueness</u>.

c) An institution is <u>infused with values</u>, both for its
   membership and for outsiders.

d) Institutions are seen as being less <u>expendable</u> than
   organizations.[59]

As an organization goes through the process of institutionali-
zation it becomes more <u>predictable</u>, and this in turn enhances
the feelings of <u>security</u> held by its members, its clients, and
its sponsors. Another byproduct of the institutionalization
process is that organizational components become more nearly
<u>interchangable</u>--a notion that applies mainly but not solely to
staff. Institutionalization also facilitates the task of new-
member <u>socialization</u>, which is always a drain on organizational
resources.

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[59]Paraphrased from a lecture given by Professor Hugh
MacNiven at the University of Oklahoma on March 9, 1971.

The concept of institutionalization can suggest new objectives fcr the federal program manager which may enhance the viability of his programs, and if he adopts any of these, he of course assumes new evaluative tasks. In any event, it is suggested that both practitioners and theorists in the field of program evaluation can add to their understanding of their subject by accessing the work that has been done by organization theorists in the sub-area of institutionalization. The evaluation model presented in this Chapter has been influenced by that work.

C. Evaluation Research

In this paper, the literature of social program evaluation research has been used mainly to describe what program evaluation is, why it is done, problems associated with doing it, and so forth. No attempt has been made to include technical descriptions of the research itself, in part because this writer claims no expertise in the field, but more especially because it is held that the program manager/evaluator needs no such expertise. While it is deemed reasonable to expect program managers to understand management by objectives, management information systems, and other common tools of their trade, in evaluation research--as in operations research--they should be permitted/expected to employ the assistance of specialists.

On the other hand, just as managers must know something about accounting in order to know when and why they may need the help of accountants, program managers must know something about the technicalities of evaluation research. In this section, therefore, we will touch at least briefly upon some of the techniques in the tool kits of the researchers. Also, we will return to the evaluation literature to expand upon a topic already mentioned, i.e., the concept of causality, which lies behind Carol Weiss' notion of "proxy goals." Finally, we will look more closely than we have at the problems of side effects and of multiple causality, two more areas where the research literature may be able to make a unique contribution.

At this juncture it seems expedient to clarify the anticipated role of the research specialist (or specialists) in the development and implementation of any actual evaluation program to be based on the model presented herein. First, it is assumed that he will be employed directly by the program manager, in either a consultative or a salaried status, and that he will be available to the manager on a "permanent" basis. Next, it is expected that he will work closely with the manager in all phases of evaluation subsystem planning, and that this will include the identification of measurable output goals. It is assumed that he will design instruments, methods, and the like--

i.e., "sensors"—for assessing the program's ongoing impact on clients, and that he will indoctrinate field project personnel in their use. Related to this, he will help to develop suitable reporting procedures—i.e., feedback loops—for routing needed information about impacts back to the program (and project) manager. Also related to this, he will help to develop procedures for aggregating feedback information and preparing it for managerial review in the form of graphs, charts, tables, print-outs and whatever. And he will assist the manager in interpreting this feedback, and in planning any program changes that may be deemed necessary in response to it. In addition to all this, he will be expected to produce occasional short-term "research designs" with and for the managers, to answer special questions about program effects.

Some of the things to be specifically excluded from his role are also important. For example, he will have to understand that he has no special privileges regarding what he can publish about the program—he will be expected to behave with the same discretion as any other program (or project) staff member. Additionally, he will have to understand that his efforts are not oriented toward policy decisions, but toward management decisions; if he can think only in terms of grand research designs which demand protracted periods of program

stability for their fulfillment, he should seek other employment.

Carol Weiss describes the role that most evaluation research specialists might like to play, then offers an alternative:

> Evaluators generally come out of the academic research tradition. In school they were subjected to the socialization processes and the initiation rites of science. By far the majority still take what Kathleen Archibald has described as an "academic orientation" to their work. They value their autonomy from the sponsor's interference in their research, and once they have completed their study, they do not seek involvement in the agency's decision-making conflicts . . . . Many evaluators are therefore more interested in doing work that will be of interest to their professional colleagues then in answering the administrators' practical questions.[60]

> There are, however, minority traditions in applied research that place greater value on influencing the decision process. One of the best known is "action research." Derived principally from the work of Kurt Lewin, action research involves self-study procedures; the people who are to take action participate in the research process. The action-research group diagnoses its difficulties, collects information to help make necessary changes, and after the changes have been effected, evaluates their effectiveness. The research aspect is clearly subordinated to bringing about needed modifications in the structure and functioning of the group.[61]

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[60]Carol Weiss, _Evaluation Research: Methods of Assessing Program Effectiveness_ (Englewood Cliffs, New Jersey: Prentice-Hall, 1972), p. 111.

[61]_Ibid._, p. 113.

Weiss fairly describes the desired role of the evaluation

researcher in a program evaluation effort based on the model

presented in this paper.

As indicated above, it is desirable that the evaluation

research specialist be involved in the task of developing pro-

gram objectives. This is not because the program manager is

inherently incapable of doing this alone, or with his other

staff personnel--it is because the manner in which objectives

are expressed will have a great influence on how progress

toward them can be measured. To assist in the formulation of

objectives which will be optimally susceptible to evaluative

techniques, Edward Suchman offers the following six questions:

1. What is the nature of the content of the objective?
    Are we interested in changing knowledge, attitudes,
    and/or behavior? Are we concerned with producing
    exposure, awareness, interest, and/or action?

2. Who is the target of the program? At which groups
    in the population is the program aimed? Are we
    seeking to change individuals, groups, or whole
    communities?

3. When is the desired change to take place? Are we
    seeking an immediate effect or are we gradually
    building toward some postponed effect?

4. Are the objectives unitary or multiple? Is the pro-
    gram aimed at a single change or a series of changes?
    Are these changes the same for all people or do
    they vary for different groups of people?

5. What is the desired magnitude of effect? Are we
    seeking widespread or concentrated results? Do we
    have to attain any particular proportion of

effectiveness before the program can be considered
a success? Are there any specified standards of
accomplishment that we have to meet?

6. <u>How</u> is the objective to be attained? What means
   are to be used to put the program across? Will one
   depend primarily on voluntary cooperation or will
   an attempt be made to secure legal sanctions? Will
   personal or impersonal, formal or informal appeals
   be made?[62]

Suchman justifies these questions thusly:

> These six questions deal with basic questions that need
> to be answered in formulating the objectives of a pro-
> gram for the sake of evaluation. While some of these
> questions may be irrelevant for operational purposes,
> they play a crucial role in determining which objec-
> tives one selects for evaluation and how one designs
> the evaluation study. Such methodological problems as
> sampling, selection of controls, preparation of mea-
> suring instruments, method of field administration, and
> techniques of analysis are strongly affected by the
> kinds of answers one gives to the questions specified
> above . . . .[63]

These questions and explanatory comment by Suchman are presen-
ted here as illustrative of the way in which evaluation research
specialists approach the task of setting objectives. It was
stated earlier that program managers must have some understand-
ing of the evaluators' craft in order to know when and how to
use them, and this might be called "lesson one."

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[62]Edward A. Suchman, <u>Evaluative Research: Principles
and Practice in Public Service and Social Action Programs</u> (New
York: Russell Sage Foundation, 1967), pp. 39-41.

[63]<u>Ibid</u>., p. 41.

After objectives have been set but before the program can get underway, the program staff must develop an output evaluation plan.[64] In a case of classic evaluation research this would probably have taken the form of an "experimental model," with carefully selected control groups, but within the program context some other approach will most likely be selected. (This is because program personnel would probably find it difficult to identify and maintain close contact with a randomly selected group of people who--while being ideally suited to participate in the program--are kept from doing so.) As an alternative, the evaluation specialist may suggest the use of case studies, post-program surveys, time series, correlational studies, etc., alone or in combination. One such approach involves the use of a "panel," as is described by Suchman:

> "Before" measures are made of an unexposed target population. The program is initiated and "after" measures of the desired effect are made to compare changes that have taken place in those who became exposed with those who did not. If the program is an on-going one, these measures can be repeated periodically in a "during-during-during" design. Information can be fed

[64]Discussion here is limited to the evaluation of client impact factors, i.e., program outputs. Planning for the evaluation of input and process variables will also be done by the manager, but it is expected that in doing so he will get more help from the literature of management and organization theory than from that of evaluation research.

back to the program which can then undergo a series of revisions with the effects of various changes being measured at different points in time.[65]

This approach has well developed methodologies, as do the others listed above, and it is expected that the evaluation specialist will be able to communicate these to the manager while justifying his recommendations.

In pursuing an evaluation plan, skilled researchers can--as Weiss explains--measure all sorts of things:

> They can use the whole arsenal of research techniques-- observation, content analysis of documents, testing, search of existing records, interviews, questionnaires, sociometric choices, laboratory experiments, game playing, physical examinations, measurement of physical evidence, and so on. With attitude tests and opinion polls, they can even measure such relatively "soft" goals as improvements in self-esteem or self-reliance.[66]

But it is emphasized that the researchers must be skilled; here, the literature can only tell the typical manager what is possible, and he must depend upon his research specialist to get it done. As Freeman and Sherwood remark: "At first glance, developing yardsticks for measuring social behavior and community conditions may appear simple. It is not; moreover,

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[65]Edward A. Suchman, "Action for What? A Critique of Evaluative Research," in The Organization, Management and Tactics of Social Research, ed. by Richard O'Toole (Cambridge, Massachusetts: Schenkman Publishing Company, Inc., 1971), p. 112.

[66]Weiss, Evaluation Research, p. 26.

the success of program planning depends upon the selection of

relevant measures."[67]

In addition to being "relevant," these yardsticks must

be <u>accurate</u>. This sounds like a truism, but it is an unfor-

tunate fact that the results of a great number of social re-

search projects have been negated when it was determined--after

the fact--that their measuring sticks had been non-linear, or

otherwise biased. To illustrate the point, we can consider a

situation wherein an evaluator goes directly to a program's

clients in search of information. He may be doing this on

either a statistical sampling basis or via a total census

approach, but in either case he will be using some sort of

survey instrument--a questionnaire, a structured interview

format, a test, etc. After he gets his information, he will

compile it into some sort of report format and communicate it

to his sponsor. In this total process, he will encounter the

possibility of at least three major classes of error, as

described by Howard Ehrlich:

A. Response errors

    1. deliberate error (e.g., lying, evasiveness).
    2. reporting error (e.g., errors of knowledge, recall).

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[67]Howard E. Freeman and Clarence C. Sherwood, <u>Social Research and Social Policy</u> (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1970), p. 39.

    3. stylistic error (e.g., acquiescence, indecisiveness).

B. Instrument errors

    1. commitment error (e.g., inadequate alternatives, meaningless options).
    2. errors of order (e.g., primacy effects, effects of repetition).
    3. errors of structure (e.g., ambiguity, difficulty level).
    4. errors of measurement (instrument-generated changes).

C. Researcher errors

    1. errors derived from the communication of expected results.
    2. errors of non-standard research operations.
    3. errors of deceptive/manipulative designs.
    4. errors of sponsorship.[68]

Ehrlich's taxonomy includes more than just instrument errors, but his entire list is applicable to our discussion because there is little ultimate difference between errors resulting from a poorly-designed instrument and those from a good instrument improperly employed and/or interpreted. The important factor here is that program managers must know something about the types and sources of possible errors in measurement, to enable them to work intelligently with social research specialists.

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[68]Howard Ehrlich, "The Sociology of Social Research: A Discussion," in The Organization, Management and Tactics of Social Research, ed. by Richard O'Toole, p. 48.

At this point, having at least introduced some of the techniques--and some of the technical problems--of the social researchers, we will examine their writings to pick up a few of their comments about _causality_. The concept of causality is of prime importance in the planning, management, and evaluation of social programs because in a majority of cases a program cannot aim directly at its ultimate, basic objectives. For example, if the basic goal of a manpower development program is to move certain unskilled people into the ranks of the permanently employed, it may put most of its effort into _training_ them--relying upon the concept of causality to take over from there. To express this more precisely: job training will be seen as a necessary cause of subsequent employment (although not as sufficient cause), and will therefore serve as the "proxy" goal of the program. Another example of causality would be a public health program with the basic goal of eradicating smallpox in a given locale, when the program devotes all of its efforts to a vaccination campaign. In this case, the proxy goal--vaccination--even constitutes _sufficient_ cause, because the program operators can be sure that the causal process will definitely work.

In both of the foregoing examples there is little doubt that the indicated proxy goals are valid. If they can be

attained, the possibility of achieving the basic goals are cer-

tainly enhanced, if not assured. Progress toward the proxy

goals is therefore a meaningful subject for evaluation. Unfor-

tunately, not all proxy goals meet this standard, as is noted

here:

> . . . a project Head Start may succeed in increasing
> the curiosity of culturally deprived pre-schoolers,
> but whether increased curiosity leads to higher educa-
> tional aspirations is a matter of theory and non-
> evaluation research. This is probably the reason why
> so few evaluations can show any direct effect of a
> program upon ultimate objectives.[69]

Edward Suchman illustrates this statement with a diagram where-

in he tries to show the relationship between program, causal

process, and desired (ultimate) effect:[70]

Independent Variable	Intervening Variable	Dependent Variable
Activity or Program	"Causal" Process	Desired Effect
	Program Failure	Theory Failure

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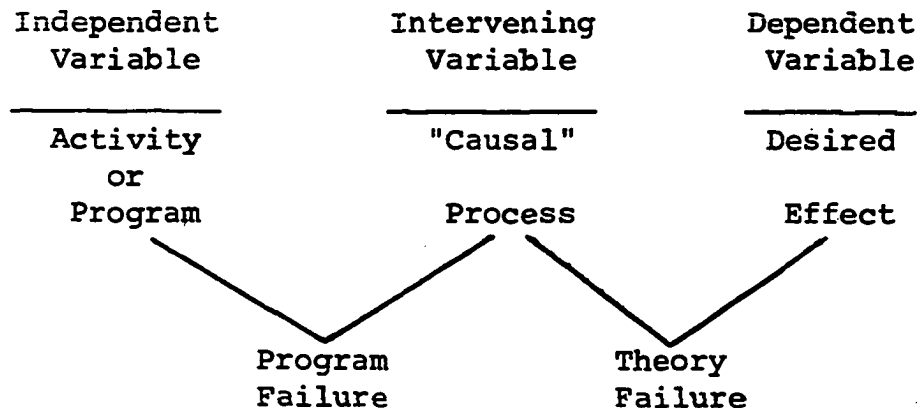
[69]Edward A. Suchman, "Evaluating Educational Programs,"
in _Readings in Evaluation Research_, ed. by Francis G. Caro
(New York: Russell Sage Foundation, 1971), p. 47.

[70]_Ibid_.

He is saying, in brief, that any inability to trigger the selected causal process (to achieve the proxy goal) is a matter of program failure, while any inability of the causal process to lead to desired ultimate effects is a matter of unsound theory. Relating this to our model, we can say that program evaluation will normally be limited to assessing progress toward (or achievement of) the _intervening variable_, and therefore may or may not be acceptable as indicative of progress toward ultimate (or basic) objectives.

B. G. Greenberg draws from his experience in public health programs to offer an example of their reliance on the concept of causality. He first says that "ultimate goals may be specific, such as lowered mortality, or they may be vague and refer to such concepts as increased levels of well-being or healthful living."[71] He then presents a table showing--on a time scale--the typical relationships between inputs and outputs in a public health program. The portion of that table dealing with time-phased outputs looks like this:[72]

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[71]B. G. Greenberg, "Evaluation of Social Programs," in _Readings in Evaluation Research_, ed. by Caro, pp. 160-161.

[72]_Ibid._, p. 161.

Output
(True evaluation)

Immediate Goals	Intermediate Goals	Long-Range Goals
Increase in knowledge, improved attitudes and practices.	More positive health and improved status.	Reduction in morbidity and mortality.
Reduced dissatisfaction	Reduced disease	Reduction in death
Reduced disinterest	Reduced discomfort and deprivation	Reduced disability

Greenberg says that in public health programs, it is not uncommon to find a three to five year interval between the time of program impact—when it achieves its immediate goals—and the time when intermediate goals are reached. He adds that the interval between program and long-range goal attainment is frequently about ten years.[73]

Recognition of the widespread reliance on causal processes constitutes, in itself, a powerful argument against the one-shot, "pass-fail" program evaluations by outside agencies. In very few programs, it appears, is it realistic to assess achievement of basic goals until several years after implementation of a program, and by that time it is much too late to make correctional changes. Alternatively, if the evaluators

[73]Ibid., p. 162.

unquestioningly accept the program's proxy goals as their basis

for evaluation, their results will be—at best—only as valid

as the applied causal theory behind the establishment of the

proxy goals. Program reliance on causal processes seems to

demand some sort of process model of evaluation, as described

here by Weiss:

> The process model makes clear what intermediate effects
> the evaluation has to look for, and directs attention
> to the essentials. Tracking the progress of the pro-
> gram input along its putative path allows a test of
> the theoretical linkages and enables the evaluation to
> say useful things about the stage where things go awry
> and adjustment is needed.[74]

The evaluation model of this paper is a process model, in that

it demands evaluation of every step in the program from plan-

ning and inputs through effort to outputs, and because it is

ongoing. Anyone studying it, teaching it, or implementing it

is expected to incorporate all the subject matter of this

Chapter into it, including, of course, the concept of causality.

And in specific regard to causal theory, they are expected to

apply this to the best of their ability when first establish-

ing their immediate (or proxy) objectives, and again while

reexamining the validity of those objectives as the program

moves along.

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[74]Carol Weiss, "Utilization of Evaluation," in Readings
in Evaluation Research, ed. by Caro, p. 140.

The final topics to be taken up here (from the evaluation literature) and thereby associated with the evaluation model are the related problems of <u>side effects</u> and <u>multiple causality</u>. "Side effects" may be defined as those inadvertent impacts of a program on its clients, its environment, or even on its own personnel and processes. "Multiple causality" refers to the fact that "effects" are usually caused by more than one thing; that a federal program, for example, because it cannot operate in isolation, must never be taken as the sole cause of effects associated with it. One way to discern a relationship between side effects and multiple causality is to consider the logical reverse of the latter, i.e., the notion that every single "cause" will have multiple effects.

The proper attitude of evaluators toward side effects is made clear by Hyman and Wright, who state: "Evaluation aims to provide objective, systematic, and comprehensive evidence on the degree to which a program achieves its intended objectives <u>plus</u> the degree to which it produces unanticipated consequences which when recognized would also be regarded as relevant to the social-action agency."[75] These unanticipated consequences can, of course, turn out to be either desirable

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[75]Herbert H. Hyman and Charles R. Wright, "Evaluating Social Action Programs," in <u>Readings in Evaluation Research</u>, ed. by Caro, p. 202.

or undesirable. Greenberg tells of a family planning program based upon the insertion of intra-uterine devices, where physical examination of the women led to the discovery of uterine abnormalities.[76] In the opposite direction, we have this example from Hyman and Wright:

> . . . a public health mass-information campaign . . .
> failed to increase the amount of information about
> venereal disease among certain publics or the rate at
> which they volunteered for treatment; nevertheless,
> the campaign ultimately led to a reduction in the
> amount of untreated disease in the area because it
> boosted the morale of local health workers and stimu-
> lated them to more vigorous efforts on their job once
> the campaign had attracted public attention to their
> professional problem.[77]

A classical example of program side effects can be found in the famous Western Electric Company studies of the 1930s, as reported by Roethlisberger and Dickson.[78] In this case, the mere _existence_ of the study group and its experimental activities produced effects which were initially quite difficult to explain, and which would certainly have taxed the abilities of any "evaluator" on the scene. This particular program spin-off is commonly called "Hawthorne Effect," and it is still very

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[76]Greenberg, "Evaluation of Social Programs," p. 162.

[77]Hyman and Wright, "Evaluating Social Action Programs," p. 203.

[78]See F. J. Roethlisberger and William J. Dickson, _Management and the Worker_ (Cambridge, Massachusetts: Harvard University Press, 1939).

much with us. For example, Freeman and Sherwood write that it
has been suggested that "the supposed efficacy of tranquilizers
in curtailing symptoms of mental illness is not due to the
drugs themselves but to the phenomenon of nurses, physicians,
and ward attendants feeling that the patients are going to do
better and thus behaving differently toward them."[79]

The program manager is not expected to become expert
at recognizing or measuring side effects, but he should know
enough about the phenomenon to be able to work with his evalu-
ation specialist in assuring that their probable existence
will be anticipated by his evaluation subsystem. The design of
the evaluation model of this paper is predicated on the assump-
tion that both manager and staff research specialist will make
systematic efforts to identify and evaluate program side
effects.

Multiple causality is also a two-edged sword, in that
any external "causes" which may mix with program "causes" to
form a combined "effect" on clients can be either positive or
negative, i.e., they may either reinforce the program or work
against it. T. K. Glennan tells of a comprehensive youth pro-
gram wherein it was noted that successful labor market

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[79]Freeman and Sherwood, *Social Research and Social Policy*, p. 124.

performance had an inverse relationship to length of stay in

the program.[80] As an evaluation result this might have been

enough to scuttle the program, but a check for multiple cau-

sality provided an explanation: youths with more severe prob-

lems tended to stay in the program longer and also to have

poorer labor market performance after leaving it. The opposite

type of problem might occur if some new employer moved into

the neighborhood of a similar program, on such a scale as to

positively impact the availability of jobs for program par-

ticipants. An on-going evaluative feedback under these cir-

cumstances might indicate that the program itself had sudden-

ly become more effective, when such would not be the case.

Edward Suchman notes that no events have single causes

and that all events have multiple effects. Also, that all

events are interrelated via a complex causal network which is

open to purposeful intervention.[81] He is impressed by the wide

implications which this open-system approach to causality has

for program evaluation:

> Evaluations of success must be made in terms of con-
> ditional probabilities involving attacks upon causal

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[80]T. K. Glennan, Jr., "Evaluating Federal Manpower Programs," in Evaluating Social Programs, ed. by Peter H. Rossi and Walter Williams (New York: Seminar Press, 1972), p. 205.

[81]Suchman, Evaluative Research, p. 84.

> factors which are only disposing, contributory, or
> precipitating rather than determining. The effect of
> any single factor will depend upon other circumstances
> also being present and will itself reflect a host of
> antecedent events. These surrounding circumstances
> become an essential part of the "explanation" of the
> success or failure of attempts to influence any par-
> ticular causal factor and combine to increase or
> decrease the probability but not the certainty of
> effective action.[82]

Many evaluations have gutted themselves on the rocks and shoals

of multiple causality and side effects. These subjects have

been introduced here to associate them--by inference--with the

evaluation model, and to suggest to the program manager that

he might profit from additional study of the concept and

theories of causality.

D. Evaluation Model

This section (D) of this Chapter sets forth a concep-

tual approach to federal social program evaluation as seen from

the viewpoint of the program manager. It incorporates, either

explicitly or implicitly, all the concepts set forth in the

preceding sections of this Chapter and in Chapter III. Its

orientation is toward control, based on evaluative feedback

information about the program's inputs, efforts, and outputs.

In ideographic form, this is the basic model:

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[82]Ibid., pp. 84-85.

Feedback from
environment

Sustaining
inputs from
suprasystem

Program Manager

3

INPUT

BOUNDARY

2

FEEDBACK

CONVERSION

1

B   B

A

OUTPUT

A

Program Clients
A   A

BOUNDARY
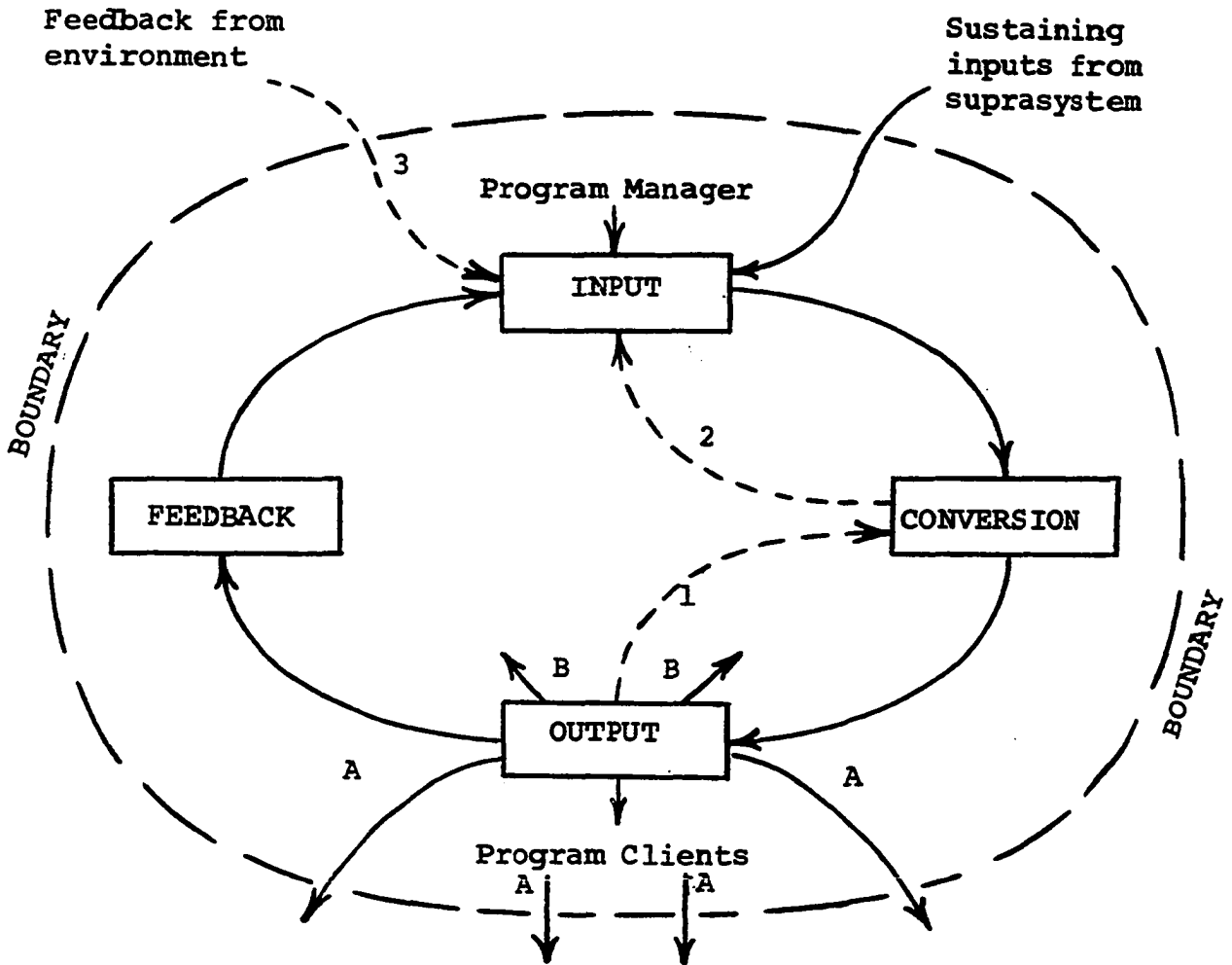
LEGEND

INPUT The main control point of the program, where sus-

taining resources, authorizations, and mandates

are synthesized to produce plans, goals, directives,

and support for the program's central staff and

field projects. Also, the point where feedback

information is compared with established (goal-

based) standards to produce changes in the plans,

goals, and directives provided to the central staff

and field projects. These activities are carried

out under the direction of the program manager.

CONVERSION   The program's field projects, where directives and

support are translated into activities which will

impact clients.

OUTPUT   The main point of client impact, where services

and/or products are actually delivered. Also, the

point where program side effects impact both the

environment and the program itself.

FEEDBACK   The primary feedback loop, which carries information

about the program's outputs--and the effects of

these upon clients--back to the program manager and

his staff.

BOUNDARY   The conceptual line of demarcation between every-

thing considered to be part of the program and the

environment of the program. Clients, <u>while acting</u>

<u>as clients,</u> are considered to be part of the program.

(Secondary   (1)   Carries information similar to that in the
Feedback
Loops)   primary feedback loop, but is directed toward

the field project manager and his staff.

(2)   Carries information about the field project

itself back to the program manager and his

staff.

(3) Carries information about the environment--
and about program effects on the environment--
back to the program manager and his staff.

(Secondary
Outputs)
(A) Unintentional program outputs which impact
the environment, either directly or via the
program's clients.

(B) Unintentional program outputs which impact
within the program itself--on its personnel,
its procedures, or its efficiency/effective-
ness.

GENERAL STATEMENTS

1. The program is perceived as an open cybernetic system. It
is error-regulated, through feedback; it is adaptive; it
possesses memory, and is capable of learning; it is pur-
posive, as in the pursuit of goals; it is boundary-main-
taining; it is in evolution; it resists entropy; it
encompasses several subsystems; it is part of a supra-
system; its organizing principle is information; and it is
designed to be controlled.

2. The suprasystem of which the program is a part is the
federal agency which established it. Its environment is
made up of all the other systems/subsystems in society,
including its own suprasystem. Among its more important

subsystems are an information subsystem, an evaluation

subsystem, field project subsystems, and a management sub-

system, all of which are linked at many interface points.

3. The system (program) exists to pursue goals and objectives--

within specific time frames--which are developed by its

managers from mandates furnished by higher levels of govern-

ment. The system's primary goals will involve impacting

its clients in one or more ways, and some of its secondary

goals will relate to the internal effectiveness and secur-

ity of itself and its subsystems. To the extent possible,

all its goals/objectives will be expressed in measurable

form--with dimensions of time as well as of activity--so

that progress toward them can be measured. Ultimate

primary goals will, in many cases, be very long-term, and

in these cases valid proxy goals will be developed.

4. The evaluation subsystem will be activated during the

planning stages of the program and will remain active

throughout its life. It will contribute to the initial

establishment of goals and proxy goals, and to modification

of these over time. It will develop sensors for monitor-

ing/measuring the achievement of both primary and secondary

goals on a continuous basis, and will feed resultant

information into the information subsystem. When this

information is received at management control points, the evaluation subsystem will compare it with established standards and provide the management subsystem with the results of its comparisons.

5. The information subsystem makes two main contributions to the evaluation effort. It transmits evaluative information to management via special feedback channels, and it provides management with control channels for reaching the field with the results of decisions based on evaluative feedback.

6. The management subsystem utilizes the evaluation subsystem and the information subsystem to effect two related but distinct types of control:

    a. Homeostatic control, to maintain system equilibrium between acceptable limits and thereby assure continued progress toward certain goals and objectives.

    b. Innovative control, to make changes in system inputs, processes, and goals in planned attempts to enhance system effectiveness.

7. Field project subsystems can be treated as full systems for certain evaluative purposes, and this is diagrammed thusly:
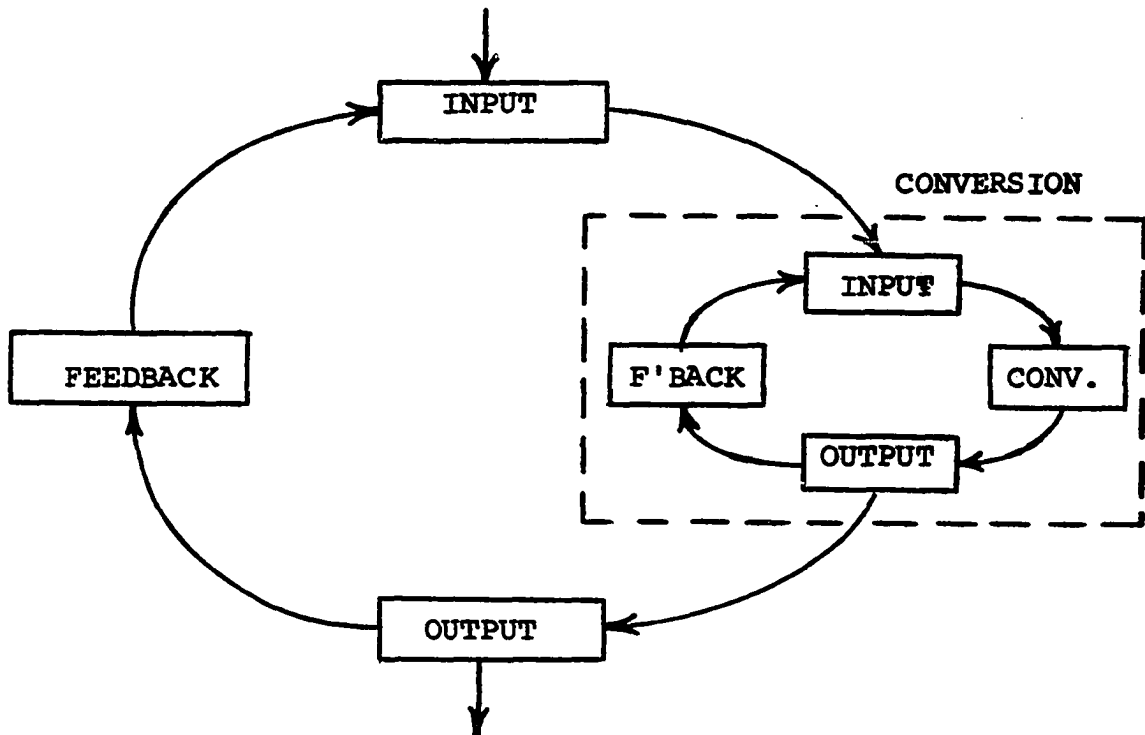
When this approach is taken, field project outputs simply become a part of the total system's output.

8. The utility of this model will be enhanced to the extent that the program manager makes use of--at appropriate times--the techniques of management by objectives and operations research. It will also be enhanced to the extent that the manager familiarizes himself with the concepts and applications of the other fields of study reviewed in this paper.

CHAPTER V

SURVEY OF PROGRAM AND PROJECT MANAGERS

A. Introduction

Development of a conceptual model leads naturally to

the question of its potential applicability to "real life"

situations. A fundamental factor affecting this question, of

course, is the extent to which pressures for evaluation have

worked their way down to the program and project manager

levels; if evaluation is not very high on a manager's prior-

ity list, he will have little incentive to learn either con-

ceptual or practical approaches to it. Another important

influential factor relates to the direction or directions that

evaluation is actually taking within the myriad federal agen-

cies and other project milieus; since the model is at least

as concerned with processes as with effects, it may not have

appeal within projects/programs where client impact is the

only concern of evaluation. Potential applicability of the

model is also influenced by such things as program/project

managers' current understanding of management theory, their

familiarity with the techniques of social research, their grasp

of the "feedback" concept, and their attitudes concerning the

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relevance of all these to the evaluation process. (In the literature reviewed for this dissertation, not a single indi-cation was found of any research effort to determine what program managers know about program evaluation, or their attitudes toward evaluation and/or evaluation research personnel.) To gain some insight into these factors--and through them, into the potential utility of the model--a modest field survey has been conducted.

As there are many thousands of public program and project managers, a complete sampling of their knowledge and attitudes was considered to be beyond the aspirations--and needs--of this research effort. Instead, the following more limited investigation has been performed: (1) Some 30 national social programs are represented by project activity carried on by personnel of this University, and 30 managerial-level people associated with 27 of these projects have been personally interviewed and asked to complete a "Project Manager Questionnaire." A copy of this questionnaire is contained in Appendix A of this study, and a list of the projects surveyed is provided in Appendix B. (2) A comparable number (28) of people associated with 27 non-university projects in the central Oklahoma area were contacted, interviewed, and asked to complete and return the same questionnaire. About 70 per cent

of the projects represented by this second group are similar to
ones within the University with respect to funding sources and
sources of evaluation policies; a complete match of projects
in this regard was attempted, but was found to be impractical.
A list of these non-university projects is also provided in
Appendix B. (3) Each of the 58 aforementioned project people
were asked to provide the name, title, and business address of
one or more federal-employee program management persons asso-
ciated with their projects. Sixty names were obtained, and a
letter was sent to each of these managers requesting that they
complete and return an enclosed "Program Manager Questionnaire."
A copy of this form is also included in Appendix A.

As indicated in Chapter I, the purpose of this survey
was to assess the desirability of incorporating the conceptual
model into future public administration course work at this
University, and/or into special seminars for working managers,
and perhaps into publications on the subject of managerial
evaluation. Because of this limited objective, no effort was
made to "randomize" the survey with respect to the total array
of national social programs, and it is recognized that no
authoritative generalizing about that larger universe is pos-
sible from the survey results. On the other hand, since the
projects which were surveyed represent a fairly wide range of

program areas (e.g., health services, education, aid to the

aged, law enforcement, civil defense, rehabilitation, etc.),

the survey inherently contains a high degree of diversity.

Further, since the physical proximity of the project managers

permitted 100 per cent interview coverage, and because the rate

of return of both types of questionnaire was very satisfactory,

it is felt that the survey accomplished its purpose. Inciden-

tally, it may be worth noting at this point that in the orig-

inal survey plan, only about 15 interviews were contemplated

and the 118 questionnaires were to have been the major survey

vehicle. But the results of early interviews were so inter-

esting--in part because they revealed so many situational

variations which this investigator had not anticipated--that

the plan was expanded to include interviews with all the pro-

ject managers on the survey list. Now that both have been

completed, the interviews are seen as having contributed

somewhat more to the survey than have the questionnaires, and

considerable attention is given to analyzing them.

B. **Survey Interviews**

As just noted, this part of the survey is now consid-

ered to have been at least as enlightening as the questionnaire

part, if not more so, and will therefore be reported here in

some depth. First, the approach to the interviews will be

described and standard questions enumerated. Second, general-
izations drawn from the interviews will be set forth. Finally,
reports will be given on certain specific interviews which pro-
duced interesting facts not covered by the generalizations.

The 58 interviews with project personnel, while not
formally structured, at least followed a consistent pattern.
Respondents were first asked for the name of their project, a
general description of its activities, and the source of its
federal funds. They were then asked to describe the form or
forms of evaluation that have been requested and/or practiced
by their sponsors, and to comment on any trends in this activ-
ity area. Next, they were asked to discuss what evaluative
efforts they were making on their own, and to contrast these
with those requested/practiced by the sponsor. Finally, they
were invited to describe their project goals and objectives.
From this point forward, all interviews took off on various
tangents, the directions of which were prompted mainly by
responses to the standard questions and by the respondents'
varying interests in the evaluation problem. At the end of
each interview the respondent was given a copy of the Project
Manager Questionnaire and asked to return it by faculty ex-
change or regular mail. In cases where the respondent was
involved with more than one project, he was asked to identify

with a particular one of them for purposes of completing this

form. Incidentally, some 12 of the University respondents and

13 of the non-university respondents <u>were</u> currently associated

with more than one project and/or source of evaluation policy,

and these interviews tended to become rather wide-ranging.

Results of the interviews were not definitive enough

to present in tabular or graphic form, but several generaliza-

tions did emerge and can be stated. First and foremost, 45 of

the 58 (about 78 per cent) declared that evaluation was receiv-

ing increased emphasis in their project areas. This percentage

might have been even higher, if the survey had not included 10

people who were fairly new to their positions and who had

little or no previous experience in project-type activity. A

very few of the projects were quite obviously immune to

serious evaluation effort, for such reasons as newness, small

size, or--as in the case of the State-Based Program of the

National Endowment for the Humanities--because they are still

declaredly experimental and innovative.

The question about the forms evaluation is taking pro-

duced less agreement. Possibly the commonest response, which

came in various versions from at least 30 people, was that

evaluation was based mainly on whatever had been said in the

pre-project proposal. For example--and this is typical--if the

proposal had stated that (1) 6 staff members would be employed;

(2) 20 classes would be conducted, and (3) $125,000 would be

spent, the evaluation simply checked on these points in mile-

stone fashion. And this brings up one of the most interesting

things that this writer learned from the survey: federal

social programs, unlike military and space programs, are not

usually very monolithic or single-minded. Perhaps this fact

should have been obvious from the outset, but the writer has

an extensive background in federal technical programs and was

evidently trapped by preconceived and erroneous notions. At

any rate, the contrast is interesting and has tremendous

impact on the evaluation milieu, so some discussion here seems

warranted. Point one: In a federal military program, the cen-

tral manager usually has a specific end result to achieve,

frequently within a stated time frame. An example might be

to update a complete global communication system. The social

program manager, in contrast, frequently has only a mandate to

try to effect some sort of general change, and may be aware

that total success is manifestly impossible. Point two: In

the military program, the manager will develop tight specifi-

cations for contributive projects, and prospective project

people will submit competitive proposals addressed to those

specifications. The social program manager is more likely

to publish a set of proposal "guidelines," inviting prospective project people to submit imaginative plans for activities falling under the general mandate. Point three: Evaluative liaison between the military manager and his projects will be done by someone who is intimately familiar with the program and will focus on the original project specifications, with all parties being very knowledgeable about what is to be done. But evaluative liaison in the social program is quite apt to be performed by someone from a federal regional office who performs liaison between many programs and many projects, and who is not intimately familiar with project objectives and the nuances of their relationship to program goals. In these cases, a logical approach for the liaison man is to scan the original proposal for stated objectives, if any, or at least for an activity plan, and to "evaluate" on this basis. At least 20 of the project people interviewed in this survey stated that they had been "evaluated" by regional visitors on this basis. In these cases and in an additional ten, written reports from the projects also addressed evaluation in terms of original proposal statements.

This leads up to another common interview response, which created a communication problem for this investigator until he came to understand the professional background and

mental set of the respondents who made it. This response

tended to equate evaluation to _proposal_ evaluation, and to use

some other term in referring to later phases of performance

assessment. A variation of this response put primary evalua-

tive emphasis on the proposal, but allowed for various forms

of performance evaluation as well. All these respondents had

a _planning_ or _coordinative_ orientation, which could be traced

back to the functions of their employing organizations. Exam-

ples came from the Association of Central Oklahoma Governments,

two city staff offices, the Minority Business Program, the

Area Wide Health Planning Organization, the Business Develop-

ment Organization, Child Welfare Projects (CAP), Economic

Development Projects (CAP), the Oklahoma Crime Commission, the

Oklahoma Regional Medical Program, Progress Association for

Economic Development, and the State-Based Humanities Program.

These organizations--all of which meet the definition of

"project" as set forth in this study--are all oriented toward

yet another level of projects with which they must deal in

various ways. In effect, some of their organizations are

attempting to compensate for the "looseness" in the federal

structure described in the foregoing paragraph, by ascertaining

that federal funds expended in a particular geographical area

do not support overlapping activities and that--ideally--the

whole may become greater than the sum of the parts. For project people so engaged, an important component of evaluation takes the "form" of examining proposals for other projects to see if they are compatible with--and, hopefully, supportive of--other program and project activity in the area. In some cases this constitutes the extent of their involvement with second-tier projects, but in others they carry through with performance assessment and their comments on this are included in other paragraphs of this report. In four or five instances, respondents representing these project organizations were asked how <u>their own projects</u> were evaluated, but no definitive replies were received. Each seemed to feel generally that the future of his own organization was tied to that of some particular federal agency, and/or to the political climate in the local area, but not to any prospective formal evaluation of its performance.

Only about 25-30 per cent of those interviewed, perhaps 15 in all, mentioned any serious evaluative interest in "proof of effects," i.e., ultimate client impact. And even in these cases, reference was most generally to a recognized need for this sort of evaluation, rather than to any formalized activity. A larger number of respondents evinced an awareness that competition for social program funds is becoming keener, and

that successful programs will have to prove that they are

indeed achieving their basic goals, but no more than 15 or 16

seemed to be very knowledgeable of just how complex such an

evaluation would really be. Officials of the Community Action

Program in Oklahoma City are in that smaller percentage, and

are developing a computerized data base which they hope will

eventually provide them with evidence of the long-range effec-

tiveness of certain projects.

Regarding shifts in emphasis from one evaluative

approach to another, the most pervasive trend to be identified

was away from a preoccupation with "sheer numbers" and toward

the establishment and measurement of formalized project objec-

tives. By "sheer numbers," we refer to the enumeration of

such things as "people contacted," "clients placed," "cases

closed," "dollars spent," "test scores achieved"--usually with-

out the benefit of any previously established targets against

which progress can be rated. By "project objectives," we

refer to limited objectives to be achieved within prescribed

time frames and involving inputs, processes/activities, and

outcomes--usually of the "proxy" type. A good example of this

is provided by the Talent Search, Upward Bound, and Threshold

projects, which have a common sponsor within the U.S. Office

of Education. This sponsor has been conducting regional

seminars for project directors on the subject of "management by objectives," and has stated that this will be the basis of an increasingly sophisticated evaluation effort. The Central State Hospital Alcoholism Project is another example, where the directors are practicing MBO and are also concentrating on development of a good management information system to provide them with--among other things--evaluative feedback. A slightly different illustration is furnished by the Head Start Policy Manual of the Office of Child Development, DHEW, which sets forth detailed "performance standards" around which project people are to develop specific objectives related to all aspects of their project. According to Oklahoma City CAP Office personnel, the evaluation of projects developed in accordance with this Manual becomes just as straightforward as anything in the field of federal military or space project evaluation, and their records seem to bear this out. Yet another example is provided by the Oklahoma Crime Commission's project application form, which contains a calendarized "steps and tasks" section to be used in the quarterly measurement of the extent to which formal objectives are achieved. In toto, at least 40 per cent of those interviewed described movement toward what can be called a "management by objectives" basis for project evaluation, and in some eight instances, this was the exact term used.

A few approaches to evaluation which are quite common in the literature were conspicuous by their absence in the overall interview series. For example, only one of the respondents mentioned either "efficiency" or "cost effectiveness," and it is assumed that neither of these terms are prominent in current evaluation forms. For another, there was no mention of "cost-benefit analysis" except by a few respondents who had started to work with the Oklahoma Crime Commission's new project application form. These few, incidentally, were thoroughly confused by the subject. A subsequent check at the Crime Commission revealed that it was introduced mainly for heuristic purposes, and that no effort will be made to use it in any of its more sophisticated forms.

The third standard question asked of all respondents related to what they were doing on their own in the evaluation field, i.e., what they were doing that was not requested/ required by a sponsor. Only about six or eight were found to be doing anything significant of this nature, but those few were quite impressive. (It should be noted at this point, by the way, that almost every funding agency has put word out that more attention should be given to evaluation, but for purposes of this paragraph this is deemed to be different from _requiring_ specific things.) A good first example is the Oklahoma

Regional Medical Program, which is trying to establish a data-based model which will provide real measures of patient impact from several continuing medical education and cooperative hospital buying projects. They are now writing new contracts with all their second-tier projects, and hope to build in a data collection system which will permit evaluation of both activities and impact. A second example is the Oklahoma City Urban League, which wants to have good, dependable (and presumably re-fundable) projects regardless of any perceived deficiencies in sponsor-directed evaluation procedures. The League therefore directs its own evaluative reporting program, aimed to point up the accomplishment of "reachable" objectives, and levers these reports into sponsor-furnished forms by might, main, and the appending of many extra pages. A third example is the Norman Alcohol Information Center, which--possibly because of its modest grant--has been given no evaluation requirements. Its manager gratuitously formulated and forwarded a set of measurable objectives, compiles and forwards evaluative data, and provides summary evaluation reports. Another example of broader scope is the Oklahoma Crime Commission, which has held seminars to introduce its own project evaluation procedures and is trying to double its evaluation budget. The Crime Commission, as indicated earlier, is

oriented toward a "management by objectives" approach and is
endeavoring to develop a computer-based data collection system.
A fifth example is the Central State Hospital Alcoholics Pro-
gram which has, as noted above, a full MBO system and its own
management information system. But what was not mentioned is
that these systems were developed on the initiative of the
Hospital, not their sponsor. The Hospital's only formal eval-
uation function is to collect and forward data for Stanford
Research Institute, which has an ongoing contract to evaluate
the program. Toward this end, the Hospital has three full-
time professionals who collect data from clients entering the
program, and at 30, 90 and 180-day intervals thereafter. Feed-
back from this reporting _is_ provided by SRI, but the project
managers consider this to be inadequate because (1) feedback
is always a few months after the fact, and (2) it doesn't
include many of the types of things they want to know--e.g.,
about project processes and activities. A sixth example of
locally-initiated special evaluation effort is the Oklahoma
City Community Action Program, which has probably done more
than any other project surveyed to promote the establishment
of clear-cut objectives and to collect data regarding their
achievement.

These efforts by the Oklahoma Regional Medical Program, the Oklahoma Crime Commission, the Community Action Program, and the Urban League bring up a very interesting finding of the overall interview series. And once again, it is a finding which disabused this writer of a conception he had gained from some of the literature reviewed for this study. In brief, while much of the literature on federal program evaluation suggests that each program has one central source of evaluation policy, this is simply not the case. In the first place, the literature tends to ignore the fact that a whole lot of program decentralization has indeed taken place, and that a whole host of state and non-federal regional agencies (some of which are "projects" in their own right) are just as concerned with local projects--and their evaluation--as any federal manager in Washington or in a federal regional office. In fact, among those surveyed projects which were using standardized evaluation forms or procedures, at least half had been developed by one of these intermediate agencies. By way of possible explanation, it may be that since the writers of the literature are mostly research specialists, and since most research contracts have been let at the program or agency level, the writers are simply unaware of the considerable evaluation effort which goes on at the state and local levels.

One interesting sidelight on this is the fact that if evalua-
tion at the national level is research-oriented, which it
seems to be, it is oriented toward management at the state and
local levels. None of the intermediate-level agencies inter-
viewed had either budget or staff for significant research
activity, but all were interested in and able to talk intel-
ligently about evaluation as a management tool.

The final standard question asked of all respondents
was whether or not their projects have clearly established
goals and objectives, and whether these are measurable. About
20 respondees were able to answer this question with complete
precision, making it evident that they speak some of the lan-
guage of goal theory and/or of management theory. All of
these people were able to state what their project goals were,
although in some cases they were less certain of how to measure
them. Some 6 or 8 noted the difficulty of measuring attitu-
dinal change, and a similar number mentioned the problem of
longitudinal measurement. Ability to respond positively to
this question seemed to hinge on the respondent's background
and training, by the way, rather than on the type of program
or its agency affiliation. Among the remaining 40 or so
respondents, initial answers to this question were so varied
as to defy generalization. Some thought of goals in terms of
the Congressional mandate behind the national program, while

others saw goals only in terms of short-term program tasks. Most were somewhere in between these extremes, but it seems fair to state that for at least 50 per cent of the whole respondent group, the subject of "goals" has been a hazy one.

One interesting result of this part of the interviews was the alacrity with which many respondents picked up the term "proxy goal" and made it their own. A few were already familiar with the term, but even among the most knowledgeable 20 there was an evident need for a word that meant less than "long-term" but more than "short-term," and "proxy" seemed to fill this requirement. This is reflected in one of the questionnaire items, which, it will be recalled, was normally completed after the interview. According to returned project manager questionnaires, some 91 per cent of those with long-term goals have "clearly defined proxy goals"--which is in contrast with the initial interview stages where only 2 or 3 respondents mentioned such a thing. The proper conclusion, it is believed, is that the projects so reporting have had these "stand-in" goals all along and that "proxy goal" is simply a new name for them.

The foregoing concludes the "generalizations" which have been drawn from the interviews, except for certain conclusions to be reported in the final chapter of this study. A

few "one of a kind" situations will now be described, to bring out items which are considered to be of general interest to the student of evaluation and of particular interest to anyone who will be developing course work or seminars. As a group, these reports are intended to suggest that the real world of program and project evaluation cannot be fully anticipated by reviewing the literature.

o Mid-Del Youth and Family Center: This LEAA-funded project was established some three years ago to work with delinquent and potentially delinquent children, in a stated effort to keep them from becoming court cases. Funding was channeled through the Oklahoma Crime Commission, with ACOG serving in a coordinative capacity and with the Midwest City - Del City school district providing matching funds. The Center accepts referrals from the police departments and the schools, as well as "walk-ins." The Midwest City Police report that they have made an average of three referrals per month, and receive no feedback on what happens to them. The schools report few referrals, and also complain of little feedback. The Center claims to be busy, and this interviewer personally saw three clients there

during his one-hour visit. Center personnel stated that communications with the police are both infrequent and somewhat difficult, and this was confirmed by the MWC City Manager's Office. First and second year evaluations were done by paid (from the Center) outside consultants on a one-shot basis, and are said to have been largely descriptive. Under initial funding arrangements, i.e., 75 per cent LEAA and 25 per cent school district, these evaluations were evidently acceptable to all. Now, however, LEAA funding is scheduled to go to zero and the cities are expected to provide total financial support, and the MWC City Council wants more definitive evaluation reports before making such a commitment. As reported to this interviewer, the Council: (1) Doesn't receive favorable reports from the police and schools, which it would like if it is going to provide serious funding; (2) does receive small but vocal delegations of citizens who want the Center continued; and (3) doesn't like the evaluation reports it has, which some members reportedly will not read because they are "too glossy." Meanwhile, at the Center, two pertinent

things have happened: (1) Some of the staff mem-

bers have been released and others are on reduced

time, pending receipt of certain funds from the

City, and (2) their evaluation specialist has pro-

duced a very practical-looking "management by

objectives" type of evaluation plan, which he has

not had an opportunity to discuss with either the

police or the schools.

The Mid-Del Family Center problem is particularly

important, in that it typifies the situation of

many projects which, from their inception, were

scheduled to lose their federal funding support

over a multi-year period. With this shift of spon-

sorship there can be--as there was in this case--

significant changes in evaluation criteria. Fur-

ther, this case points up the ubiquitous inability

of sponsors to totally separate political inputs

from formal evaluation inputs, and it is conjec-

tured that in this instance the latter will not be

the determining factor in the Center's future.

o WIN Employment Training Project, Oklahoma City:

This Department of Labor/Social Security Commission

project provides training and job placement services

to a specific clientele referred to it by the State

Welfare Department. By Congressional statute, a

percentage of WIN operating funds are set aside for

use by DOL in operating a data collection and eval-

uation system. The local project forwards a great

variety of data through a state and regional hier-

archy to DOL in Washington, and eventually gets

back an "evaluative sheet." The data pertain to

numbers of clients referred, amount and types of

training given, numbers placed, dollars expended

and so forth. The return evaluation sheets, while

presumably based on local data, are described as

being incomprehensible in some areas and obviously

erroneous in others. No "code sheet" is furnished

to assist in their interpretation, and no oppor-

tunity is afforded for local reviews before evalua-

tive summaries are finalized and published. As

described by the project managers, no adequate

channel exists for reporting project implementation

problems, or their solutions, and what is learned

in the field does not feed back to influence suc-

ceeding year contracts. Further, according to the

managers, the project has "never had a good audit

from anywhere," and receives "minimal" supervision

from all levels of the hierarchy. In their words,

they don't know--from the evaluation reports they

receive--whether they are doing poorly or well in

comparison to other WIN projects.

This WIN project personifies the often-described

situation wherein managers see evaluation as a

definite threat and certainly not as a "tool of

management." Within the project, there exists a

healthy suspicion that evaluation data are being

purposely manipulated for political purposes, and

most probably for the purpose of justifying "adjust-

ments" in state funding levels.

o Opportunity Workshop and Training Center, Inc.,

Chickasha, Oklahoma: This Center provides voca-

tional training to mentally and physically handi-

capped persons and then tries to provide them with

gainful employment, either through outside job

placement or by bringing "sub-contract" business

activities into the Center. Federal funding de-

rives from the U.S. Office of Education and is

channelled through the State of Oklahoma Vocational

and Technical Education Office. Formal evaluation

procedures related to this project may stand as some sort of an ultimate in bureaucratic simplicity and efficiency. Once annually, a representative of the State Office visits the Center and completes a check-list form entitled "A Project Evaluation Report." The project is identified in six spaces at the top of the form, and then 34 items are rated as being either "Good," "Satisfactory," or "Needs Improvement." The first eight items, by way of example, are: (1) "Instructional Program;" (1) (a) "Proper Lesson Planning;" (1) (b) "Teaching Effectively;" (1) (b) (1) "Classroom;" (1) (b) (2) "Training Station;" (2) "Classroom;" (2) (a) "Arrangement and Suitability;" (2) (b) "Cleanliness and Comfort." Item 33 is "Community Acceptance" and item 34 is "Budget Management," neither of which has any sub-categories. A completed copy of this form was given to this interviewer, and every item on it is rated "Satisfactory." Evidently none were considered really "Good," but on the other hand none "Needs Improvement." The Opportunity Workshop and Training Center evaluation story is included here to illustrate the fact that anomalies

do exist in the trend toward more effective evaluation. In particular, it points up--by exception--the importance of good evaluation as a source of information for improvement-minded project managers. It happens that the present director of this Center has no previous management experience, and could be aided materially by an objective, constructive, informative evaluation by outside specialists.

o Water Pollution Control Project, Norman, Oklahoma: This project is technical in nature and most of its funds go for plant and equipment, so perhaps it should not have been included in this survey. But on the other hand, the fundamental reasons for its existence--and for the existence of the Environmental Protection Agency which funds it--are rooted in _social_ factors. Further, it does involve a public educational activity, in that service station operators and other businessmen must be convinced of the necessity of keeping certain contaminants out of the City sewage system. The project manager is responsible to the Oklahoma Department of Health _and_ to the EPA, and both have evaluation requirements. Some of these, especially from the State,

require the daily analysis of plant effluents.

Others relate to construction, preparation of man-

uals, personnel training, and so forth. None, so

far as is known, relate to the social aspects of

the project.

This project is included here as an example of a

great number of projects which have a technical as

well as a social side, and in which some balance in

evaluation emphasis needs to be struck. In this

one, it appears, the technical side is dominating

the evaluation scene. But this does not have to

be the case, because there are other public health

projects where a high percentage of funds goes for

technical materials, but in which evaluation still

addresses social factors. In the Norman project,

for example, one might ask "evaluative" questions

about the impact of the project on the quality of

life in Norman, or on whatever other groups of

people are affected by the project. And, if this

impact is significant, one might then ask how its

objectives were calendarized, noting that it will

be almost two more years before contamination is

reduced to "standard" levels. The intent here is

not to raise questions about the Norman project,
but simply to point out that in any project situa-
tion there is always the danger that evaluation
may be "captured" by participants interested in
only one facet of the project.

C. <u>Survey Questionnaires</u>

The two survey questionnaire forms (see Appendix A)
are quite similar in coverage, and were designed to be used
together in seeking answers to several general questions, as
follows:

1. In the programs to be surveyed, do the managers
   see their basic goals as long-term or short-term,
   and is there any difference here between the pro-
   gram and project levels?

2. In these programs, are goals perceived to be
   clearly defined and set in measurable terms?

3. In cases where basic goals are perceived as long-
   term, have intermediate--i.e., "proxy"--objectives
   been established in measurable terms?

4. At the federal level, when the measurement of goal
   attainment has involved the assessment of "hard to
   measure" social impacts, have social research

scientists been made available to help in the
development of measuring devices _for use by the_
managers?

5. In the programs being surveyed, do special feed-
    back channels exist--in addition to normal opera-
    ting reports--to provide federal-level managers
    with evaluative information?

6. Are all these managers, at whatever level, satis-
    fied with the evaluative feedback they get re-
    garding the actual impact of their programs/
    projects on clients?

7. Are the federal-level managers satisfied with the
    evaluative feedback they get regarding the inter-
    nal activities and processes of their field pro-
    jects?

8. Are all these managers familiar with the principles
    --and with the literature--of program evaluation
    research?

9. Are they familiar with the principles--and the
    literature--of modern management theory as it
    relates to management information systems and man-
    agement by objectives?

10. Have these managers had experience in dealing with
    evaluation research specialists? Have their pro-
    grams/projects been evaluated by such people? If
    so, how were they impressed by their ability to
    actually assess "program effectiveness"?

11. How do these managers rate the potential ability
    of social research scientists to help them in
    developing a better evaluation sub-system?

12. Are these managers in favor of more evaluation
    activity by echelons above--or agencies outside--
    their programs? Within their programs?

13. How do these managers perceive their needs for
    training and consultative assistance in the area
    of management information systems?

It is felt that answers to these questions, even considering
the small size of the survey group, give significant insight
into the potential utility of the conceptual model within pub-
lic administration credit courses and continuing education
seminars. Further, it is believed that these answers can help
determine the actual need for such offerings, and that they
can be helpful in determining content.

    Thirty questionnaires were left with University-based
project personnel at the end of interview sessions, and 24

(80 per cent) of these have been returned. Twenty-eight were left with non-University project people, and 23 (82 per cent) of these have been returned. Sixty were mailed to federal-level program personnel, and 38 (63 per cent) of these have been returned. These returns represent one-round solicitation only; no follow-up action was taken to try to increase the rate of return. The 22 federal employees who did not return the questionnaire are not personally known by this investigator, so no conjectures can be made about their reasons for not doing so. The 11 project people who did not return the form are personally known, and it can at least be stated that no known pattern exists in their attitudes toward project evaluation.

A small amount of demographic data was collected via the questionnaires, and is presented in tabular form on the following page as Table 1. No conclusions have been drawn from this data, nor were any attempted; it is presented only to provide some insight into the educational and experiential backgrounds of the respondents. The three respondent groups are presented separately, to depict such contrasts/similarities as may be evident.

Following Table 1, the general questions set forth on pages 237-239 will be examined sequentially in terms of

questionnaire response. Illustrative tables are provided where applicable, and in these—for the same reason as in Table 1— the three respondent groups are presented separately.

TABLE 1

Respondent Background Data, by Respondent Group

Background Item	24 Univ. Proj. Mgrs.		23 Non-Univ. Proj. Mgrs.		38 Federal Prog. Mgrs.	
1. Average Age	44.6		35.9		45	
2. Average GS Grade	--		--		13.5	
	N	%	N	%	N	%
3. Sex:						
Male	23	96	20	87	31	84
Female	1	4	3	13	6	16
4. Years of M'gerial Experience						
Less than 5	4	17	10	43	6	17
5 to 10	8	33	8	35	7	20
More than 10	12	50	5	22	22	63
5. Formal Training in Managerial Skills						
Coll/Univ	18	75	13	56	30	86
Other	8	33	9	40	15	43
None	3	12	4	17	1	2
6. Highest Academic Degree Earned						
Bachelors	4	17	9	40	7	19
Masters	9	37	13	56	16	44
Doctorate	10	42	1	4	10	28
None	1	4	0	0	3	8

1. As shown in Table 2 below, a great majority of the
managers in all three groups saw their basic program goals as
being long-term in nature. And in fact, 7 of the 8 project
managers who reported "short-term goals only" are known to
have done so because their projects are scheduled for phase-
out; during their interviews, all 7 discussed the "long-term
goals" of the programs of which their projects are a part.
(We have here a typical problem of survey semantics: while
this paper--and the federal government--may define a "project"
as part of a "program," its staff may not be so differentia-
ting while filling out survey forms.)

TABLE 2

Managers' Perceptions of the Long-Term and/or
Short-Term Nature of Their Program Goals,
by Respondent Group

Goal Range	University Proj. Mgrs.		Non-Univ. Proj. Mgrs.		Federal Prog. Mgrs.	
	N	%	N	%	N	%
Long-Term Only	19	79	17	74	32	84
Short-Term Only	5	21	3	13	3	8
Both L-T and S-T	0	0	3	13	3	8
Totals	24	100	23	100	38	100

2 and 3. On the question of measurability of goals,
the federal managers appear to be somewhat more confident than
the project managers (66 per cent against a composite 49 per
cent) that their long-term goals are expressed in measurable

terms. This is moderately surprising, in that these federal managers were nominated by the project managers, and should therefore be talking about the same programs but from different viewpoints. Some of this difference, of course, may be accounted for by unreturned questionnaires and/or the fact that a few project people nominated more than one federal counterpart. But some of it may also derive from inadequate communication within programs, which was mentioned as a problem by at least 25 per cent of the project managers interviewed. It is recognized that we can only conjecture about possible communication deficiencies, but additional evidence for this may be available in the fact that 68 per cent of the federal respondents stated that they receive inadequate feedback regarding project-level management processes.

Federal-level confidence in the measurability of existing proxy goals appears to be about the same as at the project level, i.e., 73 per cent against a composite 78 per cent. Both groups also evince considerable faith that their short-term goals are stated in quantitative terms: 57 per cent and 73 per cent respectively.

Numerical summaries of survey responses to this question are as follows:

TABLE 3

Managers' Perceptions of Goal Statements,
by Respondent Group

Goal Statements	University Proj. Mgrs.		Non-Univ. Proj. Mgrs.		Federal Prog. Mgrs.	
	N	%	N	%	N	%
Long-Term Goals						
In meas. terms	11	58	8	40	22	67
Not in meas. terms	8	42	12	60	11	33
Totals	19	100	20	100	33	100
Proxy Goals						
In meas. terms	15	83	13	72	24	73
Not in meas. terms	3	17	5	28	9	27
Totals	18	100	18	100	33	100
Short-Term Goals						
In meas. terms	3	60	5	83	4	57
Not in meas. terms	2	40	1	17	3	43
Totals	5	100	6	100	7	100

In toto, Table 3 contains at least one solid bit of
encouragement for the future of social program evaluation: of
the 74 managers who have long-term goals, 60 have established
proxy goals and 52 of these believe them to be measurable.
This is considered encouraging because it is generally agreed
that effective evaluation can never take place in the absence
of measurable goals, and this writer would argue that in most

social programs with long-term aims, only proxy goals can be measurable. In fact, according to all the literature reviewed for this dissertation, the chief reason for even having proxy goals is the general impracticality of trying to measure basic long-term goals. This line of reasoning obviously takes issue with the 41 managers who believe their long-term goals to be directly measurable, but it is suspected that this discrepancy could be generally eliminated through a face-to-face discussion of definitions with those managers. The chief point being made here is that proxy goals are being established, in measurable terms—several interviews confirmed this—and that this trend should lay the groundwork for better management-oriented evaluation. This trend, incidentally, is seen as being closely related to the movement toward a management by objectives approach to evaluation that was described earlier in this chapter.

4. Only federal employees were asked if they had had the help of social research scientists in developing yardsticks for their "hard" goals, but all the managers were asked if their goals are easy or hard to measure. Their answers are depicted in Table 4:

TABLE 4

Managers' Perceptions of Difficulty of Goal
Assessment, by Respondent Group

Ease of Measurement	University Proj. Mgrs.		Non-Univ. Proj. Mgrs.		Federal Prog. Mgrs.	
	N	%	N	%	N	%
Long-Term Goals						
Easy	5	28	2	10	6	17
Hard	13	72	18	90	29	83
Totals	18	100	20	100	35	100
Proxy Goals						
Easy	10	59	7	39	11	37
Hard	7	41	11	61	19	63
Totals	17	100	18	100	30	100
Short-Term Goals						
Easy	1	20	1	17	1	14
Hard	4	80	5	83	6	86
Totals	5	100	6	100	7	100

It is interesting to note that while 67 per cent of the federal managers believe their long-term goals to be stated in measurable terms, a thumping 83 per cent of them see these goals as being "hard to measure." A suspicious man might wonder if they voted "the law" (which states that all managers should set measurable goals) on the earlier question and voted "their conscience" on this one. If this is true, and the interviews suggest that it is, then the law needs to be

changed. This writer sees no reason why managers should be under pressure to write long-term goal statements in quantitative form, since this is frequently an exercise in futility. From the manager's viewpoint, at least, the place for measurable terms is in the proxy and short-term areas.

This writer is too lacking in practical experience to make any judgemental statements about the ease of measurement of proxy goals, but tends to believe that in most instances managers could and should set proxy goals which are fairly easily measurable. Several of the interviewed project managers expressed this viewpoint, and their questionnaire responses indicate that about half of them feel they have succeeded. Further, the percentage of federal managers indicating "easy to measure" proxy goals is about twice as great as the percentage indicating "easy to measure" long-term goals.

Taking the table as a whole, about 80 per cent of the responding managers indicate "hard to measure" long-term goals, almost 60 per cent of those with proxy goals describe these as "hard to measure," and even short-term goals are seen as being hard to measure in 80 per cent of the cases. "Hard to measure" was described in the questionnaires as pertaining to the assessment of social factors, e.g., attitudinal change, which would logically be in the province of social research people.

Logic might suggest, therefore, that managers should have the assistance of social research scientists in developing sensors and measuring sticks with which to measure progress toward these goals, but evidently this is not always the case. According to questionnaire responses, such assistance has been available to slightly more than half of the federal-level managers who reported "hard to measure" goals.

Investigations of this type are supposed to raise new questions as well as answer old ones, and one seems to be emerging here. To wit: is it possible that one of the best forms of assistance which social scientists could provide to managers would be in the area of establishing proxy goals? As discussed earlier in this study, proxy goals should be designed to take advantage of natural causal processes, and these are certainly "social" in nature and might therefore be better understood by a social psychologist or a sociologist than by an expert in management by objectives. One of the federal-level respondents, in discussing the analysis of evaluative data on the Job Corps, commented that: "Perhaps we haven't yet properly wedded the social scientist and the manager." His comment is well taken, and the establishment of proxy goals which are based on valid causal processes may offer a new basis for matrimony.

5, 6 and 7. General question number five asked if

special feedback channels exist for providing federal-level

managers with evaluative information, and slightly more than

50 per cent reported that they do. Question six asked all the

managers if they are satisfied with the feedback they get re-

garding the actual impact of their programs/projects on clients,

and some 72 per cent reported that they are not. Question

seven asked if the federal-level managers are satisfied with

the feedback they get regarding the internal processes and

activities of their field projects, and--with the exception of

financial affairs--they are not satisfied. These three ques-

tions are interrelated and can be examined together, because

the existence of special feedback channels should be a factor

in the adequacy of all kinds of evaluative feedback.

Responses to the question about the adequacy of feed-

back regarding program/project impact on clients were as

follows:

TABLE 5

Managers' Ratings of Feedback About
Program Impact on Clients, by Respondent Group

Adequacy of Feedback	University Proj. Mgrs.		Non-Univ. Proj. Mgrs.		Federal Prog. Mgrs.	
	N	%	N	%	N	%
Adequate	10	42	5	22	8	21
Inadequate	14	58	18	78	30	79
Totals	24	100	23	100	38	100

The federal managers appear to be less satisfied with their feedback than are the field people, although none are very happy. Much of this problem, of course, goes back to the difficulty of measuring such impact in the first place. Some of the rest of the problem may relate to the existence—or lack of existence—of special evaluation feedback channels, which is examined in Table 6.

TABLE 6

Federal Managers' Perceptions of Adequacy
of Feedback About Program Impact,
by Existence of Special Feedback
Channels for Evaluation

Adequacy of Feedback	Special Channels Exist		Spec. Channels Do Not Exist	
	N	%	N	%
Adequate	7	35	1	6
Inadequate	13	65	17	94
Totals	20	100	18	100

If the numbers in the table cells were larger and had been derived from a scientifically designed sample, we could immediately make three important inferences at this point: (1) The probability that feedback about impacts will be adequate is several times greater when special channels exist for it than when they do not. (2) The probability that this feed-back will be adequate is still only about 35 per cent, even

when special channels exist. (3) The probability that this feedback will be inadequate becomes better than 90 per cent when special channels for it do not exist. In short, we do have some evidence here that--at least in these cases--the federal managers' problem of inadequate feedback about program impact is partially explained by lack of special channels for it.

Special evaluation channels are probably more important in some program areas than in others, and this question is examined in the next five tables. These tables will depict the influence of special evaluation channels on the adequacy of feedback in the following five areas of field project activity: (1) management processes, (2) staff competencies, (3) financial accounting, (4) staff morale, and (5) client-centered activities.

TABLE 7

Federal Managers' Perceptions of Adequacy of
Feedback about Field Management Processes,
by Existence of Special Feedback Channels
for Evaluation

Adequacy of Feedback	Special Channels Exist		Spec. Channels Do Not Exist	
	N	%	N	%
Adequate	9	45	3	18
Inadequate	11	55	14	82
Totals	20	100	17	100

In this activity area, while the adequacy of feedback

is better in all cases then that of feedback about impacts,

the existence of special feedback channels still appears to

be a fairly important factor.

TABLE 8

Federal Managers' Perceptions of Adequacy of
Feedback About Field Staff Competencies,
by Existence of Special Feedback
Channels for Evaluation

Adequacy of Feedback	Special Channels Exist		Spec. Channels Do Not Exist	
	N	%	N	%
Adequate	8	40	10	59
Inadequate	12	60	7	41
Totals	20	100	17	100

To this writer, the inference here would be that

federal managers rely very little upon formal evaluation re-

ports in formulating opinions about the competencies of field

personnel. They may form these opinions on the basis of per-

sonal acquaintance, their feelings about "how things are going"

within the field project, and/or on normal operating reports.

TABLE 9

Federal Managers' Perceptions of Adequacy of
Feedback About Field Financial Accounting,
by Existence of Special Feedback Channels
for Evaluation

Adequacy of Feedback	Special Channels Exist		Spec. Channels Do Not Exist	
	N	%	N	%
Adequate	13	65	11	69
Inadequate	_7	_35	_5	_31
Totals	20	100	16	100

This table provides evidence in support of something this writer strongly anticipated: that federal program accounting practices have become quite effective, and that more managers would be satisfied with feedback in this area than in any other. Further, that these practices are pervasive, and exist fairly independently of any "formal evaluation channels." In fact, the writer is surprised that as many as one-third of the federal managers expressed dissatisfaction with their feedback about program financial activities.

TABLE 10

Federal Managers' Perceptions of Adequacy of
Feedback About Field Staff Morale, by
Existence of Special Feedback Channels for
Evaluation

Adequacy of Feedback	Special Channels Exist		Spec. Channels Do Not Exist	
	N	%	N	%
Adequate	5	26	3	19
Inadequate	14	74	13	81
Totals	19	100	16	100

Feedback in this area is generally inadequate, and is

not remarkably improved by the existence of special evaluation

channels. It may be that the federal managers have made little

effort to keep informed about this subject, although this can

only be a conjecture.

TABLE 11

Federal Managers' Perceptions of Adequacy of
Feedback About Client-Centered Activities in
the Field, by Existence of Special Feedback
Channels for Evaluation

Adequacy of Feedback	Special Channels Exist		Spec. Channels Do Not Exist	
	N	%	N	%
Adequate	7	35	3	19
Inadequate	13	65	13	81
Totals	20	100	16	100

Feedback here is also generally poor, even though somewhat improved where special channels exist. A possible explanation might be that in this case—and in the cases involving impact and staff morale—the root problem lies in inadequate sensors at the field level. This notion is compatible with the improvements indicated where special channels do exist, because a manager setting up special channels might be expected to make a special effort to install sensors.

8. General question number eight asked the familiarity of managers at all levels with the literature and the principles of evaluative research. This was posed as two separate questions in the questionnaires, and results are as follows:

TABLE 12

Managers' Ratings of Their Familiarity With
Evaluation Research, by Respondent Group

Familiarity	University Proj. Mgrs.		Non-Univ. Proj. Mgrs.		Federal Prog. Mgrs.	
	N	%	N	%	N	%
With the literature						
High	2	8	1	4	3	8
Medium	11	46	9	39	19	51
Low	11	46	13	57	15	41
Totals	24	100	23	100	37	100
With the methods						
High	7	29	7	30	10	27
Medium	16	67	13	57	18	49
Low	1	4	3	13	9	24
Totals	24	100	23	100	37	100

No conclusions--nor even conjectures--are derived from this table. A non-tabulated check of the questionnaire forms indicated that managers with doctoral degrees generally tended to consider themselves fairly familiar with research methods, which could be anticipated. But apart from that, it can only be noted that about half of all the responding managers claimed some acquaintance with the literature of evaluation, and that a substantial majority claimed familiarity with the methods.

9. General question nine asked the familiarity of all the managers with modern management theory and practice as it relates to management information systems and to management by objectives. Questionnaire results are as follows:

TABLE 13

Managers' Ratings of Their Familiarity With the
Theory and Practices of Management Information Systems
and Management by Objectives, by Respondent Group

Familiarity	University Proj. Mgrs.		Non-Univ. Proj. Mgrs.		Federal Prog. Mgrs.	
	N	%	N	%	N	%
With MIS						
High	5	21	3	13	10	26
Medium	16	67	14	61	20	53
Low	3	12	6	26	8	21
Totals	24	100	23	100	38	100
With MBO						
High	7	29	7	30	17	46
Medium	13	54	12	52	12	32
Low	4	17	4	17	8	22
Totals	24	100	23	99	37	100

This table contains no startling revelations. The fact that around 80 per cent of a group of managers claim medium or high familiarity with MIS and MBO appears natural enough. Or, looking at it another way, the fact that some 70 per cent of them claim low or medium familiarity with MIS and MBO suggests that a sizable education/training need still exists--which is confirmed by the managers themselves (see Table 14 below).

10 and 11. General question ten asked about the experience of the managers in dealing with social research specialists, and--if they have seen them in action--how they were impressed by their ability to actually assess program effectiveness. Question eleven asked their assessment of the ability of such specialists to help them design better evaluative subsystems. Survey returns on these questions are presented in the following tables:

TABLE 14

Managers' Experience in Dealing With
Social Research Specialists, by Respondent
Group

Experience	University Proj. Mgrs.		Non-Univ. Proj. Mgrs.		Federal Prog. Mgrs.	
	N	%	N	%	N	%
Significant Amount	15	62	9	39	17	45
Little or None	9	38	14	61	21	55
Totals	24	100	23	100	38	100

About all that can really be noted from this table

is that social research scientists are making their presence

felt in the world of federal social programs. About half of

the responding managers have had "significant" dealings with

them.

TABLE 15

Managers' Ratings of the Ability of Social
Research Specialists to Actually Assess
Program Effectiveness, by Respondent Group

Impressed With Ability to Assess	University Proj. Mgrs.		Non-Univ. Proj. Mgrs.		Federal Prog. Mgrs.	
	N	%	N	%	N	%
Highly	1	6	1	6	3	10
Somewhat	11	65	8	50	17	55
Little	5	29	7	44	11	35
Totals	17	100	16	100	31	100

The first message here is that some 75 per cent of the

responding managers have worked on programs/projects which

have been evaluated by social researchers, and that they have

seen the results of these evaluations, whether or not they had

significant personal dealings with the researchers. The second

message is that their ability to assess effectiveness is seen

by the managers as being quite variable. This is somewhat

evident from the table, and is underscored by remarks which

were added to the questionnaire forms and made during the

interviews. As one GS-14 put it: "We use one group which impresses me highly with their ability. With the others I am somewhat, little, or negatively impressed." (Perhaps in frustration, he checked all available answer blanks on the questionnaire.) In summarized form, all the commentaries agreed that while one researcher (or group of researchers) is apt to be very capable, the next is apt to be useless. One can deduce from this that--in the opinion of a majority of these managers--social research skills can be useful to federal programs, but that the odds of finding those skills are not good.

TABLE 16

Managers' Ratings of the Potential Ability of Social
Research Specialists to Assist Them in
Developing Better Evaluation Subsystems,
By Respondent Group

Potential Ability	University Proj. Mgrs.		Non-Univ. Proj. Mgrs.		Federal Prog. Mgrs.	
	N	%	N	%	N	%
Much	10	42	7	30	14	41
Some	11	46	13	57	16	47
Little	3	12	3	13	4	12
Totals	24	100	23	100	34	100

The questions on this subject were worded to make it clear that the manager would pick his own researchers, and that he could remove/replace them if they weren't satisfactory.

On these terms, it is evident that these managers generally believe that social research scientists have a place on the program management team.

12. This general question dealt with the managers' perceived requirement for more program evaluation, either within the program itself or of the one-shot type done by outsiders sponsored by echelons above the program. Responses to this question are presented here:

TABLE 17

Managers' Attitudes Toward More Evaluation
Activity, by Respondent Group

Attitude About More Evaluation Activity	University Proj. Mgrs.		Non-Univ. Proj. Mgrs.		Federal Prog. Mgrs.	
	N	%	N	%	N	%
By Outsiders						
For	6	26	6	27	13	41
Against	17	74	16	73	19	59
Totals	23	100	22	100	32	100
Within the Program						
For	23	96	21	91	30	83
Against	1	4	2	9	6	17
Totals	24	100	23	100	36	100

The table doesn't show this, but only two managers (both federal) voted against both types of evaluation. Nineteen, on the other hand (from all groups) voted for more of both kinds of evaluation. The basic trend within all groups is in favor

of more evaluation within programs and against more "external"
evaluation. The import here, it appears, is that if managers
want to do more of their own evaluation, there may be a need
for new training programs to support them.

13. General question 13 asked how these managers per-
ceive their need for training and consultative assistance in
the area of management information systems. In retrospect, it
is wished that the question had been broadened to include more
areas. But since hindsight cannot change reality, the respon-
ses to the question as asked are presented in the next table.

TABLE 18

Managers' Perceptions of Their Needs for
Training and Consultative Assistance in the
Area of Management Information Systems, by
Respondent Group

Perceived Need	University Proj. Mgrs.		Non-Univ. Proj. Mgrs.		Federal Prog. Mgrs.	
	N	%	N	%	N	%
Training for Self						
Yes	19	79	20	87	27	79
No	5	21	3	13	7	21
Totals	24	100	23	100	34	100
Training for Staff						
Yes	18	78	19	83	27	79
No	5	22	4	17	7	21
Totals	23	100	23	100	34	100
For Consultative Assistance						
Yes	17	74	19	83	28	82
No	6	26	4	17	6	18
Totals	23	100	23	100	34	100

The message here is simple enough: a training need exists in the area of MIS and the managers acknowledge it.

Apart from the general questions just discussed, the questionnaires posed a matched pair of questions to the program and project-level managers on the general subject of program organizational structures and how these affect management effectiveness. The federal-level people were each asked if most of their field staff was employed by non-federal entities, and if so, whether this impaired their ability to manage the program. The project-level people were asked (a) if they were employed by an organization with goals not related to those of the project, and (b) if so, whether this resulted in goal-conflict for them. In brief, of the 35 federal managers who worked with non-federal field people, 5, or 14 per cent, felt that this impaired their ability to manage their programs. And of the 33 project managers who had employers with additional goals, 6 (18 per cent) said that this created frequent conflicts for them, and another 21 (67 per cent) said that it created occasional conflicts. What impact this situation may be having on the evaluation problem is not clear at this time, but there is indication that further investigation is needed.

CHAPTER VI

CONCLUSIONS AND RECOMMENDATIONS

A. Conclusions

One of the broadest, most fundamental conclusions which the writer has drawn from this study is that in the world of federal social programs, there already exist two fairly separate and distinct sub-worlds of program evaluation. (One would like to call these "subsystems" rather than "sub-worlds," but given the fairly precise definition of "system" that was set forth in Chapter I of this study, they simply do not qualify.) These two sub-worlds have overlapping purposes and even populations, but each has unique characteristics which make it worthy of study. This writer, incidentally, was essentially unaware of much of the activity taking place in one of those sub-worlds until he conducted the survey interviews, and prior to that would not have said that two sub-worlds even existed.

The first sub-world is policy-oriented. Its major actors include the Congressmen who make--and withhold--appropriations; top agency officials who recommend policy and who let evaluation contracts; Office of Management and Budget

executives who consolidate budget requests; prestigious orga-

nizations and commissions which study federal programs and

submit reports which are read in high places; the press, and

other popular critics of governmental activity; and finally,

the research institutes, universities, and individual social

scientists who perform "outside" evaluations of federal pro-

grams. The program and project managers also inhabit this

world, but by and large they are not enfranchised citizens of

it. The same can be said of program clienteles, although a

fair number of these are able to exert influence on the major

actors.

The other sub-world is management-oriented. The major

actors of this sub-world include the program and project

managers themselves; a great number of state and regional

coordinative and planning agencies; several kinds of federal

agency field personnel; a few maverick social research special-

ists who are at least as concerned with the problems of manag-

ing programs as with grading them; and finally, a small but

growing number of management theorists who--while previously

concerned chiefly with business--are expanding their field of

interest to include government. Top agency officials, the

prestigious organizations, and a few of the other major actors

in the first sub-world are automatically honorary citizens of

this one, but they exert little influence in it except to
insure its active and continued existence. Program clienteles
occupy a position in this sub-world quite similar to the one
they occupy in the other, except that their influence in this
one is most apt to be through sub-world number one.

The policy-oriented sub-world has a rich and varied
professional literature, which flows from the pens of its
research specialists, the prestigious organizations, and even
the upper echelons of the federal bureaucracy. It also has a
considerable popular literature, to be found in the editorials
and feature articles of newspapers and magazines. The manage-
ment-oriented sub-world has hardly any literature at all. Its
maverick social scientists produce useful—if not always
directly applicable—chapters and paragraphs, but many of these
are masked by research-related titles and are therefore unknown
to the practitioners. The same statement can be made about the
prestigious organizations. The real base of a professional
literature for this sub-world should probably be the public
administration faculties of the nation's universities, but
these people seem generally unaware that such a need exists.
In the face of this nearly bare cupboard, the practitioners of
managerial program evaluation are—in increasing numbers—

turning to the voluminous literature of management theory and culling through it for parts they can call their own.

The second sub-world appears to have less sense of common purpose than the first, perhaps because it has no professional literature to tie it together. It is fragmented: what is learned in one program is not immediately known in another, so mistakes are duplicated and forward progress is slow.

A corollary conclusion to the one just stated is that these two sub-worlds have great need for closer cooperation, and that the widely perceived requirement for much better social program evaluation will not be met until such cooperation is effected. For example, as has been stated by some of those "maverick" social scientists, a good evaluation data collection system could serve both types of users. But in regard to this, while the second sub-world is in perhaps the best position to establish such collection systems, the first sub-world controls the required financial and manpower resources and has a propensity to reserve both for its own purposes. Paralleling this, the first sub-world needs to give the second one more of a voice in the development of its policies toward evaluation, which have tended to vary more in accordance with the dictates of politics than with those of

good management. Here is how this is expressed (on a survey questionnaire) by one GS-14 who works at the program level: "I feel that emphases on evaluation in the area in which I work are not consistent, are not provided for financially or in terms of manpower, and are not sufficiently recognized in terms of priority." Or as it was put by a feminine federal manager: "In my experience (of 10 years) in government service, planning and evaluation are given very low priorities. Generally speaking, we run programs 'by the seat of our pants'." These complaints by managers are common, but what they leave out is the fact that the federal agencies do expend goodly amounts of money and manpower in both planning and evaluation-- it just doesn't involve the program level as much as the managers would like. In fact, there is some evidence that much of sub-world one--like this writer before he conducted his survey--is essentially unaware that sub-world two is actively in being.

A final example of the desirability of closer cooperation between the two sub-worlds is found in the area of "outside" evaluation, which is most frequently funded from sub-world one. As was noted in Chapter I, the literature of evaluation research reveals what is almost an adversary position on the part of some researchers vis-a-vis program

managers. The reciprocal of this is exemplified by a comment which a project manager added to his questionnaire: "My experience with formal outside evaluation has not been satisfactory. These evaluations have been conducted with a fault-finding attitude and results have not been communicated to me in a frank and helpful manner." On the other hand, interview conversations with a few project managers suggest that this situation does not have to exist, and that outside evaluation can be useful to both agency and program personnel.

The third general conclusion to be drawn from the study is that there is a real need for the universities to turn their attention to management-oriented social program evaluation. The survey portion of this study has tentatively identified some of the requirements of the managers for educational programs, related research, publications, and even advisory assistance. Its literature analysis has established, at least to this writer's satisfaction, that the universities already command a reservoir of knowledge and expertise with which the managers could be helped. Further, the study has outlined the general magnitude of social program activity as a percentage of total federal expenditures, and this magnitude is so great as to suggest the mandatory involvement of any set

of social institutions which might possibly contribute to social program effectiveness.

The fourth conclusion (or sub-group of conclusions) of the study relates directly to the conceptual model presented in Chapters III and IV. The obverse side of this conclusion, which is derived from the analysis of the six fields of literature incorporated into the model, is that all six fields have something to contribute to the problem of managerial evaluation. The reverse side, which derives from the survey, is that while almost all of the managers contacted could presently benefit from study in one or more of the model's fields, very few could benefit from all of them. The basic conclusion, therefore, is that the model--which inherently incorporates all six fields--has potential utility as an "organizing principle" around which to build a comprehensive shopping list of credit courses and/or continuing education seminars for present and future managers.

The synthesized core of the model, i.e., the diagram and its descriptive statements, appears to be suitable for use as an introduction to all courses/seminars which might appear in such a compendium. So used, it would underscore the point that program management and evaluation are intrinsically complementary system processes, and that any specialized courses

in these areas are _ipso_ _facto_ logically related. Apart from brief coverage in course introductions, however, it is concluded that further attention to this core should be reserved for advanced graduate-level seminars.

A conclusion related to the foregoing is that the most immediate needs for educational offerings are in the fields of (1) management by objectives (MBO), (2) management information systems (MIS), and (3) evaluation/evaluation research—all of which are included in the model. This three-part conclusion is explained as follows:

1. As described in Chapter V, within several program areas there is already a trend toward the use of management by objectives as a basis for management-oriented evaluation. Knowledgeable managers have stated that this approach is making a positive contribution, in that it is producing _measurable_ objectives in programs where none have existed in the past. Further, these objectives relate to all facets of program/ project operations, including inputs, activities, and—in some cases—even client impacts. And they are said to be generally realistic, partly because the MBO process automatically causes them to be worked out jointly by more than one level of management. In short, this study found a strong case for the increased use of MBO within projects and programs, but it also

found (particularly during interviews) that the managers need additional training in order to be able to make effective use of it.

2. Whereas MBO emphasizes the establishment of measurable objectives and logical approaches to achieving them, management information systems (as a field of study) addresses the problem of developing feedback channels whereby information about the achievement of objectives is carried upward within the organizational hierarchy. And this receiving of information about the degree of achievement of measurable objectives is the very heart of program evaluation. Regarding the actual need for training in this field, reference can be made to Chapter V of this study, which reported that some 80 per cent of all managers surveyed perceived a need for training in MIS for both themselves and their staffs.

3. The interviews conducted during this study confirmed something which had already been made quite plain by the literature analysis, i.e., that widespread semantical confusion--and even conflict--exists regarding just what program evaluation is. This confusion extends to include why evaluation is needed; who should accomplish what aspects of it; who will use its results, and for what purposes; what can be measured, and what cannot; and so forth. It is therefore

concluded that a need exists for both on-campus courses and
for continuing education seminars addressed to all these
questions. Some of these courses should be introductory in
nature and mainly descriptive and informative in content.
Others should be more advanced, and should delve into some of
the techniques and processes of impact measurement.

One of the other four fields incorporated in the model
is organization theory, and this is already included in the
public administration curriculum of credit courses. In the
light of this study, it is believed that organization theory
as a credit course should immediately be considered a part of
the compendium described above, and that it should be included
as a second-priority subject in the development of any family
of non-credit seminars on managerial evaluation.

It is concluded that the other three fields of the
model--general systems theory, cybernetics, and operations
research and systems analysis--deserve a third-priority place
in any family of credit or non-credit courses on program
evaluation. This suggested lower priority is not based on any
question of their applicability or value; rather, it is based
on the belief that the other fields have a broader current
appeal, and that even the long-range market for courses in these
fields is limited to a minority of the management population.

B. <u>Recommendations</u>

This study raised several new questions in the mind of this writer, and two of these are described here in the form of recommendations for research and study.

1. The business firm in a competitive environment is always subject to the ultimate evaluative test of whether or not it can continue to be economically viable. <u>Ergo</u>, its management-oriented evaluation processes cannot—for very long—be out of synchronization with its policy-oriented evaluation processes. In fact, the first is simply an extension of the second, and it is improbable that any observer of the firm would have any reason to even think in terms of two sets of processes. The federal social program, in contrast with the business firm but in common with most governmental entities, enjoys no comparable ultimate evaluative test. Of course, one can say that the federal program faces competition, i.e., for appropriations, and that if it fails to get these it will not be "economically viable." This is considered to be quite a different contest, however, in that survival in the political arena has not traditionally been closely associated with management effectiveness at the working levels. At any rate, the "ultimate" evaluation criteria for federal programs are radically different from those of most business firms, and because

they are, it is evidently possible for policy-oriented evaluation to become separated--to varying degrees--from management-oriented evaluation.

This study has concluded that such separation is very noticeable in the programs it surveyed, and has concluded further that this separation is impairing the effectiveness of overall program evaluation. It has not, however, provided any insight into why this is the case and what might be done to improve the situation. Logic suggests that partial explanation of this problem may be found in differences of outlook between the middle managers who operate the programs and the "super grades" and appointed officials who operate above the programs--but we have no solid evidence of this. Another possibility may exist in the fact that most of the field project activities are managed by non-federal personnel--but this too is only guesswork. A third possible source of explanation may lie in the state and regional planning and coordinative organizations--but if so, further study will be required before we understand their roles.

The recommendation, it follows, is that interested researchers investigate the causes of the hiatus which this investigator believes to exist between policy-oriented evaluation and management-oriented evaluation of federal programs.

2. It is presumed that most of the textbooks on management by objectives and management information systems have been developed with a "unitary" organization in mind. During the literature analysis portion of this study, a special (although admittedly limited) search was made for any publications --or even chapters or paragraphs--on how MBO and/or MIS theory or applications might have to be altered when top management is dealing mainly through "sub-contractors," and nothing was found. It can easily be suggested that alterations are needed in such circumstances, however, if for no other reason than that within the duration of sub-contract periods, top management faces limits on what it can do to vary inputs, processes, or objectives.

This question is seen as being pertinent to the problem of evaluating federal social programs for these two reasons: (1) Most of these programs are operated on a sub-contract basis, through a wide variety of types of project agencies. (2) There is a trend within several program areas toward the use of MBO as a basis for managerial evaluation, and MIS is a natural adjunct to MBO.

The recommendation, then, is that interested parties investigate if and/or how "normal" MBO and MIS theory and applications need to be altered for use in federal programs.

APPENDIX A

SURVEY QUESTIONNAIRES

PROJECT MANAGER QUESTIONNAIRE

Age _____   Sex: M _____ F _____

Type of employer (school, city, etc.) _____

Years of experience in managerial positions:

    Less than 5 _____   5 to 10 _____   More than 10 _____

Formal training/education in managerial skills:

    Coll/Univ _____   Other _____   None _____

Highest academic degree earned:

    Bachelors _____   Masters _____   Doctorate _____   None _____

INSTRUCTIONS: Please indicate your response to each question or sub-question by checking the appropriate blank. If you desire to make additional comment, please do so, either in the space available by the question and/or on the last page of the questionnaire.

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1. Would you say that the <u>basic</u> goals of your program are long-term or short-term?

    Long-term _____   Short-term _____

2. (TO BE ANSWERED ONLY IF YOU CHECKED "LONG-TERM" IN QUESTION 1.)

    Both management and evaluation theorists state that program goals should be expressed in <u>measurable</u> terms. Therefore, since it is often difficult to do this with long-term goals (so as to be able to measure progress toward them), managers sometimes set up more immediate "proxy" goals. For example, if the future and continued <u>employment</u> of a clientele group is the long-term goal, getting a certain number of them through a vocational training program might be taken as a valid "proxy" goal.

    a) Do you feel that your long-term goals are expressed in measurable terms?

        Yes _____   No _____

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b) Does your program have clearly defined "proxy" goals?

Yes _____   No _____

c) If you have "proxy" goals, are these expressed in measurable terms?

Yes _____   No _____

The degree of achievement of some program goals is easy to measure; one can simply count the number of graduates of a training program, or the number of "talking books" delivered to blind persons. But the goals of some programs are harder to measure--for example, those that aim at changing attitudes.

d) Do you see the degree of achievement of your long-term goals as being easy to measure or hard to measure?

Easy _____   Hard _____

e) If you have "proxy" goals, do you see the degree of achievement of these goals as being easy to measure or hard to measure?

Easy _____   Hard _____

3. (TO BE ANSWERED ONLY IF YOU CHECKED SHORT-TERM IN QUESTION 1.)

Both management and evaluation theorists state that program goals should be expressed in measurable terms.

a) Do you feel that your program goals are expressed in measurable terms?

Yes _____   No _____

The degree of achievement of some program goals is easy to measure; one can simply count the number of graduates of a training program, or the number of "talking books" delivered to blind persons. But the goals of some programs are harder to measure--for example, those that aim at changing attitudes.

b) Do you see the degree of achievement of your program goals as being easy or hard to measure?

Easy _____   Hard _____

4. Many social research scientists have participated in program evaluation activities, and a great number of books and articles have been written about the process. This literature discusses ways of assessing those "hard-to-measure" goals, as well as tactics and strategies for determining overall program effectiveness. How would you rate your familiarity with this body of books and articles?

High _____   Medium _____   Low _____

5. One can, of course, learn the methods of evaluative social research--the scientific assessment of program impact--from sources other than books and journals, i.e., by experience, or through special training programs. How would you rate your familiarity with these methods?

High _____   Medium _____   Low _____

6. How would you rate your familiarity with the literature and/or the principles of modern management theory as it relates to management information systems?

High _____   Medium _____   Low _____

As it relates to management by objectives?

High _____   Medium _____   Low _____

7. Within the context of management information and control systems, how would you rate your knowledge of the "feedback" concept, wherein information about program activities are constantly channeled back to the manager--in quantitative terms--for his use in making adjustments and corrections to the program?

High _____   Medium _____   Low _____

8. All programs probably have some amount of built-in feedback, specially planned or otherwise. But it may not be set up to give the manager just what information he needs; it may be too little, too much, or on the wrong subjects.

How would you rate the feedback you get regarding actual program impacts/effects on clientele(s)?

Adequate _____   Not good enough _____

9. Have you had significant experience in dealing with evaluation research specialists, i.e., social psychologists, sociologists, psychometrists and the like who specialize in social research aimed at the evaluation of program effectiveness?

Yes _____   No _____

10. If social research specialists have evaluated any program with which you have been associated:

a) How were you impressed with their ability to actually assess "program effectiveness"?

Highly _____   Somewhat _____   Little _____

b) Who sponsored their evaluation activities, i.e., to whom did they make their primary report?

The program manager _____

A higher echelon of government _____

Other (specify) _____

11. Referring to _formal_ evaluation, designed to provide empirical evidence about both the internal and external effectiveness of social programs:

a) Do you favor more evaluation of the "external" type, where government echelons above the program bring in research institutes or university-based social scientists, under special contract, to perform major, one-shot assessments of program effectiveness?

Yes _____   No _____

b) Do you favor more evaluation _within_ programs, with both evaluation activities and evaluation reporting to be under the general control of the program manager? (Assume additional funding for this, if it would otherwise put a strain on program/project resources.

Also assume that you would carry out much of the eval-
uation task, following the program manager's guide-
lines.) You favor more "internal" evaluation:

Yes _____   No _____

12. Do you feel that social research scientists could be of
    help to your federal program manager—and to you—in devel-
    oping a better evaluation system within your program?
    (Assume that they would work directly for your program
    manager, not for some higher or outside agency.) They
    could be of:

    Much help _____   Some help _____   Little help _____

13. According to many writers in the field of management, a
    properly designed and maintained management information
    system—including an evaluative feedback component—is a
    cornerstone of program control. Do you think you need
    assistance of any or all of the following types in improving
    the management information system of your project and that
    of the larger (national) program?

    Training for yourself   Yes _____   No _____

    Training for your staff   Yes _____   No _____

    Assistance from the program manager   Yes _____   No _____

    Outside consultative assistance   Yes _____   No _____

14. (For non-federal employees only.) Most field project
    managers are employed by organizations of one kind or
    another, and these organizations (universities, state
    agencies, cities, etc.) usually have interests and goals
    in addition to those represented by the national program
    in which the project manager plays a part.

    a) Are you an employee of an organization that has interests
        and goals in addition to those of your program/project?

        Yes _____   No _____

    b) If so, do you feel that you sometimes have significant
        problems because your program/project goals are in
        conflict with your employer's goals?

        Frequently _____   Occasionally _____   Never _____

USE THE REMAINING SPACE FOR ANY ADDITIONAL COMMENTS YOU MAY HAVE.

PROGRAM MANAGER QUESTIONNAIRE

Age _____   Sex: M_____ F_____   GS grade _____

Years of experience in managerial positions:

    Less than 5 _____   5 to 10 _____   More than 10 _____

Formal training/education in managerial skills:

    Coll/Univ _____   Other _____   None _____

Highest academic degree earned:

  Bachelor _____   Masters _____   Doctorate _____   None _____

INSTRUCTIONS: Please indicate your response to each question
or sub-question by checking the appropriate
blank. If you desire to make additional comment,
please do so, either in the space available by
the question and/or on the last page of the
questionnaire.

---

1. a) Who employs the majority of the people who implement
your program at the state and/or local level?

    The federal government _____   Other entities _____

  b) If your program is implemented at the field level by
non-federal employees, do you feel that this impairs
your ability to manage it effectively?

    Yes _____   No _____

2. Would you say that the <u>basic</u> goals of your program are
long-term or short-term?

    Long-term _____   Short-term _____

3. (TO BE ANSWERED ONLY IF YOU CHECKED "LONG-TERM" IN
QUESTION 2.)

Both management and evaluation theorists state that program
goals should be expressed in <u>measurable</u> terms. Therefore,
since it is often difficult to do this with long-term goals
(so as to be able to measure current progress toward them),

managers sometimes set up more immediate "proxy" goals.
For example, if the future and continued employment of a
clientele group is the long-term goal, getting a certain
number of them through a vocational training program might
be taken as a valid "proxy" goal.

a) Do you feel that your long-term goals are expressed in
measurable terms?

Yes _____   No _____

b) Does your program have clearly defined "proxy" goals?

Yes _____   No _____

c) If you have "proxy" goals, are these expressed in
measurable terms?

Yes _____   No _____

The degree of achievement of some program goals is easy to
measure; one can simply count the number of graduates of a
training program, or the number of "talking books" delivered
to blind persons. But the goals of some programs are
harder to measure--for example, those that aim at changing
attitudes.

d) Do you see the degree of achievement of your long-term
goals as being easy to measure or hard to measure?

Easy _____   Hard _____

e) If you have "proxy" goals, do you see the degree of
achievement of these goals as being easy or hard to
measure?

Easy _____   Hard _____

4. (TO BE ANSWERED ONLY IF YOU CHECKED "SHORT-TERM" IN
QUESTION 2.)

Both management and evaluation theorists state that program
goals should be expressed in measurable terms.

a) Do you feel that your program goals are expressed in
measurable terms?

Yes _____   No _____

The degree of achievement of some program goals is easy to measure; one can simply <u>count</u> the number of graduates of a training program, or the number of "talking books" delivered to blind persons. But the goals of some programs are harder to measure--for example, those that aim at changing <u>attitudes</u>.

b) Do you see the degree of achievement of your program goals as being easy to measure or hard to measure?

Easy _____ Hard _____

5. (FOR THOSE WHO CHECKED THAT THEIR GOALS ARE "HARD" TO MEASURE.)

Have you had the assistance of professional social research people--sociologists, social psychologists, etc.--in developing "yardsticks" for use in measuring the extent to which your program is achieving its basic goals?

Yes _____ No _____

6. Many social research scientists have participated in program evaluation activities, and a great number of books and articles have been written about the process. This literature discusses ways of assessing those "hard to measure" goals, as well as tactics and strategies for determining overall program effectiveness. How would you rate your familiarity with this body of books and articles?

High _____ Medium _____ Low _____

7. One can, of course, learn the methods of evaluative social research--the scientific assessment of program impact--from sources other than books and journals, e.g., by experience, or through special training programs. How would you rate your familiarity with these methods?

High _____ Medium _____ Low _____

8. How would you rate your familiarity with the literature and/or the principles of modern management theory as it relates to <u>management information systems</u>?

High _____ Medium _____ Low _____

As it relates to <u>management by objectives?</u>

High ____   Medium ____   Low ____

9. Within the context of management information and control
    systems, how would you rate your knowledge of the "feed-
    back" concept, wherein information about program activ-
    ities are constantly channeled back to the manager--in
    quantitative terms--for his use in making adjustments
    and corrections to the program?

    High ____   Medium ____   Low ____

10. All programs probably have some amount of built-in feed-
    back, specially planned or otherwise. But it may or may
    not be set up to give the manager just what information he
    needs; it may be too little, too much, or on the wrong
    subjects. How would you rate the feedback you get regard-
    ing <u>actual program impacts/effects on clienteles?</u>

    Adequate ____   Not good enough ____

11. (Question 10 referred to the <u>external</u> effects of the pro-
    gram; this question refers to its <u>internal</u> activities.)
    How would you rate the feedback you get on the activities
    and internal processes of your field projects in each of
    the following areas:

	<u>Adequate</u>	<u>Not good enough</u>
a) Management processes	____	____
b) Staff competencies	____	____
c) Financial accounting	____	____
d) Staff morale	____	____
e) Client-centered activities	____	____

12. Evaluative information can sometimes be obtained from ordi-
    nary program operating reports, but <u>better</u> evaluative infor-
    mation can often be obtained if special channels are set up
    for this purpose. Does your program have special feedback
    channels for data pertinent <u>only</u> to program evaluation?

    Yes ____   No ____

13. Have you had significant experience in dealing with evaluation research specialists, i.e., social psychologists, sociologists, psychometrists and the like who specialize in social research aimed at the evaluation of program effectiveness?

    Yes _____ No _____

14. If social research specialists have evaluated any program with which you have been associated:

    a) How were you impressed with their ability to actually assess "program effectiveness"?

       Highly _____ Somewhat _____ Little _____

    b) Who sponsored their evaluation activities, i.e., to whom did they make their primary report?

       The program manager _____

       A higher echelon of government _____

       Other (specify) _____

15. Referring to formal evaluation, designed to provide empirical evidence about both the internal and external effectiveness of social programs:

    a) Do you favor more evaluation of the "external" type, where government echelons above the program bring in research institutes or university-based social scientists, under special contract, to perform major, one-shot assessments of program effectiveness?

       Yes _____ No _____

    b) Do you favor conducting more evaluation within programs, with both evaluation activities and evaluation reporting to be under the general control of the program manager? (Assume additional funding for this, if it would otherwise put a strain on program resources.)

       Yes _____ No _____

16. If they were to be selected by you, and either on your staff or regularly available to you as consultants, and removable/replaceable by you--in short, if they were to be your people--do you feel that social research scientists could help you in developing a better evaluation system within your program? They could be of:

Much help ____   Some help ____   Little help ____

17. According to many writers in the field of management, a properly designed and maintained management information system--including an evaluative feedback component--is a cornerstone of program control. Do you think you need assistance of any or all of the following types to improve your program's management information system?

Training for yourself   Yes ____   No ____

Training for your staff   Yes ____   No ____

Consultative assistance   Yes ____   No ____

USE THE REMAINING SPACE FOR ANY ADDITIONAL COMMENTS YOU MAY HAVE.

APPENDIX B

LISTS OF PROJECTS SURVEYED

<u>University-Based Projects by Name and Federal Funding Source</u>

Note: Some of these 27 "projects" are actually project offices with more than one activity, and have therefore produced more than one interview.   "Indian Education Projects" is one example.

Action Peace Corps Training Projects
        U.S. Office of Education, DHEW

Civil Defense Training Projects
        U.S. Department of Defense

Consultant Training Project
        U.S. Employment Service, DOL

Consultative Center for Equal Educational Opportunity
        Bureau of Equal Educational Opportunity, USOE, DHEW

Counselors Training Project
        U.S. Employment Service, DOL

Health Services Surveyors Training Project
        Community Health Service, DHEW

Indian Education Projects
        Bureau of Indian Affairs, DOI;
        U.S. Office of Education, DHEW

International Business Program
        Language and Area Centers Section, USOE, DHEW

Management Institute for State Survey Program Supervisors
        Public Health Service, DHEW

Minority Business Program
        Office of Minority Business Enterprise, DOC

National Police Training Program
        Law Enforcement Assistance Administration, DOJ

Nutrition Programs for the Elderly
        Administration on Aging, DHEW

Police Assaults Study Project
        Law Enforcement Assistance Administration, DOJ

Regional Rehabilitation Research Institute
      Social and Rehabilitation Service, DHEW

Rehabilitation Management Training Program
      Social and Rehabilitation Service, DHEW

Special Veterans Training Project
      U.S. Office of Education, DHEW

Southwest Center for Human Relations Studies
      Several sources within DHEW

Supervisory Training Project
      National Institute for Occupational Safety and
      Health, DOL

Talent Search Project
      U.S. Office of Education, DHEW

Teacher Corps Project
      U.S. Office of Education, DHEW

Threshold Project
      U.S. Office of Education, DHEW

Title I (HEA) Community Relations Projects
      U.S. Office of Education, DHEW

Upward Bound Project
      U.S. Office of Education, DHEW

Urban Planning and Development Office
      U.S. Department of Housing and Urban Development

WIN Employment Training Project
      U.S. Department of Labor;
      U.S. Social Security Commission

WIN OJT Project
      U.S. Environmental Protection Agency;
      U.S. Department of Labor

Non-University Projects by Name, Location, and Federal
Funding Source

Note: Some of these 27 projects are multiple in nature
and produced more than one interview.

American Indian Investment Opportunities, Inc.   (Norman, OK)
        Small Business Administration, DOC

Area Wide Health Planning Organization   (Oklahoma City, OK)
        Comprehensive Health Plan Service, DHEW

Association of Central Oklahoma Governments, Law Enforcement
        Project Office   (Oklahoma City, OK)
        Law Enforcement Assistance Administration, DOJ

Business Development Organization   (Norman, OK)
        Office of Minority Business Enterprise, DOC

Central State Hospital Alcoholism Project   (Norman, OK)
        National Institute of Mental Health, DHEW

Child Welfare Projects, Community Action Program   (Oklahoma
        City, OK)
        Office of Child Development, DHEW

Community Development Project   (Moore, OK)
        U.S. Department of Housing and Urban Development

Economic Development Projects, Community Action Program
        (Chickasha, OK)
        Office of Economic Opportunity

Economic Development Projects, Community Action Program
        (Oklahoma City, OK)
        Office of Economic Opportunity

Education and Services Projects, Community Action Program
        (Chickasha, OK)
        Office of Economic Opportunity and DHEW

Follow Through Project   (Chickasha, OK)
        U.S. Office of Education, DHEW

Housing 235 Counseling Project, Urban League   (Oklahoma City, OK)
        U.S. Department of Housing and Urban Development

Juvenile Delinquency Project   (Midwest City, OK)
        Law Enforcement Assistance Administration, DOJ

Manpower Development Project, City of Norman   (Norman, OK)
        U.S. Department of Housing and Urban Development

Mid-Del Youth and Family Center   (Midwest City, OK)
        Law Enforcement Assistance Administration, DOJ

Norman Alcohol Information Center   (Norman, OK)
        National Institute of Mental Health, DHEW

Oklahoma Crime Commission, Police Assistance Projects
        (Oklahoma City, OK)
        Law Enforcement Assistance Administration, DOJ

Oklahoma Regional Medical Program   (Oklahoma City, OK)
        Health Resources Agency, DHEW

Opportunity Workshop and Training Center, Inc.   (Chickasha, OK)
        U.S. Office of Education, DHEW

Police Community Relations Project   (Norman, OK)
        Law Enforcement Assistance Administration, DOJ

Progress Association for Economic Development
        (Oklahoma City, OK)
        Small Business Administration, DOC

State-Based Humanities Program   (Oklahoma City, OK)
        National Endowment for the Humanities

Street Academy   (Oklahoma City, OK)
        Law Enforcement Assistance Administration, DOJ

Title I (ESEA) Special Education Projects   (Norman, OK)
        U.S. Office of Education, DHEW

Title III (ESEA) Special Education Projects   (Norman, OK)
        U.S. Office of Education, DHEW

Water Pollution Control Project   (Norman, OK)
        Environmental Protection Agency

WIN Employment Training Project   (Oklahoma City, OK)
        U.S. Department of Labor and U.S. Social Security Comm.

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