

TECHNOLOGY TRANSFER WITHIN A GOVERNMENT ORGANIZATION:  
A STUDY OF THE INNOVATION PROCESS IN  
FLORIDA'S SOCIAL SERVICES

By

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by

Marcia Euan Steinhauer

TO

DAVID S. KUYPERS, Ph. D.

A unique human being;  
a bridge over troubled waters.

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Abstract of Dissertation Presented to the Graduate Council of  
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This work examined the processual dynamics of a complex organization adopting and implementing an innovation which was a departure from its own traditions. One particular mechanism, the Client Information System (CIS), was selected to follow the flow of an innovation for the purpose of systematically analyzing the expectations, behavioral patterns, and linkage devices associated with the process of technology transfer within a complex and highly decentralized human resources organization, the Florida Department of Health and Rehabilitative Services.

The research methodology was exploratory, utilizing a multiple approach: literature and documents were analyzed for concepts; two rounds of interviews were conducted with principal actors at several levels of state and federal government; a local indepth case study followed the innovation to the lowest level of the organization.

The findings revealed the degree of transfer of the CIS technology was very limited in terms of a successful introduction and application of new ends or means. The judgement of limited success was based

on the extent to which the CIS was meeting its purposes: providing a uniform information base; demonstrating fiscal accountability; providing a case coordination mechanism; and providing a client tracking system.

The explanation for the limited success was revealed by the analysis of the combination of dynamic factors comprising 1) the qualities of the technology, 2) the qualities of the actors, and 3) the transfer process.

Under the qualities, or attributes, of the technology, the focus of change was administrative rather than programmatic. Administrative innovations generally require more time to discern results. With the time lag that occurred, the legitimacy of the procedure was eroded. Another important attribute was a negative halo effect. The reaction against the technology was really a reaction against a larger and unacceptable change associated with the technology--namely, the expansion of services.

The participants were examined according to their background characteristics and perceptions about the organization. The top level actors, the research-relevant elite, defined both by rank and by participation in this particular transfer, were split into the two sub-groups of receivers and senders. Several background characteristics of the elite were found to explain the absence of transfer support: educational backgrounds were highly divergent; receivers majored in social work and senders majored in engineering; prior work experiences had the same divergencies; receivers had been in the organization a longer amount of time and attained positions by coming up through the ranks;

senders had lateral entry into high pay grades. One of the most significant findings was the low legitimacy of the senders, perceived as self-oriented opportunists wanting funds for their own staff expansion.

The findings about direct service workers were considered in relation to their organizational superiors, the receivers. In settings perceived as centralized and formalized, workers were highly dependent on their superiors for guidance and behavior cues.

The nature of the transfer process which evolved around the CIS was accounted for by the top decision-makers' assessment of the demand for a change and the subsequent measures taken to accommodate the change. One finding was the absence of strong commitment from top officials which added to low legitimacy. The linkage devices utilized were temporary, whereas the CIS required permanent measures. The linkage devices included task forces, consultants, staff training, and an operational prototype. Developmental participation as a linkage strategy did not appear to be an important factor for inducing compliance behavior for innovation implementation.

General implications for further research and policy decisions are described.

## CHAPTER I

### INTRODUCTION

#### Problem

Bureaucratic systems have tremendous problems absorbing change. Departures from the organization's own traditions can usefully be considered a processual phenomenon. Technology transfer is such a phenomenon. According to Doctors, technology transfer is:

. . . the process whereby technical information originating in one institutional setting is adopted for use in another institutional setting. The transfer typically requires active participation by both the transferor and the transferee and implies more than the mere dissemination of technical information; it implies the adaptation of new technology through a creative transformation and application . . .<sup>1</sup>

The focus selected for this study was the problem of the development and implementation of a new procedure in a complex organization. It was believed that focusing on a particular case would serve to examine the flow of an innovation in a complex organization and to systematically analyze the expectations, behavioral patterns, and transfer strategies associated with the process of innovation.

#### Setting

The setting of this study was a single, but complex formal organization, the Florida Department of Health and Rehabilitative Services (DHRS).

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Samuel I. Doctors, The Role of Federal Agencies in Technology Transfer (Cambridge, Massachusetts: The M. I. T. Press, 1969), p. 3.

The Department's present formal organization consists of nine program or line divisions and two staff divisions. The program divisions include the following: Aging; Children's Medical Services; Corrections; Family Services; Health; Mental Health; Retardation; Vocational Rehabilitation; and Youth Services. The staff divisions are Administrative Services, and Planning and Evaluation.

The present structure dates back to July, 1969, at which time the Legislature merged approximately 20 independent units into seven program divisions under one Secretary appointed by the Governor and confirmed by the Senate. Boards, commissions and advisory groups were either abolished or stripped of all but advisory functions.

A good description of the Department is one Sapolsky used in his study of department stores: ". . . federations of quasi-independent merchants."<sup>2</sup> The highly decentralized structure of the Department can be considered analogous to a store, with units under the direction of separate buyers. Each buyer has complete authority over his particular unit of merchandise. In the Department, much the same situation has prevailed because it has only been since July, 1974, that the Secretary could directly appoint and remove division directors without legislative confirmation. Prior to that time, the Secretary could never exercise complete coordination authority over the divisions because of their own individual political linkages to the Legislature. Another factor which has reinforced the semi-autonomous nature of the divisions in the Department is the categorical nature of federal grants. Various segments of the United States Department of Health, Education and Welfare promote

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Harvey M. Sapolsky "Organizational Structure and Innovation," Journal of Business, Vol. XL, No. 4 (October 1967), p. 498.

the administration of funds for specialized groups of clientele. Federal procedural regulations have required special local units to administer these funds. This arrangement further discourages coordination within the Department, because the funded agency is not dependent upon departmental coordination for its resources.

The Innovation Under Study:  
Client Information System

The specific vehicle used in this study for observing and explaining the innovative process in a complex bureaucracy is the Client Information System (CIS). The technology of the Client Information System is not a new idea and has been in existence for several years. However, the use of the technology was new to the Department of Health and Rehabilitative Services at the time of its introduction.

The CIS can be conceptualized as a response to two environmental factors outside the major organization under consideration. One was the state Legislature and the other was the federal government. It had been the unstated legislative intent that with the 1969 merging of agencies into an umbrella-type department, there would be both a uniform source of information on clients and a coordination of services for a particular client. The popular phrase, "clients falling through the cracks in the service system," meant that no agency would claim a client with two or more major disabilities. As an example, a theoretical client who was both retarded and a juvenile delinquent would not have a program in any agency and thus no agency would handle the case.

The second major environmental factor was the federal government. In mid-1971, Congress asked the United States Department of Health,

Education and Welfare (HEW) to explain the huge expansion in spending on social services--from over \$354 million in fiscal year 1969 to \$1.69 billion in fiscal year 1972. There was no adequate explanation. No one knew what exactly federal services grants were spent for because of the inability of governments to account in detail for the spending.<sup>3</sup> The system had been process oriented, not impact oriented. As part of a plan for social reform for the nation, HEW issued regulations requiring state agencies to submit an annual program and financial plan as a condition for receiving reimbursement for social service expenditures under Title IVA and XVI (Titles IVA and XVI also are referred to as IVA and VI) of the Social Security Act.<sup>4</sup> There was a change in order, but not substance of the Social Security Act. As a response to this requirement for all states, the Community Services Administration of HEW

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"In the technical language of OMB, social services grants were 'uncontrollable' because 'open-ended.' The law did not put a ceiling on the amount that could be spent, but rather obligated the federal government to match whatever state governments spent for a particular activity--that is, for 'social services.' How much the federal government spent therefore depended on what the states claimed and what HEW allowed. Congress finally did close the open end on social services spending with a \$2.5 billion ceiling enacted in late 1972, but only after social services had turned into one of the biggest federal grant-in-aid programs." Martha Derthick, Uncontrollable Spending for Social Service Grants (Washington, D. C.: The Brookings Institution, 1975), pp. 2-3.

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Derthick mentions the sense of urgency felt by federal administrators. They felt the new regulations "should be designed to generate basic program information concerning types of services rendered, cost of particular services compared to numbers and types of recipients, etc. . . ." In order for a reasonable stewardship of federal funds, "States should be required to submit a program budget for social services, backed by a separate accounting system that will support program and financial audits." *Ibid.*, p. 94.

selected Florida to develop and institute a management and information system that would eventually be utilized nationwide. The CIS was but one of several components of a larger program and financial planning project.

At the same time that the notion was being formulated to build a management and information system which would both have accountability for federal reimbursement and could be utilized as a state budgeting device, other concepts were being developed within the Community Services Administration aimed at assessing the impact of social services on clients. A construct known as the Goal Oriented Social Services structure was developed to determine what barriers prevented a client from reaching his highest level of self-sufficiency, and what services were needed to overcome them.<sup>5</sup> This was another way of asking what treatment and what training were needed by the individual to make him economically independent and to remove him from public financial assistance (or slow down his entry into an institution).

The Florida Department of Health and Rehabilitative Services (DHRS) was selected by the HEW Community Services Administration to build a prototype management and information system. Florida was chosen for a range of reasons: it had no mechanism for assuring accountability for federal reimbursements; there was a planning and research agency within

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Florida was requested to participate in the task forces established by the Community Services Administration which had as its aim the preparation of new regulations for the accounting of the social services funds. Berthick mentions these developments. "Late in the fall of 1971 the CSA began a crash effort to prepare new regulations. Five task forces were assembled to consider various aspects of services administration, and Booz, Allen and Hamilton was engaged to give advice. (Booz, Allen designed and depicted a scheme that it called GOSS, a Goal Oriented Social Services Model, and that others called, a bit derisively, Box's boxes.)" Ibid., p. 73.

the appropriate state Department (the Division of Planning and Evaluation), something not found in other states; the head of the Community Services Administration had been formerly the head of the Florida Department of Health and Rehabilitative Services and was familiar with its operations.

The Florida Department of Health and Rehabilitative Services has nine operating divisions which deal with client services. A person seeking services applied to one agency for the one service that the agency supplied. There was no way to handle a multi-service client. Consequently, client problems were not solved because the individual received one service and not a combination. Referrals to other service agencies depended upon the initiative and/or knowledge of social workers. Moreover, there was no way to tell if the client actually received service from the referral agency.

Thus, it was believed that with the Client Information System several aims could be achieved: case-management or service coordination; centralized and uniform management information; tracking of client movement; accountability for funds. A client could be treated as a total entity and a multi-service program could be designed to overcome his individual set of problems and subsequently make him self-sufficient. A picture could be drawn of how much of a particular service would be needed in order to have an impact on a client and this information could be aggregated in order to budget for service needs. The federal government would get its required accountability reports for reimbursement.

The Client Information System procedure, the innovation selected for study, requires the filling out of forms at the social worker/client

point, and at the agency provision point. One form is called the Social Service Information Document (SSID) and provides for client demographic characteristics, barriers to self-sufficiency, and services required to overcome them. The other form, the Social Service Provision Form (SSPF), would document what and how much service was actually received by the client. The information was to be aggregated and automated with a range of reports going to both the federal government and the various levels of administration within the Department.

The development of these documents and their incorporation into the system as a required procedure will be the specific device studied in order to examine the flow of innovation in a complex organization. The development of CIS indicates a perception of a need both by the primary organization and other organizations in its environment. The planning and research agency which had the central role in developing CIS (Division of Planning and Evaluation) was located both physically and administratively closer to the top of the organization (DHRS) than the operating service divisions. The planning and research staff consisted of individuals not associated with the social work profession. Their backgrounds were the aero-space industry and the social sciences. Various training techniques and manuals were developed by the planning and research agency to implement CIS.

There were many organizational implications of the change for the people involved. The procedure required new positions to be established that cut across divisional lines, but which were housed in one of the operating divisions. Social worker professional norms, coupled with a sense of territoriality, came into play with rhetoric of the kind that "Our clients are unique and can only be served by this division." There

were charges that the CIS procedures were designed by people who had no knowledge of clients and their needs. There were also complaints of additional paperwork. The installation of the two forms was considered a threat in terms of reduction of organizational autonomy and loss of prestige with loss of identity. There was fear that the human side of work would be removed as the computers took over.

The magnitude of the CIS mechanism and its utility for studying bureaucratic dynamics are covered in the chapter on empirical methodology. There one can get an idea of the number of people at different levels of government and the scope of the effort that was involved.

#### Purpose and Plan of the Study

This indepth case study of technology transfer in one organization was done for the purpose of better understanding the dynamics of development and adoption of innovations within large organizations. It is believed that the results may lend themselves to the building of a model for multi-organization application and more awareness in policy formulation. The need for research of this nature has been stressed by Doctors:

. . . it has been difficult to obtain measurable feedback on the process of transfer. Such feedback is essential in formulating transfer policy, both in the initial stages and on a continuing basis, to provide for program modification and adoption to a changing environment. In short, there is a need for comprehensive experiments by social scientists which would investigate the acquisition, evaluation, and dissemination of technical information and the measurement of its use after dissemination.<sup>6</sup>

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Doctors, Technology Transfer, p. 7.

In the next chapter, previous research in this field is examined. Examination of the literature has the effect of heightening one's awareness both to the limitations of previous research and to new areas which need exploring. Chapter III sets out the methodological approach. Examined here are the theoretical framework and the field methods used. Chapter IV assesses the success of the technology transfer and presents the evidence upon which the assessment is based. In Chapter V, the attributes of the technology are analyzed to ascertain their effect on the transfer process. In Chapter VI, the actors, those who participated in the process, are analyzed from both their background characteristics, and their perceptions about the organization. Attention is focused on how these characteristics affected the transfer process. Particular attention is given to the similarities and differences between the receivers and senders of the technology. Chapter VII is an examination of the dynamic aspects of the process: communication; resistance; transfer strategies; participation. In Chapter VIII, the conclusions are presented with their implications for both future research and policy formulation.

CHAPTER II  
REVIEW OF LITERATURE

The topic of formal organizations engaging in innovation activities has generated increasing interest both among students of organizational phenomena and practitioners. The result of this interest has been the development of a wide body of literature related to the topic, but the development has been diverse and fragmented and often unrelated to previous endeavors. Mohr noted that the literature consists of ". . . scattered projects representing different disciplines, motivated by different considerations, and employing a startlingly heterogeneous selection of independent variables"<sup>1</sup>

The purpose of this review of the literature is to gain an understanding of the wide range of approaches, the major areas of investigation, the various units of analysis, and to explore the conceptual bits and pieces that have emerged. The diversity of sources and perceptions in the literature on innovation in organizations is presented in a manner which gives the broadest possible overview of the field and which gleans findings that are applicable to this exploratory research.

There are many overlapping areas in the literature and no one article or book can be said to fit best in only one conceptual category.

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Lawrence B. Mohr, "Determinants of Innovation in Organizations," American Political Science Review, Vol. LXIII, Number 1 (March 1969), p. 112.

The materials presented in this chapter are organized by a conceptual scheme that can both highlight their contribution and show points of congruence and variance within the research. The first section notes the different definitions of the term "innovation." The connotations of the term directly influence the research intent and scope and findings. The second section deals with the major orientations behind the examination of innovation. The intents behind the studies can be demonstrated by the various purposes and paths the research has taken, especially in disciplines outside of Political Science. The literature is conceptualized for purposes of this review into: diffusion research; factors conducive to creativity; research utilization; and aggregate multi-organizational analysis.

The last section contains the contributions from organization theory. The section is divided into the following major conceptual categories: kinds and properties of innovation; organizational characteristics affecting innovation; characteristics of the individuals involved affecting innovation; and the dynamics of organizational adoption.

#### Problems of Defining Innovation

There has not been conceptual agreement on the term "innovation." It has been used within three different contexts.<sup>2</sup> The first context is that of invention, whereby a creative process occurs to

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Gerald Zaltman, Robert Duncan, and Jonny Holbek, Innovations and Organizations (New York: John Wiley & Sons, 1973), pp. 7-8.

produce new phenomena. The literature on creativity and technological development use the term in this manner. Utterback's definition of innovation is that of ". . . an invention which has reached market introduction in the case of a new product. . ."<sup>3</sup> In Milo's study of the resource-getting of a health organization, the term means to create a new means to respond to the demand of building a new organization.<sup>4</sup>

Myers and Marquis emphasize technological development, but view innovation as a process beginning with awareness of a demand and the feasibility of its development and proceeding to a item and its utilization.

A technical innovation is a complex activity which proceeds from the conceptualization of a new idea to a solution of the problem and to the actual utilization of a new item of economic or social value.<sup>5</sup>

The second context in which innovation is found is in the process of adoption and institutionalization--that is, there are changes in the organization. Knight's definition of innovation is ". . . the adoption of a change which is new to an organization and to the relevant environment."<sup>6</sup> His view implies that the organization has gone beyond conception of a new idea and has begun to apply it, thus stressing adoption.

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James M. Utterback, "The Process of Technical Innovation Within the Firm," Academy of Management Journal, Vol. 14, No. 1 (1971), p. 77.

4

Nancy Milo, "Health Care Organization," Journal of Health and Social Behavior, Vol. 12 (1971), p. 164.

5

Donald G. Marquis and Summer Myers, Successful Industrial Innovations (Washington, D. C.: National Science Foundation, United States Printing Office, 1969), p. 1.

6

Kenneth E. Knight, "A descriptive Model of the Intra-Firm Innovation Process," Journal of Business, Vol. XL, Number 4 (October 1967), p. 478.

The definitional focus of Evan and Black is similar in that they take the adoption context of the term and carry it a step further to "the implementation of a new procedure or idea, whether a product of invention or discovery."<sup>7</sup> Clark, on the other hand, puts emphasis on the institutionalization aspect by noting that it ". . . is a process whereby specific cultural elements or cultural objects are adopted by actors in a social system."<sup>8</sup> Given this emphasis, he notes that innovation can be depicted as ". . . new forms of knowledge that result in structural change."<sup>9</sup>

The creation of ideas is not included in the definition by Becker and Whisler, but they posit the idea of organizational risk. Their view of innovation is "the first or early use of an idea by one of a set of organizations with similar goals."<sup>10</sup> To them, an organization is credited with being innovative if it assumes the risks inherent in being among the first to use an idea, regardless of the source. They also note that innovation can be separated in time and space from an invention, because an invention is a creative act of an individual, but an innovation requires a co-operative group action.<sup>11</sup>

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<sup>7</sup> William M. Evan and Guy Black, "Innovation in Business Organizations: Some Factors Associated with Success or Failure of Staff Proposals," Journal of Business, Vol. XL, No. 4 (October 1967), p. 519.

<sup>8</sup> Terry N. Clark, "Institutionalization of Innovations in Higher Education: Four Models," Administrative Science Quarterly, Vol. XIII, No. 1 (June 1968), p. 1.

<sup>9</sup> Ibid., p. 2.

<sup>10</sup> Selwyn W. Becker and Thomas H. Whisler, "The Innovative Organization: A Selective View of Current Theory and Research," Journal of Business, Vol. XL, No. 4 (October 1967), p. 463.

<sup>11</sup> Ibid., p. 462.

Mohr omits from his definition the aspects of creation, but does point to the notion of success (and early use). This perspective of organization innovation involves "the successful introduction into an applied situation of means or ends that are new to that situation."<sup>12</sup> Success implies acceptance of the innovation by those in the situation. Mohr's definition also allows for use of the term even though adoption is based on information previously developed outside the organization where the innovation is adopted.

The first contextual usage implies a more widespread process, beginning with the creation of an item, while the second usage, adoption and internalization, does not include an act of creativity. Both contexts do imply a dynamic situation, or a process occurring.

The third use of the term does not involve a process; rather it is used in a descriptive mode. The emphasis is on why something is new or different, regardless of its implementation. This use focuses on the delineation of the characteristics of the innovation. The various attributes an innovation can possess will be considered in a later part of this chapter. However, within this context there is agreement by several authors, such as Knight, Becker and Whisler, and Zaltman et al., that what is considered "new or novel" results from the perceptions of the social units which adopt it.

To summarize, the first two contexts of innovation, that of invention and adoption, imply processes occurring. The first context includes a notion of the generation of an idea or artifact and may or may not include the process of adoption. The adoption connotation may be used

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Mohr, "Determinants," p. 112. The notion of success can offer something more than Mohr's usage of whether or not something is worthwhile because it works; success of an innovation can also mean it was done or attempted.

with the additional notions of risk or success being added. In the last context, simple description, innovation is determined by the perceptive capacities of the adopting social unit.

The diversity of the definitions has promoted a range of orientations to both the empirical and theoretical research applications of innovation. The orientations presented will demonstrate the research development and the several emergent paths within the literature. The two major deficiencies that will emerge from the review of these groups of literature is an absence of rigor in both the conceptual and operational definitions of the term. The lack of a clear conceptual reference has already been demonstrated. But the lack of a clear operational definition has led researchers to imply they are examining a process when they are actually focusing on non-dynamic phenomena. The next section considers four of the major alternative approaches and the nature of the resultant studies.

### Alternative Approaches to the Study of Innovation

#### Diffusion Research

Sociology, using the adoption context of the term innovation, has produced much on the subject. The major area of consideration has been with "diffusion" research. The focus of the research is "the earliness of knowing about something new . . . and the rate of adoption of something new."<sup>13</sup> The orientation of diffusion research has been extensively applied in the fields of marketing, anthropology, rural sociology, and

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Everett M. Rogers and F. Floyd Shoemaker, Communication of Innovations: A Cross-Cultural Approach (New York: The Free Press, 1971), p. 100.

communications on a diverse range of subject matter from hybrid corn  
 14  
 to marihuana use. In diffusion studies, the unit of analysis has  
 usually been the community. Gross et al., give a cogent description  
 of these studies:

. . . (1) they generally deal with the spread or adoption of rather simple technical innovations such as hybrid seed, tranquilizers, or audio-visual aids; (2) the agricultural studies have focused on the spread or adoption of innovations among farmers residing in a particular county, state or region; (3) the studies of medical innovations have primarily dealt with their diffusion and adoption by doctors in a single community; (4) the anthropological studies have focused on the spread of such practices as the use of new tools, wells, and modern farming techniques within non-industrial societies; and (5) the education studies have primarily dealt with the adoption rates of innovations in school systems.<sup>15</sup>

To illustrate the multiformity of subject matter, several examples of diffusion studies are presented. Bennett focused on groups of individuals in different socio-economic categories and their acceptance of contraception.<sup>16</sup> Katz did a comparative analysis of two studies: how hybrid seed corn gained acceptance among farmers in two Iowa's communities; how physicians in four communities responded to the availability of a new miracle drug called gammanym.<sup>17</sup> Public response within two different socio-economic neighborhoods to new medical technology was the

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Ibid., p. 48.

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Neal Gross, Joseph B. Giacquinta, and Marilyn Bernstein, Implementing Organizational Innovations: A Sociological Analysis of Planned Education Change (New York: Basic Books, 1971), p. 20.

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C. Bennett, "Diffusion Within Dynamic Populations," Human Organizations, Vol. 28 (Fall 1969), p. 244.

17

Elihu Katz, "The Social Itinerary of Technical Change: Two Studies on the Diffusion of Innovation," Human Organization, Vol. 20 (1961), p. 71.

focus in a study by Yeracaris.<sup>18</sup> Marshal Becker studied the adoption of a new program, diabetes screening, in local health departments. He was especially interested in the peer influence in the two-step flow of information.<sup>19</sup>

The narrow nature of this view of innovation as early knowledge or first adoption has a limiting effect on studying the dynamics of political phenomenon. Walker, a political scientist, utilized the diffusion literature to study spatial patterns in order ". . . to measure the speed with which states adopt new programs."<sup>20</sup> The study was at a macro level, with all 50 states included, and defined an innovation to be a policy or program new to the state, but there was no follow through on what happened after the legislators adopted the program.

There have been theoretical attempts to explain entire systems in terms of diffusion. Clark looked at the variations in development of the university as an institution in several countries. He used Roger's scheme of knowledge, information collection, evaluation, and trial and error to describe the development of the German university system.<sup>21</sup>

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Constantine A. Yeracaris, "Social Factors Associated with the Acceptance of Medical Innovations: A Pilot Study," Journal of Health and Social Behavior, Vol. 3 (1961), p. 193.

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Marshal H. Becker, "Factors Affecting Diffusion of Innovations Among Health Professionals," American Journal of Public Health, Vol. 60, No. 2 (1970), p. 294.

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Jack L. Walker, "The Diffusion of Innovations Among the American States," American Political Science Review, Vol. 63 (September 1969), p. 880.

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Clark, "Four Models," p. 10.

Schon developed theoretical variations of the diffusion model in looking at social movements. The "center-periphery" system depends on a high level of resources and energy at the center because it is limited in its capacity for handling feedback. The "proliferation of centers" system adds secondary centers or outposts, an example being missionary installations. His "Johnny Appleseed" design has a primary center which roams a given territory to disseminate information. His last construct is the "magnet model" where the adopters flock to a central point and then return back to their own locale.<sup>22</sup>

Criticism of this approach to the study of innovation has come from several authors. The study of diffusion has promise as an approach, notes Victor Thompson, on new products and procedures that seem to be in the interests of prospective users. He goes on to mention that they are actually studies of technological change, but have not yet been sufficiently integrated theoretically to be of general application.<sup>23</sup>

Gross and his associates posit that this approach has little application in explaining the implementation of innovations in organizations.

One of its basic assumptions is that . . . the individual is free to decide himself whether the innovation shall be tried and if tried, whether it should be continued. If the innovation does not interest him, he is free to reject it. If he is not pleased with his evaluation of it, he can discontinue his use of the innovation.<sup>24</sup>

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Donald Schon, "The Diffusion of Innovation," Innovation, No. 6 (1969), pp. 44-45.

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Victor A. Thompson, Bureaucracy and Innovation (University, Alabama: University of Alabama Press, 1969), p. 68.

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Gross et al., Implementing Organization Innovations, p. 21.

Moreover, to emphasize the point that adoption does not always mean change, a study by Carlson revealed that mere adoption of programs by top level education administrators does not necessarily lead to the desired changes at school levels.<sup>25</sup>

The remarks of Cross et al., are concise statements on the inapplicability of the diffusion approach to complex organizations:

. . . it is concerned with the adoption of simple technological innovations of individuals, and it assumes that they can try out innovations on a small scale without the help or support of other persons. It also assumes that persons can undertake trials in an either/or fashion and that short trials are sufficient to render an effective evaluation. Many organizational innovations cannot be tried on a small scale and cannot be implemented unless there is cooperation and support among colleagues. . . . And some require several years of full implementation before an adequate evaluation of their effectiveness can be made. . . . In short, this may be useful in understanding the adoption of simple innovations among aggregates of individuals, it appears to be of little value for explaining the implementation of organizational innovations.<sup>26</sup>

#### Factors Conducive to Creativity

Within the literature presented in this section, the conceptual connotation of innovation is linked to the context of invention. There is a statement of the creative process and the bureaucratic conditions needed to foster it. The importance of the literature in this section

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Richard O. Carlson, *Adoption of Educational Innovations* (Eugene, Oregon: Center for the Advanced Study of Educational Administration, University of Oregon, 1965). An observational analysis and critique of diffusion research done in education is presented by the same author in "Barriers to Change in Public School," in Change Processes in the Public Schools, ed. Richard O. Carlson (Eugene, Oregon: Center for the Advanced Study of Educational Administration, University of Oregon, 1965), pp. 3-8.

26

Gross et al., Implementing Organizational Innovations, p. 22.

is its limited approach. While there is a notion of a dynamic situation, only the creative part of an innovation process is considered, not the adoption and implementation parts. However, several of the concepts dealt with here also hold significance in a wider connotation of innovation and will be reviewed again in sections which consider organizational and individual characteristics affecting innovation.

The description of the creative process by Gary Steiner which is used by Hlavacek and Thompson appears to be the most concise statement on the subject:

First the creative process is an irregular one, and it often seems aimless and unpredictable. It is characterized by sudden leaps. From the point of view of production norms, it seems inefficient. . . . Second, the creative process is characterized by slowness of commitment, by suspended judgment. . . . It is inclined to make a painfully full exploration at the analytical stage and to continue search long after satisfactory solutions have been found.<sup>27</sup>

Several conditions within organizations have been identified as relevant to creativity. Thompson names the following: ". . . (1) psychological security and freedom, (2) a great diversity of inputs, (3) an internal or personal commitment to search for a solution, (4) a certain amount of structure or limits to the search situation, and (5) a moderate amount of benign competition." <sup>28</sup> There are other internal conditions such as freedom from unusual external pressures, group

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Gary Steiner, The Creative Organization, selected papers Number 10, Graduate School of Business, University of Chicago, 1962, quoted in James D. Hlavacek and Victor A. Thompson, "Bureaucracy and New Product Innovation," Academy of Management Journal, Vol. 16, No. 3 (September 1973), p. 363.

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Thompson, Bureaucracy and Innovation, p. 10.

interaction, a sense of professionalism, and uncommitted resources which enhance the likelihood for innovative or creative behavior to occur.<sup>29</sup>

There is empirical support for the conditions posited by Thompson in the work of Pelz and Andrews on creativity in research and development laboratories. They found that creative abilities of scientists and engineers were enhanced where coordination was loose, where individuals worked on particular specialties as main projects for relatively short periods of time, where there were methods for communicating ideas, and where there was an opportunity to influence decision makers.<sup>30</sup> In general, the factors identified by Thompson empirically support the notion that innovation is fostered in a loosely structured, professional organization with some minimal excess resources.

#### Research Utilization

The approach taken in the literature discussed in this portion is most closely linked to the discipline of economics. The definitional context of innovation is closest to that of adoption, but it is an external rather than internal incidence. It is an adoptive nexus between an organization and knowledge development by its environment.

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Ibid., pp. 10-28. Thompson posits that the characteristics found in a bureaucracy are opposite of those required for creative behavior. A monocratic social structure, a productive ideology, a detailed allocation of resources, an extrinsic reward system based on status and power, and a control system designed to suppress conflict collectively tend to reduce the potential for innovative behavior.

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Donald C. Pelz and Frank M. Andrews, Scientists in Organizations: Productive Climates for Research and Development (New York: John Wiley & Sons, Inc., 1966), p. 171.

The emphasis of this approach is on the sources of new ideas and products, and the time lag between research output and its application, rather than the innovative process itself. Knight notes that economists have been concerned with the subject matters of the role of government support of R & D, the spillovers into civilian endeavors from R & D defense efforts, and the number of innovations from small firms.<sup>31</sup>

Doctors' study of the National Aeronautics and Space Administration (NASA) is one of the best single sources for a detailed presentation of R & D expenditures by the United States Government.<sup>32</sup> He highlights the fact that much of the promotional activity of NASA for securing government funds was based on the promise of future beneficial non-space developments. He uses a quote of two NASA officials to emphasize this point:

A considerable portion of the technology resulting from military/space/nuclear work is relevant to needs outside those mission areas.<sup>33</sup>

His analysis shows that the field which utilized the most innovation from both space and defense were computer manufacturers. In looking at the rate of technological development, or the diffusion of innovation from conception to end item usage, he notes that:

Our studies suggest that major technological discoveries may wait as long as 14 years before they reach commercial application even on a

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<sup>31</sup>

Knight, "A Descriptive Model," p. 479.

<sup>32</sup>

Samuel I. Doctors, The Role of Federal Agencies in Technology Transfer (Cambridge, Massachusetts: The M. I. T. Press, 1969), pp. 10-19.

<sup>33</sup>

Ibid., p. 27.

small scale, and perhaps another five years before their impact on the economy becomes large.<sup>34</sup>

Mansfield's studies also examined the time lag of utilization of an invention. He found that in industry there is about a 10-15 year period between invention and usage. He found that mechanical innovations require the shortest interval, and electronic innovations require the longest.<sup>35</sup> He also found that the lag seems shorter for consumer products than for industrial products, and shorter for new products and processes developed with government funds than for those developed with private funds.<sup>36</sup> Moreover, he mentions a bandwagon effect, in that as the number of firms in an industry using a new product or technique increases, the probability of its adoption by a nonuser increases.<sup>37</sup> In another study, examining the speed of adoption of new techniques within a given industry, such as the railroads, brewing, and steel, he found that investment is directly related to a perceived profitable situation.<sup>38</sup>

Utterback confirms Mansfield's findings in that firms innovate in cases where there is clear short-term potential for profit. He has

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<sup>34</sup>

Ibid., p. 27.

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Edwin Mansfield, Industrial Research and Technological Innovation: An Econometric Analysis (New York: W. W. Norton, 1968), p. 129.

<sup>36</sup>

Ibid., p. 129.

<sup>37</sup>

Ibid., p. 130.

<sup>38</sup>

Edwin Mansfield, "The Speed of Response of Firms to New Techniques," Quarterly Journal of Economics, Vol. LXXVII (May 1963), p. 310.

pointed out that innovations that represent breakthroughs of industry-changing magnitude are from sources other than firms within a particular industry. As an example, he gives the case of DuPont, where 12 out of 18 major product innovations originated outside the firm. Lastly, because of the 10 to 20 year time lag, he posits that the stimulus for innovation is not new technological information.<sup>39</sup>

The Myers and Marquis study of innovation in American firms supports some of the earlier points. Their analysis of 157 case studies of innovation has shown that in 96 cases, or 61 per cent of the cases examined, the ideas for new products and processes came from outside the firm. They also hold that the major sources for ideas for innovation come from marketing factors, as opposed to technological factors.<sup>40</sup>

The foregoing studies indicate that organizations try to reduce risks. They do this by either promoting the possible spill-overs from their work or by assessing the potential market demands and the developed technical sources.

#### Aggregate Multi-Organizational Analysis

The common thread of the studies represented in this group is that they relate community socio-economic variables with aggregate organizational variables in attempts to measure successful innovation. These organizational studies of innovation have been operationalized at a macro level and have centered mostly on private enterprise. The focus

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Utterback, "Process Within Firm," p. 80.

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Marquis and Myers, Successful Industrial Innovations, p. 77.

is not on innovation as a process within a given organization, but rather on the quantitative adoptions within given sets of similar organizational entities.

While most of this kind of study has been on private, profit-motivated organizations, examples have been taken from the literature to demonstrate the range of applicability in the public sector also. Becker and Stafford had as their unit of analysis 140 savings and loan associations with assets of at least \$5 million in Cook County, Illinois. They used organizational efficiency as the dependent variable and operationalized it with two monetary measures: future growth (assets) and current profit (surplus). In examining if organizational efficiency, or success, was related to innovativeness, they examined organizational size, administrative size, number of innovative adoptions, community growth, and the management team's leadership style.<sup>41</sup> The range of innovations they counted included bonus plans, advertising, premiums for new accounts, and the purchase of municipal bonds. They found that the initial growth of the organization was highly related to the growth of the surrounding community. After this easy growth period (growth in terms of adding surplus to their funds), there was usually an increase in administrative size. With this increase in the number of administrative staff came an increase in the number of innovations adopted.<sup>42</sup> Lastly, they found that group atmosphere is important for adoption of new ideas in that it generates communication within the managerial staff about how to improve business.<sup>43</sup>

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<sup>41</sup>Selwyn W. Becker and Frank Stafford, "Some Determinants of Organizational Success," Journal of Business, Vol. XL, No. 4 (October 1967), p. 511.

<sup>42</sup>Ibid., p. 514

<sup>43</sup>Ibid., p. 517.

Carroll selected 85 American and Canadian medical schools as her units of analysis in an attempt to determine which of a number of variables were associated with innovation. The variables related to size and composition of the student body and of faculty and administrative personnel, to volume and sources of support of research, and to number and location of clinical facilities. A medical school was classified as either innovative or conservative on having initiated major revisions of its curriculum, either in content or organization.

The author used the construct of a "federal type" of organization structure to analyze her findings. In the federal type of organization there are a number of unitary departments, each with a field of study in the curriculum. Research funds were secured by department chairmen and certain of their faculty and thus power centered in the departments. With the entrance of the government into allocation of research funds, a change began. The funds were allocated directly to the schools, rather than to individuals or departments. The power balance shifted and departmental autonomy began to erode away in the more innovative schools.<sup>45</sup> Lastly, Carroll found the innovative schools to have the following characteristics: larger faculties; more part-time faculty members; a large number of departments in the basic sciences and clinical areas.<sup>46</sup>

Mohr used as his unit of analysis 94 local health departments in Michigan, Illinois, Ohio, New York, and Ontario, each one "serving a

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Jean Carroll, "A Note on Departmental Autonomy and Innovation in Medical Schools," Journal of Business, Vol. XL, No. 4 (October 1967), p. 531.

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Ibid., p. 533.

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Ibid., p. 534.

jurisdiction of not greater than 600,000 in population, whose chief executive--the local health officer--had occupied his current position during the entire period of 1960-1964."<sup>47</sup> He was looking for program response to advancing technology, and to the changing needs of the public. Earlier, programs were designed to control communicable disease. More recent service demands have been in the areas of mental health, dental needs, and prevention services. He proposed that the extent of innovation in non-traditional programs is a negative function of obstacles and a positive function of the motivation to innovate and the availability of relevant resources. He operationalized the study by examination of the health-officer activism-ideology, the extent of public health training of key employees, health department expenditure, and aggregate community variables, such as population of the health jurisdiction and percentage of the population in white collar occupations.<sup>48</sup> His findings supported his proposition, but the relationships were weak. He found size of the organization important, but only insofar as it implies the presence of motivation, obstacles, and resources.<sup>49</sup>

While the approach this literature represents has yielded many significant findings on the comparative aggregate level, the notion of innovation as a process is conspicuously absent. The emphasis has been on adoptive output, or major changes in substantive programs. However, the studies did yield some important concepts, such as management team style, professionalism, and motivation, which lend themselves to operationalization within a single complex organization.

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<sup>47</sup>

Mohr, "Determinants," p. 111.

<sup>48</sup>

Ibid., p. 117.

<sup>49</sup>

Ibid., p. 126.

Organization Theory and the Analysis of Innovation

Classification schemes and dimensions of innovations

Part of the literature on innovation has been concerned with the description of the various types and properties of innovations. The typologies are broad classes of phenomena grouped by the changes they imply. The properties, or characteristics, of innovations are more unidimensional and detailed. Typology categories are not mutually exclusive in attribute descriptions. Indeed, typologies can be combinations of characteristics.

Typologies of innovations. The typologies are examined by initial focus, degree of anticipation and outcome. Evan, in trying to understand the differential response to innovation designed a two-fold classification aimed at identifying the initial focus of the innovation. He makes a distinction between technical and administrative innovation with the following definition:

A technical innovation is the implementation of an idea for a new product, process or service; by an administrative innovation, . . . the implementation of an idea for a new policy pertaining to the recruitment of personnel, the allocation of resources, the structuring of tasks, of authority, of rewards.<sup>50</sup>

Evan hypothesizes that administrative innovations in organization tend to lag behind technical ones. His rationale is that new technical ideas are more likely to be viewed by management as related to the profit goal of an industrial organization. Also, administrative innovations are likely to require more time for a discernible effect.<sup>51</sup>

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William M. Evan, "Organizational Lag," Human Organization, Vol. XXV (Spring 1966), p. 51.

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Ibid.

The degree of anticipation of the appearance of an innovation into the system, or the recognition of a need for change, is the basis of the typology put forth by Knight. The recognition of a need for change is also linked to whether an organization is successful or not. Knight posits that many innovations are routine, that is, they are scheduled in advance. He gives the example of style and color changes in products as being programmed in advance.<sup>52</sup> This kind of innovation usually occurs in a successful atmosphere.

A non-programmed or non-routine innovation can occur under both successful or unsuccessful organizational conditions. If a non-routine innovation takes place when an organization perceives itself successful, it is called a slack innovation. Slack innovations are promoted and adopted when there is an excess of resources and an opportunity to enhance the status and prestige of subunits and individuals.<sup>53</sup> The search is external and the selection of slack innovations is done in such a way as "not to disturb the internal structure or operation of the organization."<sup>54</sup>

Another form of non-programmed innovation is a distress innovation. These occur when the organization perceives itself as unsuccessful. "Internal changes will occur rather than changes in products or processes. The company does not have the excess resources to look outside. It cannot afford the risk and high cost of introducing a new product or

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<sup>52</sup>

Knight, "A Descriptive Model," p. 484.

<sup>53</sup>

Ibid., p. 485.

<sup>54</sup>

Ibid., p. 486.

processes and, instead, the company will emphasize cost-reduction projects."<sup>55</sup> Knight hypothesizes stress conditions can be either mild or great. Under mild stress, one can expect moderate measures, internal in nature, and focused on reducing costs, changing organizational structure, or reshuffling personnel. Under great stress, the search for distress innovations is wider and more random, and more radical steps are made for an improvement of organizational conditions.

Bradshaw and Mapp, building on Knight's typology, have devised a variation on a non-programmed innovation. They posit that this type of innovation can result from a power strategy applied to the innovating organization by another agency. They give as an example the adoption of consumer participation panels in a family planning program, in compliance with pressure from the federal government in the form of a threat to withhold funding. Thus, a governmental agency can specify the implementation of a specific innovation as a prerequisite for the funding of the usual services of the agency.<sup>56</sup>

Normann's typology focuses on the outcome or effect of innovation patterns. Outcome is considered in terms of minor and major changes, called variations and reorientations, respectively.

A new product may be a variation, that is, a product with a set of dimensions basically similar to those earlier products of the organization, through refinements and modifications.<sup>57</sup>

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Ibid.

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Barbara Bradshaw and C. Bernell Mapp, "Consumer Participation in a Family Planning Program," American Journal of Public Health, Vol. 62, No. 7 (July 1972), p. 988.

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Richard Normann, "Organizational Innovativeness: Product Variation and Reorientation," Administrative Science Quarterly, Vol. 16, No. 2 (June 1971), p. 205.

The annual model changes of American cars would be a typical example of a variation. Reorientations, on the other hand, imply more fundamental changes, in which some product dimensions may be eliminated and entirely new ones added. Variations can be accommodated within the framework of the existing political system of an organization, while reorientations tend to be associated with changes in the system.

Normann posits that reorientation falls into three typical patterns: systematic, idiosyncratic, and marginal. Systematic reorientations are related to the development of the organization and phases in a longer orientation process. Their legitimation comes with their relation to the longer series of events in the organization. Expansion into new markets is a ready example.<sup>58</sup>

Idiosyncratic reorientations lack consistency with other events in the development of the organization. "They are typically initiated because the center of power--most often the managing director--is exceptionally strongly influenced by some event and then legitimizes and promotes a project."<sup>59</sup> Normann points out that these projects are not easily integrated in the value system and tend to suffer from low concept consensus. He gives an example of a medical products firm which traditionally had a policy to manufacture only highly developed products. A consultant outside the firm urged the director to make a skin cream. A subsidiary was formed around the new product and new marketing channels had to be developed. Thus, the nature of the product itself differed from those produced by the company, from medical to cosmetic.

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Ibid., p. 208.

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Ibid.

Development as opposed to just manufacturing became an operation. Lastly, distribution patterns were not consistent with previously established ones.<sup>60</sup>

Marginal reorientations are relatively small projects which do not substantially affect the structure and goals of the organization and are easy to legitimize. This kind of reorientation usually fits into existing production or distributing systems and they ". . . may initiate learning processes that lead to greater reorientations by changing the focus of attention and the perception of some new part of the environment."<sup>61</sup> An example of this pattern is a drug firm which used only chemists to conduct research. Within several years after the employment of two pharmacologists, the research efforts and the structure of the company were changed in a pharmacological direction.

Properties of innovations. Several writers have been concerned with the probable effects of the properties or attributes of innovations on the likelihood of their adoption. Many innovations are items of modern technology and can be complex entities, having various properties. Each property can have a positive or negative effect on the rate at which an innovation is adopted in a given population. Fliegel, et al., have noted that to study the adoption of innovations

. . . via their attributes is a compromise between treating each new idea as essentially unique, and on the other hand, treating various new ideas as equivalents. Different innovations cannot be compared. By denying the existence of differences among innovations,

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Ibid., p. 209.

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Ibid., p. 210.

the research has simply substituted one type of unexplained variability for another.<sup>62</sup>

Compatibility. The literature posits that innovations are more acceptable if they are compatible or consistent with the adopter's previously established norms, values, and experiences. Katz's exploration of past research findings notes that the adopter must perceive an innovation as compatible with his values on such factors as risk and profitability before an innovation is accepted.<sup>63</sup> Miles found that innovations must be congruent with the potential adopting system. Innovations which are perceived as threats to existing practices are less likely to be adopted; while those innovations which can be added to an existing system without disturbing it are more likely to be accepted.<sup>64</sup> Thio's thorough review of the property of compatibility offers a succinct analysis. He adds two organizationally related dimensions to the concept: symbolic compatibility, which refers to the perception of the innovation by members of the organization; and functional compatibility, which concerns what is required by the adopter to utilize the innovation.<sup>65</sup>

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Frederick C. Fliegel, Joseph E. Kivlin, and Gurmeet S. Seklon, "A Cross-Cultural Comparison of Farmers' Perceptions as Related to Adoption Behavior," Rural Sociology, Vol. 33 (December 1968), p. 438.

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Elihu Katz, "The Characteristics of Innovations and the Concept of Compatibility," paper presented at Rehovoth Conference of Agriculture in Developing Countries, Rehovoth, Israel, 1963, in National Institute of Mental Health, Planning for Creative Change in Mental Health Services, DHEW Publication No. (HSM) 73-9148 (Washington, D. C.: United States Government Printing Office, 1973), p. 158.

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Matthew B. Miles, "Innovation in Education: Some Generalizations," in Innovation in Education, ed. Matthew B. Miles (New York: Bureau of Publications, Teachers College, Columbia University, 1964), p. 638.

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A. O. Thio, "A Reconsideration of the Concept of Adopter Innovation Compatibility in Diffusion Research," Sociological Quarterly, Vol. 12 (Winter 1971), p. 63.

Divisibility. The literature posits that an innovation which can be introduced in segments or parts with each segment having an opportunity to be assimilated into an existing situation, will arouse less resistance than would comprehensive change. Fliegel and Kivlin, in their study of Pennsylvania dairy farmers, found that divisibility of trial, the extent to which an innovation lends itself to a small-scale tryout before full adoption, was an important factor in encouraging rapid adoption.<sup>66</sup> Zaltman, Duncan, and Holbek state that divisibility may facilitate adoption for either or both of the following reasons: by minimizing threatening situations by maintaining current practices during implementation; or by providing a set of components that can be implemented gradually with the use of feedback.<sup>67</sup> The last idea is reinforced by Bright, in his distillation of principals from case studies. He suggests that innovations should be introduced in stages since resistance are lessened if only slight changes are required.<sup>68</sup>

Complexity. The degree to which an innovation is perceived as difficult to understand and use will have an effect on its adoption. According to some of the literature, the more complex the innovation, the less likely it will be put into operation. In the cross-national study by Fliegel et al., it was found that in a range of innovations related to

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<sup>66</sup> Frederick C. Fliegel and Joseph E. Kivlin, "Attributes of Innovations as Factors in Diffusion," American Journal of Sociology, Vol. 72, No. 3 (1966), p. 245.

<sup>67</sup> Zaltman et al., Innovations and Organizations, pp. 42-43.

<sup>68</sup> James R. Bright, Research, Development, and Technological Innovation: An Introduction (Homewood, Illinois: Richard D. Irwin, 1964), pp. 133-134.

dairy farming, the more complex ones were less rapidly adopted.<sup>69</sup> In examining the attribute of complexity as both an idea and an operation, Zaltman, Duncan, and Holbek posit that "an innovation which is easy to use but whose essential idea is complex is more likely to be adopted than an innovation which is difficult to use but whose essential idea or concept is readily understood."<sup>70</sup> However, in Clark's analysis of innovations in higher education, the attribute of complexity serves a different purpose. In examining the criteria for institutional acceptability, he found that the degree of development of an innovation assumes importance because in universities the more intellectually sophisticated and conceptual scheme, the better it conforms with university values.<sup>71</sup> Hence, in this setting, the attributes of complexity and compatibility are linked.

Efficacy. There are various observations in the literature that the uncertainty associated with an innovation will be reduced if the innovation has been proven before in another system. Becker and Whisler have noted that the cost to late adopters is smaller because of "reduced risk to late adopters where the innovators have demonstrated the possibility of a new idea."<sup>72</sup> The literature refers to efficacy under several headings. Mansfield uses the term "observability" to denote that when there is tangible proof of utilization, the greater the

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<sup>69</sup>

Fliegel et al., "Cross-Cultural Comparison," p. 447.

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Zaltman et al., Innovations and Organizations, p. 39.

<sup>71</sup>

Clark, "Four Models," p. 14.

<sup>72</sup>

Becker and Whisler, "Selective View of Current Theory," p. 462.

probability of adoption.<sup>73</sup> Lin and Zeltman advance the notion of "result demonstration" which shows the benefits of adopting a particular innovation. They hold that the more visible the innovation's advantages, the more likely it will be adopted.<sup>74</sup> Fliegel and Kivlin use the term "clarity of results" to signify the communication of the results of a new practice and suggest that this should contribute to a more rapid adoption.<sup>75</sup>

Physical manifestation. The physical properties of innovations have been given rather superficial treatment in the literature. The reason is probably that most innovations studied are mechanical devices or items of a tangible nature; and the properties discussed above naturally lend themselves to descriptions of material artifacts. Doctors points out that:

. . . we tend to view technology primarily in terms of machines and physical tools, that is, hardware. Increasingly, however, such software as systems concepts, management control techniques, and computer programs may all be viewed as being as much a part of the common store of technology as a rocket vehicle or a linear accelerator.<sup>76</sup>

Evan and Black found in their study of acceptance of staff proposals that "software" innovations, which they approximate with administrative rather

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Mansfield, "Speed of Response," p. 309.

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Nan Lin and Gerald Zaltman, "Dimensions of Innovations," in Processes and Phenomena of Social Change, ed. Gerald Zaltman (New York: Wiley Interscience 1973), p. 104.

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Fliegel and Kivlin, "Attributes of Innovations," p. 248.

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Doctors, Technology Transfer, pp. 3-4.

than technological innovations, may be more difficult to sell to management because in dealing with ideas and concepts, potential payoff is more uncertain.<sup>77</sup> Lin and Zaltman, commenting on the perceptions of potential adopters toward the attributes of an innovation, query if the visibility of a physical object is more readily acceptable than ideas and practices which are abstract.<sup>78</sup>

#### Organizational characteristics affecting innovation

Environment. Organizations operate and interact within a contextual setting. The relationship between the organization and its environment is an important determinant of the innovative process. The literature dealing with this characteristic is mostly theoretical, but empirical findings are noted to the extent they appeared. Zaltman et al., note that environment of a multi-member adoption unit is important in two different ways:

First, changes in the environment create a situation of stress and pressure to which an adoption unit must respond if it is to remain in a relationship of dynamic equilibrium with the environment. Thus an adoption unit is more likely to innovate when its relevant environment is rapidly changing than when it is steady. . . . Second, if the response to the situation is an innovative solution, environmental norms may or may not favor the changes this solution implies.<sup>79</sup>

Burns and Stalker were interested in whether management systems could alter in conformity with the changes in "extrinsic factors." For

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<sup>77</sup>

Evan and Black, "Innovation in Business Organizations," p. 526.

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Lin and Zaltman, "Dimensions," p. 113.

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Zaltman et al., Innovations and Organizations, p. 110.

them, these extrinsic factors were different rates of technical or market change brought on by the appearance of new scientific discoveries, inventions, and consumer demands.<sup>80</sup> Utterback reinforces this point in his theoretical analysis of the firm's social and economic relationship to its environment, he says that the process of innovation is embedded in the environment because it is the use of existing products and processes which leads to recognition of needs and wants for new products and processes.<sup>81</sup> As noted earlier, Utterback demonstrated that the technological environment was often the stimulus for innovation because most product innovations originated outside the firm. Thus, he concluded, it was neither cost nor technical knowledge which acted as crucial restraints on the firm. "The primary limitation on a firm affecting its innovative ability is in recognizing the needs and demands in its external environment."<sup>82</sup>

The environment is also important to innovation in that the solution must be acceptable to the larger social environment to which the adopter unit belongs. James Thompson suggested that many organizations are subject to authoritative specification for permissible action and must adjust to the constraints and contingencies imposed by the larger system. An example would be governmental units having to exist on the financial inputs of legislative bodies, and having no option regarding their

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Tom Burns and G. M. Stalker, The Management of Innovation (London: Tavistock Publications, 1961), p. 96.

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Utterback, "Process Within Firm," p. 78.

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Ibid., p. 81.

clientele.<sup>83</sup> An empirical example to substantiate the correspondence between environmental factors and organizational change is described by Becker and Stafford, who found that the most important variable to explain adoption of innovations by savings and loan associations was community growth rate.<sup>84</sup>

Duncan contributes to our understanding by dividing the environment into components and factors. First, he makes a distinction between internal and external environments by using the notion of relevant physical or social factors falling either inside or outside the boundaries of an organization. The components of the internal environments are: organization personnel; organizational function and staff units; organization levels. The external components are: customers; suppliers; competitors; and socio-political and technical factors.<sup>85</sup> He found in this study of twenty-two decision units that the more dynamic the environment the more likely the organization will experience innovation in order to reduce disequilibrium.<sup>86</sup>

Structure. The literature on organizational structure as it applies to the innovative process stresses its multi-dimensionality. The consensus seems to be that different configurations of the dimensions comprising organization structure can either facilitate or hinder the

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James D. Thompson, Organizations in Action (New York: McGraw-Hill, 1967), pp. 19-20

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Becker and Stafford, "Determinants of Success," p. 574.

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Robert B. Duncan, "Characteristics of Organizational Environments and Perceived Environmental Uncertainty," Administrative Science Quarterly, Vol. 17 (1972), pp. 314-315.

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Ibid., p. 325.

innovative process. A discussion of the salient structural dimensions of centralization, formalization, specialization and research findings can serve as illustrations.

Centralization. The dimension of centralization focuses on the location of authority and decision making in an organization. Victor Thompson posits that the modern bureaucratic organization is dominated by the monocratic stereotype which dictates centralized control over all resources. The monocratic organization is resistant to innovation because the conditions which generate creativity call for free communication, flexible structure, and intrinsic rewards. Moreover, the hierarchy of authority is a procedure whereby legitimacy is dispensed. "It is a procedure that works in such a way as to give the advantage to the veto . . . [it] does not provide for appeals. . . . Thus, even if the monocratic organization allows new ideas to be generated, it will probably veto them."<sup>87</sup> The Burns and Stalker study amplifies the discussion of highly centralized organization with a partial description of their "mechanistic" model. "Management, often visualized as the complex hierarchy in organization charts, operates a simple control system, with information flowing up through a succession of filters, and decisions and instructions flowing downward through a succession of amplifiers."<sup>88</sup> In his descriptive model of intra-firm innovation, Knight alleges that one needs power to innovate and this comes in great part from the formal hierarchy in that the higher a person's position, the more likely one is

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Thompson, Bureaucracy and Innovation, pp. 19-20.

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Burns and Stalker, Management of Innovation, p. 5.

to be a successful innovator and the more radical the development that can be introduced.<sup>89</sup>

The Hage and Aiken study of program change in sixteen social welfare agencies operationalized centralization as the degree of participation in organization decision making and contrasted this with hierarchy of authority. They found a positive relationship with the first; when there was greater participation in agency-wide decisions, there was a greater rate of program change. They found a negative relationship between hierarchy of authority and program change.<sup>90</sup>

A case against expecting much innovation within a decentralized organization is made in Sapolsky's study of department stores. He described the organization of a department store "as federations of quasi-independent merchants."<sup>91</sup> He found that because of the decentralization, tactics used to innovate in one subunit can be known and resisted in another.<sup>92</sup>

Formalization. The dimension of formalization emphasizes the rules and regulations that insure predictability of performance. The theoretized relationship between formalization and innovation is that strict emphasis on rigid rule observation, job codification, and specification of roles inhibits diffusion and communication of ideas, suppresses creativity, and consequently is negatively associated with innovation. Lawrence and Lorsch, examining differentiation and integration within

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Knight, "A Descriptive Model," p. 490.

<sup>90</sup>Jerald Hage and Michael Aiken, "Program Change and Organizational Properties: A Comparative Analysis," American Journal of Sociology, Vol. 72, No. 5 (1967), pp. 510-511.

<sup>91</sup>Harvey M. Sapolsky, "Organizational Structure and Innovation," Journal of Business, Vol. XL, No. 4 (October 1967), p. 498.

<sup>92</sup>Ibid., p. 508.

the subsystem of six industrial organizations, found that those aspects of behavior in organizations subject to pre-existing programs and controls were more defined or rigid when there was a certainty of performance from their relevant environment.<sup>93</sup> Burns and Stalker's field studies confirm this point in that they found that organizations that were profitably coping with uncertain and changing situations had a low degree of formalized rules and job specification, instead of the higher degree of formalized structure associated with financial success in the more certain situations of the mechanistic model. They note that in the mechanistic model ". . . there is a precise definition of rights and obligations and technical methods attached to each functional role; . . . a tendency for operations and working behaviour to be governed by the instructions and decisions issued by superior."<sup>94</sup>

The Hage and Aiken study of welfare organizations found that many rules and procedures cause restraints for an organization. They found that job codification is inversely related to the rate of organization change. However, the relationship between the degree of rule observation and the rate of program change was much weaker than expected.<sup>95</sup> Shepard postulates an unstable relationship between formalization and innovation by distinguishing stages of innovation. In essence, he advocates an oscillating organization model. He calls attention to periodicity, or alternations associated with innovating groups, and

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Paul R. Lawrence and Jay Lorsch, "Differentiation and Integration in Complex Organizations," Administrative Science Quarterly, Vol. 12, No. 1 (June 1967), p. 18.

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Burns and Stalker, Management of Innovation, p. 94.

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Hage and Aiken, "Program Change," p. 511.

holds that at the idea generation stage, there should be a loose and open organization. At the implementation stage, there should be a functional division of labor, discipline, and control of internal communication.<sup>96</sup>

Specialization. The structural dimension of specialization, or complexity, focuses on the number of occupational specialties in an organization and the training and degree of professional activity associated with them. Hage and Aiken determined that in welfare agencies there was a high positive correlation between the rate of acceptance and implementation of new programs and the number of occupational specialties within the organization. They also found that the number of occupational specialties was one of the best predictors of future program innovation. They indicated that this was because the most innovative organizations were more likely to have many cooperative relationships with other agencies, which might suggest that the focus of the staff was on professional organizational goals rather than on departmental self-interests.<sup>97</sup>

Along a similar line, Carroll's study of medical schools found that innovative schools had a larger number of departments in the basic sciences and clinical areas. She presumed that the diversity in subcultures stimulates proposals, but it is centralized authority which leads to their acceptance. Thus, in this study, the innovative schools

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Herbert A. Shepard, "Innovation Resisting and Innovation Producing Organizations," Journal of Business, Vol. XL, No. 4 (October 1967), p. 474.

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Hage and Aiken, "Program Change," pp. 508-509.

reflected a lessening of departmental autonomy along with a larger number of departments.<sup>98</sup>

The degree of autonomy or interdependence of the differentiated organization subunits is a factor in determining the effects of specialization. Sapolsky held that the department store's structural arrangement of a large number of autonomous subunits deterred the implementation of any proposed centralized innovations.<sup>99</sup>

The various findings pertaining to the several dimensions or organizational structure and its relationship to innovation indicate that different configurations of structure facilitate the innovation process in its varying stages. Zaltman et al., have the most succinct statement on this point:

Specifically it is emphasized that in stimulating the initiation of innovations, a higher degree of complexity, lower formalization, and lower centralization facilitate the gathering and processing of information, which is crucial to the initiation stage. It is also emphasized that in the implementation stage a higher level of formalization and centralization and a lower level of complexity are likely to reduce role conflict and ambiguity which could impair implementation. This conclusion thus implies that the organization must shift its structure as it moves through various stages of innovation; at the earlier initiation stage a more-organic or less bureaucratic structure seems more appropriate. Then, as the organization moves to the implementation, more-bureaucratic structure becomes appropriate.<sup>100</sup>

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Carroll, "Autonomy and Innovation in Medical Schools," pp. 533-534.

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Sapolsky, "Organizational Structure," p. 509.

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Zaltman et al., Innovations and Organizations, p. 155.

Climate. A part of the literature examining organizational climate has been reviewed earlier under the various research approaches, namely, the factors conducive to creativity. The bureaucratic conditions identified previously include: psychological security and freedom; a great diversity of inputs; an internal or personal commitment to search for a solution; a limited structure to the search situation; a small amount of benign competition. It was noted that while this approach is important, it is limited to only the earliest stages of an innovation process, that of the creation of innovative ideas. There are some other relevant dimensions that can be identified from the literature which are applicable to organizational climate and that have possible significance for the large view of an innovation process.

Communication. In the journals articles aimed at practitioners of public administration, one of the principles deemed essential for an innovative organizational climate is open communication. Patrick advocates both formal and informal free communication. "Creativity is encouraged by free and open channels of communication. Employees must feel free to use the existing channels of communication and should be encouraged to communicate with colleagues and associations outside the organization."<sup>101</sup> Siepert and Likert advocate open communication for an innovative climate because of the informational interdependence on which decision making is based.<sup>102</sup>

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John F. Patrick, "Organizational Climate and the Creative individual," Public Personnel Review, Vol. 31 (January 1970), p. 33.

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Albert F. Siepert and Rensis Likert, "The Organizational Climate for Successful Innovation," Public Management, Vol. 55 (May 1973), p. 4.

The communication problem between technologists and managers within the same organization is an important consideration of informational exchange for decision making. Under any organizational situation, the problem exists, but within the framework of an innovation process, informational interdependence is highly relevant. A theoretical scheme developed by Churchman and Schainblatt analyzes effective relationships based on communication between managers and scientists. They focused on the distinct forms which emerge with the problem of implementation of innovation, or the manner in which results of scientific efforts may come to be used by managers. The four-fold scheme takes into account the actor's perception of how information should be communicated. The "separate functionalist" thinks of management and science as separate functions. "For him, implementation consists of designing the operation solution, which is a specification of the physical changes that must take place in the organization in order for it to be able to accommodate the optimal mathematical solution."<sup>103</sup> The "communicator" emphasizes the need for creating more understanding on the part of the manager, i. e., creating better lines of communication. It is vital for the scientist to appreciate this need, but a detailed understanding of the manager is not required in order to have the manager understand the scientist. Communication is a fairly direct process which is independent of the personality of the manager.<sup>104</sup>

The "persuader" views the implementation problem in terms of the manager's personality.

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C. W. Churchman and A. H. Schainblatt, "The Researcher and the Manager: A Dialectic of Implementation," Management Science, Vol. XI (February 1965), p. B-71.

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Ibid., p. B-75.

Here the problem is not to provide for the manager's complete understanding of the scientist, but to insure that the scientist understands enough about the manager so that the scientist can overcome managerial resistance to change per se, alter specific managerial attitudes, or persuade managers to accept recommendations.<sup>105</sup>

The "mutual understander" takes a synthetic position in order to bring about a successful union of the other communication patterns. This type of actor would argue against the separation of technology and management because "if science is to become a method of managing, then management must become a method of science."<sup>106</sup>

Staff cohesiveness. Another dimension of organizational climate which can influence innovation is the level of staff cohesiveness, or reciprocal colleague support. Thompson, commenting on the reward system relevant to an innovative environment, notes the importance of this extrinsic source of satisfaction ". . . it appears that they take the form of improved esteem in the eyes of similarly committed peers rather than an increase in interpersonal power relative to peers or a mere improvement in income as such."<sup>107</sup> This point was reinforced by the government-sponsored Arthur D. Little study which was aimed at formulating the optimum conditions of successful innovations. It was found that an atmosphere of collaboration, where relationships are governed by mutual confidence and

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<sup>105</sup>

Ibid., p. B-79.

<sup>106</sup>

Ibid., P. B-82.

<sup>107</sup>

Thompson, Bureaucracy and Innovation, p. 11.

trust and there are long personal associations between parties, was most conducive to implementation of innovation.<sup>108</sup>

Becker and Stafford's study of savings and loans associations included a factor similar to staff cohesiveness. They examined the management team's leadership style, using a sociometric approach to discovering both the most and the least preferred co-worker. They found that group atmosphere is important for innovation because if it is congenial and mutually supportive, communication will be frequent and easy, thus allowing for creation and adoption of viable innovations.<sup>109</sup>

Morale. A dimension of organizational climate closely related to staff cohesiveness is that of the level of staff morale, or job satisfaction. Hage's theoretical explanation of organizational adaptiveness to change posits that high job satisfaction, measured by attitude batteries and rate of turnover, can provide a climate for innovation. There are empirical studies which substantiate this relationship. Marcum's study of innovation adoption in schools showed that in an open climate there is high morale with regard to work and that there is a relationship between high morale toward one's work and innovation adoption.<sup>110</sup>

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Arthur D. Little, Inc. Management Factors Affecting Research and Exploratory Development (For Director of Defense, Research and Engineering under Contract No. SD 235, April 1965), pp. I- 18-19.

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Becker and Stafford, "Determinants of Success," p. 517.

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Laverne R. Marcum, Organizational Climate and the Adoption of Educational Innovation (Research Report for Office of Education, Contract No. OEG-4-7-078119-2901, Logan, Utah: Utah State University, March 1968) in National Institute of Mental Health, Planning for Creative Change in Mental Health Services, DHEW Publication No. (HSM) 73-9148 (Washington, D. C.: United States Government Printing Office, 1973), p. 191.

Hage and Aiken's research on social welfare agencies found the performance variable of job satisfaction was correlated to the rate of program change. However, they also found "job satisfaction may be a necessary precondition for the introduction of changes, but after this change has been introduced, it may have disruptive and negative effects on social relationships among members of an organization."<sup>111</sup> This brings up again the point considered earlier, namely that the climate required for introduction of an innovation does not guarantee its implementation.

Tenure of leadership. A final dimension of organizational climate which is relevant to innovation is that of the length of time a particular high level position is filled by the same individual. The literature on tenure of leadership does not have an empirical base and the theoretical propositions do not attempt to explain similar phenomena. Tenure is significant to organizational climate and innovation because of the very importance of managerial roles per se in adoption and implementation and because it is a measurable phenomena which can be studied. Thus, although the contributions from the literature are sparse, recognition of this variable is noted for later methodological utilization.

Siepert and Likert, speculating on high managerial mobility patterns in public service organizations, hold that:

There is some job mobility because a manager tries to innovate and fails, but we suspect there is more job switching because the manager does not risk the necessary innovation and sits tight until organizational pressures overwhelm him.<sup>112</sup>

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Hage and Aiken, "Program Change," p. 513.

<sup>112</sup>

Siepert and Likert, "Organizational Climate," p. 2.

The organizational climate can be determined by the organizational leadership. It is for this reason that Griffiths states that the number of innovations is inversely proportional to the tenure of the chief administrator.

The longer an administrator stays in a position, the less likely he is to introduce change. . . . All of the processes which bring about a steady state have had time to operate. Feedback channels have become fully established . . . the sub-systems have become structured and have gained independence. Change is thus more difficult, because the frequency of interaction between sub-systems is decreased.<sup>113</sup>

It was noted above that the organization climate has a similarity to organizational structure as a variable in that it may be necessary for differing configurations to emerge at various stages of an innovation process. Wilson hypothesized that different climates are required for generation, approval and implementation of innovation proposals. According to him, the climate required to induce innovative behavior in organizations may be the same climate which will prohibit the implementation of innovative proposals.<sup>114</sup>

The Evan and Black study on the factors associated with the success and failure of innovative staff proposals provides support for this hypothesis. It is of interest at this point, additionally, because it is an empirical application of clusters of both structural and climate variables. They found that staff proposals were more likely to be successful

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Daniel E. Griffiths, "Administrative Theory and Change in Organizations," in Innovation in Education, ed. Matthew B. Miles (New York: Bureau of Publications, Teachers College, Columbia University 1964), p. 434.

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James Q. Wilson, "Innovation in Organization: Notes Toward a Theory," in Approaches to Organizational Design, ed. James D. Thompson (Pittsburgh: University of Pittsburgh Press 1966), p. 200.

in an organization when formalization of rules, specialization, communication between line and staff, quality of proposals, competitive position of the organization and perceived need were high; and where the professionalization of management was low.<sup>115</sup>

Rowe and Boise have synthesized the theories and findings on this point and suggest the following about the total climate required for organizational innovation:

- (1) during the knowledge accumulation and diffusion stages both rational and open-ended operational climates may be required;
- (2) during the formulation stage, a loosely structured, diverse, professionalized, mildly competitive, psychologically secure climate operating under the presumption of available resources and some freedom from external pressures may be appropriate;
- (3) during the decisional stage, the climate must be sufficiently rational to assure the quality of proposals, their orderly transmission to decision makers, and the adequacy of communication between proposers and decision makers;
- (4) during the implementation stage, a generally rational and efficiency-inducing climate seems required;
- (5) externally, the innovative process within the organization seems likely to be fostered by the availability of fiscal resources, organizational diversity, and extensive patterns of communications, information, and knowledge.<sup>116</sup>

Size. One of the variables which has been highly correlated with innovation is organizational size. This variable has been used in aggregate multi-organizational studies where large numbers of similar

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Evan and Black, "Innovation in Business Organizations," p. 524.

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Lloyd A. Rowe and William B. Boise, "Organizational Innovation: Current Research and Evolving Concepts," Public Administration Review, Vol. 35 (May/June 1974), p. 289.

firms and agencies have been studied. The findings indicate more change takes place in larger organizations. For example, Hage and Aiken found that a rate of program change in social welfare agencies was highly related to larger size organizations.<sup>117</sup> Mansfield's study of technological innovation in industry found that the largest organizations will do a disproportionately large share of innovation in situations where: the investment required to innovate is large relative to the size of the organizations that could use the innovation; the minimum size of the organization required to use the innovation is large relative to the average size of similar organizations; the average size of the largest organizations is much greater than the average size of all potential users of the innovations.<sup>118</sup>

Resources. The organizational characteristic of availability of uncommitted financial resources has been favorably linked in both the theoretical and empirical literature to the innovation process. Clark, in his analysis of innovation models descriptive of higher education, holds that among the characteristics which influence the universities to be open to innovation is financial support--that the more extensive the financial support, the greater the propensity of institutional innovativeness.<sup>119</sup> Mohr's study of health departments emphasizes the significance of excess resources. He found empirical support for the

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Hage and Aiken, "Program Change," p. 516.

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Mansfield, Industrial Research, p. 107.

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Clark, "Four Models," p. 17.

hypothesis that innovation was a function of the interaction among  
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 motivation, obstacles, and resources.

The concept of resources is expanded by Victor Thompson to mean more than financial affluence and excess. His concept of "slack" denotes the existence of a comprehensive affluent situation in the organization.

By "slack" I mean uncommitted and unspecified resources of appropriate personnel, finance, material, and motivation; . . . A situation in which there is such a slack apparently makes it possible for various psychological variables that are supportive of innovation to operate. . . . Slack at the organizational level is the counterpart of psychological security in the creative process. It makes it easier for management to back innovations. The presence of slack encourages the decentralization of control over resources. 121

The Arthur D. Little study on successful research and exploratory development in new weapons empirically substantiated Thompson's points. One of the findings was that in nearly all cases of successful research and development, a vital element present for the triggering of the event was "resources, usually facilities, materials, money, and trained and  
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 experienced men, which could be committed to do a job." Also present were an explicitly understood need, goal, or mission and a source of ideas, or pool of information. Another finding dealing with patterns of funding revealed that a common pattern for initial funding of successful research and development was on the basis of local decisions. It was recommended that further allocations also be made at local, or

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Mohr, "Determinants," p. 114.

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Thompson, Bureaucracy and Innovation, pp. 42-43.

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Arthur D. Little, Inc., Management Factors, p. II-5.

decentralized, points because centralized controls involve justification of work and introduce delay.<sup>123</sup>

Professionalism. The organizational characteristic of professionalism is closely related to the structural dimension of complexity or occupational specialization. However, professionalism covers more than the number of occupational specialties; it conveys the notion of very extensive pre-entry training and extra-organizational involvements. Thompson holds that professionalism involves specialization of people, not of task, and that it "is based on the concept of investment of human 'capital' rather than of labor as a commodity."<sup>124</sup>

The findings in the literature relate professionalism positively to innovativeness in organizations. Hage and Aiken found that the main effect of staff professionalism is the input of new knowledge into the organization because of a heightened awareness of programmatic and technological developments within a profession. This was related to involvement in extra-organizational activities. (However, the amount of professional training did not appear significantly associated with the rate of innovation in social welfare agencies.)<sup>125</sup>

An interesting finding about professionalism was made by Evan and Black in their study of organizational factors affecting the success of staff proposals submitted to management in business firms. Among the characteristics of organizations in which proposals were more likely to

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Ibid., p. II-10.

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Thompson, Bureaucracy and Innovation, pp. 42-43.

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Hage and Aiken, "Program Change," pp. 509-510.

be successful was the combination of a higher degree of professionalization of management. The authors offer the possible explanation that under such conditions management is more disposed to rely on the judgment of its professional staff.<sup>126</sup>

#### Characteristics of the individual affecting innovation

The literature pertaining to the relationships between individual characteristics and organizational innovation is sparse. However, there are some items of a demographic and perceptual nature that lend themselves to research on the innovation process. The very scarcity of such materials indicates the need for more empirical research in this area.

Age. It is a rather common assumption that younger people are more favorably disposed to organizational innovation. Marcum found in his study of educational innovation that the professional staff was younger in the more innovative schools.<sup>127</sup>

Professionalism. This characteristic was treated before as an organizational characteristic. It has been previously stated that extra-organizational professional activity of social welfare workers was found to be related to a higher innovation rate, while the amount of training they received was not. Sapolsky also found in his department store research that it was the increased involvement of professional comptrollers in outside activities that lead them to propose innovative management techniques.<sup>128</sup>

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<sup>126</sup> Evan and Black, "Innovation in Business Organizations," p. 524.

<sup>127</sup> Marcum, Organizational Climate and Adoption, p. 191.

<sup>128</sup> Sapolsky, "Organizational Structure," p. 509.

The type of training received by individuals can also be significant in furthering innovation. Radnor et al., did a field study of 66 firms which were attempting to integrate operations research and management science skills into their organizations. The researchers found personnel fell into five general categories: former military; professional scientists from engineering; OR/MS specialists with training in systems analysis; management specialists with training in business administration; organization men with special training serving in an interim capacity.<sup>129</sup> They also found that as management science activities became integrated in the firms, the management specialists succeeded to leadership of the units and that these units were moved to the top management levels.<sup>130</sup>

The dearth of materials reviewed in this section pointed out possible areas of research. The individual as a member of a social system has both demographic and cognitive characteristics that are relevant to institutional research. Age, amount and type of educational background, career patterns, organization rank are but a few of several important aspects of the members of an organization. The relationship of these aspects to an innovation process clearly needs to be explored.

#### Dynamics of organizational adoption

The innovation literature on the dynamics of organizational adoption concentrates on integrative interfaces which reduce resistance and assist

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Michael Radnor, Albert Rubenstein, and Alden Bean, "Integration and Utilization of Management Science Activities in Organizations," Operations Research Quarterly, Vol. 19 (1968), p. 119.

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Ibid., p. 133.

implementation. The output of previous research efforts can best be grouped under the following headings: linkage mechanisms; boundary personnel; participation of workers; and power relations.

Linkage mechanisms. There are several contributions in the literature which treat the organizational devices for facilitating and integrating change. Lynton presents a comprehensive model which lends itself to a variety of settings and conditions. He distinguished four different assessments of the environment regarding the need for change and the linkage mechanisms these assessments lead to. The needs for change can be assessed as: negligible; frequent, but temporary; frequent, but specific; continuous. Linkage mechanisms to integrate change range from project orientations and ad hoc committees to permanent differentiated subsystems. He found that where the environmental assessments are inaccurate the linkage mechanisms are inadequate to support the required integration. Inaccurate assessments, therefore, will tend to provoke a multiplication of innovative subsystems. 131

Lawrence and Lorsch found in their study of integration devices in six organizations that supplementing the hierarchical and administrative systems there is a great development of "voluntary" integrating activities. They discuss the tendency for such voluntary activities to become increasingly formalized:

One has only to note the proliferation of coordinating departments (whether called new product, marketing, or planning departments), task forces, and cross-functional coordinating

teams to find evidence that new formal devices are emerging to achieve coordination.<sup>132</sup>

Two authors offer suggestions for linkage mechanisms within extremely hostile organizational situations. Knight describes the use of formal powers for the creation of a new organization. This new creation contains a subsystem of the formal power system which may be able to introduce innovations. This type of situation occurs because the parent firm ignores new developments.<sup>133</sup> Evans holds that members of an organization who find resistance to their attempts to incorporate an innovation can adapt to the situation and develop sub-rosa strategies to circumvent organizational policies. They can incorporate the developed innovation by "bootlegging"--that is, by attaching it to other projects which have already gained acceptance.<sup>134</sup>

Boundary personnel. Specific and formalized organizational positions charged with reducing attitudinal and communication barriers to innovation are sometimes established. The idea of establishing such positions is found in the literature under a variety of labels: boundary personnel; boundary spanner; change agent; or linking agent. The purpose of these organizational positions is to establish the function of transferring innovations between units within the same organization or from one organization to another.

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Lawrence and Lorsch, "Differentiation and Integration," p. 12.

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Knight, "A Descriptive Model," p. 490.

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Evan, "Organizational Lag," p. 54.

The research on this area is quite supportive of the boundary personnel concept. In Corwin's experiment in training Teachers Corps personnel for low income schools, he found that one of the most important factors for technological innovation was competent and receptive boundary personnel in the host organizations. In his study of technology utilization from the space program, Doctors found that moving the technical personnel along with the innovation was a key element in a successful transfer.

Participation of workers. One method of reducing resistance to an organizational change is to allow workers to participate in its development--the notion being that they will accept the change if they had a part in its occurrence. As Stewart said,

If a change is arbitrarily imposed there will be great resistance. However, participation in the discussions on how the change is to come about will lower resistance.<sup>137</sup>

Research studies such as those by Coch and French in a textile factory<sup>138</sup> and Watson and Glaser in mental health agencies and group therapy<sup>139</sup> support the "participation hypothesis."

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<sup>135</sup> Ronald G. Corwin, "Strategies for Organizational Innovation: An Empirical Comparison," American Sociological Review, Vol. 37 (August 1972), p. 448.

<sup>136</sup> Doctors, Technology Transfer, p. 17.

<sup>137</sup> Michael Stewart, "Resistance to Technological Change in Industry," Human Organization, Vol. 16, No. 3 (Fall 1957), p. 36.

<sup>138</sup> Lester Coch and John French, Jr. "Overcoming Resistance to Change," Human Relations, Vol. I (1948), pp. 512-532.

<sup>139</sup> Goodwin Watson and Edward M. Glaser, "What We Have Learned About Planning for Changes," Management Review, Vol. 54, No. 11 (1965), pp. 34-36.

Power relations. A line of thought contrasting to the participation hypothesis is found in the literature on power relations. The underlying premise is that an organization's subunits (including individuals), common claimants to the same resources, will have varying amounts of conflict during the processual development necessitated by an organization change.

Power relations in organizations are defined by Harvey and Mills, ". . . as relations between individuals or subunits in which each is attempting to impose its own inner structure on the organization's internal environment--aims which to some extent are incompatible."<sup>140</sup>

Harvey and Mills propose a theoretical scheme of subtypes of power relations based on the dimensions of legitimacy and ability to impose sanctions. The subtypes include legal authority, rational authority,<sup>141</sup> coercion, and persuasion manipulation. They do not attempt to operationalize these terms.

With power defined as an individual's capacity to obtain performance from other individuals, Bachman found in his study of college administrators that an individual may exercise power over other individuals because of his control of sanctions, the respect accorded his knowledge, the existence of norms which legitimate his exercise of

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Edward Harvey and Russell Mills, "Patterns of Organizational Adaption: A Political Perspective," in Power in Organizations, ed. Mayer M. Zald (Nashville, Tennessee: Vanderbilt University Press, 1970), p. 202.

141

Ibid., p. 203.

142

power, or because of his personal attractiveness. In a comparative study of five organizational settings, which included business and industry, Bachman, Bowers and Marcus duplicated these findings. 143

It is interesting to note that they found the powers of coercion and reward to be the least influential ones for motivating organizational behavior.

One final insight into the nature of organizational power is suggested by Mann and Neff. They propose that an executive understand the use of expert and referent power in such a manner that as he acts to bring complex change, ". . . he would be respected for his command of technical knowledge . . . , his ability to see administrative problems . . . , and his skill in helping others grow as they face large, unfamiliar organizational problems." 144

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142

Jerald G. Bachman, "Faculty Satisfaction and the Dean's Influence: An Organizational Study of Twelve Liberal Arts Colleges," Journal of Applied Psychology, Vol. 52, No. 1 (1968), pp. 55-61.

143

Jerald G. Bachman, David G. Bowers, and Philip M. Marcus, "Bases of Supervisory Power: A Comparative Study in Five Organizational Settings." in Control in Organizations, ed. Arnold S. Tannenbaum (New York: McGraw-Hill, 1968), pp. 229-238.

144

Floyd C. Mann and Franklin W. Neff, Managing Major Change in Organizations (Ann Arbor, Michigan: Foundation for Research on Human Behavior, 1963), p. 56.

## CHAPTER III

### METHODOLOGICAL APPROACH

#### Exploratory Study Design

The study design was one of an exploratory nature. An exploratory study, as defined in this context, is an attempt ". . . to gain familiarity with a phenomenon and to achieve new insights into it, in order to formulate a more precise research problem and to develop appropriate testable hypotheses."<sup>1</sup> Specifically, this study was exploratory in that it investigated in some depth a relatively unknown and complex phenomenon, i. e., the organizational dynamics of the innovation process.

#### Theoretical Awareness

There are three methods usually employed in conducting exploratory studies.<sup>2</sup> First, a review of the literature is valuable because it increases the researcher's awareness of the problem and suggests tentative research questions. As is customary in an exploratory study, no formal hypotheses were tested in this study; rather, based upon the review of the literature of the previous chapter, lines of inquiry were suggested by the theoretical framework and guiding assumptions which are presented in this chapter. The framework was a means of specifying

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Clair Selltiz et al., Research Methods in Social Relations, 2nd ed. (New York: Henry Holt, 1960), p. 50.

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Ibid., pp. 53-54.

relationships which might prove to be areas of investigation and systematizing the concepts and factors to be used in both observation and interpretation.

#### Document Examination and Interviews

The second method employed in an exploratory study is to interview people who have had practical experience with the problem being investigated. In order to comply with this requirement, a multiple approach was undertaken. First, letters, memos, directives, minutes of meetings, and reports were thoroughly examined for identification of prominent actors, especially those making the transfer and those receiving it; flow of influence; use of power; categories or mechanisms of the transfer; etc.

Next, there were two rounds of interviews. The first round of interviews was unstructured and uncovered a chronology of milestones, issue areas, and identities of the important actors in the process. Those individuals in the Department most active in the entire process, as determined both from the document review and the knowledge of the researcher, were interviewed in this phase. There were five actors interviewed in sessions ranging from two to five hours.

There was a second round of indepth, structured interviews with the principal actors of the transfer process. The scope of the CIS project involved individuals at several levels of government in various locations. As many of these as possible were contacted for interviews. At the federal level, there were officials in the Atlanta Regional Office, of the Community Services Administration of the Department of Health, Education and Welfare who worked very closely with Florida to develop

and implement the CIS. In Florida, the central and regional offices of the divisions within the Department of Health and Rehabilitative Services had participants involved throughout the transfer process.

The interview schedule was based upon material gathered from both the review of relevant documents and review of the literature, as well as the information in the first round of interviews. The schedule was designed to be as comprehensive in coverage as possible. It served as a basic guide during an interview session, with additions or deletions for a particular actor. As much as possible of the available field of literature was utilized when appropriate. The interview schedule is shown in Appendix A. There were 27 participants interviewed in sessions lasting from 1 1/2 to 5 hours. Of all the persons contacted, only two refused to be interviewed.

#### Worker Survey

The analysis of a local indepth case study is a third method employed in exploratory research.

Scientists working in relatively unformulated areas, where there is little experience to serve as a guide, have found the intensive study of selected examples to be a particularly fruitful method for stimulating insights and suggesting hypothesis for research.<sup>3</sup>

It was for this reason that part of the investigation of the innovation process involved the individuals at the lower levels of the organization who had to receive and implement the innovative procedure. The social workers and supervisors who deal directly

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Ibid., p. 59.

with the clients of the operating divisions made up the largest group of participants in the transfer process.

The worker group selected was located in the Department's Region 8, which includes the counties of Palm Beach, St. Lucie, Martin, Indian River, and Okeechobee. This geographical region was selected for several reasons. In demographic descriptions of the state, this geographical region reflects a microcosmos of state-wide characteristics; the personnel in the Department had been participants here in several demonstration projects which had bearing on the CIS; the CIS was first begun in this region and thus had been in use longer here than in other parts of the state, and it was believed that longer exposure to the system would yield greater insight. This group was examined through the administration of a survey questionnaire, small discussions groups, and individual interviews both in person and by telephone conversations.

The survey questionnaire administered to the direct service worker was constructed to include many of the items asked of those in the second round of interviews. There were also many items which would only pertain to the perceptions of the direct service worker. The questionnaire was constructed, pretested and modified on the basis of the pretest. The pretest was held in three field offices located in the Tallahassee area. The instrument, shown in Appendix B, had two final versions in actuality so as to reflect the language usage orientation of the respondents. A total of 79 questionnaires were completed.

### Theoretical Framework

This research approached the study of innovation as a process that runs from awareness of a need to creation to the implementation or diffusion of the innovation to other parts of the organization. Because the technology itself was not a new idea, the utilization of Mohr's definition of innovation appeared to be the most viable one and was used as an anchor of conceptual consistency. "An innovation is the successful introduction into an applied situation of means or ends that are new to that situation."<sup>4</sup> An abstract set of constructs or categories was devised to attempt systematically to examine and analyze the dynamics of this processual phenomenon. A brief description of the categories utilized and some suggested presumptions can serve at this point to describe the orientation of the research.

1. Degrees of transfer was designed to gather data on questions of what is created and diffused and in what increments. This category was used to examine the functions the innovation was to fulfill and to evaluate the success or failure of the transfer process. In a more classic research design, this category might be considered the dependent variable. The rest would be considered as the independent variables.

2. Qualities of the item (e. g., technology) to be transferred was a category designed to aid in the examination of such things as

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Lawrence B. Mohr, "Determinants of Innovation in Organizations," American Political Science Review, Vol. LXIII, Number 1 (March 1969), p. 112.

the legitimacy of the technology and the effects of this on acceptance or resistance in the transfer process. Also examined were such qualities as divisibility. A divisible innovation may minimize threatening situations by allowing gradual implementation and only a piecemeal attack on current practices. Another variable, the physical manifestation of the innovation, was examined to find out if a tangible item such as a form, for example, is more readily transferable than a conceptual item such as a policy or an idea.

3. Qualities of the source of the technology was a category designed to direct attention to the dimensions of the individual, group, or organizational unit proposing the transfer. Also examined was administrative and socio-psychological closeness to the transferee. This category also took into account the perceived legitimacy and/or expertise of the transfer source, possible variables affecting acceptance or resistance on the part of the receiver.

4. The transfer process as a category was to include the type of communication connected with the transfer (e. g., formal or personal). The methods of communication used at various stages of implementation and diffusion through the organization, and at different distances from the innovation source, were examined. This category also included the inducements used in the transfer process--for example, power, exchange, and formal authority. As dimensions of acceptance and resistance were generated by the research, an attempt was made to discover the corresponding type of inducement. Another important variable considered in the transfer process was the kind

of strategy used to overcome resistance--for example, cooperation, task forces, prototype demonstrations, etc.

5. The qualities of the transferee were also examined. The qualities were compared with those of the source to see if they complemented or conflicted with them. Moreover, the transferee was compared with the transfer source to see if it was competitive for resources, prestige, organizational authority, etc. Lastly, the transferee was examined from the aspect of type of transferee participation during the transfer process. The transferee could act in an advisory, developmental, or directing capacity, each behavior having possibly varying degrees of acceptance or resistance to the innovation.

6. Residual factors was a category designed to take into account the unique circumstances which might have affected outcomes in this particular case but would not be present elsewhere. Foremost would be personality factors. Also, there might have been possible historical circumstances that could only be regarded as unique to this case.

Several presumed relationships were suggested from the interactions among the categories and from previous research and these were used as guiding assumptions to give some minimal structure to the research. Examples of such assumptions are:

1. An innovation is more likely to be transferred if it is perceived by the receivers to be narrow, technique-oriented, and symbolic rather than substantive.
2. An innovation is more likely to be transferred if it is perceived by the receivers as not disturbing to the existing situation.

3. An innovation is more likely to be transferred if it is perceived as facilitative rather than restrictive.
4. An innovation is more likely to be transferred if it is perceived as incremental, divisible, and reversible.
5. An innovation is more likely to be transferred if it is perceived to be technically respectable and effective by the receiver.
6. An innovation is more likely to be transferred if its physical manifestation is tangible, visible, and concrete rather than conceptual or philosophical.
7. The greater the similarity in professional expertise between the sender and the receiver the more likely an innovation will be transferred.
8. An innovation is more likely to be transferred if there are gemeinschaft relations between sender and receiver.
9. The greater the participation in a developmental capacity by the receiver the more likely an innovation will be transferred.
10. An innovation is more likely to be transferred if it is perceived as not adding to the work load of the receivers.
11. An innovation is more likely to be transferred within a group of identifying people than between such groups.

### Organizational Population

#### Conceptual Groups

Utilizing the case study approach, the aim is one of seeking rather than testing. A suggested means of operationalizing this approach is to select ". . . individuals who represent different positions in the social structure . . . to produce a different view of the situation they are reflecting." Several major conceptual groups evolved during the study. One group was the research-relevant

elite, which included all those actors identified as key participants in the innovation process. Formally, many of the individuals were also in high-level positions in the authority structure. The make-up of the relevant elite was drawn from three sources: senders of the innovation; high-level receiver participants' and several persons outside the formal bureaucracy. Members of this last group, comprised of staff from the Governor's office and federal bureaucrats, were key participants and interacted with and influenced most of the CIS-relevant elite enough to be considered a part of them. However, in aggregate data descriptions, this outside source is not included. But for purposes of describing the dynamics at work within the organization, the information gathered from those outside the organization will be used as interpretative insights.

As the major sub-groups of the elite, there are the senders, or transferors, of the innovation and the receivers, or transferees. Organizationally, the senders were within a staff division of the Department of Health and Rehabilitative Services (DHRS), Planning and Evaluation (P & E). The receivers were within the program divisions--namely, Children's Medical Services, Family Services, Retardation, Vocational Rehabilitation, and Youth Services.

A last group considered was the direct service workers. While the other groups consisted of top and middle level management, workers represented the lower level of the organization. They were treated as a group apart from the receivers because they did not participate in the initial interactions of the transfer process. Additionally, it became apparent during the analysis that information about the

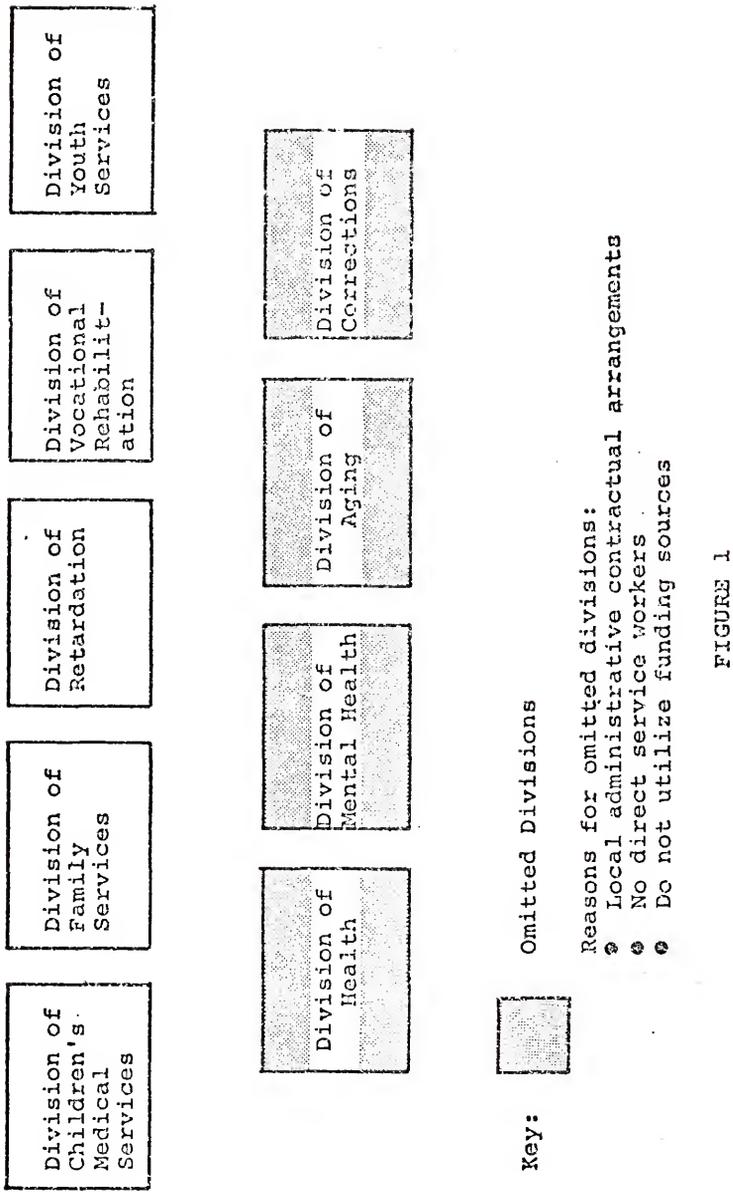
workers was more valuable when considered along with their relations to their organizational superior, the receivers.

#### Organizational Limitations

To keep the study focused within the organization, certain decisions were made. Several program divisions were excluded at the worker level because of organizational constraints. One constraint is that not all program divisions of DHRS have direct service workers. The services of these divisions are provided through purchase of service contracts with local agencies. Service workers in these local agencies are not employees of DHRS and thus are beyond the direct influence of the Department. An example is the Division of Mental Health, which purchases its services from Community Mental Health Centers. The only direct DHRS mental health service workers are in insitutions and the latter were not included in the study. They were excluded because of their autonomous nature and because their client contact is within a protective and closed setting which itself contains all necessary support services.

Other divisions were excluded because they do not utilize IVA and VI funds and hence were not brought into the reporting process. An example is the Division of Corrections.

The figure illustrates the included and omitted divisions.



DIVISIONS SELECTED AND OMITTED FOR STUDY

## CHAPTER IV

### DEGREES OF TRANSFER

The purpose of this chapter is to examine how much of the innovation was diffused. It examines the purpose of the technology, i.e., the reasons it was created and the needs it was to fill, an assessment of its success or failure in meeting its purposes, and the evidence upon which the assessment was based.

The research revealed that transfer of the Client Information Service technology was very limited in terms of a successful introduction and application of new ends or means. The assessment of limited success was based on the reasons it was created and the functions the Client Information System was supposed to perform. The officially announced reasons for its creation were: to provide a uniform information base for management; to demonstrate fiscal accountability of resources; to provide a mechanism for case coordination; to provide a client tracking system.

The evidence for the assessment was determined on how well the Client Information System fulfilled its purposes. The evidence revealed that the technology was non-comprehensive in the scope of application. It was tied to a single funding and did not apply to all programs and services. Furthermore, the first attempt at installation resulted in the failure of meeting accountability reporting requirements and caused a \$30 million audit exception. Later, a differentiated structure in the form of a new agency was created to be responsible for the

fiscal accountability that was supposed to be secured by the CIS system. The Client Information System was bypassed by additional procedures for back-up documentation, although it was formally credited as the information source for financial accountability.

The limited success of this technology transfer was also evidenced by the low acceptance and perceived negative utility by the workers on the issues of its accuracy, benefits for clients, and usefulness for working with clients.

Opinions from all organizational levels on the type and amount of total departmental information provided to top level state management gave additional evidence and substantiated the assessment because the CIS information was confined to the number of people served and services provided by only one funding source. Lastly, opinions as to the worth of continuing the Client Information System for future development and output were positive by top management, but the system was valued at the worker level mostly to insure the continuance of federal funds--i. e., as a money-getting ritual.

#### Reasons for the Creation of a Client Information System

##### Provide a Uniform Information Base for Management

There are four main reasons for the client information system which have been found in the documents and interviews. The first was to provide a uniform management base:

The system will facilitate communication . . .  
in uniformly understandable terms. When the  
information which is being reported is entered

into the Department's data processing system, reports will periodically be made to departmental managers, supervisors and service workers.<sup>1</sup>

The need for uniform data which can be aggregated at the top management level is required to arrive at a simple determination of how many clients are served by the Department. A uniform data base was considered to be an essential managerial tool for obtaining client demographic profiles and for noting program and geographical differences to be used in projecting future directions. A high regional administrator emphasizing this function noted:

It is vital to have correct information so as to give a better interpretation of services and unmet needs to the public and legislature . . . good data shows a good and respectable effort and this will get good support.

Divisions and programs had various informational bits. Most often these were in the form of case narratives written by the direct service worker. Such narratives did not lend themselves to an aggregating process. In the situation where there was some aggregate information, it was detailed and narrow in scope in order to fit the requirements of a particular program. It could not be used as the basis of a broader departmental scope of information. Top management was thus dependent on divisional information and could not present a departmental view or substantiate any departmental priorities.

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Florida Department of Health and Rehabilitative Services, "Manual for the Departmental Service Planning and Reporting System, Tallahassee, Florida, September 1974. (Photocopied), p. 2.

### Demonstrate Fiscal Accountability of Resources

Fiscal accountability has a dual connotation. The first meaning is accounting for the efficiency with which dollars are spent. The aim is to show how resources are allocated as a means for justification of staff needs and for costing out specific services.

One sender of the new administrative technology noted that:

The core function of the system is to tie programs and budgets together . . . units of costs rather than total cost can distinguish amounts spent on administration of programs and service given to clients.

Another sender further explained:

Federal requirements demand that costs be explained for reimbursements.

The other meaning of accountability deals with the notion of effectiveness. There was a need to show how well money is spent, i. e., to show the societal and personal impact of services being delivered. As one federal administrator noted:

There was not knowledge of the impact on a client of the services supported by federal money.

One sender involved through the entire process explained:

There was a need to provide a mechanism to demonstrate the linkage of resources put into services were effectively and efficiently being utilized.

A top level sender said:

The client information system would provide the basic building blocks to show how much it takes (costs) to rehabilitate a person. It would allow us to do measurements on alternatives. Most of all, the system would quantify a traditionally non-quantifiable area.

Provide a Mechanism for Case Coordination

One reason for the creation of a client information system was to treat the client as a whole person who might require more than the one service given by a particular program. A case coordination mechanism would develop a client profile which would provide "worker and supervisor with quick reference to pertinent client information, his current condition, goal, problems, and plan for services to meet these problems."<sup>2</sup>

The function of case coordination had several implications. By viewing a person as a whole, the Department would be handling the complex problem of service integration for the client. The implications of case coordination can be best highlighted from several interview statements. A divisional state office evaluator noted:

Case coordination can identify multi-divisional clients.

A long time program staff person said:

I see it as a training tool for new staff to get them thinking in a case work process that is, a problem-solving process . . . this in turn provides a structural approach to the delivery of services.

A federal official offered:

Case coordination enables the Department to act as an advocate for the client because the function assumes total greater information. It also allows the client to be aware of what the agency can and can not do.

A last implication was stated by a top regional administrator:

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Florida Department of Health and Rehabilitative Services, Division of Family Services, "GOSS Benefits," Jacksonville, Florida, 1974. (Typewritten lecture notes), p. 1.

It would facilitate referrals both across the Department and outside the Department. . . . It was designed to give statistical reporting of inter-agency referrals.

#### Provide a Client Tracking System

The need for a social services department to understand the results of its programs is closely tied to the three needs discussed above: uniform information, accountability, and case coordination. There should be the capability to examine and understand client movement through and out of the social services programs. Client movement means that services are goal-directed within given time limitations.

The function of client tracking would measure client movement at two levels in the service system. first, the top management level would have aggregate data on the numbers of similar problems. It would be made aware if in certain areas of the state clients with certain problems moved out of the system faster than in other geographic areas. Furthermore, the Department could evaluate and change its performance by understanding its impact on client needs.

At the worker level, client tracking would provide feedback to the worker and supervisor. The value of this need has been expressed by several of those interviewed. A top regional administrator noted:

There could be better casework because follow-up information would be cited when necessary.

A top division regional administrator expressed the same idea and added another dimension:

The CIS is valuable to the individual worker because it keeps up with the client through

built in tracking, that is, feedback. It also could provide the supervisor with information for staff management and employee evaluations.

One of the senders made mention of the idea that workers would improve their contributions to the agency because,

they are part of a larger system and have a ball score of how well They are doing.

#### Assessment of Success or Failure

For conceptual clarity, Mohr's definition of innovation has been a consistent reference point. He states that an innovation is, ". . . the successful introduction into an applied situation of means or ends that are new to that situation."<sup>3</sup> Any judgement about the degree of transfer was based on the extent to which the four main functions were being achieved at the time of the study.

When this study was proposed, there was an assumption by the researcher (and many others at the top of DHRS) that the application of the innovation was successful. The assumption of success came from the initial suggestions of colleagues for a mechanism to focus upon to study the successful innovation process; it was generally believed that the Client Information System was in place and producing a variety of data. The focus was to be how various dimensions of the innovation process categories interacted in the transfer process.

As the research progressed, it was found, using Mohr's definition, that the innovation had limited success. The one area that can

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Lawrence B. Mohr, "Determinants of Innovation in Organizations," American Political Science Review, Vol. LXIII, Number 1 (March 1969), p. 112.

be said to be served fairly well was fiscal accountability. There was some limited success here in that dollars can be accounted for, but the impact aspect of accountability was not yet determined.<sup>4</sup>

### Evidence for the Assessment

#### Non-comprehensive Scope

The orientation of the Client Information System implemented by the Department was tied to a single funding source. All programs and services which were not tied to funds from the Titles IVA and VI of the Social Security Act did not have to report on the forms. This meant that both many staff workers and clients throughout the Department were not (and are not) linked into the system. The federal requirements were discussed earlier in the introductory chapter. Different federal funding sources carry varying reporting requirements which range from narrative reports to very narrow details on certain groups of clients.

#### System Did Not Meet Limited Application

The first attempt at installing the CIS and utilizing its output resulted in an audit exception of over \$30 million declared after a financial review by HEW. There was much discussion on the content of the reporting forms between HEW and the Department. Forms were

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These judgements are made on the basis of studying the approximately three and a half year period the CIS came into being and was utilized. The judgements made here are not to be considered as criticism, but rather the results of analyzing a process. There is presently a four phase plan underway to expand and further operationalize the CIS. A mandatory cut-off time on the research was the completion of field work and it is hoped insights gained here can be beneficial to future implementation efforts.

sent to the program divisions with minimal instructions. HEW required that a "categorical relationship" be shown for all clients eligible for services--that is, present or future conditions of a family which are making them or would make them potential recipients of government financial support.

The failure to meet requirements, as shown from the financial review team report, was the basis for HEW asking for the return of \$30 million:

The Client Information Questionnaire reviewed by SRS in March 1972 did not provide for establishing categorical relationships as a condition of eligibility for IVA. The form was then revised to add four alternative conditions . . . . The revised form was dated "DHRS 3/72" as the original form had been . . . . Virtually no use of the revised form was found in the DHRS Divisions, and in the instances where it was found to be used, the categorical relationship portion of the revised form was not completed.<sup>5</sup>

One member of the Social and Rehabilitative Service (SRS) financial review team told of his experiences:

Our mission was to evaluate the accomplishment of the objectives and in doing so we interviewed staff office personnel and local staff. What we found was the complete absence of any reporting forms, or forms never completed and stacked in closets and files. Sometimes in files, were found undated and unsigned memos. There was no legal basis for reimbursement of funds.

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<sup>5</sup> United States Department of Health, Education and Welfare, Social and Rehabilitation Service, Region IV, "Review of Social Service Programs in the State of Florida Department of Health and Rehabilitative Services, Titles IV-A and VI Social Security Act for the Period: January 1, 1971-September 30, 1972," Atlanta, Georgia, 1974. (Photocopied), p. 9.

### Creation of a New Accountability Agency

The \$30 million audit exception is still being negotiated (November, 1975), but in order to prevent a recurrence of such a financial and political catastrophe, a new agency was set up to monitor reporting of federal funds. The agency called Office of Grants Management (OGM) was delegated the responsibility to see that fiscal accountability for IVA and VI was carried out. It was set up under the Office of the Secretary. The establishment of this agency, reasoned one federal official, was because,

The responsible agency, Division of Family Services (DFS), did a terrible job on accounting of IVA and VI funds and it is improper for one division, such as DFS, to monitor colleague divisions, such as Mental Health, in accounting for funds. There should be set up a third party outside of both divisions.

Office of Grants Management (OGM) adopted an existing form containing the essential data elements which had already been developed and approved but had been shelved. Training sessions, with manuals, were organized throughout the state. A short movie film telling of the importance of the forms was given state-wide distribution and shown in training sessions. Since OGM, stated one of its top administrators, "We have not had another audit exception."

### Circumvention of the CIS

The judgement of the limited success of CIS in financial accountability was based on the fact that DHRS had to adopt an additional procedure to establish costs for reimbursement. There has been no way to aggregate the completed forms of this additional procedure. There was no procedure devised for automating and compiling what the

direct service workers prepared. Forms were not sent to any central collection point. Instead, the researcher found that the forms are filled in and left in the file drawers of local field offices of the service agencies.

Several days each month, staff in agencies which utilize IVA and VI are work-sampled. This is a procedure whereby the activities of various time periods within a day are noted and cost allocations are calculated. Requests for reimbursements are based on this data. The CIS is credited as providing the information, but in actuality the forms serve only as back-up materials in the files for financial reviews if questions of an audit exception arise. Thus, the claim to financial accountability can only be credited with limited success because of the back-up nature of documentation and the circumvention of the system with another procedure.

#### Direct Service Workers' Negative Reaction

The limited acceptance and low perceived utility is demonstrated by the attitudes of direct workers on several points: accuracy of information; benefits to clients; usefulness for work with clients; approval or disapproval of utilization of the forms. On the ability of CIS to provide accurate information, only 55 per cent of the direct service workers surveyed felt they were able to get accurate information for the system. Moreover 73 per cent of those who answered felt that there were no benefits to the clients from the forms.

When workers who had been utilizing the forms for at least six months were asked if the forms were useful for their work with clients, 69 per cent of those responding indicated they were not useful; 25 per

cent said they were somewhat useful; and only 6 per cent found them to be very useful. It is interesting to note that 54 per cent of the workers explained that the lack of usefulness was due to the fact that they could not determine the benefit to the client and that there was no feedback to the worker on the status of the client. This indicates the system is not fulfilling its feedback and client status function to the direct service workers to enable them both to track a client's progress and to coordinate with other agencies in the provision of services.

The negative reaction of the direct service workers is further demonstrated by their reasons for disapproving the utilization of the forms. Almost 65 per cent explained as their reasons for disapproval the following: the forms take time away from other activities; their actual activities and time spent with clients is inadequately described; they get no feedback; they feel that the forms are never seen by others.

#### Opinions on Information Provided

The motivation behind the CIS was to provide the previously described informational functions. Both the relevant elite and direct service workers were questioned on the kinds and amounts of information that were thought to be provided to top level state management from the CIS. The elite felt that it gave much information on both numbers of people served by IVA and VI funds (68.4 per cent) and number of services provided (52.0 per cent). However, to the elite, there was a decreasing amount of other kinds of information they thought the CIS was providing. On information regarding caseload for

staff allocation, 63.1 per cent felt the CIS gave some or no information. There was 89.4 per cent who felt that there was some or no information about the number of people with special problems. More than 84 per cent felt that there was some or no information about services unavailable in an agency or community. Lastly, 68.5 per cent noted that there was some or no information provided on which to base a legislative budget request. These figures further substantiate the judgement as to the limited success of the innovation.

Direct service workers had an even lower evaluation about the kinds and amounts of information provided by CIS. On the number of people served by IVA and VI funds, 36 per cent felt that there was much information. Only 18 per cent felt there was much information on number of services provided, while 70 per cent felt there was some or no information. The pattern of the elite toward the decreasing amount of information provided is similar to that of the direct service workers. On information about caseload for staff allocation, 58 per cent felt the system gave some or no information. There was 73 per cent who felt that there was some or no information about the number of people with special problems. Over 44 per cent felt there was no information about services unavailable in an agency or community. Only 17 per cent felt that much information was provided to form the basis for a legislative budget request.

#### Feelings on the Worth of Continuing the System

An estimation of the future value of CIS was solicited from all parties contacted. Responses were sought on various points related

to the worth of continuing the system. While neither top management nor workers believe in the comprehensive utility of CIS now, top management feels it is worthwhile continuing for future development and output. This can be demonstrated by their high positive reaction to continuing the CIS to serve various functions: case coordination, 76 per cent; insuring continuance of federal funds, 88 per cent; accountability for federal funds, 82 per cent; feedback on staff utilization, 70 per cent; providing information on types of clients services, 82 per cent.

However, the direct service workers, at this point, do not feel that it is worthwhile continuing. The only strong positive preferences of this group related to continuance of federal funds (76 per cent) and accountability of funds (59.7 per cent).

#### Linkage of Assessment to Other Findings

The factors described in this chapter were to substantiate how the assessment of limited success was determined. The next three chapters attempt to analyze and explain why the condition of limited success occurred in the innovation process. It is believed that a combination of dynamic factors contributed to this result. One of the major factors was the qualities, or attributes, of the system itself. Another factor was the characteristics and perceptions of the actors, or participants, in the transfer process. Lastly, the elements of the process are examined to determine what significance these had on the limited success of the innovation transfer.

CHAPTER V  
QUALITIES OF THE TECHNOLOGY

The results presented in this chapter attempt to analyze the limited success of the innovation in relation to the characteristics of CIS. Several of the qualities were planned into the study. These include divisibility, physical manifestation, and efficacy. It is interesting to note that several other attributes emerged during the course of the study as possible explanations for the limited success of the system. These include complexity, focus of change, and a negative halo effect.

Of the three qualities initially provided for in the study, that of divisibility, the extent to which an innovation lends itself to a partial, small-scale tryout, did not appear to be a crucial factor. In an actual demonstration, or prototype, that was run divisibility was not a means of gaining acceptance for the innovation. The factors which promoted resistance for the trial innovation process were existent in the demonstration and not corrected. Moreover, the findings on the attribute of the physical manifestation of the technology, a tangible object versus an abstract idea, were inconclusive. Top management shows a preference for implementing hardware, or more tangible items. What was revealed about physical manifestation is its relatively minor significance to individuals at the bottom of the organization. They do not differentiate among new things as being

objects or policies because what they eventually confront is indeed something tangible, such as a form or manual. The quality of efficacy was examined from staff perceptions of both first awareness and proven utility in other places. Generally, the top managers had strong positive expectations when they first heard about the system. Worker perceptions were negative to hazy based upon expectations of more paper work and no change in the client situations they encountered. Perceptions of proven utilization in other places were stronger with the senders of the technology than with top level receivers and workers. Thus, the perceived efficacy of the innovation was differentiated in magnitude among the various actors, but not for the most part, in direction.

Three innovation qualities emerged from the field research and were found to be helpful in the analysis. Complexity was one. It was important because found to be a factor at all organization levels was difficulty in understanding the innovation and what it could do. The findings revealed that the focus of change was administrative rather than programmatic. As an administrative innovation, the CIS required substantial time to discern results and with the lag that did occur, the legitimacy of the procedure, or confidence that it was the best policy, was eroded. Another attribute which was discovered to be especially important in explaining much of the limited success was that of a negative halo effect. The action against the technology was actually a reaction against a larger and unacceptable change in the organization--expansion of services--which was associated with the

technology. The following sections present the detailed findings and analysis on the qualities of the technology.

#### Divisibility

The characteristic of divisibility examines the extent to which an innovation lends itself to a small-scale tryout before full adoption. This characteristic was examined in two ways: actual experience with a prototype demonstration, and a question on how difficult the CIS was to try-out on a small scale. The data does not reveal whether or not it is better to demonstrate technology such as CIS on a small scale. Almost half of all respondents considered it very or somewhat difficult to demonstrate this kind of technology on a small scale. Direct service workers especially felt this way. The senders, as might be expected, felt the small scale trial was the best way to get such an understanding and leaned away from it being very or somewhat difficult.

As supportive information, as many as possible of the workers who could be located were questioned on their experience in the participation of a prototype run in the summer of 1972. This trial run did not serve as a means of gaining acceptance. This is contrary to the findings of Fliegel and Kivlin who posit that the extent to which an innovation can lend itself to a small-scale tryout before full adoption, the more important the factor of divisibility becomes in encouraging rapid adoption.<sup>1</sup> However, in the case of this prototype, it

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<sup>1</sup>Frederick C. Fliegel and Joseph E. Kivlin, "Attributes of Innovations as Factors in Diffusion," American Journal of Sociology, Vol. 72, No. 3 (1966), p. 245.

was felt to be an additional work load. It was not considered a simple operation which would replace other activities. Moreover, some of the same complaints acknowledged in the larger implementation were noted for the demonstration: the absence of automation which would be part of the entire process, and the absence of feedback to participants.

While it was found that the quality of divisibility was not a crucial variable in this study, that is not to deny its possible import. For its purposes here, however, it is interesting to note that problems which emerged as factors of resistance were quite probably existant in the small scale prototype. There are implications inherent here that suggest the perfection of the demonstration product before and after it is tried. Thus, the senders did not take advantage of one of the most often suggested benefits of a small-scale demonstration, the knowledge gained from feedback on problem areas.<sup>2</sup>

#### Physical Manifestation

The inclusion of this property in the study was for the purpose of examining the perceptions of the tangibility of the technology and their effect on those involved in a transfer. The assumption was that a physical object is more readily acceptable than an abstract

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Gerald Zaltman, Robert Duncan, and Jonny Holbek, Innovations and Organizations (New York: John Wiley & Sons, 1973), pp. 42-43.

idea. In order to examine the quality of physical manifestation and its acceptance by members of the organization a special procedure was utilized. A panel of six persons who were not involved with the innovation but were knowledgeable about the organization were asked to suggest phenomena they thought would be either difficult or easy to adopt for utilization in the entire Department. There were several ballots toward achieving a consensus of expert opinion against which the responses of the actors in the CIS experience could be judged.

The five items named by the panel ranged from visible pieces of machinery to a procedure which would link the outside agencies with the Department. All respondents were asked to rate as to difficult the implementation of these items in the Department. The ideal rating pattern would be perceptions of increasing difficulty as the items became more intangible. An example of the ideal pattern is:

Not Difficult	Calculator	Computer Terminal		
Moderately Difficult			Common Application Form	
Very Difficult			Client Tracking Procedure	State Agency Referral

The data collected was analyzed by considering the senders and receivers together and by comparing each sub-group. The relevant elite, all top managerial actors, had a tendency to follow the expected pattern, but not in a strongly definitive way. Many of the total responses fell in the middle or moderately difficult category.

It was only when these responses were combined with the next preferred response that a hazy pattern following the predicted one was present.

An analysis of the sub-groups revealed that the closest to the ideal pattern were the senders of the technology. They saw the pieces of machinery easier to implement than those items which included interpersonal actions. Their response did vary on the item of the computer terminal by ranking it more toward very difficult to implement. It is believed that this group was aware of the sophistication of the mixture of machinery and people involved. Thus, while the machinery, a piece of hardware, is an easy notion to accept, it is believed that the dimension of complexity entered into the perceptions of the senders and clouded their initial reaction to the item. The receivers segment followed the general elite pattern closely, but once again, with a hazy configuration in the ranking of the items. While the findings about the perceptions of the elite on the physical manifestation of innovation are not strongly definitive, they do tend to be similar to the findings of Evan and Black. They found that "software" innovation staff proposals were more difficult to sell to management because these proposals were dealing with ideas and concepts.<sup>3</sup>

The responses of the direct services workers were the most incongruent with the ideal scheme. The hardware items came the closest

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William M. Evan and Guy Black, "Innovation in Business Organizations: Some Factors Associated with Success or Failure of Staff Proposals," Journal of Business, Vol. XL, No. 4 (October 1967), p. 519.

to the ideal pattern with the perception of not difficult to implement. However, the last three items which were less tangible were also thought to be easy to implement. These reactions of the workers are amenable to several interpretations. First, those at the bottom of the organization can often visualize the technology only as another form to fill out; another piece of paper. The entire network and systematic effort of which it is a part is beyond their awareness. Second, in those instances where interpersonal procedures are involved, the suggested interpretation is that the informal contacts utilized to get things done before will be continued and nothing will really change. The data suggest that nothing is really viewed as new or different at the worker level, but just considered an addition to on-going activities. Lastly, the data suggest that those at the bottom of the organization do not have to differentiate between new things being transferred. What they eventually visualize is indeed a tangible item, whether it is a machine or a piece of paper. Thus, all items can be considered relatively easy to implement because the abstract and policy notions remain mostly with top management.

#### Efficacy

The quality of efficacy of the innovation was examined in this study with a dual approach. The first approach attempted to ascertain perceptions about the advantages of the CIS at the point of first knowledge. When the system was first talked about, several claims were made about its capabilities. Thus a first knowledge or awareness about it would describe initial thought about expectations. The second

approach was designed to examine the perceptions of all actors as to their knowledge about similar phenomena in other locations or similar situations. If there is awareness that something has been proven effective elsewhere, it may be more acceptable to the new adopters.

The perceived efficacy upon first knowledge of the system included three items: accounting of funds, coordinating of client services, and tracking of clients. The combined relevant elite upon first knowledge had positive expectations on all three dimensions, but were most positive about coordinating and tracking. When the elite is broken into the two groups of senders and receivers, the same patterns continue. However, even though the senders of the technology were relatively positive about what the system could do, it appears that they were not strongly convinced of its efficacy for the accounting of funds. The response of the senders can be thought of as being one of high expectations. The senders felt something had to be better than the state of existing conditions but that more information was going to be required to account for funds.

The top level receivers, a sub-group of the elite, followed the same pattern. The greatest difference of reaction was between the top level receivers and direct service workers. Workers' perceptions were definitely either negative or hazy upon first knowledge of the system. This can be accounted for in several ways. First, the initial exposure of the workers to the very existence of the system was a negative experience--more paperwork for those at the bottom of the organization. Second, expectations about the capabilities of the system were not thoroughly explained. Lastly, they assumed that the

kinds of situations which they encountered would be handled on the same one-to-one, client-to-worker, basis, and they would therefore experience no differences in their activities.

When the data was examined to ascertain differences by DHRS divisions, it was found that employees in Family Services were generally more positive as to the efficacy of the system upon first knowledge. The initial description of the system may have met more of their expectations for dealing with clients--a better social work type mechanism.

Knowledge of proven utilization in other places was the second approach to examining efficacy. Proven efficacy in other places could be perceived in three ways: similar reporting procedures, accounting of funds, and coordination of services--all had been generally experienced elsewhere, either directly, or vicariously.

The combined elite was strongest on knowledge of similar procedures in other places, very unknowledgeable about its possible use in fund accounting, and mildly unknowledgeable about its use in coordinating services in other places. The senders were highest in their knowledge of similar reporting procedures, probably because of their general exposure to management information systems. Their response to awareness of fund accounting efficacy in other places was rather negative, probably because in the task of putting the system together, they did a deliberate search to find out what indeed had been done in other places and CIS had not been so used elsewhere. They gave strong to moderately negative responses to accounting and coordination most probably because, in their background, they were

aware of similarities in other places, but not similar procedures for dealing with social services (many were former engineers).

The receivers showed a moderate awareness of similar procedures, attributed either to an assumed existence or some actual knowledge of somewhat similar attempts in other places. This group came out the strongest on having no previous knowledge of accounting for fundings, probably because this is an aspect of the service system they never had even to consider before. They had some knowledge of coordination of services in other places because, first, it is a part of their education that the client should be dealt with as a whole being and, second, it is actually part of their verbalized philosophy that the system works to coordinate services, even though coordination might mean only reciprocal attendance at meetings by high level staff.

The direct service workers showed the least initial awareness of all the groups on all items on proven efficacy. Their perceptions of proven efficacy seemed to reinforce their negative assessment about benefits to clients and usefulness in their work. Thus, it seems again that the greatest difference in perception is between those at the top and bottom levels of the organization, rather than between the two groups at the top. While the top level receivers and senders differ in opinion, it is in magnitude and not direction of perceived efficacy.

The overall results on the effects of initial perceptions of efficacy appear to coincide with findings in other studies, such as one done by Mansfield. He used the term "observability" and concluded that when there is proof of utilization, there is greater probability

of adoption.<sup>4</sup> Moreover, as Fliegel and Kivlin hold, the communication of successful results of a new practice should contribute to its adoption.<sup>5</sup>

### Complexity

Complexity of the innovation is one of the variables which emerged from the study rather than being planned into it. It became apparent during the study that the quality of complexity had importance to an explanation of the limited success of the technology transfer. Complexity effects the transfer in the sense that if perceptions about the innovation include a difficulty in understanding it, acceptance will be diminished.

Difficulty in understanding was found to be a factor at all levels of the organization. The most over-riding statement about complexity was made by a state level program administrator:

It always seems like it means something to someone else. We are told it is important to aggregate all this information, but the part we see never gets any meaning. I don't understand why I'm doing it, I hope there is a someone or someplace where it makes sense.

Lack of understanding of the innovation was felt to exist even at the very top level of the organization. One of the senders notes:

The Secretary didn't understand either the technology or the results of the system.

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<sup>4</sup>Edwin Mansfield, "The Speed of Response of Firms to New Techniques," Quarterly Journal of Economics, Vol LXXVII (May 1963), p. 309.

<sup>5</sup>Fliegel and Kivlin, "Attributes of Innovations," p. 248.

Another sender mentioned:

The Secretary didn't understand it, but didn't want to appear backward about developments in service delivery systems.

Middle level managerial receivers seemed to have the same difficulty with complexity and a state level program analysis explained how it was dealt with:

The people over me didn't understand it and so dumped it on lower level staff. This was not an act of defiance, but the information system was just not perceived as worthy of their time and effort.

At the direct service worker level, the complexity of the system was coupled with additional activities. One of the senders noted:

The workers didn't understand what the system could give them. It only seems like another paper work burden.

A top regional administrator further emphasized the complexity of turning concepts into a working reality:

They [the senders] were expecting professional deliverers of services to become data processing clerks.

Thus, it can be seen that at various levels of the organization lack of understanding of the technology of what it could do, was related to its limited application and lack of success. It is interesting to note that complexity emerged from the research because its effect as a negative quality in the transfer process has been substantiated in earlier studies, but only in a limited sphere. Fliegel, Kivlin and Seklon found in the innovations of dairy farming that the more complex

were not rapidly adopted.<sup>6</sup> Complexity, as both idea and operation in an administrative setting, has usually been considered in a theoretical and not an applied manner.

#### Focus of Change

The initial focus of an innovator can be a defining characteristic. Evans made the distinction between technical and administrative innovation, with the former connoting a new product or service and the latter a new policy.<sup>7</sup> The Client Information System was focused upon changing the existing allocation of resources and structure of rewards, authority, and tasks. The technology was one of an administrative rather than a technical nature and thus we would expect it to be more difficult to transfer. The reason for the technology explained in detail in an earlier chapter, was succinctly stated by a sender:

It is a mechanism to link and to assure resources put into services are effectively and efficiently utilized. . . . The system serves as a pre-audit function to provide for planning, eligibility determination, and service provision.

Furthermore, administrative innovations are likely to require more time for a discernible effect than technical ones because the latter have results which can more easily be demonstrated. Given that an administrative innovation requires more lag time, sometimes

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Frederick C. Fliegel, Joseph E. Kivlin, and Gurmeet S. Sekhon, "A Cross-Cultural Comparison of Farmers' Perceptions as Related to Adoption Behavior," Rural Sociology, Vol. 33 (December 1968), p. 447.

<sup>7</sup>William M. Evan, "Organizational Lag," Human Organization, Vol. XXV (Spring 1966), p. 51.

its legitimacy, or the confidence that it is the best procedure, is challenged. That which Evans posited conceptually was indeed borne out in the analysis of the CIS. Even the senders waived as a group as to their confidence in it. The senders gave less than positive opinions about the system:

I have confidence in the technology. It has been used in private industry. . . . General Motors can get information back from local dealers to decision makers . . . However, the pure mechanics of automating the system were not finished . . . it is impractical as a manual system. Also, having the forms designed in Tallahassee is a problem for accommodating the information in the field.

The technology is good . . . the principles are good . . . but, Administrative Services has lagged behind in ADP (automatic data processing) implementation . . . the people there seem incompetent to do so.

Several of the top management receivers voiced their feelings of a lack of confidence in this administrative technology. Some examples include:

There is no way to obtain information . . . CIS is theoretical . . . it is stacked somewhat because it's not automated . . . there is no way in the Department to obtain aggregate data. (A state level program administrator).

I think the system is not the wherewithall to obtain non-duplicative client data. (High level regional administrator).

I'm not completely confident in the technology . . . must be that computer programs and data system are messed up. (State level planner).

It would be impossible from this research to ascertain whether an innovation of a technical focus would have been more successful in the same setting. There have been no comparable situations that cut across the whole Department and a technical innovation would be

specific to a program division. However, this particular innovation, with its administrative focus, did not have the promised discernible effects. Moreover, its very legitimacy appeared to be challenged.

#### Negative Halo Effect

One of the most interesting findings about the qualities of the technology was that the reaction against the CIS was in actuality a reaction against a larger change which was unacceptable with many members in the organization.

When Title IVA and VI funds first became available to the divisions, there was widespread reluctance on the part of some program divisions to utilize them. This reluctance took the form of complaints about the time consuming reporting requirements, but these complaints were in fact symptoms of a widespread disenchantment with the whole idea of federal funding and compliance with seemingly endless regulations. The program divisions did not, in fact, want to expand services--they were quite content with their territories and established routines; and IVA and VI represented a major threat to the peace.

As one state level program administrator in a division already offering social services noted:

The other divisions didn't even want social services . . . it meant requiring new expertise. They didn't want to restructure their pattern of doing things.

An administrator from a division which wanted to expand services stated:

Nobody really wanted to do it (CIS) . . . (it) really was forced on us because of the money

involved. There was no hope or idea at all that this kind of document would provide management information.

The Secretarial level felt the forced compliance because the CIS was the prerequisite for HEW funding. The pressures of the funding agency over the organization were clearly stated:

The Feds hold a money clout over you. They say that this client information, is going to be in vogue and that we'd better go that way . . . I didn't see any other alternative . . . it was too risky with the money involved.

These findings about the negative halo effect were reinforced by observations of a federal official involved in the financial review which resulted in the large audit exceptions. He stated:

As deficiencies were found in divisions, there was almost glee, not embarrassment by the fact that they hadn't accounted for the funds through the CIS. There was hope that someone swings for it . . . I really feel that some program divisions thought that expansion of social services would be halted with the audit exception.

It can not be stated with certainty that the CIS would have been more successful if it had not been enforced to account for particular federal funds. If anything, it was probably the accountability requirement which motivated the transfer process at all. But it seems that the findings show that the feelings towards the funds and the subsequent expansion of services gave the quality of a negative halo effect to the CIS.

## CHAPTER VI

### QUALITIES OF THE ACTORS

The individual as a member of a complex social system, the organization, is equipped with his own set of characteristics which can affect the dynamics of technology transfer. James D. Thompson describes the importance of what he called "the human variable":

The human actor is a multidimensional phenomenon subject to the influences of a great many variables. . . . Neither we nor organizations have the data or the calculus to understand organization members in their full complexity, . . . the interaction of (1) the individual, who brings aspirations, standards, and knowledge or beliefs about causation; and (2) the situation, which presents opportunities and constraints. Interaction of the individual and the situation is mediated by his perceptions or cognitions.<sup>1</sup>

This chapter examines the demographic and perceptual aspects of the participants of this particular innovation process. The materials have been organized to first examine the two sub-groups of the relevant elite, the senders of the technology and the top managerial receivers. They are compared along various dimensions to see if they are complementary or conflicting with each other. Several background characteristics of the elite were found to be relevant in explaining the absence of supportive relationships when the innovation here

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James D. Thompson, Organizations in Action (New York: McGraw-Hill, 1967), pp. 101-102.

involved were moved across organization boundaries. Education backgrounds were highly divergent: receivers majored in social work and senders majored in engineering. Indicators of professionalism, special training, and extra-organizational activities were similar for both groups. But training and extra-organizational activities were concentrated into the same divergent areas, thus reinforcing the divergent dogmas of their educational disciplines.

Other factors were studied to ascertain if any thread of commonality in backgrounds existed which might have facilitated the transfer process. In the area of work experience prior to employment in the Department, both groups had been concentrated once again in the two different areas--social work and engineering. Moreover, no relationships developed across the membership of the two elite groups which could have been the basis for rapport.

The organizational background characteristics of the elite groups surfaced factors which further accentuated differences. The receivers had been in the organization for a long time and gained their present positions by coming up through the ranks. The senders had lateral entry into the Department into high pay grades.

Perceptions about structural dimensions of the organization, change, and legitimacy of the senders were useful in explaining resistance in the transfer process. The degree of autonomy accorded the divisions was extremely high. The decentralization was such that the Department could be described as a federation of semi-autonomous units, most with their own funding sources. There were fears that the autonomy would be jeopardized by a centralizing mechanism such as

the Client Information System. Perceptions about formalization, examined on the dimensions of specification of job definition and rule observation, were higher for the receivers. This seems to indicate an emphasis on ritualistic behavior and would create an atmosphere which would discourage the adoption of new procedures. On attitudes toward change, neither of the elite groups was high. While this might be expected from the receivers, who would prefer the status quo, it was not expected for the senders. A possible explanation is that the senders view themselves as technocrats rather than change-agents. The engineering background is generally viewed as one with conservative orientation which could have contributed to this finding.

The legitimacy of the senders as the source of the technology was held to be quite low. A combination of factors contributed to this finding, including their divergent educational backgrounds, experiences, and the short amount of time in the Department. More important, however, was a perceived negative image of the senders as self-oriented wheeler-dealers who wanted federal funds for their own staff expansion. It was felt that the senders acted without mandated authority, a factor of significance in a formalized setting. Moreover, antagonisms were compounded in situations of interactions between the elite groups by language differences. The senders used the jargon from their experiences in aero-space and did not accept the traditional professional terminology of the field of social work and of the Department. One of the ramifications of the low legitimacy of the senders was that it was felt they should not be the interpreters of federal

regulations on grants. Another ramification was that the program divisions would not accept descriptions and definitions of program activities that came from an agency that did not understand social work activities.

The direct service workers were examined to ascertain if their personal qualities were relevant in explaining the limited success of the technology transfer studied. The rationale for considering the workers separately is that, in the overall process, the initial interaction began between those in the relevant elite. Subsequently, the workers became a part of the interaction, but the qualities of the elite, alone, relative to the innovation, were revealing.

The direct service workers, as a set of actors, were most interesting in relation to their organizational superiors, the receivers. The profile which surfaced from the lower levels of the organization was one of individuals who were young; had non-social work background; for the most part had B. A. degrees; had no indicators of professionalism, such as special training or extra-organizational activities; were in the Department a short amount of time; had little to no previous work experience. Furthermore, their work settings were perceived by them to be both highly centralized and formalized. In essence, the workers were highly dependent on their superiors for guidance and behavioral cues. Thus a negative reaction or implicit message from superiors about the Client Information System was sure to be mirrored at the worker level. A detailed analysis of the findings on the actors is presented.

## Relevant Elite

### Background Characteristics

#### Age

The data presented on Table 1 shows that the senders and receivers are fairly close together on the characteristics of age. There is a wide range of ages for the elite and both sub-groups of the elite share in this.

The measures showed that there was a high congruence in the age make-up of both the combined elite and its sub-groups. Thus, an age differential, which might give rise to a generational viewpoint, is not a factor in the limited success of the innovation.

#### Educational background

Data was collected on all participants as to both their major subject area and amount of education. The findings are shown in Tables 2 and 3 respectively. It is important to note that on the major subject area, half of the top management receivers had a social work curriculum and over 40 per cent of the senders received an engineering education. These are extremely divergent fields of study, with the former emphasizing the human in a one-to-one situation and the latter emphasizing mechanical phenomena. Thus, the two groups of the relevant elite were exposed to highly different sets of thoughts and norms.

The "other" category accounts for almost a fourth of both groups. The major educational areas here for both groups of the elite include law, education, and agriculture. Both groups also included individuals with emphasis in the social sciences and business administration.

TABLE 1

## AGE

Analysis of Years Old	Combined Relevant Elite (n=22)	Relevant Elite		Direct Service Workers (n=79)
		Senders (n=7)	Receivers (n=12)	
Range	28-62 years	31-55 years	28-62 years	21-54 years
Mean	39.4	38.1	38.5	30.5

TABLE 2  
MAJOR EDUCATIONAL AREA

	Relevant Elite		Direct Service Workers (n=79)
	Senders (n=7)	Receivers (n=12)	
Social Work	0.0%	50.0%	17.7%
Social Science	14.3%	8.3%	55.7%
Liberal Arts	0.0%	8.3%	6.3%
Engineering	42.9%	0.0%	0.0%
Business Administration	14.6%	8.3%	1.3%
Other	28.6%	25.0%	19.0%

TABLE 3  
AMOUNT OF EDUCATION

Highest Completed Degree	Relevant Elite		Direct Service Workers (n=79)
	Senders (n=7)	Receivers (n=12)	
B. A.	14.3%	25.0%	84.8%
M. A.	85.7%	75.0%	15.2%

The amount of higher education reflected in Table 3 is similar for both elite groups. This is an interesting finding in light of the departmental lore that the division the senders are from is reputed to be "heavily degreed." Both groups showed emphasis on advance degrees and about an equal number from both groups have academic work beyond the Masters' level. Thus, while the amount of education is not a differentiating factor, the area of educational emphasis is.

#### Professionalism

This characteristic of the actors was included for study because of the assumption that the heightened awareness of programmatic and technical developments one would receive within a profession would be input of new knowledge into the organization. Information was gathered on two items: special training and extra-organizational activities.

Special training. The information on this item was a combination of data from respondents on both formal graduate education and other professional training such as short courses, institutes, seminars, which was not for the purpose of attaining a formal degree. The information was grouped by the categorical schema designed by Hage and Aiken.<sup>2</sup> The data on Table 4 shows that both the senders and receivers have high percentages of special training and can be

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Jerald Hage and Michael Aiken, "Program Change and Organizational Properties: A Comparative Analysis," American Journal of Sociology, Vol. 72, No. 5 (1967), pp. 508-510.

TABLE 4  
SPECIAL TRAINING

Occurrence of Special Training	Relevant Elite		Direct Service Workers (n=79)
	Senders (n=7)	Receivers (n=12)	
Absence of both education beyond college degree and other professional training	0.0%	0.0%	49.4%
Presence only other professional training	14.3%	8.3%	34.2%
Presence only education beyond college degree	14.3%	8.3%	7.6%
Presence both education beyond college degree and other professional training	71.4%	83.3%	8.9%

considered to have exposure to and awareness of professional developments. However, an indepth view of their professional exposures shows that the initial educational differential was further reinforced through specialized education. The receivers have special training in such areas as guidance, advanced counseling, alcoholism, problems of the deaf, corrections, juvenile justice, and retardation. The senders, on the other hand, reflect special training in management science, data processing, and statistics.

Extra-organizational professional activities. To examine this facet of professionalism, respondents were asked to report if they held membership in a professional organization, the proportion of meetings attended, the holding of an office, and the presentation of a paper, all of which represent professional involvement. This range of activities is suggested by Hage and Aiken and each of the activities can be considered almost a cumulative measure, because it denotes an increasing involvement.<sup>3</sup> Thus, if one attends meetings, organization membership can be assumed. The results of this inquiry are shown in Table 5.

The difference in percentages such as 14.3 per cent for the senders and 8.3 per cent for the receivers are because of the small and unequal number in each group; it does not mean a difference in the magnitude of involvement. Thus both groups contain an individual with no organizational activity and some with just membership. The two groups also have their greatest emphasis on involvements on

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Ibid.

TABLE 5  
EXTRA-ORGANIZATIONAL PROFESSIONAL ACTIVITIES

Type of Activity	Relevant Elite		Direct Service Workers (n=79)
	Senders (n=7)	Receivers (n=12)	
No Activity	14.5%	8.3%	65.8%
Membership in profes- sional organization	28.6%	16.7%	20.3%
Attendance regularly at meetings	41.7%	42.9%	10.1%
Hold office or presented paper in professional organization	14.3%	33.3%	3.8%

both the membership and attendance levels. The most notable distinction is that the receivers are more actively involved in holding offices and presenting papers. This might be explained in that high involvement with professional organizations dealing in social work and services are both a source of high esteem in one's job and also facilitate other organizational and government contacts. Moreover, high involvement in these organizations is promoted within the Department and financial reimbursements are available for conferences because such activities are considered job related and increase one's professionalism, which in turn, enhances the image of the Department.

#### Organizational background

This section examines the phenomenon of administrative and socio-psychological closeness of the groups within the relevant elite to each other in order to ascertain the nature of this relationship to the acceptance or the resistance of the technology transfer. Included here are: hierarchical rank; amount of time within the Department; status differentials.

Hierarchical rank. The organizational location, or relative placement in the hierarchy, of agencies and individuals in relation to each other can be a descriptive and graphic method of designating what and who is important to top level executives. An examination of this dimension of administrative and socio-psychological closeness revealed that the senders were mostly from the same agency, the Bureau of Research and Evaluation within the Division of Planning

and Evaluation. The Division is one of two staff units under the Secretary. The senders included the heads of both the Division and Bureau, as well as section administrators and specialists from within the Bureau. For a long period, the Division Director was located within the office suite of the Secretary.

The receivers were comprised mostly of the directors of program divisions and the other staff division. Other members of this group were of bureau chief or top regional level. Until recently all directors were approved by the Senate, which made them equal to the Secretary in the method of appointment. Together, they met as a council with the only real distinction being on an organizational chart, which showed the Secretary over the divisions. Two major agencies, Health and Family Services, are located in Jacksonville, which gave the added quality of physical distance from the Secretary.

The inferences which can be made about the situation of hierarchical rank for the actors involved draws upon and substantiates several diverse points from the literature. High formal power is needed to innovate and this comes in great part from a person's position in the formal hierarchy.<sup>4</sup> The placement of management science type activities toward the top levels of an organization indicates at least some recognition of its value.<sup>5</sup> There is,

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<sup>4</sup> Kenneth E. Knight. "A Descriptive Model of the Intra-Firm Innovation Process," Journal of Business, Vol. XL, No. 4 (October 1967), p. 490.

<sup>5</sup> Michael Radnor, Albert Rubenstein, and Alden Bean, "Integration and Utilization of Management Science Activities in Organizations," Operations Research Quarterly, Vol. 19 (1968), p. 128.

however, an inference from this particular hierarchical rank situation which works in contrary manner. The existence of a large number of equally situated subunits can deter the implementation of proposed centralizing innovations.<sup>6</sup>

Amount of time within the Department. One of the most distinctive characteristics of the elite is the length of time each group has been employed in the Department. As Table 6 demonstrates, the receivers have had overwhelmingly longer tenure. In breaking down the figures, the minimum amount of time for any receiver is three years.

The senders, on the other hand, have only been employed five or less years. Of the 71.4 per cent found in the 4-5 years category, 57 per cent have 4 years. It should be noted that almost half of the senders when contacted for inclusion in the study were then in positions in other organizations outside of the Department.

The different amount of time in the organization by the two elite groups had several implications as sources for antagonisms. The interview data covered these implications. One antagonism on the part of the receivers was that the senders had not come up through the ranks of the organization, as almost the entire group of receivers had done. The long employment of receivers is such because they had started out as direct service workers and lower

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Harvey M. Sapolsky, "Organizational Structure and Innovation," Journal of Business, Vol. XL, No. 4 (October 1967), p. 509.

TABLE 6  
YEARS WITHIN THE DEPARTMENT

Number of Years	Relevant Elite		Direct Service Workers (n=79)
	Senders (n=7)	Receivers (n=12)	
Less than 1 year	0.0%	0.0%	24.1%
1 year	14.3%	0.0%	15.2%
2-3	14.3%	16.7%	37.7%
4-5	71.4%	25.0%	7.6%
6-7	0.0%	0.0%	7.6%
8-9	0.0%	25.0%	2.5%
10-15	0.0%	16.6%	6.4%
20-22	0.0%	16.6%	0.0%

level supervisory staff. This feeling, however, was more than one of paying one's dues through serving time; it meant having dealt directly with clients. One top level regional administrator explained:

I know this division from every level because I came in as a social worker and worked my way up. . . . It makes me mad when someone who hasn't ever seen a client comes in and starts telling you how to deal with them.

A variation of this antagonism, experience or lack of time in the organization, expressed in terms of program understanding, was stated by a high level program administrator:

Here comes a person from P & E with one year's experience to deal with one of our people who has been here almost twenty years, and I think there is no way to understand if you don't know what we do.

Status differentials. There are several additional factors of the organizational background which emerged through the course of the research and which were important reasons for the antagonism between the groups of relevant elite. It is believed that these organizational factors contributed to the resistance of the technology transfer in the innovation process.

One such factor was the difference in pay grades between receivers and senders. At the time of the creation of the Division of Planning and Evaluation, the pay grades established were equal or above those attained for relatively high administrative positions in other divisions. It has been previously shown that the notion of "working one's way up through the ranks" and the

amount of time in the system were very important to the receivers. But in the case of the senders, there was lateral entry into a relatively high set of pay grades of the organization. One receiver noted that the higher pay grades stand for responsibility and experience and the senders did not have either in the organization. Thus, the prestige associated with a high pay grade was, in the eyes of the receivers, belittled because of the relatively high entry level of the senders, which, it was often felt, they did not deserve.

Another difference which emerged as an irritant, which did not facilitate the socio-psychological closeness of those in the elite, stemmed from the status attributed to a given position within the organization. The receivers were conscious of whether or not a sender held a similar management title and rank to their own. One sender mentioned how this related to her work:

In other divisions that I had to go to I had to deal with persons whose titles were higher than mine, but the money was the same. I noticed several problems in doing my work, one being that I needed a memo from the Secretary to even see people in other divisions; the other problem was that they didn't point out pitfalls . . . they let you make errors.

Another sender at a high level, recalled that persons in program divisions "talked down" to representatives of Planning and Evaluation.

I noticed a rank difference when I had P & E staff accompany me to meetings. . . . There we were trying to deal with real problems and there was game playing.

A receiver in a regional administrative position attempted to examine some of the behavior of his colleagues on this point:

The people here are aware of their positions and their titles. I remember the bad reaction we heard when P & E staff was sent to deal with a program bureau chief . . . I don't think the people I work with understand that staff (from P & E) was sent in relation to function rather than position.

The status difference did not concern one high regional administrator, but he was bothered by the fact "that everyone was presented as an expert." In later interviews with individuals that worked closely with this administrator, his distaste for the term "expert" was revealed.

He was scared of his own inadequacy of handling managerial matters . . . afraid he didn't know the materials. Everyone who came into the region was referred to as an expert on areas he felt he should be able to understand and handle himself.

Further insight was gained on this particularly crucially placed administrator from his colleagues:

He felt better dealing in the company of equals from other divisions because of mutual deference. . . . He also liked dealing with those lower in the organization in a situation that put him in a counselor/teacher relationship to them.

Blau and Scott, examining the dysfunctions of hierarchical differentiation, note that explicit status-distinctions tend to undermine the process of social interaction in two ways. First, formally instituted status differences affect competition for respect. "In a peer group, a member's standing rests primarily on the respect of others, and this fact makes their respect and deference most important. But in the presence of formal distinctions of status, the respect of others is not the primary basis of a person's social

standing, . . ."<sup>7</sup> Second, the status differences distort the error-correcting function of social interaction. It is not easy to oppose the incorrect suggestions or judgements of a person with superior power or prestige. This problem was mentioned by the sender who was not told in advance of the possible mistakes or pitfalls she would make.

Thus, it can be seen that differences of status, such as pay grade and titles, can work against building a compatible situation conducive to technology transfer. These factors, while being organizational creations, are also related to the legitimacy of the senders of the technology and have additional implications for the limited success of the transfer.

#### Commonality of backgrounds

There were several items in addition to education and organizational position which were designed to get at some point of congruence in personal backgrounds of the two elite groups. These items included previous employment, and evidence of any personal relationships which transcended formal organizational memberships.

Previous employment. Even though it has been previously established that the receivers had spent more time in the organization, it was felt that perhaps, if career paths had not crossed in actuality, at least some past experience could be used as a common

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Peter M. Blau and W. Richard Scott, Formal Organizations: A Comparative Approach (San Francisco: Chandler Publishing Company, 1962), p. 122.

ground for understanding. Table 7 shows the findings for previous fields of employment before coming to the Department. The divergence between the two elite groups is again emphasized. More than half of the senders were previously employed in the field of engineering, and most of these with ties to the aero-space program. The remainder of the senders were employed in the legislative branch, other executive branch agencies, law, or college teaching.

A third of the receivers, on the other hand, were employed in social work before coming to the Department. Several had had no previous employment experience before coming to the Department. While, one fourth of the receivers had also been employed in other government agencies, law, and secondary education, there was no convergence of career paths with the senders.

Personal relationships. All of the elite were asked about the presence and nature of reciprocal relationships among those comprising the senders and receivers. The absence of personal acquaintances is very evident. There was some mention of reciprocal professional or working relationships between senders and receivers; most of these were between individuals from Planning & Evaluation and the program division of Family Services. Perhaps, over time and in other situations, these relationships can mature into personal regard which might facilitate future transfers. Even though personal friendships did not cross divisions, there were long standing, personal acquaintances within divisional units. From interviews and personal knowledge, the strongest personal ties appeared to be in Vocational Rehabilitation,

TABLE 7  
PREVIOUS FIELD OF EMPLOYMENT

	Relevant Elite		Direct Service Workers (n=79)
	Senders (n=7)	Receivers (n=12)	
Social Work	0.0%	33.3%	32.9%
Social Science	0.0%	8.3%	2.5%
Liberal Arts	0.0%	0.0%	0.0%
Engineering	57.1%	0.0%	0.0%
Business Administration	0.0%	16.7%	11.4%
Other	42.9%	25.0%	27.8%
None	0.0%	16.7%	25.3%

one of the program divisions most resistant to the CIS. The resistance was carried to the point of refusing to participate in the prototype demonstration. The next strongest personal ties appeared to be within Family Services, where many of the individuals have known each other from college days. Among the senders there were several former aero-space connections which had been developed over time spent in that field.

Thus, the absence of long standing personal relationships across divisional lines and the presence of such relationships within the divisions reinforced the earlier divergencies--those of education, previous employment, and time in the organization. The absence of points of commonality in background is significant in this study because of the limited success of the technology transfer. For a background of commonality which fosters mutual confidence and trust has been shown to be an important facilitating factor in the successful transfer process.<sup>8</sup>

#### Perceptions Related to the Organization

##### Structural dimensions

It has been demonstrated that organizational configurations represented by structural variables such as centralization, formalization, and specialization are related to rates of program change.

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Arthur D. Little, Inc., Management Factors Affecting Research and Exploratory Development (for Director of Defense, Research and Engineering under Contract No. SD 235, April 1965), pp. I-18-19.

Application of these same dimensions as operationalized by Hage and Aiken,<sup>9</sup> but modified for this study, were included to ascertain their usefulness as explanations for the failure of technology transfer in this case.

Centralization. The variable of centralization was considered in two ways: perceptions of participation in decision-making, and perceptions of the degree of autonomy accorded the divisions. To get some measure of perceptions of participation in decision-making, all respondents were asked several questions about the frequency of their input in their agency on policies and hiring practices. The results of the responses were aggregated for the purposes of this study into three categories of high, medium and low. The high category designates the greatest amount of participation in decision-making and perhaps suggests a structural looseness or openness to ideas. The results are presented in Table 8. The receivers have a higher perception of participation within their respective agencies. This finding can perhaps be explained by the fact that the receivers were located in top and middle management positions. The senders, on the other hand, all came from within the same agency. Thus, their perceptions about hiring and policy-decision participation would be more varied.

The other view of centralization--the degree of autonomy accorded the divisions--is much more relevant in explaining the

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Hage and Aiken, "Program Change," pp. 507-512.

TABLE 8  
CENTRALIZATION: PARTICIPATION IN DECISION-MAKING

Degree of Participation	Relevant Elite		Direct Service Workers (n=79)
	Senders (n=7)	Receivers (n=12)	
High	42.9%	66.8%	2.6%
Medium	42.9%	16.3%	26.6%
Low	14.3%	8.3%	70.8%

behavior of the senders and receivers. The Department operated along the lines of "a federation of semi-autonomous units."<sup>10</sup> Each division operated without statutory links to the others and none were under the legal control of the Secretary. Each one could lobby the legislative body as a separate entity. Moreover, each division was tied into a federal funding structure which promoted grants of a categorical nature. Given this kind of structural autonomy, the failure of the GOS innovation substantiates what Carroll has shown in the case of medical schools, that the more autonomous the individual departments within the schools, the less innovative is the medical school. It was when the funding pattern changed to a more centralized process that the schools themselves changed.<sup>11</sup> Sapolsky showed how, in the case of the retail store, the buyers, being similar to DHRS division directors in autonomy, resisted the information gathering control techniques of the comptrollers, and thus preserved their own independence by not joining a comprehensive aggregate information system.<sup>12</sup>

Formalization. Regulations and rules are organizational mechanisms which can be used to insure the predictability of performance. There are two aspects regarding the use of rules. One is the amount

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<sup>10</sup>

Sapolsky, "Organizational Structure," p. 498.

<sup>11</sup>

Jean Carroll, "A Note on Departmental Autonomy and Innovation in Medical Schools," Journal of Business, Vol. XL, No. 4 (October 1967), p. 531.

<sup>12</sup>

Sapolsky, "Organizational Structure," p. 509.

of specification on how the job is to be performed, and the other is the degree of diligence in enforcing the specification. The former will be called job codification, and the latter, rule observation. Together, these two aspects of rules are useful for examining the structural variable of formalization. All respondents were asked about their perceptions concerning the specificity of their jobs and the diligence of rule enforcement. The responses were aggregated in a manner to show relative degrees of perceptions of specificity and diligence.

The results of perceptions about job codification are shown on Table 9. The high category means that the respondent perceived more codification. Over half of the senders perceived low job codification. It is interesting to observe that the receivers, most of whom were at the top of their organizations, had over 40 per cent falling in a medium range. Very few (16 per cent) felt a wide discretion in job procedures. Almost a quarter of the receivers felt their jobs to be very well defined by others. Thus, the pattern between the two elite groups is one where the senders perceived their organization to be more open and the receivers perceived theirs to be more defined in how they should perform their job.

Table 10 presents the results of perceptions regarding rule observation. Here again, the higher the degree, the more enforcement of rules is perceived. Once again, the senders had perceptions of a low degree of rule observation with almost three-fourths in the lowest or mildest category. The receivers, on the other hand, had only about one third who perceived a low degree of rule observation.

TABLE 9  
 FORMALIZATION: JOB CODIFICATION

Degree of Job Codification	Relevant Elite		Direct Service Workers (n=79)
	Senders (n=7)	Receivers (n=12)	
High	14.3%	24.9%	54.2%
Medium	28.6%	57.1%	38.2%
Low	57.1%	16.3%	7.6%

TABLE 10  
 FORMALIZATION: RULE OBSERVATION

Degree of Rule Observation	Relevant Elite		Direct Service Workers (n=79)
	Senders (n=7)	Receivers (n=12)	
High	14.3%	16.6%	51.9%
Medium	14.3%	41.7%	34.4%
Low	71.4%	31.7%	12.7%

Another 40 per cent fell in the medium category, which would mean they feel that they were sometimes watched for violations.

Considering the two sets of perceptions together, it would appear that the senders have a more open organization, while the receivers have a more structured one. In the former group, which is supposed to be creative, previous research would lead us to expect that formalization would be low. The trend toward high formalization of the receivers would seem to indicate an emphasis on ritualistic behavior and could be expected to create an atmosphere which would discourage or retard the adoption of new procedures.

Specialization. The relevant aspects of this structural variable were considered earlier under the section on "Professionalism." In the study, this factor emerged as so important that it was considered separately. A high degree of occupational specialization exists in the Department. The great number of occupational specialties might be expected to foster an exchange of ideas and generate a mood for change. However, as noted earlier, it was the emphasis on the two dominant professions, engineering and social work, which worked as a negative factor in the technology transfer.

#### Values toward change

An increasingly used concept to predict the change performance of an organization is that of the value climate. There are several value climate explanations of performance. One explanation is the primacy of elite values. Thompson suggests that an inner circle

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sets organization policy in a highly decentralized structure.

Otherwise the organization would be immobilized. Hage and Aiken argue that the value climate is determined by the entire membership of an organization which can set goals and therefore determine priorities. One might expect such a climate in professional organizations such as hospitals, welfare agencies, sheltered workshops, and so forth, where the workers are highly skilled professionals. Hage and Aiken found that in decentralized power structures there was more opportunity for the values of lower level participants to be influential in the shaping of organizational policy.

In the present study, no statistical correlations between structural variables and values toward change were calculated because of methodological considerations. However, a question on attitudes toward change from Hage and Dewar<sup>15</sup> was modified and included in the field research to see if it offered insight about the qualities of the participants involved in the technology transfer. The question attempted to elicit feelings about change in general, not the particular innovation under study. The responses were aggregated for the three groups of actors. The results are presented in Table 11.

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<sup>13</sup> James D. Thompson, Organizations in Action (New York: McGraw-Hill, 1967), pp. 140-141.

<sup>14</sup> Hage and Aiken, "Program Change and Organizational Properties," p. 516.

<sup>15</sup> Jerald Hage and Robert Dewar, "Elite Values Versus Organizational Structure in Predicting Innovation," Administrative Science Quarterly, Vol. 18, No. 3 (September 1973), p. 290.

TABLE 11  
 PERCENTAGE OF GROUPS WITH VALUES FAVORABLE TO CHANGE

Intensity of Feelings Toward Change	Relevant Elite		Direct Service Workers (n=79)
	Senders (n=7)	Receivers (n=12)	
High	14%	25%	24%
Medium	43%	42%	41%
Low	43%	33%	35%

Neither the senders nor the receivers, the decision-makers and top level participants in this innovation, can be considered to have a high set of values favorable to change. The orientation of the receivers could be explained by their longevity in the system and a general bureaucratic favoring of the status quo. The data on the senders, however, showed them not to be change-oriented either. If anything, there seems to be a real lack of consensus about organizational change in general. One plausible explanation for the senders attitudes is that they viewed themselves as technocrats rather than change agents. (Furthermore, engineering and business backgrounds are generally viewed as conducive to conservative orientations and these could have contributed to the response pattern of the senders.)

It is interesting to speculate about the relation of attitudes toward change to organization structure in this particular organizational situation. It was noted that the larger organization, the Department, is highly decentralized into almost autonomous units. The receivers had perceptions about high participation in their respective organizations and yet their value orientation would inhibit change, perhaps because they have a comfortable control which they do not want to upset. The reaction of the direct service workers is considered at a later point.

#### Legitimacy of the senders

The relation between low legitimacy accorded the technology and its limited success has been established earlier. Also discovered was that perceptions about the source of technology are

related to perceptions of its legitimacy. Thus, the legitimacy of the technology and the legitimacy of its source, the senders, were interrelated. This section analyzes the dynamics of this association and its subsequent result.

Hlavacek and Thompson noted how the problems of legitimacy were interlaced with venture failures in private industry: ". . . venture teams, new to the organization and arranged and motivated on principles different from the rest of the organization, were not considered entirely legitimate by regular divisional (departmental) units and personnel."<sup>16</sup>

The senders of the technology, having less time in the Department and divergent educational backgrounds and experiences, can be thought of as the newcomers. Moreover, their organizational role in the Department was new and not clearly defined and did not involve direct contact with clients. One of their first major interactions with program units related to the issue of the Client Information System.

There were several negative implications about the legitimacy of the senders and this itself tainted the acceptance of the innovation by the other actors. These implications as perceived by the receivers were explored. Among the top management receivers, only one individual expressed complimentary sentiments about the legitimacy of the senders. This individual felt that the Division of Planning

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James D. Hlavacek and Victor A. Thompson. "Bureaucracy and Venture Failures," (Research report, 1974). (Mimeographed.), p. 7.

and Evaluation (the senders) was the most appropriate unit in the Department to handle the CIS, for it was the only division in a situation with interdivisional responsibility.

The reactions of low legitimacy of the senders were much more prevalent among top level receivers. Several prevailing themes emerged from the indepth interviews. The dominant reason for the lack of legitimacy appeared to be an image of the senders, especially of its leadership, as self-oriented wheeler-dealers. A consistent message came through from various receivers: the leadership of the senders was interested in developing their unit through staff expansion. The federal funds would provide the ends and the promise of implementing a client information system would be the means.

Even three of the senders themselves acknowledged that part of their intentions with the CIS was to build up their Division's image and to gain within the organization:

The funds were available and Y\_\_\_\_\_ wanted to become politically needed by the Secretary. He wanted to answer questions that no others could answer.

I think we got involved because Z\_\_\_\_\_ had a self-reason. He wanted to make a name for our group and did it by showing imagination and aggressiveness. It was something of a power trip to prove we were the best around. I guess you could say that the motivation of the Bureau was to prove management science would work in a social services setting.

The IVA and VI funds were a way of funding positions for this Division. . . . I think we got into it partially to get money for staff expansions.<sup>17</sup>

The situation at the federal level of both the open-ended character of the services authorization and the inherently weak control of HEW on services spending invited the attention of men

Hlavacek and Thompson explain the advantages of the absence of such a self-promoting image:

The provision of aid and authority to venture leaders, especially because they may have an opportunity for large personal gain, is facilitated if divisional (and other) staff perceive the venture manager as being company-oriented rather than a personal opportunist. Therefore, a company oriented product champion gets more legitimacy, and hence acceptance, than the traditional entrepreneur of economics.<sup>18</sup>

They go on to mention that under conditions of uncertainty, psychological forces, such as persuasion and charisma, substitute for analysis and that such forces require that members of the organization accept the advocate's honesty, sincerity, and commitment to the good of the group.<sup>19</sup>

The existence of other dimensions of legitimacy were recognized by respondents, but in their statements were coupled with perceptions about the opportunist intent. The absence of formally mandated authority to do the task on the part of senders was the basis of resistance by one of the most consistently vocal opposers. His opposition went back to the very formation of the Division of Planning

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with an entrepreneurial disposition. The perceptions about the senders in Florida, as exploiting the federal situation, gain credibility, because, as Derthick notes, "the opportunity embodied in the law attracted the promotionally inclined or bureaucratically ambitious." Martha Derthick, Uncontrollable Spending for Social Services Grants (Washington, D. C.: The Brookings Institution, 1975), p. 109.

18

Hlavacek and Thompson, "Bureaucracy and Venture Failure," p. 9.

19

Ibid.

and Evaluation. He felt that the original mandate for the development of an information system went to the other staff division, Administrative Services (DAS), through an earlier project, called Model States.

DAS, by repeated clarification through the Secretary, had responsibility for a Client Information System. This even pre-dated P & E's existence. . . . P & E's involvement seemed to be a means of achieving power through IVA and XVI funds. They became involved because there was money there to build up a staff for P & E.

Another reason for the low legitimacy of the senders' authority was perceptions of to whom the senders were responsive and responsible. The same party noted on this point:

The date need of the Department is not the same as federal data need . . . one of the stumbling blocks set up by P & E is that they establish liaisons with SRS and created confusion as to our responsibility on what is required. . . . The emphasis was supposed to be on IVA and XVI, and yet it was not. . . . They became involved because of the encouragement of SRS and used the feds as leverage within the Department.

The last point was substantiated by federal officials, explaining their involvement with the senders:

The Regional office was responsive to P & E because the kind of ideas we were looking for to change the whole delivery system initiated from there. It was the most appropriate unit in the Department to handle the development of an information system. . . . The life blood of Planning and Evaluation was to bring in grants, they came up with an idea and the Regional office needed ideas for changes. We assumed P & E would involve the other divisions. Good ideas were resisted because of a lack of understanding and negotiation.

Another insight from Derthick can further explain why the federal officials promoted those who were the senders in Florida.

She explains that federal administrators were backing those who could produce the changes the federal management experts were trying to achieve. They wanted to have an increase of generalist staff at the state level to combat the parochialism of the professional specialists in traditional welfare agencies. "Ideally, bigger, more competent generalist staffs in state executive branches would lead to a better-planned, more efficient use of federal grant-in-aid funds."<sup>20</sup>

Another factor in the low legitimacy accorded the senders was their perceived lack of program understanding. One top level program administrator explained her antagonism:

There was a total lack of program understanding. . . . P & E had the image of people so far above operational knowledge, having no client or field staff orientations. They were planning without the proper background. My time was consumed trying to educate them about programs.

A top regional DHRS administrator found that the lack of program understanding also involved lack of understanding as to what the jobs of direct service workers entailed:

They always wanted to put too much of the work on the line staff. These are specialists who deliver field services, not clerks. The actual tasks of the CIS should have been given to a special clerical staff, not to service professionals.

The antagonism caused by the lack of program understanding on the part of the senders was compounded by their use of a terminology foreign to the program personnel. They used the jargon from their experiences in the field of aero-space during interactions with the

receivers. It was a source of irritation to have the senders not accept the traditional professional terminology of the Department and the field of social work. Some receivers felt this staff jargon was totally unrelated to the field of social welfare and other acknowledged that they perceived the senders to gain a feeling of superiority from using a specialized language whose relevancy and applicability few of them could determine. This finding is substantiated in other studies. The presence of a foreign jargon, called a "communication differential," has been shown to inhibit innovations.<sup>21</sup>

A final factor which weakened the legitimacy of the senders is that when they got involved with what was to become the CIS, a similar system had already been given considerable effort over a long period of time in one of the program divisions and many individuals in the larger organization associated it with the services and clients of that particular division. Hlavacek and Thompson have mentioned this type of occurrence: "The legitimacy . . . may be tainted at the very beginning if it originates in a division where considerable product development work has been done on it."<sup>22</sup> It is then considered to rightfully belong to that division.

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21

Gerald Zaltman, Robert Duncan, and Jonny Holbek, Innovations and Organizations (New York: John Wiley & Sons, 1973), p. 86.

22

Hlavacek and Thompson, "Bureaucracy and Venture Failure," p. 7.

There were two ramifications for the legitimacy of the senders because of this association of CIS with another division. The first ramification was whether the interpretation of the program division, Family Services, or that of Planning and Evaluation, was to be accepted in any application of the CIS. Two Family Services administrators noted:

We were working to create a system before P & E was even a division . . . . When the funds were available, the Secretary gave P & E the responsibility to develop the system to meet our needs, but to develop a data base to accommodate the other divisions.

Family Services had fairly conservative views of the federal regulations and P & E held more sweeping views about expansion of services of the CIS . . . . Several of our bureau chiefs were described as "obstructionists" to the expansion.<sup>23</sup>

The second ramification mentioned above for the senders' legitimacy was that other program divisions perceived the CIS as not reflecting their activities because it was directed at programs and services of another division (Family Services). Moreover, it was also said to be a disturbance to current program operations.

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This conservative approach from the traditional welfare agencies was not unusual in other states. Derthick ponders the point of why the states were so slow to exploit the loophole of the social services grants. She believes that the states were cautious "because the initiative for exploitation rested for some years with welfare agencies, which understood the implicit limitations of the federal intent." They knew the purpose of their federal patron agency, the Bureau of Family Services (BFS). For exploitation to occur required two occurrences. The first was that the BFS had to be deprived of jurisdiction at the federal level and this did happen, with reorganization. The second occurrence was that "other grantsmen invade the traditional jurisdiction of welfare agencies at the state level." This is what happened in Florida. Derthick, Uncontrollable Spending, p. 78.

This last reason was thought by the researcher to mean that the information system threatened old vested interests of the program divisions. The issue became one of the invasion of informational turf. A departmental comprehensive information system meant that program performance would be evaluated at a higher level and not just on the information supplied by the specific program divisions.

One top level program administrator explained his view:

I don't think I was any more uncooperative than the other divisions . . . . We just don't deal with the kind of clients that would receive the IVA and XVI services. Also, for us it represented a duplicative reporting system. I could tell them about my programs, and its best that I do, because our clients are unique.

Thus, the senders had low legitimacy, based on having a self-oriented image, lacking mandated authority, antagonizing other with their jargon, and working on a product which was tainted from previous association. The low legitimacy of the senders appears to be one of the most important explanations for the fact that the innovation transfer had limited success.

#### Direct Service Workers

This group of actors was involved in the technology transfer at a later point in the process. It was this set of participants that were the ones who actually had to utilize the technology and sustain its implementation. This section is an examination of their background characteristics and perceptions about the organization. It will attempt to elicit the factors which might help further to explain the limited success of the transfer process.

### Background Characteristics

The workers, as a set of participants, are most interesting when considered in relation to their organizational superiors, the receivers of the relevant elite. They are a younger group of people, with an average of almost nine years difference in age. (See Table 1.) Although there are several persons in their 40's and 50's, these people are holding low level supervisory positions or are new to the organization.

On the factor of education, the workers differ markedly from those in top positions in their agencies both in amount of education and the major field. The majority of service workers (85 per cent) entered the organization with only a B. A. degree. This is almost exactly the reverse of their superiors, most of whom had graduate degrees. Furthermore, over half of the direct service workers had emphasized the social sciences fields, not social work, in their college curricula. (See Table 2.) This fact was especially evident for workers in both Youth Services and Family Services. Thus, both for job knowledge and for the specialized terminology of the social work field, the workers would be highly dependent on their superiors for guidance.

The indicators of professionalism were also demonstrated to be weaker for workers in relation to top program management. Almost half of the workers had no specialized training beyond a college education. The workers from Youth Services were relatively the largest group without any specialized training. This contrasts with the receivers, 83 per cent of whom had both education and special

training beyond a college degree. (See Table 4.) Professional involvement of workers, as shown in extra-organization professional activities, was extremely low, with two-thirds not even holding membership in professional societies. Only 4 per cent of the workers, as shown in Table 5, were highly active in outside organizations including the holding of office. The direct service personnel in Children's Medical Services had the lowest extra-organizational activities while those in Retardation had the most activity, but this activity was limited to membership and attendance at meetings.

There are two more indicators of workers' possible dependence on superiors for behavior cues. The length of time that direct service workers have in the Department is very short. This level of the organization is reputed to have extremely high turnover rates, attributed to the limited potential for upward mobility, low pay, and close supervision. Almost 40 per cent of this personnel group have been in the Department only a year or less. Almost another 40 per cent have been employed for two years.

On the factor of previous field of employment, Table 7 shows that one fourth of the workers never held a position before entering the Department. Over another 40 per cent worked in various positions, including public schools and hospitals. Only a third of the workers had been previously employed in social services agencies. Thus, the combination of a brief time in the organization coupled with either previous employment in a non-social work environment or no previous experience would suggest that direct service workers would look to superiors for appropriate behavioral cues, including clues about innovations.

### Perceptions Related to the Organization

The structural conditions related to direct services workers are generally expected for those at the lower levels of the organization. On the dimension of centralization, over 70 per cent of the workers expressed low participation in decision-making in the organization. On the two measures of formalization, the expected pattern occurred. On job codification, the detailed specification of rules for job behavior, most of the workers expressed perceptions of high or medium codification. This would mean little discretion on the part of the worker in carrying out tasks. The same pattern emerged for rule observation, or the diligence with which codification was enforced.

It has been posited earlier that in professional organizations, lower level participants could be influential in shaping policy and performance, i. e., being contributors to the value climate. Under such conditions, the values toward change held by workers could be an important factor in an innovation transfer. The pattern which emerged in this particular study was striking. One would expect an idealistic orientation because of an age difference, newness to the organization, and little previous work experience. However, as Table 11 demonstrates, the direct service workers had almost exactly the same values about change as their top management, with only a fourth falling in the high category in each case.

This conservatism can be explained, given other kinds of information collected about the direct service workers. While the organization can be considered as professional, the workers themselves have

low professionalism. Moreover, while the Department is highly decentralized structurally, the individual divisions are not. This fact was indicated by the low participation in decision-making and tight formalization of job codification and rule observation. Thus, the lower level participants can be said to influence organization policy and performance only as much as it is tolerated by those at the top of their agencies.

One cannot make the judgement that this attitude about change in general would create resistance to all innovations, everywhere, because of the limited number of persons involved in each group. The suggested inference, given the information in the data, would be that one could not appeal directly to the lower level workers to implement and sustain an innovation of the nature of the Client Information System. Rather, a strong and positive message and procedure given by middle and upper management should be an integral part of a process in an organization where behavioral cues for the lower levels are regularly provided and sought.

CHAPTER VII  
TRANSFER PROCESS

This chapter is an examination of the dynamics under which the innovation was diffused through the organization. The factors of the process interact with the phenomena of the qualities of the technology and the actors to account for the limited success of the technology transfer. The conceptual framework developed by Lynton lent itself to this analysis because the nature of the transfer process which evolved around the CIS can largely be accounted for in the top decision-makers' assessment of the nature of the change required by the organization to accommodate the innovation. The measures subsequently taken to deal with the change were those usually associated with changes that are temporary, whereas the successful application of the CIS required a differentiated subsystem and integrating linkage devices and procedures,<sup>1</sup> as will become clear.

The first of the dynamic factors discussed in this chapter is communication. Aspects of communication set the tone of the transfer process, such as the commitment of top management, feedback and persuasion. One of the most important findings of this

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Rolf Lynton, "Linking an Innovative Subsystem into the System," Administrative Science Quarterly, Vol. 14, No. 3 (1969), p. 403.

research was the absence of a strong commitment to the innovation by the highest executive office. This non-supportive stance was perceived at all organizational levels and added to the already low legitimacy of the undertaking. Moreover, there was no circulatory communication, or feedback, which allowed for both criticism and adaptive-coping techniques to occur. Lastly, the senders felt little efficacy in their attempts at persuasion.

The next dynamic factor, the resistance to the CIS, is analyzed from the perceptions both the groups of actors have about themselves and the other actors and the behavioral modes which demonstrated the resistance. The finding shows that actors perceived resistance from various loci of the organization, such as state level program offices, immediate superior, direct social workers, and colleagues. The behavioral actions range from not allocating staff to do certain tasks to open hostility and refusal to participate.

A third segment of this chapter examines the linkage devices and procedures, the strategies, utilized to transfer the CIS. The successful application of the Client Information System required the permanency of the differentiated subsystem that could produce integrating rather than temporary linkage devices. One such temporary device, called a task force, was an ad hoc group with members from the various program divisions. The task force was not effective for these reasons: most of the individuals had other on-going activities; attendance by the same individuals was intermittent; participation was perceived to be token.

Another temporary device was the employment of consultants, individuals outside the organization brought in to serve a middle-man role. They did not appear to be effective in this role because they were inappropriately used. Their functions and tasks were not specified and they were impossible to manage. No tangible benefits were derived from their appearance and thus nothing permanent was left as a result of their inclusion in the transfer.

Training was a temporary linkage device which attempted to impart new attitudes and skills in the staff. It was found that even with structured materials and training sessions, over one third of the staff felt they learned more about the system through personal contact with supervisors or friends, or through their own self-instruction. The service workers who felt that the sessions and the quality of training was very adequate were in a program division which did not consider the system in a temporary manner. That division provided that personnel be transferred with the technology and that a differentiated subsystem be established to insure sustained integration of the CIS.

A final linkage mechanism was an operational prototype to demonstrate the technology. The prototype was closer to subsystem differentiation than the other linkage devices utilized. However, the prototype did not serve as a means to transfer the technology of the CIS for two reasons. First, it ran for only a short period of time and did not serve as a point of expanding the system into the larger organization. Second, the problems which caused the resistance that emerged under the prototype were not corrected and

occurred again during the larger implementation. Thus, workers reapplied the methods of resistance they found to be effective under the demonstration.

Lastly, the phenomenon of participation in the development of the CIS by the actors is analyzed to ascertain its effects on the process of technology transfer. The notion of participation was explored, and indeed all actors agreed that lower level personnel should have been included in this specific technology development. However, participation did not appear to be a relevant factor for compliance behavior in implementation. It appears that referent, expertise, and positional powers are more important to workers for inducing their compliance. Thus, being admired and doing what they are directed to do by supervisors is more important in a highly complex hierarchical organization than being a participant in change development. This finding is congruent with other findings that workers sought behavioral cues from their superior. A detailed examination of the analysis and findings is presented below.

#### Communication

The perceptions and impressions about the innovation transfer are derived from organization communication. In essence, the communication of the organization set the mood for transfer process. Several aspects of the nature of the communications were examined. These aspects, which give additional substantiation to the assessment about the limited success of CIS, include the commitment of

top management, an example of poorly diffused information, the absence of feedback on the working of the instruments, and the efficacy of persuasion.

#### Top Managerial Commitment

One of the conditions most favorable to the transfer process involves attitudinal and behavioral acceptance of the innovation. A demonstration of commitment by the top management of an organization can make attitudes change to become consistent with behavior. Zaltman et al., emphasize how the authority structure of the organization is an important factor to commitment:

. . . degree of commitment is relevant primarily in situations where there is considerable participation among organizational members in the decision-making process. A decision to adopt an innovation even if made by only one or a few individuals automatically commits other organizational members to the innovation, in a behavioral context.<sup>2</sup>

Given the highly decentralized authority structure of the Department, the adoption of the CIS and its implementation would have been facilitated by top level demonstrations of support. In their paper on venture failures, Hlavacek and Thompson point out that the legitimacy of a venture can be enhanced by an unmistakable commitment by the top-management:

This commitment can be dramatized by the promulgation of a formal charter for the venture. Such a charter can symbolize . . . top management

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Gerald Zaltman, Robert Duncan, and Jonny Holbek, Innovations and Organizations (New York: Wiley-Interscience, 1973), p. 43.

support. . . . However, it is important to remember that a piece of paper is a piece of paper. What counts is the process of agreement and commitment symbolized by the paper.<sup>3</sup>

In the case of the CIS, a lack of commitment was obvious to all of the participants. Some felt it was one of the major factors in the limited success of the transfer process. One top level sender succinctly noted how the absence of firm positive support could affect the transfer:

We lacked a clear mandate from the Secretary and thus we lacked commitment on the part of the division directors.

There were the opportunities for demonstrations of support, but both the senders and receivers noticed the absence or hesitancy thereof.

The question is raised of why the top management even allowed the Department to get involved with an operation like the CIS and then not support it. Some of the senders interviewed saw the irony of assigning high priority to the system, but then showing a lack of interest in the mechanics of it and a lack of public enthusiasm. One sender felt it was as if the Secretary wanted to avoid disaster and it was as if he were saying, "I have to have it, but I'm not going to crusade for it." When asked about why he even allowed the information system to be developed, the Secretary was candid in his statement that information systems were in vogue and he had better go in that direction:

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James D. Hlavacek and Victor A. Thompson, "Bureaucracy and Venture Failures" (Research report, 1974) (Mimeographed), pp. 9-10.

I felt I had to move to PFP (Program and Financial Planning). The feds hold a money clout of you. . . . I didn't see any other alternative . . . it was too risky with the money at stake. . . . I really felt the pressure of the feds.

Even though it was considered a necessary evil imposed to get federal funds, there was another reason for the non-supportive atmosphere. Many felt there was a lack of understanding about the technology in general. One sender explained that decisions were not based on data, so it was not a natural thing to expect or request data. Another sender posited that the front office did not want to appear backward and thus only extended lip service.

However, at the top level of the Department, another key individual could have made an impact and chose to remain passive for his own set of reasons. There was a consensus among senders and receivers alike that the Deputy Secretary understood both the technology and the possible application of the results of the system, but that his style was not to do anything unless directed; he would not take a personal stand to make things happen. One sender described the situation, whereby following the Deputy's actions of barely verbalized support, nothing would happen:

He attended meetings and signed memos. The meeting had the right kind of representation, that is, the Deputy Secretary was in the room and nodded at appropriate times. We really never had a real push from the top. He didn't back up what came out of meetings. . . . I guess he was supportive, but didn't have the delegated responsibility to back it up.

One of the top level senders attempted to explain the dynamics behind the weak commitment of the front office and its manifestation.

The authority is there, but the basic personality style to accomplish it was missing. The Secretary had a lack of dynamism. He allowed P & E to do almost anything, even to the point of finessing HRS to do things. We even set in motion HEW requirements, but at some point down the line, there arose turf, issues and as the divisions backed off, so did the central authority figure back off.

The Secretary provided insight to his perceptions of the situation under which he was forced to operate and the style or manner he used:

I really felt like I was letting some top people down. . . . I didn't make any speeches, but I signed memos to the division directors, with the Director of Planning & Evaluation having the responsibility. . . . My way was to only encourage. I only had a federation of divisions to work with. . . . I would give pats on the back and try to please as many as possible as my approach as Secretary.

The absence of dramatizing top level managerial support had its attitudinal and behavior effects on a venture that perhaps could have been more successful. A top level sender attempted to explain why the approach of the front office does not work in this kind of organization in a transfer process:

There was little or no experience in managing program change. In this situation, you have to assume there will be failure and move to preempt it. . . . You have to have strategies to overcome resistance. Titular power doesn't make it. Voluntary compliance is the concept which permeates the HRS system. In complex systems one needs vision, power, and authority to make the decisions. . . . Those in the front office weren't aware of the need for such decisions.

Organizational Message: Final Choice  
on Implementation

The previous section illustrated the importance of top management support to innovative activities. Also illustrated was how the absence of commitment prepares for ineffective technology transfers. Perhaps, the low commitment affected the general diffusion of messages about the implementation of the CIS. However, while that relationship can not be shown to be direct, there was a wide range of perceptions about where in the organization the decision was made to implement the CIS. This should indicate the absence of strong supportive communication from any particular location.

All actors were asked to select the position in the organization which they believed to have made the final decision on implementing the CIS. The results of this inquiry are shown in Table 12. The wide range of perceived positional choices shows that on this decision organizational messages were not clear-cut. Even members of the elite credit division level positions with a decision for a departmental-wide effort. The poor quality of communication in the organization is further illustrated by the fact that over a third of the workers who responded chose a range of hierarchical locations.

Lack of consensus as to who would make a decision which would affect the entire organization demonstrates the existence of undifferentiated channels of communication surrounding the CIS when differentiation was probably required for a successful transfer.

TABLE 12  
 PERCEPTIONS OF FINAL CHOICE ON GIS IMPLEMENTATION

List of Choices	Relevant Elite		Direct Service Workers (n=55)
	Senders (n=6)	Receivers (n=10)	
Secretary of HRS	33.3%	40.0%	63.6%
Deputy Secretary	16.7%	10.0%	3.6%
Division Director	16.7%	30.0%	16.7%
PPP Coordinator	0.0%	0.0%	3.6%
Regional Office	0.0%	0.0%	7.3%
Supervisor	0.0%	0.0%	3.6%
Bureau Chief	33.3%	20.0%	0.0%

### Feedback: Circulatory Communication

An aspect of organizational communication which can identify the emergence of implementation problems and serve to control the performance of an innovation process is feedback. Incoming information can be turned into adaptive measures. A provision to secure circulatory communication in the situation of CIS technology transfer would have been a vital problem-identifying device. The initial perceptions about the efficacy of the CIS have been discussed earlier. The staff that actually had to utilize the instruments, the direct service workers, were either negative or undecided about the CIS upon their first knowledge of it. Some of the reasons for their feelings were that it meant more paperwork for them, the potential capabilities of the system were not fully understood, and it did not alter assumptions about how clients would be handled by workers in the future.

While the negative feelings about the increase in paper work did not decrease, there were hints about the realization of the potential capabilities of CIS. However, there were strong opinions by all actors that the instruments needed improvement to serve their intended functions and to have applicability to the worker-client interaction. The strength of this felt need is shown in Table 13. Only those workers that were employed by the Department at the time of the initial utilization of the CIS were asked to respond, which accounts for the change in the number of actors. As said above, there was no feedback of this information.

TABLE 13

FEEDBACK: INSTRUMENTS NEEDED IMPROVEMENT

	Relevant Elite		Direct Service Workers (n=48)
	Senders (n=7)	Receivers (n=10)	
Yes	100.0%	90.0%	81.3%
No	0.0%	10.0%	18.3%

Perceptions regarding the existence of a mechanism to allow for criticism are shown in Table 14. Most actors, again, felt strongly that feedback was not provided for. In the few cases in the table where actors did feel there was a place to air critical remarks about the instruments, it was not because of the presence of a formal procedure. Rather, individuals went personally to workers and asked their opinions. This was mostly done in the Division of Family Services who wanted the system even if the rest of the Department rejected it.

Thus, a mechanism did not exist to identify dissatisfaction with the system. Ill feelings were ignored rather than examined for adaptive-coping techniques and, hence, more discontent flowered.

Persuasion: Personally Convincing  
Communication

The transmittal of information through direct and personal contact of the technologists, or senders of the innovation, could be an effective resistance reduction communication channel. Belief in persuasion as a successful communication form to resolve conflict is based on the assumption that the receivers of the information will understand the rationale of the solution presented, or, if they do not, will trust the expertise of the sender. The senders of the relevant elite were queried as to their attempts to personally persuade receivers about the CIS and their perceptions of the efficacy of these attempts. The results of this line of inquiry come as no surprise. Most of the senders expressed feeling of low efficacy, or being unsuccessful, in persuading the elite

TABLE 14

FEEDBACK: PROVIDED MECHANISM FOR CRITICISM

	Relevant Elite		Direct Service Workers (n=48)
	Senders (n=7)	Receivers (n=9)	
Yes	14.3%	37.5%	25.0%
No	85.7%	62.5%	75.0%

receivers and the workers about the CIS. Neither of the assumptions, understanding or trust, could be realized. The importance of this unsuccessful communication is interrelated with many of the perceptions identified and discussed with regard to the qualities of the actors. As stated then, the senders used a terminology, or jargon, to describe the innovation and its applications to the receivers. This vocabulary, foreign to the organization, created a communication differential between the two groups of the elite and was a constant source of antagonism. Persuasion did not work on the receivers either because they did not understand the vocabulary which described the CIS or because they rejected it after knowing about it. One sender noted that those who initially accepted the CIS became committed and remained so. Another sender mentioned he felt mildly successful in persuasion, but he never followed up to see if his messages were taking hold and being transmitted further to others in the organization.

Trust in the expertise of the senders was not evident. There were no long standing professional acquaintances between senders and receivers. Moreover, the senders were new to the organization, had low legitimacy, and were regarded as climbers and opportunists.

The communication problem between technologists and top managers within the same organization is an important consideration, especially in an innovation process where informational interdependence is highly relevant. The theoretical scheme by Churchman and Schainblatt which focused on the communication forms between managers and scientists on the implementation of innovation

offers some useful insights. The senders perceived themselves to be "separate functionalists," whereby they designed a solution and expected the rest of the organization to accommodate the solution.<sup>4</sup> To have been efficacious, a "persuader," the senders should have viewed the implementation problem in terms of the manager's personality.<sup>5</sup> The senders needed to understand the receivers well to overcome resistance and alter specific attitudes. This could have been partially accomplished through using terminology familiar to the receivers.

#### Resistance

The fact that the innovation transfer received resistance has already been well-established. This sector examines why the innovation was not performed adequately once admission of the CIS as a part of the organization was achieved. Resistance will be examined in a two-fold manner. First, the perceptions of the several groups of actors as to how they saw themselves and other organizational members reacting will be examined. Second, the behavior used to demonstrate resistance will be discussed.

All participants were asked to respond to several questions about their perceptions of resistance or cooperation in implementing the innovation from various levels of organization. Thus, all

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C. W. Churchman and A. H. Schainblatt, "The Researcher and the Manager: A Dialectic of Implementation," Management Science, Vol. XI (February 1965), p. B-71.

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Ibid., p. B-79.

actors were asked about not only their own attitudes, but also those of their colleagues, their immediate organizational superior, and state level or central office attitudes as well. This gave an opportunity for all actors to state their own behavior and feelings and to comment on their levels of the organization. The findings are arranged according to the various loci of the organization; state level program divisions; immediate superior; direct service worker.

The state program division office level was an extremely important locus in the transfer process because of its involvement at the development stage and because each division was supposed to send the technology down through its hierarchical structures. It is interesting to note in Table 15 the wide range of perceptions, from resistant to cooperative, about the state level of the organization. The senders felt that those in top positions at the state level were generally resistant to the CIS, with over 70 per cent making that judgement. The receivers saw themselves and their colleagues in other state offices as showing an almost equal mixture of resistance and cooperation. The direct service workers felt their state level offices were generally cooperative (51 per cent) probably because the CIS was allowed in at all. It is interesting to note that almost a third of the direct service workers had no notion of how the state level program offices acted in this situation. A small portion (14 per cent) knew of strong resistance because of both frequent contact with state level personnel and verbal hints not to take the CIS seriously in their work.

TABLE 15

PERCEPTIONS OF RESISTANCE/COOPERATION AT VARIOUS  
 LOCI OF THE ORGANIZATION: STATE LEVEL PROGRAM DIVISIONS

Perceived Reaction	Relevant Elite		Direct Service Workers (n=49)
	Senders (n=7)	Executives (n=10)	
Great deal of resistance	28.6%	20.0%	2.0%
Some resistance	42.9%	20.0%	12.2%
No resistance	14.3%	20.0%	6.1%
Some cooperation	14.3%	20.0%	14.3%
Great deal of cooperation	0.0%	20.0%	36.7%
Don't know	0.0%	0.0%	28.6%

The basis for the perceptions described above were the behavioral cues given by the others; i. e., their demonstrated forms of resistance/cooperation. The senders have described the state offices of the program divisions as showing active to passive resistance. One of the most often mentioned forms of resistance was an apparent unwillingness to allocate any key staff time and resources beyond those necessary to show superficial cooperation. One sender noted that while he detected no outward negative signs, the untimeliness and poor quality of requested reports were indicators to him of low interest and motivation in the program divisions.

At the meetings of the division directors, there was reported to be continual complaining to the Secretary about the CIS. One sender who was an observer at several meetings described an atmosphere of "open hostility." The sender gave the following observations:

They [division directors] called the information system a "primrose path," because it seemed too good to be true. . . . I guess the hostility was a conditioned response from bad results from other federal grants. You do all the work and never get anything back.

Another form of behavioral resistance was essentially political. State level program executives reportedly talked to both professional and local advocacy groups, which in turn complained to the Legislature about the waste of time and staff on the information system.

One program division protested about the system to the point of outward refusal to participate in the prototype. One of the top senders recalled the situation:

They just refused to participate at all, not even showing undermining. We didn't have any clout to make them to do it and so we decided to quietly drop the matter. We were really concerned that the other divisions might do the same thing if they made enough noise. We didn't want the others to get the same idea.

However, a top regional administrator felt that the refusal was not unusual and spoke to defend the actions of the program division which refused to participate in the prototype:

I want to emphasize this point, I don't think they were uncooperative. They didn't have IVA and VI clients. The other divisions refused the same amount. Also, it represented a duplicative system.

Another behavioral sign was termed by the several senders as "passive resistance." It was described as the state division offices limiting their activity to distribution of the forms, but not watching to see if they were filled out properly or even filled out at all.

One sender noted that the resistance continued throughout the entire technology transfer process with various barriers:

There were always complaints, but no constructive alternatives were offered. There were constant delays and an unwillingness to work on common goals . . . they tried to stop you at each stage. There was great disputes over detail and sets of definitions. The complaints were that the system didn't have adequate places for their own division's information or that they didn't want to burden the local service workers with any more forms. I don't think these things were a real concern to them as much as they were a barrier for them not to get involved in the system.

The receivers, as discussed earlier, had perceptions of both cooperation and resistance coming from the state offices of the program divisions. Those receivers who held perceptions of state level cooperation were in the regional offices and noted that there were demonstrations of support in written directives and in meetings held for the purpose of informing regional officials about the CIS. The most positive reaction about the state level was in Family Services. However, within the state office of Family Services, itself, a mixed reaction was mentioned. One service bureau was noted to show resistant behavior by asking negative sounding questions and suggesting in training sessions not to take the state office approach.

Another locus of the organization that was examined for perceptions of resistance or cooperation was the immediate supervisors of all the actors. It was believed that a supervisor's attitude, at whatever level of the organization, can be influential on an individual's participation in a transfer process of an innovation. The senders clearly felt there was positive reinforcement by their superior throughout their efforts. This was demonstrated by personal letter writing, interviewing and backing of individuals criticized in program divisions, etc. Only one high level sender was critical of her superior, because supportive commitment was never shown and the CIS was low among his priorities. The results on the perceived reactions of immediate superiors are shown in Table 16.

TABLE 16  
 PERCEPTIONS OF RESISTANCE/COOPERATION AT VARIOUS  
 LOCI OF THE ORGANIZATION: IMMEDIATE SUPERIOR

Perceived Reaction	Relevant Elite		Direct Service Workers (n=50)
	Senders (n=7)	Receivers (n=9)	
Great deal of resistance	0.0%	22.2%	4.0%
Some resistance	14.3%	33.3%	24.0%
No resistance	0.0%	0.0%	12.0%
Some cooperation	28.6%	0.0%	16.0%
Great deal of cooperation	57.1%	44.4%	38.0%
Don't know	0.0%	0.0%	6.0

The receivers had dichotomous perceptions on the attitudes they felt their superiors held. Those receivers who felt that their immediate superior was cooperative were located within Family Services both at the regional and state office level. The indicators of cooperation mentioned included traveling to participate in planning sessions, great independence to work within the Division, verbal statements of trust and faith in the CIS, and utilization of positions not originally authorized to work on the information system.

Over half of the receivers (55 per cent) felt their immediate superiors were resistant to the implementation of the CIS. Those that discussed those perceptions mentioned behavior ranging from acts of open defiance to passive acceptance, i. e., do little to help the system. However, most said resistance was based largely on not understanding the system and thus not considering it worthy of their time and involvement, the behavioral manifestation being "to dump it on lower level staff."

The information from direct service workers shows they felt their immediate supervisors to be more cooperative than resistant. This could be accounted for by the fact that the supervisors had part of the responsibility for the training process and that by this action they were felt to have shown cooperation. However, one worker noted that while her supervisor showed no resistance, she expressed to the workers the shortcomings and problems through her interpretations of the materials.

A final organizational locus that was examined was that of direct service worker. The results are shown in Table 17. Both

TABLE 17

PERCEPTIONS OF RESISTANCE/COOPERATION AT VARIOUS  
 LOCI OF THE ORGANIZATION: DIRECT SERVICE WORKER

Perceived Reaction	Relevant Elite		Direct Service Workers (n=48)
	Senders (n=7)	Receivers (n=10)	
Great deal of resistance	28.6%	30.0%	22.9%
Some resistance	50.0%	50.0%	54.2%
No resistance	0.0%	0.0%	2.1%
Some cooperation	20.0%	20.0%	16.7%
Great deal of cooperation	0.0%	0.0%	2.1%
Don't know	14.3%	0.0%	2.1%

of the relevant elite groups, the receivers and the senders, perceived the direct services workers to be highly resistant to the system. The elite groups felt the direct service workers were resistant because the forms did not mean anything to the jobs they perform. The workers expressed complaints about the additional paper and the intrusion on time better spent with the client. Thus, the workers demonstrated their resistance either by not seeking advice and incorrectly filling out the forms, or not filling them out at all. It is not surprising to find, then, that the workers rated themselves and their peers as generally resistant to the implementation of the system, with over three-fourths (77 per cent) expressing that perception. One worker expressed the sentiments behind the resistance she and her peers displayed:

We felt powerless about the changes being made. To make any changes or improvements should have been based on our compliance to accept the information system. There was no mechanism provided to us to participate in its development within this bureaucratic structure. If there had been, it would have been the basis to relieve the pressure of resistance we felt.

Thus, at the three loci of the organization analyzed, there was indeed perceived and demonstrated resistance. It has been expressed throughout the study that there should have been participation by all actors to have lessened resistance. There was a constant underlying message that if workers had participated in the development, acceptance and implementation of the innovation would have been successful. This underlying notion is examined in a subsequent section to ascertain if participation by the lower strata

personnel is really desired by them and the elite. Before participation is examined, the transfer strategies which were actually utilized are reviewed.

#### Linkage Devices and Procedures

The integration of an innovation into the organization in which it is to operate can be approached through a selection of linkage devices. The choice of devices is based on the assessment of decision-makers as to the requirements surrounding the change and the corresponding amount of differentiation required for the technology transfer. The linkage devices chosen in the situation of the CIS can be generally characterized as temporary activities. Lynton noted that when the response seen for a solution is usually beyond the routine capacity of the organization, formal measures are taken, even though they are temporary ones. Linkage devices of a temporary nature include: ". . . ad hoc meetings of people involved in a change, calling in outside consultants, and sending some staff member(s) for training."<sup>6</sup>

The devices used for linking the CIS into operation in the organization were of types Lynton described. They included task forces, consultants, training, and demonstration. An examination of each of these linkage mechanisms presents further reasons for the generally unsuccessful transfer of the CIS. The lack of success can be partially attributed to using temporary linkages when the

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Lynton, "Linking an Innovative Subsystem," p. 405.

situation required a permanent differentiated linkage for a change that was to be sustained. The demonstration could have been expanded as a permanent subsystem, but was not. Thus, the original assessment of the situation and subsequent choice of transfer strategies can further help to explain the limited success of the innovation process.

### Task Forces

One of the strategies employed to transfer the technology was an interface mechanism called in the Department a task force, which was to link the program divisions with the sending division. The task force, being a temporary resource, with ad hoc meetings of people involved in a change, is thus a temporary allocation of resources. The change is considered a project, which, again, connotes a lack of permanence.<sup>7</sup>

The task force was examined to ascertain what those in the elite perceived as both its appropriate uses and its successfulness in the specific transfer of the CIS. The senders, as an organizational unit, make greater use of the task force as a linkage device than other units because of their staff position. The field research showed that it was the senders who most recognized the appropriateness of the device for various purposes.

One of the major purposes needed for a task force was to solve a single and specific problem by allocating manpower and handing out assignments. A variation of this would not be a single,

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Ibid., p. 403.

identifiable problem as such, but a group focused on getting over a large and unforeseen routine workload. Another purpose is to have a forum for the development of organizational opinion by crossing divisional lines. This was the focus of a successful task force application at DHRS--developing a departmental perception of the confidentiality of client records.

A task force can also be used to relieve pressure from management when it cannot decide on a solution which will be pleasing and binding on all concerned parties. A fourth purpose is that a task force can be used as a political device for management to bring in critics as part of the force; this rids management of snipers within the organization.

A final purpose mentioned is utilizing a task force as a by-pass of the formal reporting system. In this usage, the leaders of the task force can by-pass critical blockages in a system posed by certain opposing individuals, or more quickly and directly involve the technical persons who would be the change-agents in their respective organizations. This last purpose can be used if a top executive can not understand the substantive technical matters under consideration. Thus, certain changes can be brought into being without the participation of top level executives; the task force can isolate them from the actual changes going on.

While legitimate purposes for task forces as linkage mechanisms could only be enumerated by the senders, both the senders and receivers had definite ideas why it was not effective in the transfer of the CIS technology. One of the primary reasons

presented by several senders for this mechanism not being especially effective was that the task force was comprised of people with many other on-going activities that were not reassigned. Thus, there was an inconsistency in attendance at meetings; members would assign other individuals to represent them at what was an already delegated representative situation. One sender felt that participants should have been selected with the notion of them reporting back to their leaders, not with the idea of attending just another meeting.

The absence of a consensus by the task force participants that its decisions were binding on the agencies, coupled with the absence of a follow-up by those having prime responsibility for the task force assignments, was another weakness in the use of this linkage mechanism. One receiver from a program division described how this worked:

Many times we refused to follow task force's directives, and there was no follow up to make us. The division's view was, "Attend the meetings and if we don't concur with the decisions, just go back to what you were doing before." There was no iron hand in the Department. . . . The Secretary couldn't buck the division directors with their political backing.

A final dissatisfaction with the use of the task force in the CIS technology transfer, voiced by the majority of receivers, was that it was felt to be merely token participation. One top level regional administrator best expressed the sentiments on this point:

I never felt that my staff contributed anything. There was no real chance for opportunity into the process. . . . I felt the time was ill

spent and non-productive. P & E used task forces in this way--involvement by attendance. I feel that is tokenism.

In order to give a complete picture of this linkage mechanism, one sender revealed that in her situation participation in the task force had indeed served as a by-pass loop into her organization. Her division director was by-passed because he felt new things never really affected the system and he was not particularly interested in her briefings from the meetings:

I was allowed to send out policy directives to the Division without any over-view by my superiors. . . . The weren't interested in the CIS because they didn't want to be bothered going to meetings. Too many other things were happening in the Division, like court actions and legislative investigations. The information system wasn't important enough to them to be concerned with the things I did.

### Consultants

One means to reduce resistance to the transfer process and induce the linkage of technology to utilization was the use of outside consultants. The consultant can serve a middleman role, that is, as a third party, he can act as a referral or linking agent, in order to initiate and support efforts for getting relevant knowledge resources linked to potential consumers. Two nationally recognized firms were at the disposal of the Department for the development and implementation of the CIS; Touche-Ross built the costing structure and Booz, Allen and Hamilton developed the Goal-Oriented Social Services (GOSS) model. There was also a group of social scientists from the University of Georgia hired for the period of the development and testing of the prototype.

This section examines three aspects of the relevant elite's perceptions regarding consultants: their proper roles and functions; how they were used on this innovation; and their future use by the Department.

The relevant elite, both the senders and the receivers, had definite conceptions of how outside consultants should be used in the Department. In fact, there was a high consensus on the roles consultants should assume and the tasks they might perform. One of the functions consultants can perform for an organization is to act as temporary personnel in order to supply specialized expertise--to bring knowledge present staff does not have or the time to attain it. Another function for a consultant would be to sell a particularly favored concept or program. An official can get legitimacy, justification, and reduce resistance for an idea by employing an unbiased outsider. A further function of consultants would be to act as problem solvers or catalysts on issues on which an organization has reached an impasse. Part of the function of problem-solving could be for a consultant to serve as a sounding board in hearing alternative solutions and to pin-point, in an unbiased way, the consequences of the alternatives. A last function for consultants would be to act as announcers for management on decisions that have already been made, but which might be politically unpopular for the management to announce themselves. A variation of this function is to make consultants fall guys to take the blame when the decisions they announce do not work out.

Most of the elite expressed dissatisfaction with the utilization of consultants on the CIS project. The most consistent

complaint was that the involvement of the consultants was too unstructured. Reasons for the discontent were not for what consultants did as much as for what they did not do. There were feelings that there was no objective laid out in the work plan. The two national firms were highly criticized. One sender mentioned, "They took more than they gave . . . they out-stayed their welcome."

The consultants were supposed to monitor development of the CIS in Florida so that it could be transplanted to the other States, and to provide technical assistance. The receivers were dissatisfied because they saw no tangible benefits to Florida. One program division staff member explained:

What they did was not worthwhile because it could not be replicated from one division to another . . . the methodology was way off.

A high level regional administrator explained his attitude:

For the most part, they all asked lots of questions, but I never saw any report. . . . They had a good understanding of the needs and direction the federal people wanted, but they had blinders on to departmental needs. . . . Their view was categorical; they were concerned with only IVA and VI.

One sender acknowledged that the dissatisfaction with the consultants was not entirely their own fault, but rather the fault of the inappropriate manner in which they were used by the organization:

We didn't make the most appropriate use of them. This was due to both our own unacceptability and inexperience. Because P & E was unacceptable to the others in the Department, we used consultants to act for us. They did routine tasks. The staff was too inexperienced to use them properly and so we used them as other staff members, rather than as a sounding board.

The major difference between the two elite groups was in their attitudes regarding the frequency and extent of the use of outside consultants. The senders generally felt that experience had taught them to specifically define the task for which a consultant was to be hired. They felt that consultants could best be utilized in an organization to develop a single product and train staff to use it. Moreover, they felt that they could teach specialized seminars or workshops for the staff. The senders felt that consultants should be used when there is a lack of staff expertise, or legitimacy for an idea is absent. The notion of specificity in using consultants was emphasized by one of the senders:

An organization can't defer to a consultant to generally manage things. It doesn't work because of the nature of using consultants in one shot deals. Using them this way doesn't take into account the on-going situation and that there are people who can wait them out.

The receivers, on the other hand, were not receptive to utilizing outside consultants. Again, the notion of specificity is emphasized:

I have a bias against consultants; they provide a little for a lot. The contracts with them are not specific enough to get definite results. My preference is for such temporary personnel to develop specific programs and concepts or to do very specific evaluations and investigations.

Two receivers reflected on the alternatives to the use of consultants:

In this situation, we needed to augment our manpower, but the Department should not have to rely on this solution too often.

Traditionally, administrators would like outside consultants because it means something works somewhere else. . . . But, I prefer that if we need a certain capability, to build it ourselves.

Training: Changing Staff Skills

Another linkage device is training, or attempting to impart new attitudes or skills to the staff. On the first installation of the CIS, which resulted in the audit exception, there were no instructions to explain to workers about the forms. On the second installation, several kinds of materials were developed: a short movie with the Secretary urging cooperation; a detailed manual explaining the codes to be used; and training sessions in the departmental regional offices for supervisors and workers.

The direct service workers were asked several questions about the training they received. The majority of workers (65 per cent) said the main source or principal way that they received training was in staff development sessions held in their regional offices. The remainder (35 per cent) named a number of more personal-contact approaches; these included: supervisors and co-workers; friends in other agencies; self-instruction; trial and error. When asked about the adequacy of the training, about half of the workers felt it was somewhat adequate; the other half was evenly split between very adequate and not adequate. The program division whose workers felt that they got the most from training sessions and that the quality of the training was very adequate was in the Division of Family Services.

The notion of training as a transfer mechanism has been shown to be effective under several conditions. One of these is the movement of the highly trained technical personnel with the technology. They can then not only help in the initial training, but help solve other problems which arise later. Doctors comments on this factor: "It appears that mobility of technical personnel may be a key element in technology transfer. . . ."<sup>8</sup> Training as a linkage device is also more likely to be effective when the training unit becomes more than a temporary linkage, but rather a differentiated subsystem within the organization. Lynton highlights this observation by noting that success of action between the temporary training system and the parent system calls for an additional linkage. This linkage is to provide a mechanism to guide implementation and cope with new problems. The inability of the regular organization to cope with the new skills necessitated the training program. Therefore, to insure continued dealing with problems of implementation, the temporary system should be a consultant link to the organization--it should become permanent.<sup>9</sup>

Family Services provided both the transfer of technical personnel and a differentiated subsystem. Some personnel that assisted in the development of the CIS actually went into the field offices and conducted the training sessions. The presentations and the people were consistent across the state. Questions

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<sup>8</sup> Samuel I. Doctors, The Role of Federal Agencies in Technology Transfer (Cambridge, Massachusetts: The M. I. T. Press, 1969), p. 17.

<sup>9</sup> Lynton, "Linking an Innovative Subsystem," pp. 407-408.

could be dealt with on the spot. Moreover, the training system remained an integral part of the Family Services agency. They answered questions by telephone and sometimes returned to the field to conduct refresher training sessions.

### Demonstration

The building of a prototype on a small scale to demonstrate how technology can operate is closer to the differentiation of a subsystem than were the temporary linkage devices selected and utilized in the CIS transfer process.

The prototype, discussed earlier to illustrate divisibility in the qualities of the technology, did not serve as a means to transfer the technology of the CIS. There were two major reasons for this demonstration not being an effective linkage device. The first was that the demonstration ran only for a short period, the summer of 1972, and was not continued to serve as a point of expansion into the larger organization. Thus, the differentiated subsystem was not permanently utilized and expanded into the larger system.

The second major reason for the lack of efficacy of the demonstration as a linkage mechanism was that the problems of resistance which emerged in the prototype were not corrected and the same ones occurred during the regular implementation of CIS. There was once again an additional workload with no substitution of existing tasks, the absence of automation to aggregate and provide information, and no provision for feedback of the shortcomings found in the CIS. The senders did not apply the practical lessons

from the demonstration, but rather formalized the mistakes. Thus, the program divisions and the direct service workers could reapply the methods of resistance to the CIS which they had found to be effective under the demonstration.

### Participation

In handling an innovation it is important to understand why occasionally some organizational members will embrace it, some will simply tolerate it, others will resist it, and a few will openly oppose it. In an earlier section it was reported how a service worker noted that resistance would have been much less if workers had been allowed to participate in the development of the CIS. The notion that lower level staff will more readily accept change if they feel they had a part in it is well established by research findings.<sup>10</sup> This section examines the notion of lower staff participation on two levels: felt participation by staff, and the views of all actors as to whom they preferred to have participated in the development of the CIS. There is also an analysis of the preferences and work motivations of all actors which questions the participation hypothesis mentioned above-- which questions whether direct service staff would have really

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Michael Stewart, "Resistance to Technological Change in Industry," Human Organization, Vol. 16, No. 3 (Fall 1957), pp. 36-39; Lester Coch and John French, Jr. "Overcoming Resistance to Change," Human Relations, Vol. I (1948), pp. 512-532; Goodwin Watson and Edward M. Glaser, "What We Have Learned About Planning for Change," Management Review, Vol. 54, No. 11 (1965), pp. 34-46.

been less resistant to change within their bureaucratic setting had they participated in the development of CIS.

If service workers could not have direct involvement in the development of CIS, they could have felt indirect participation through their supervisors. Supervisory staff has had longer time in the organization and has usually worked in the direct service ranks. The service workers were asked about their perceptions of their supervisors' influence on the CIS at various points of development and transfer.

Table 18 displays the aggregated results of this line of inquiry. It is interesting to note that for the first three stages in an innovation process, about a third of the workers did not know what, if any, influence their superior had in the CIS. However, there is an increasing trend to perceive supervisor influence from early to later stages of the transfer (from 10 per cent to 68 per cent). Still, for the first three stages, almost half of the workers perceived their superiors to have no influence. Workers seem more knowledgeable about their superiors' influence at the point of implementation, or carrying out of procedures to put the system in effect, because this is when they, themselves, were more directly involved.

All actors were questioned regarding how much direct service workers should have participated in the development of the CIS. The results of this inquiry are shown in Table 19. Both the workers and their top managers, or the receivers, felt strongly that workers should have had more involvement. About half of the senders

TABLE 18  
 WORKERS' PERCEPTIONS OF SUPERVISORS' INFLUENCE  
 ON CIS AT STAGES IN TRANSFER PROCESS  
 (n=40)

Amount of Per- ceived Influe- ence by Super- visor	Development of Instruments and System	Testing	Modifications	Carrying out Procedures
Great Deal of Influence	4.1%	4.0%	2.0%	26.0%
Some Influence	6.1%	12.0%	22.0%	42.0%
No Influence	55.1%	48.0%	44.0%	16.0%
Don't Know	34.7%	36.0%	32.0%	16.0%

TABLE 19  
 MORE PARTICIPATION BY DIRECT WORKERS

Amount of Participation	Relevant Elite		Direct Service Workers (n=70)
	Senders (n=7)	Receivers (n=10)	
More involvement	57.1%	70.0%	70.0%
Same involvement	28.6%	30.0%	21.4%
Less involvement	14.3%	0.0%	8.6%

felt the same way. However, the rest felt that workers had sufficient involvement and that worker participation should be at the end of the transfer rather than at the beginning.

The other aspect of direct participation examined was the preferences of all the actors on the make-up of a task force to develop and implement the innovation. The responses fell into obvious groupings and the rankings were assigned according to the modal pattern. The results are shown in Table 20. The direct service workers have as their first choice themselves. Their second choice is staff from various levels and locales from their own division, which shows the narrow perspective from which they view departmental operations. The involvement of staff divisions was perceived almost as a necessary evil. The receivers do not even consider staff divisions as a necessary evil; they should not be involved with clients. Receivers, most having been service workers themselves, hold that this latter group should be heavily involved in client information. Next, receivers would prefer the participation of other program divisions.

The next concern is for the geographic aspect of representation, the regional-district level, because this organizational level is considered to be the most involved with service delivery and local problem solving. The preferences shown by the receivers appear to exhibit a narrow perspective on management. The notion that service people know the needs of the organization is evident, but the notion that top management has informational requirements is not.

TABLE 20  
 RANKING OF PREFERENCES FOR DEVELOPMENT TASK FORCE  
 MAKE-UP

Choices as Partici- pants	Relevant Elite		Direct Service Workers (n=65)
	Senders (n=6)	Receivers (n=11)	
Staff Divisions	1		3
Direct Service Workers	3	1	1
District or Regional Level		3	
Own Division			2
Other HRS Program Divisions	2	2	
Agencies Outside HRS			

The senders have a pyramidal view of participation in a task force. At the top, the staff divisions are preferred because they both would define the informational needs for top management and supply the general systems knowledge. Next, program personnel are required for both descriptions of service delivery and specific program area information. Lastly, task force participation by workers could clear up nuts and bolts problems of language across services and supply information needed by service delivery personnel to assist their clients. It is interesting to note the wide divergence of the preferences among the actors on the preferred task force make-up. Especially noteworthy is that no group had a preference for service agencies outside the HRS organization. This bears mention because many agencies have purchase of service contracts with HRS and are required to supply client information under contract stipulations, yet their participation was not valued.

The final aspect of whether participation in the development and implementation process was relevant to the limited success of the CIS is an examination of types of authority which influence and motivate individuals in organizations. All respondents were requested to rank the reasons they complied with things their superiors wanted them to do. The operational concepts which were utilized are by Bachman. The data were modified for analysis in this study.<sup>11</sup> Again the responses fell into obvious groupings and the rankings were assigned according to the modal pattern. Table 21 displays

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<sup>11</sup>Jerald G. Bachman, "Faculty Satisfaction and the Dean's Influence: An Organizational Study of Twelve Liberal Arts Colleges," Journal of Applied Psychology, Vol. 52, No. 1 (1968), pp. 55-61.

TABLE 21  
 RANKING OF TYPES OF AUTHORITY WHICH MOTIVATE COMPLIANCE

Type of Authority	Relevant Elite		Direct Service Workers (n=79)
	Senders (n=6)	Receivers (n=11)	
Referent	2	3	2
Expertise	1	1	1
Reward	3	4	4
Coercive	5	5	5
Legitimate	4	2	3

the ranked results of this line of inquiry. All the groups had agreed that expertise--greater knowledge or ability--was the most important factor in compliance. This kind of authority has high legitimacy and Harvey and Mills posit that innovative problems are most likely to call upon rational authority, or expertise. They also note that expertise is the best type of power only the first time a problem is encountered.

Referent authority, based on wanting a superior's personal respect and admiration, is the second most important compliance factor to both the senders and the direct service workers. These two groups are both composed of the organizational newcomers and therefore probably want to please their superior. The receivers are more apt to be responsive to legitimate authority, which is based on position and duty. This ranking seems to be congruent with their other preferences, such as favoring high centralization and formalization and believing one should earn his or her hierarchical position by going through the ranks. Legitimate authority also signifies that routine problem situations are resolved in standardized procedures.

The third and fourth ranked authority types are curiously varied for the participants. For the senders, rewards are the next most important reason for compliance. This would logically follow

because rewards for the senders would include the benefits of higher positions and more staff, things which the senders as a group were seeking from the organization. To the receivers, being respected was important because of their long affiliation both with the top management of their own divisions and of the department. The workers chose the positional authority of legitimacy, one quite favored by their superiors. This suggests that the workers are both receiving behavioral cues from their superiors, and that their decisional parameters are fairly limited. To the senders, legitimate authority is not important. This finding was substantiated in other parts of the study. Their low regard for legitimate authority was a hindrance in their own quest for legitimacy as the senders of the technology.

In summarizing the possible relationships between participation (cooperation) and authority, it appears all the actors deem the quality of the work to be the most important factor in their behavior. For the senders, being personally respected and receiving benefits were the important factors to motivate organizational participation, not whether or not they were legitimized to do so. For the receivers, carrying out the duties of their positions was an important factor for organizational compliance. If the commitment of the Secretary had been more openly supportive to the implementation of the CIS, it is possible that their behavior would have been of a less resistant nature. For the workers in this organization, participation in development of an innovation appears to be less important as a motivational factor than is being admired

and doing what they are directed to do by those they believe to have more expertise.

These last findings on participation appear to contradict those of previous studies. One reason for this might be that previous research dealt with people who had professional or specific and transferable skills and who were therefore, able to make substantive contributions by their participation. The lower level worker in this complex social services bureaucracy, on the other hand, have mixed educational backgrounds and most of their skills are acquired from the organization itself.

Given these organizational circumstances, it seems that those who would influence and motivate the behavior of others should be fully conversant with the use of expert and referent authority. For, it appears that worker participation in the developmental aspects of an innovation is not the way to gain implementation compliance in a highly complex, hierarchical organization.

## CHAPTER VIII

### CONCLUSIONS AND IMPLICATIONS

#### Research Conclusions

This study examined the processual dynamics of a complex organization adopting and implementing an innovation which was a departure from its own traditions. One particular mechanism, the Client Information System, was selected to follow the flow of an innovation for the purpose of systematically analyzing the expectations, behavioral patterns, and linkage devices associated with the process of technology transfer within a complex and highly decentralized social services organization, the Florida Department of Health and Rehabilitative Services.

The body of literature on innovation, diverse and fragmented, represents the different disciplines and approaches generated by both the students and practitioners of organization change associated with innovation. The literature provided little consensus in either conceptual or operational definitions and was examined for the purpose of describing the research domain and of drawing constructs upon which to build. In order to present the most comprehensive overview of this area of research, the literature was grouped into the areas of diffusion research; factors conducive to creativity, research utilization, aggregate multi-organizational analysis, and contributions from organizational theory.

The research methodology was exploratory, utilizing a multiple approach. The literature and organization documents were analyzed to develop a theoretical awareness and useful concepts. Two rounds of interviews were conducted with principal actors at several levels of government. A local indepth case study was employed with a field survey for the purpose of following the innovation to the lowest level of the organization. Formal hypothesis testing was not employed because the research was exploratory in nature.

The findings revealed the degree of transfer of the Client Information Service technology was very limited in terms of a successful introduction and application of new ends or means. The assessment of limited success was based on the reasons for adoption-- the functions the Client Information System was supposed to perform. The reasons for its creation were: to provide a uniform information base for management; to demonstrate fiscal accountability of resources; to provide a mechanism for case coordination; and to provide a client tracking system.

The evidence for the assessment of very limited success based on how well the Client Information System fulfilled its purposes. The evidence revealed that the system was non-comprehensive in the scope of application. It was tied to a single funding and did not apply to all programs and services. Furthermore, the first attempt of installation resulted in the failure of meeting accountability reporting requirements and caused a \$30 million audit exception. Later, a differentiated structure in the form of a new agency was created to be responsible for the fiscal accountability that was

to be reported from the system. The Client Information System was circumvented by additional procedures for back-up documentation, although it is credited as the information source for financial accountability.

The limited success of the technology transfer was also evidenced by the low acceptance and the workers' perceptions that it had negative utility in regard to its accuracy, benefits for clients, and usefulness for working with clients.

Opinions from all organizational levels as to the type and amount of information provided to top level state management by CIS further substantiated the negative assessment because the information was confined to only the number of people served and services provided by one funding source. Continuing the Client Information System for future development and output, although desired by top management, was desired at the worker level mostly to insure the continuance of federal funds.

The explanation of the limited success in the innovation process was revealed by an analysis of the combination of dynamic factors comprising 1) the qualities of the technology, 2) the qualities of the actors, and 3) the transfer process.

The qualities of the technology--an examination of the attributes or characteristics of the innovation--can partially explain its limited success. The focus of change was administrative rather than programmatic. Administrative innovations generally require more time to discern results. With the time lag that occurred, the legitimacy of the procedure, or confidence that

it was the best policy, was eroded. An attribute which was discovered in the course of study to be especially important for explaining much of the limited success was that of a negative halo effect. The action against the technology was in actuality a reaction against a larger and unacceptable change in the organization--namely, expansion of services, which was associated with the technology.

The quality of efficacy was examined from perceptions of both first awareness and proven utility in other locations. Generally, the top managers had strong positive expectations when they first heard about the system. Worker perceptions were negative to hazy based upon expectations of more paper work and no change in the client situations they encountered. Perceptions of proven utilization in other places were stronger with the senders of the technology than with top level receivers and the workers. Thus, the perceived efficacy of the innovation was differentiated in magnitude among the various actors, but not in direction.

Complexity was another quality which emerged during the research. It was important because it was found that at all organization levels there was difficulty in understanding the innovation and what it could do.

The findings on the attribute of the physical manifestation of technology, a tangible object versus an abstract idea, were inconclusive. Top management showed a preference for implementing hardware, or more tangible items. What was revealed about physical

manifestation was its relatively minor significance to individuals at the bottom of the organization. They did not differentiate among new things as to whether they were objects or policies because what they eventually receive in either case is indeed something tangible, such as a form or manual.

The quality of divisibility, the extent to which an innovation lends itself to a small scale tryout, did not appear to be a crucial factor. What did appear to be important about an actual demonstration or trial run was that it was not a means of gaining acceptance for the innovation. The factors which promoted resistance for the trial innovation process were existent in the demonstration and were not corrected for the actual implementation later. This experience suggests that the demonstration product should be refined before and after it is tried on a small scale.

The qualities of the actors, or the participants, were analyzed to ascertain whether either their background characteristics or perceptions about the organization could explain the limited success of the innovation transfer. The top level actors, conceptualized as the research-relevant elite, were defined and identified both by rank and by participation in this particular transfer process. The relevant elite was split into the two subgroups of receivers and senders of technology.

Several background characteristics of the elite were found to be relevant in explaining the absence of supportive relationships when innovations are moved across organization boundaries. Education backgrounds were highly divergent; receivers majored in

social work and senders majored in engineering. Indicators of professionalism--special training and extra-organizational activities--were similar for both groups. But the training and activities were concentrated into the same divergent areas, thus reinforcing the contradictory dogmas of their educational disciplines. Other factors were studied to ascertain if any thread of commonality in backgrounds existed which might have facilitated the transfer process. In the area of work experience prior to employment in the Department, the two groups had the same divergent experiences, one in social work and the other in engineering. Moreover, no relationships developed across the membership of the two elite groups which could have been the basis for rapport. The organizational background characteristics of the elite groups surfaced factors which further accentuated differences. The receivers had been in the organization for a relatively longer amount of time and had gained their present positions by coming up through the ranks. The senders had lateral entry into the Department into high pay grades.

Perceptions about structural dimensions of the organization, change, and the legitimacy of the senders were useful in explaining resistance in the transfer process. A dimension of centralization-decentralization, the degree of autonomy accorded the divisions, was extremely important. The decentralization was such that the Department could be described as a federation of semi-autonomous units, most with their own funding sources. There were fears that this autonomy would be jeopardized by a centralizing mechanism

such as the Client Information System. Perceptions about formalization, examined on the dimensions of specification of job definition and amount of rule observation, were higher for the receivers. This seems to indicate an emphasis on ritualistic behavior, and this would create an atmosphere which would discourage the adoption of new procedures. On the value of change, neither of the elite groups was high. While this might be expected of the receivers, who would prefer the status quo, it was not expected of the senders. A possible explanation is that the senders view themselves as technocrats rather than change-agents. The engineering background is generally viewed as one with conservative orientation which could have contributed to this finding.

The legitimacy of the senders as the source of the technology was held to be quite low. A combination of factors contributed to this finding, including their different educational backgrounds, experiences, and short amount of time in the Department. More important, however, was a perceived negative image of the senders as self-oriented wheeler-dealers who wanted federal funds for their own staff expansion. It was felt that the senders acted without mandated authority, a factor of significance in a formalized setting. Moreover, antagonisms were compounded in situations of interactions between the elite groups by language differentials. The senders used the jargon from their experiences in aero-space and did not accept the traditional professional terminology of the field of social work and of the Department. One of the ramifications of the low legitimacy of the senders was that it was felt

they should not be the interpreters of federal regulations on grants. Another ramification was that the program divisions would not accept descriptions and definitions of program activities that came from an agency which did not understand social work activities.

The direct service workers, as a set of actors, were most interesting in relation to their organizational superiors, the receivers. The profile which surfaced from the lower levels of the organization was one of individuals who were: young; had non-social work backgrounds; the majority of whom had B. A. degrees; had no indicators of professionalism, such as special training or extra-organizational activities; were in the Department a short amount of time; had little to no previous work experience. Furthermore, their work settings were perceived to be both highly centralized and formalized. In essence, the workers were highly dependent on their superiors for guidance and behavioral cues. Thus, a negative implicit message about the Client Information System was sure to be received at the worker level.

The dynamics of introduction into the organization were examined in the factors of the transfer process. The nature of the transfer process which evolved around the Client Information System can largely be accounted for in the top decision-makers' assessment of the severity of the demand for a change by the organization and the subsequent measures taken to accommodate the innovation. The organizational communication set the tone for expectations of the innovation transfer. One of the most important findings was

the absence of a strong commitment to the innovation by the highest executive office. This non-supportive stance was perceived at all organizational levels and added to the already low legitimacy of the undertaking. Moreover, on another dimension of communication, there was no circulatory communication, or feedback, which allowed for both criticism and adaptive-coping techniques to emerge.

The choice of linkage measures utilized to transfer the innovation were those usually associated with organizational changes which have been assessed as temporary, whereas the successful application of the Client Information System required the permanency of a differentiated subsystem that could produce integrating rather than temporary linkage devices. One such temporary device, called a task force, was an ad hoc group with members from the various program divisions. The task force was not effective for these reasons: most of the individuals had other on-going activities; attendance by the same individuals was inconsistent; participation was perceived to be token.

Another temporary device was the employment of consultants, individuals outside the organization brought in to serve a middle-man role. They did not appear to be effective in this role because they were inappropriately used. Their functions and tasks were not specified and they were impossible to manage. No perceived benefits were derived from them and, thus, nothing permanent was left as a result of their inclusion in the transfer.

Training was a temporary linkage device which attempted to impart new attitudes and skills to the staff. There were several

kinds of materials developed, including a movie and a reference manual. Additionally, staff development sessions were held. Even with the structured materials and training, over one third of the staff felt they learned more about the system through personal contact with supervisors or friends, or through their own self-instruction. The service workers who felt that the sessions and the quality of training was very adequate were in a program division which did not consider the system a temporary event. This division provided that personnel be transferred with the technology and that a differentiated subsystem be established to insure sustained integration of the CIS.

A final linkage mechanism was an operational prototype to demonstrate the technology. The prototype was closer to subsystem differentiation than the other linkage devices utilized. However, the prototype did not serve as a means to transfer the technology of the CIS for two reasons. First, it ran for only a short period of time and hence did not serve as a point of expanding the system into the larger organization. Second, the problems which caused the resistance that emerged under the prototype were not corrected and occurred again during the larger implementation. Thus, workers reapplied the methods of resistance they found to be effective under the demonstration.

The notion of participation in the development of the innovation as a linkage strategy to facilitate its implementation had been advanced by actors throughout the course of the research. This notion was explored and indeed all actors agreed that lower level personnel should have been included in this specific technology

development. However, when examined from the perspective of the type of authority which motivates individuals within an organization, participation did not appear to be a relevant factor for inducing compliance behavior on implementation. It appears that referent and positional powers are more important in inducing workers' compliance. Thus, according to this research, being admired and doing what they are directed to do by supervisors are more important motivators in a highly complex hierarchal organization than being a participant in change development. This finding is also consistent with an earlier one that workers sought behavioral cues from their superiors.

While it is acknowledged that the findings and conclusions presented here are based on a case study, it is thought that there are general implications to be derived for consideration both in future research and in policy decisions. These implications are explored in the following sections.

#### Research Implications

There are three courses suggested for emphasis in future investigations of the processual phenomenon of innovation. These should not be considered exclusive of each other: the first is in methodological approach; the second is the substantive factors of analysis; the third is organizational contextual setting. Methodologically, the advantages gained in an exploratory research design lay in its inherent openness to discovery of important dimensions. However, the limitlessness of this kind of design is burdensome to the researcher in that the absence of structure

demands substantial decisions of inclusion and exclusion which at times prohibits exhaustiveness on the subject matter.

The methodological implications, therefore, are to design a more structured research approach. This would promote several general aims of research. A more limited and structured design could lead to exhaustive analysis of specific factors in the innovation process. Furthermore, a set of definitions could be developed and applied in a consistent manner. Lastly, replication of findings could be promoted. The literature has shown that both because of the scope of exploratory studies and the absence of consistent terminology, studies are not yet being replicated from one organization to another. This means that generalizations cannot be evolved and applied in a variety of settings. The setting can somehow be interpreted to be unique and thus make the findings not applicable as explanatory statements in other organization situations. Thus, it is suggested that research be designed so that it is both narrower in scope of material and builds upon a consistent set of terms. Then findings can lend themselves to replication and testing in other organizations.

The second course for future study of the innovation process pertains to the substantive factors which should receive the focus of attention. As research designs become more structured, researchers should examine more than a single innovation to discover the dynamics of the processual phenomenon. It is suggested that both administrative and program type innovations be studied in a comparative design to assess the similarities or differences in their

dynamics within the same organizational context. Moreover, it is also suggested that the focus of analytical content should be the innovation process within sub-units within a complex organization.

Several of the categories of the findings utilized in this research appear to hold promise for further studies. In order to build generalizations more emphasis is needed on the qualities and perceptions of the participants in the innovation process. The emphasis should be on their major educational disciplines, career paths, positions attained in the organization, and modes of entry. These are factors that can lead to a quantification and thus give a firmer basis for replication. The concept of legitimacy of participants and its relationship to the innovation itself appears to be a rich area to be explored. Mutual perceptions of legitimacy of major participants also seems worthy of further investigation.

The qualities of the technology offer still another area for further study. The focus of research on qualities in the literature has not been explored adequately because of concern with simple phenomena such as agricultural implements. Administrative and program innovations are complex phenomena with characteristics which are not always discernible on first awareness by the individuals in the organization. The difficulty of this research pursuit will be the conceptual and operational definitions required to ascertain the differences among the qualities. Of the qualities, the most fruitful for further research pursuit appear to be the physical manifestation, tangible objects versus abstract ideas, and the possibility of a halo effect, association with other concurrent changes.

Of the factors analyzed in the category of the transfer process, it appears that the assessment of the need for change by decision makers sets in motion other behavioral reactions. A further examination of the assessment for change and the subsequent linkage mechanisms should be an area of research. If assessment and decision for change is related to perceptions of the organizational environment, then further study is required on environmental conditions that are perceived to be more threatening than others. This research limited environmental conditions to descriptive passages and focused more on phenomena of the innovative process internal to the organization. However, it is suggested that environmental factors be given more emphasis, not only from their initial thrust for innovation, but also their continuing relationship as the organization reacts and attempts implementation.

The final course for further investigation which emerged from this study is the organizational setting. The largest part of the present literature on innovation is within the context of private organizations. The stimulus to change is usually related to the profit motive. The private organization is under pressure to have its output, whether goods, services, or claims on future income, suit the changing desires of its consumers and is dependent upon them for resources. The governmental organization does not usually get its resources from the same people who would use its services. It has to be responsive to politicians and other governmental strata. Walter emphasizes this point: "Since the governmental bureau is funded by the legislature, it can afford to be

insensitive to the wants of the people who consume its output so long as it satisfies the legislature that it is doing a good job."<sup>1</sup> Perhaps it is the need to satisfy the legislature that restrains bureaucrats from making judgements and decisions involving more than marginal risk. This relationship to the funding sources may also explain the choice of linkage devices that are merely temporary and that do not sustain innovations. The differences in dynamics of private and public bureaucracies have indeed long been debated. Perhaps, new light can be shed on this area through more research on the internal dynamics of the innovation process within the two contextual settings and their corresponding environments.

#### Policy Implications

Public social services bureaucracies, or human resources agencies, have multiple and often undefined or poorly defined goals, political environments, and clients. These organizations have also been under increasing scrutiny by legislative committees to explain what they are doing and what are the effects of their activities and programs. In effect, public social services bureaucracies have been accused of being unresponsive to social demands. The implications suggested from the study of the innovative process may assist complex social services organizations to take advantage of both administrative and programmatic developments and transfers in order

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<sup>1</sup> Benjamin Walter, "On Contrasts Between Private Firms and Governmental Bureaus," in Power in Organizations, ed. Mayer M. Zald (Nashville, Tennessee: Vanderbilt University Press, 1970), p. 325.

that they may better serve the clients. The policy implications of innovation research for social service administrators stem from the areas of the interrelated phenomena concerned with: making the decision to innovate; transfer strategies; managerial capability; and the direct service worker level.

There are several policy implications related to the initial assessment for a decision to make a required innovation and the subsequent behavioral actions of top executives. The dynamics of the transfer process of an innovation begins with a demand from the environment of an organization. The perceived severity of the demand from the environment sets in motion behavior to find a solution and implement it. For top level executives of Florida's public social services organization, the environmental demands and resources are from dual and often contradictory masters, the State Legislature and the federal granting agencies. Both masters want a solidarity in organizational responsiveness, but both promote specialized interests and divisiveness. The legislature asks for accountability of an entire complex organization, yet itself is pressured and influenced by special interest clients and voluntary service groups. The federal agencies require single state agency accountability, but provide funds on a categorical grant basis. A top executive in an undefined milieu will be highly cautious of the risks involved in change and may tend to initially assess and subsequently deal with them in a similar and temporary manner. A system that does not initiate change for positive reasons may become dominated by individuals who will take only that

amount of risk necessary to provide marginal gains. Thus, top executives must realize that their policy discussions and directives on innovations cannot be in terms of benefits and positive values. Instead, they must make risk attractive by drawing attention to the adverse conditions and losses which will occur from not taking a chance.

The presentation of negative values associated with an innovation appears to be especially important to social services bureaucrats. There is an inherent conservatism in the decision making of the system because the organization deals with the lives of people with problems and risk is therefore not acceptable. Thus, decisions are usually cautiously made in a committee-oriented atmosphere, and responsibility for decisions cannot be accounted for when made under those conditions.

Once the top executive selects the most appropriate solution, there are two areas he can act on to promote compliance. One of the most important actions a top executive can take is to consistently and continuously articulate his personal commitment to the innovation. Strong top commitment appears to set the tone because it gives the legitimacy an innovation requires to be deemed the appropriate course.

The other area of action is the choice of the most effective transfer strategies as linkage mechanisms. This action area also has several policy implications. Temporary linkage devices should not be selected, especially if an innovation is to become a permanent part of the organizational operation. Ad hoc measures have

been shown to be unsuccessful for the transfer and utilization of a sustained and pervasive innovation. It is therefore suggested that more developed interpersonal and permanent linkages be established. Staff that link two bureaucratic agencies have been referred to in the literature under a variety of labels: liaisons; boundary spanning staff; change agents.

A viable transfer linkage is to transfer the personnel most knowledgeable about the technology to the receiving agency until it is functional part of the operations. Moreover, for complex transfers of sustained innovations, a differentiated structure should be created. An organizational unit of this nature implies that special attention and commitment have been focused on a specific issue by top management. It also implies that follow-through and feedback are insured so as to determine if the innovative process is occurring and what is the status of the activities. In a complex organizational setting, it would be naive to allow the normal hierchical communications channel to act as the only mechanism for innovation transfer and information.

Accurate assessment for an innovation and choice of appropriate strategies to transfer it throughout the complex public social services system is highly dependent on top managerial capability for the analysis of organizational problems. Top level service and program administrators may be resistant to innovation because of their lack of understanding of management and organization dynamics. Top level administrators in this system are traditionally promoted from the ranks and tend to look to and be bound by their social work

discipline. The implication here is that if administrators are recruited in this manner, then there should be an internal career development ladder which will permit and encourage potential administrators to have exposure to organizational decision making skills and education.

The problem of low legitimacy of the senders has implications for both personal interaction and staffing patterns. In order to build reciprocal trust between innovation senders and potential receivers, interpersonal relationships should be encouraged with attendance at planned retreats and problem-solving workshops. There is also an implication that flexible staffing patterns between technical personnel of program and staff agencies should be considered. An early exchange between potential senders and receivers of innovations could be the basis for developing knowledge and trust about various organizational units. Since much of the dynamics of the transfer process is related to the legitimacy of both the senders and the innovation, the background of reciprocity could be very important. Legitimacy can produce credibility and acceptability of the innovation itself and thereby facilitate the transfer process. Moreover, legitimacy can have a payoff in building positive perceptions at the lower level of the organization.

At the direct service worker level of the organization there are several policy implications in the case of administrative type innovations. Perceptions that workers should participate in the development of a particular innovation to insure their compliance

should be re-examined. In a work situation that is characterized by a highly formalized and centralized hierarchical structure, spurts of democracy are not realistically expected at the lower level. Of even more significance is that service workers respond to expertise, coherent, and legitimate power of those supervising them. They take behavioral cues from superiors and, in the case of innovation, care should be taken to see that cues from the supervisory staff be positive. What direct service staff are aware of is the load of paperwork and an opinion as to the worthwhileness or efficacy of the multiplicity of forms. It is suggested that there be a removal of some of the paperwork at the time new paperwork is implemented. This would show that there is significance to the innovation and at the same time decrease dependence on older procedures. Moreover, the product of their input should be displayed back to the worker level. The success of the innovation process would benefit if the worker level is given reinforcement that their efforts are indeed meaningful to the larger organization. Both what is learned by the managers from the lower levels of organization and the corrective measures taken on the basis of input from this level should be communicated back as an indication of the worthiness of worker support of the innovation.

APPENDIX A

INTERVIEW GUIDE FOR BEHAVIORAL ELITE

1. DIVISION \_\_\_\_\_  
TITLE \_\_\_\_\_

2. Please give your educational background. PLEASE USE THE SPACES PROVIDED. IF YOU HAVE NOT RECEIVED A DEGREE, PLEASE PUT NUMBER OF YEARS IN COLLEGE, MAJOR AND UNIVERSITY.

Degree	Major	University
_____	_____	_____
_____	_____	_____
_____	_____	_____

3. Please list any specialized or professional training you have received which was not for the purpose of attaining a college degree. Such training might include specialized seminars, workshops, and short courses.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4. Age on last birthday \_\_\_\_\_

5. How many years have you been in this division? \_\_\_\_\_

6. What was your previous place of employment?

Agency or Firm	City
_____	_____
_____	_____
_____	_____
_____	_____

7. Please answer these questions about your participation in extra-organizational professional activities.

(a) Do you belong to a professional organization?

Yes \_\_\_\_\_ No \_\_\_\_\_

(b) How many meetings has your organization held in the last year?  
(Please answer with respect to the organization which meets most frequently if you belong to more than one organization.)

Times/Year \_\_\_\_\_

(c) How many of these meetings were you able to attend in the last year?

Times/Year \_\_\_\_\_

(d) Have you presented a paper or do you hold office in any professional organization?

Yes \_\_\_\_\_ No \_\_\_\_\_

8. Let us assume the Department is to begin using the following items. Based upon your experience, how difficult would it be to implement the use of these items?

	Very Difficult	Moderately Difficult	Not Difficult
--	-------------------	-------------------------	------------------

- |                               |       |       |       |
|-------------------------------|-------|-------|-------|
| (a) Calculator                | _____ | _____ | _____ |
| (b) Computer terminal         | _____ | _____ | _____ |
| (c) Common intake form        | _____ | _____ | _____ |
| (d) Client tracking procedure | _____ | _____ | _____ |
| (e) Inter-agency referral     | _____ | _____ | _____ |

9. In order to better understand the transfer process of the development and utilization of the Service Planning and Reporting System - SPARS - I'd like your opinion as to the reasons it was created - What needs did it serve (to fill)?

Probe for: accountability; case coordination; client tracking; management decision-making information

Probe also: opposition



21. Is it doing so? If no - why not?

22. Does the top management have any means to obtain aggregate data on the services it provides and the clients served across divisions?

Probe for: confidence in technology - the concept of management information.

23. When SPARS was proposed, did you feel it was an effective way of accounting for funds spent under IVA and VI service regulations?

\_\_\_\_\_ Yes

\_\_\_\_\_ No

\_\_\_\_\_ Didn't know

24. Did you feel it was an effective way of coordinating services received by a particular client?

\_\_\_\_\_ Yes

\_\_\_\_\_ No

\_\_\_\_\_ Didn't know

25. Did you feel it was an effective way of tracking a client's change in progress after receiving services?

\_\_\_\_\_ Yes

\_\_\_\_\_ No

\_\_\_\_\_ Didn't know

26. Do you know of other places where a procedure similar to the Service Planning and Reporting System has been in use?

\_\_\_\_\_ Yes

\_\_\_\_\_ No

If "Yes", please tell where. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

27. Do you know if it has been demonstrated to account for funds in other places?

\_\_\_\_\_ Yes

\_\_\_\_\_ No

28. Do you know if it has been demonstrated to coordinate services received by a particular client in other places?

\_\_\_\_\_ Yes

\_\_\_\_\_ No

29. From the correspondence and documents I have reviewed, it appears that the initial thrust for a client information system, or SPARS, started in the Division of Planning and Evaluation. Why did this group become involved?

30. Do you think it was the most appropriate unit in HRS to handle development?

31. If no - what would have been more appropriate?

Probe for: other participates.

32. Were the people who explained SPARS in similar management positions as the personnel they dealt with in other Divisions?

Probe for: comparable status levels

33. Were outside consultants involved in the client information system? In what way?

34. Do you think this was an appropriate use of outside consultants?

35. Now I would like to better understand your part in the process of what has become known of SPARS. I am going to ask you at different points what role you had.

Development - either CIS or GOSS

Testing - prototype (training)

Modifications

Implementation (training)

Presently

Probe for: advisory, in from the first - i. e.,  
developmental, or directing

Also probe for: as member of Task Force - as PFP -  
and worth of Task Force

36. In the different points of development, what kinds of communication did you have with others?

Probe for: Formal or informal

37. I'd like to know another aspect of your involvement. Did you attempt to personally persuade others about the system?

Probe for: Resistance or compliance

Describe -

38. Do you feel that you were successful in these attempts?

39. Did you have a personal friendship with any of the individuals involved in the development and implementation of SPARS?

40. Generally, how helpful did you feel you were in assisting the implementation of SPARS?

\_\_\_\_\_ Very helpful  
 \_\_\_\_\_ Somewhat helpful  
 \_\_\_\_\_ Not very helpful  
 \_\_\_\_\_ Not at all helpful

41. In your opinion, who was the individual responsible for the final choice on implementation? PLEASE CHECK ONE OF THE FOLLOWING POSITIONS AND NAME THE PERSON OCCUPYING THE POSITION. BECAUSE OF THE MANY CHANGES THAT HAVE OCCURRED AND ARE OCCURRING IN THE DEPARTMENT, IT WOULD BE HELPFUL TO HAVE THE PERSON'S POSITION AND HIS/HER NAME.

Position	Person Occupying Position
_____ Secretary of HRS	_____
_____ Deputy Secretary	_____
_____ Division Director	_____
_____ Bureau Chief	_____
_____ PFP Coordinator	_____
_____ Regional Officer	_____
_____ Supervisor	_____
_____ Case Worker	_____

42. From your view - how committed to implementing SPARS was the Secretary's Office?

43. How was this articulated?

44. Were there particular problems over implementing the concepts into a working reality?

Probe for: Disputes over details

45. At the time the instruments of the SPARS were introduced, did you feel that they needed improvements?

\_\_\_\_\_ Yes

\_\_\_\_\_ No

46. Was there a mechanism provided for feedback on modifications?

\_\_\_\_\_ Yes

\_\_\_\_\_ No

47. Did you perceive at implementation of the SPARS that the social workers in general showed:

\_\_\_\_\_ Great deal of resistance

\_\_\_\_\_ Some resistance

\_\_\_\_\_ No resistance

\_\_\_\_\_ Some cooperation

\_\_\_\_\_ Great deal of cooperation

\_\_\_\_\_ Don't know

Why? \_\_\_\_\_

48. To what extent do you think direct service workers should have been involved in the development of SPARS?

\_\_\_\_\_ Service workers should have been more involved

\_\_\_\_\_ Service workers should have been involved about the same

\_\_\_\_\_ Service workers should have been less involved

49. Do you think it has been useful to direct service workers for helping clients?

Why?

Probe for: Feedback; client summaries

50. Did you perceive that at implementation of the SPARS your superior in general showed:

\_\_\_\_\_ Great deal of resistance

\_\_\_\_\_ Some resistance

\_\_\_\_\_ No resistance

\_\_\_\_\_ Some cooperation

\_\_\_\_\_ Great deal of cooperation

\_\_\_\_\_ Don't know

Why? How was this demonstrated?

51. Did you perceive that at implementation of SPARS the people in the State level of the divisions in general showed:

\_\_\_\_\_ Great deal of resistance

\_\_\_\_\_ Some resistance

\_\_\_\_\_ No resistance

\_\_\_\_\_ Some cooperation

\_\_\_\_\_ Great deal of cooperation

\_\_\_\_\_ Don't know

Why? How was this demonstrated?

52. If you were given the assignment to coordinate a task force of 10 persons for developing the Service Planning and Reporting System, how would you staff the task force with respect to the following personnel.

PLEASE GIVE THE NUMBER OF EACH KIND IN THE SPACES.

- \_\_\_\_\_ Staff from Division of Administrative Services
- \_\_\_\_\_ Case Worker Supervisors
- \_\_\_\_\_ Staff from office of the Secretary of HRS
- \_\_\_\_\_ Direct Service Workers
- \_\_\_\_\_ Staff from Division of Planning and Evaluation
- \_\_\_\_\_ Director of your Division
- \_\_\_\_\_ Regional office of your Division
- \_\_\_\_\_ District office of your Division
- \_\_\_\_\_ Planning and Research staff of your Division
- \_\_\_\_\_ Staff from other HRS Divisions
- \_\_\_\_\_ Staff from agencies not in HRS

53. In your opinion, what methods were used to overcome resistance in the implementing of SPARS?
54. The main function of SPARS now is that it is being used for accounting of IVA and VI services. How well does it do this?
55. Are there other methods in use which now serve this function?

56. At this point, in terms of the following list, please note if you prefer that the Service Planning and Reporting System be continued or discontinued for the following purposes:

	Continued	Discontinued	No Preference
(a) case coordination	_____	_____	_____
(b) to insure continuance of federal funds	_____	_____	_____
(c) accountability of funds	_____	_____	_____
(d) feedback concerning utilization of staff	_____	_____	_____
(e) types of client services	_____	_____	_____

57. In your opinion, how does the Service Planning and Reporting System lend itself to being tried out on a small scale?

Very Difficult	More Difficult Than Easy	Easier Than Difficult	Very Easy
_____	_____	_____	_____

THE REMAINDER OF THE ITEMS ON THIS QUESTIONNAIRE DEAL WITH YOUR PERCEPTIONS. PLEASE CONSIDER EACH ITEM CAREFULLY.

Please name the position of your superior. \_\_\_\_\_

58. Listed below are five reasons generally given by people when they are asked why they do the things their superiors suggest or want them to do.

READ ALL FIVE REASONS CAREFULLY, THEN NUMBER THEM ACCORDING TO THEIR IMPORTANCE AS TO REASONS FOR DOING THE THINGS YOUR SUPERIOR WHICH YOU NAMED ABOVE SUGGESTS OR WANTS YOU TO DO. GIVE RANK "1" TO THE MOST IMPORTANT FACTOR, "2" TO THE NEXT, ETC.

- \_\_\_\_\_ (a) I respect and like her (him) personally, and want to act in such a way that merits her (his) respect and admiration.
- \_\_\_\_\_ (b) I respect her (his) competence and judgement about things with which she (he) is more experienced than I.

- \_\_\_\_\_ (c) She (he) can give special benefits to those who cooperate with her (him).
- \_\_\_\_\_ (d) She (he) can apply pressure or penalize those who do not cooperate.
- \_\_\_\_\_ (e) She (he) has a legitimate right, considering her (his) position, to expect that her (his) suggestions be carried out.

If there are any reasons not covered in the list as to why you do what your superior suggests or wants you to do, please list them.

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PLEASE READ EACH QUESTION CAREFULLY AND CHECK THE RESPONSE YOU FEEL BEST DESCRIBES YOUR VIEW OF YOUR AGENCY.

	Never	Seldom	Sometimes	Often	Always
59. How often do you usually participate in the decision to hire new staff?	_____	_____	_____	_____	_____
60. How frequently do you usually participate in the decisions on the promotion of the professional staff?	_____	_____	_____	_____	_____
61. How frequently do you participate in decisions on the adoption of new programs?	_____	_____	_____	_____	_____
62. How frequently do you participate in decisions on the adoption of new policies?	_____	_____	_____	_____	_____

	Definitely True	More True Than False	More False Than True	Definitely False
63. I feel that I am my own boss in most matters.	_____	_____	_____	_____
64. A person can make his own decisions without checking with anybody else.	_____	_____	_____	_____
65. How things are done here is left up to the person doing the work.	_____	_____	_____	_____
66. People here are allowed to do almost as they please.	_____	_____	_____	_____
67. Most people here make their own rules on the job.	_____	_____	_____	_____
	Definitely False	More False Than True	More True Than False	Definitely True
68. The employees are constantly being checked for rule violation.	_____	_____	_____	_____
69. People here feel as though they are constantly being watched to see that they obey all the rules.	_____	_____	_____	_____

IN THIS GROUP OF ITEMS, PLEASE CHECK THE RESPONSE THAT BEST DESCRIBES HOW YOU FEEL ABOUT CHANGE.

Definitely More False More True Definitely  
False Than True Than False True

70. There is really something refreshing about enthusiasm for change.

\_\_\_\_\_

71. If I were to follow my deep convictions, I would devote time to change movements.

\_\_\_\_\_

72. The current situation in the community calls for change; we should do something now (we must respond at once).

\_\_\_\_\_

73. If you want to get anywhere, it's the policy of the system as a whole that needs to be changed, not just the behavior of isolated individuals.

\_\_\_\_\_

74. Any organizational structure becomes a deadening weight in time and needs to be revitalized.

\_\_\_\_\_

APPENDIX B

THIS QUESTIONNAIRE IS FOR THE PURPOSE OF STUDYING HOW CHANGE OCCURS IN A LARGE ORGANIZATION. THE INFORMATION COLLECTED BY THIS DOCUMENT IS TO GAIN KNOWLEDGE ABOUT THOSE WHO DEAL WITH CLIENTS. THE INFORMATION IS BEING COMPILED FOR USE IN A DOCTORAL DISSERTATION IN POLITICAL SCIENCE.

PLEASE BE FRANK AND OPEN WITH YOUR ANSWERS. ALL MATERIAL WILL BE TREATED WITH STRICT CONFIDENCE BY THE RESEARCHER.

YOUR PARTICIPATION IN THIS STUDY IS GREATLY APPRECIATED.

1. DIVISION \_\_\_\_\_  
 POSITION AND/OR JOB TITLE \_\_\_\_\_  
 UNIT \_\_\_\_\_  
 LOCATION OF AGENCY \_\_\_\_\_

2. Please give your educational background. PLEASE USE THE SPACES PROVIDED. IF YOU HAVE NOT RECEIVED A DEGREE, PLEASE PUT NUMBER OF YEARS IN COLLEGE, MAJOR AND UNIVERSITY.

Degree	Major	University
_____	_____	_____
_____	_____	_____
_____	_____	_____

3. Please list any specialized or professional training you have received which was not for the purpose of attaining a college degree. Such training might include specialized seminars, workshops, and short courses. \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

4. Age on last birthday \_\_\_\_\_

5. How many years have you been in this division? \_\_\_\_\_

6. What was your previous place of employment?

Agency or Firm	City
_____	_____
_____	_____

7. Please answer these questions about your participation in extra-organizational professional activities.

- (a) Do you belong to a professional organization?

Yes \_\_\_\_\_ No \_\_\_\_\_

- (b) How many meetings has your organization held in the last year?  
 (Please answer with respect to the organization which meets most frequently if you belong to more than one organization.)

Times/Year \_\_\_\_\_

- (c) How many of these meetings were you able to attend in the last year?

Times/Year \_\_\_\_\_

- (d) Have you presented a paper or do you hold office in any professional organization?

Yes \_\_\_\_\_ No \_\_\_\_\_

8. Let us assume your agency is to begin using the following items. Based upon your experience, how difficult would it be to begin the use of these items?

	Very Difficult	Moderately Difficult	Not Difficult
--	-------------------	-------------------------	------------------

- |                               |       |       |       |
|-------------------------------|-------|-------|-------|
| (a) Calculator                | _____ | _____ | _____ |
| (b) Computer terminal         | _____ | _____ | _____ |
| (c) Common intake form        | _____ | _____ | _____ |
| (d) Client tracking procedure | _____ | _____ | _____ |
| (e) Inter-agency referral     | _____ | _____ | _____ |
9. Prior to using the Service Planning and Reporting System (SPARS - Title IVA and VI forms), what kind of client records did you keep?

\_\_\_\_\_

\_\_\_\_\_

10. Prior to using SPARS, did you have a client tracking system?

Yes \_\_\_\_\_ No \_\_\_\_\_

If "Yes," please describe. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

11. Prior to SPARS, did you make referrals to:

Other Divisions	_____	Yes	Agencies Outside HRS	_____	Yes
	_____	No		_____	No

12. What were the procedures for referrals?

\_\_\_\_\_

\_\_\_\_\_

13. Please check HRS divisions to which referrals are presently made.

\_\_\_\_\_ Aging  
 \_\_\_\_\_ Children's Medical Services  
 \_\_\_\_\_ Corrections  
 \_\_\_\_\_ Family Services  
 \_\_\_\_\_ Health  
 \_\_\_\_\_ Mental Health  
 \_\_\_\_\_ Retardation  
 \_\_\_\_\_ Vocational Rehabilitation  
 \_\_\_\_\_ Youth Services

14. Please list the five agencies outside HRS to which you make the most referrals.

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

15. What are the present procedures for referrals? \_\_\_\_\_

\_\_\_\_\_  
 \_\_\_\_\_

16. How did you first hear about the Service Planning and Reporting System?

\_\_\_\_\_ Conversations with co-workers  
 \_\_\_\_\_ Announcement from supervisor  
 \_\_\_\_\_ Memo from supervisor  
 \_\_\_\_\_ Letter from Regional or District Office  
 \_\_\_\_\_ Letter from State office  
 \_\_\_\_\_ Other, please explain. \_\_\_\_\_

\_\_\_\_\_  
 \_\_\_\_\_

17. What do you feel is the purpose of these forms? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

18. Who was it that directed you to participate?

Name \_\_\_\_\_

Position \_\_\_\_\_

19. Did you have a choice in the extent or amount of your involvement?

\_\_\_\_\_ Yes

\_\_\_\_\_ No

If "Yes", on what basis was your decision to participate made?

\_\_\_\_\_ Persuaded

\_\_\_\_\_ Ordered

\_\_\_\_\_ Thought it a good idea and wanted to be a part of it

20. What was the principal way your part in SPARS was explained to you?

\_\_\_\_\_ Training by supervisor

\_\_\_\_\_ Staff development training sessions

\_\_\_\_\_ Forms and manual given me; self-instructed

\_\_\_\_\_ Training by consultants

\_\_\_\_\_ Your Division State office training sessions

\_\_\_\_\_ Another Division State office training session

\_\_\_\_\_ Other, please explain. \_\_\_\_\_

\_\_\_\_\_

21. In what city did you receive your training? \_\_\_\_\_

22. When the SPARS was first explained, how useful did you perceive it for your work?

\_\_\_\_\_ Very Useful

\_\_\_\_\_ Somewhat Useful

\_\_\_\_\_ Not Very Useful

23. How did you receive training in completing the forms? Who did it?

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24. How do you feel about the adequacy of the training you received?

- \_\_\_\_\_ Very adequate  
 \_\_\_\_\_ Somewhat adequate  
 \_\_\_\_\_ Not at all adequate

25. Has the information collected with these instruments ever been sent to you in any form?

- \_\_\_\_\_ Yes \_\_\_\_\_ No

26. After six months, how useful did you feel the SPARS was for working with your clients?

- \_\_\_\_\_ Very Useful  
 \_\_\_\_\_ Somewhat Useful  
 \_\_\_\_\_ Not at all Useful

Please explain your answer about the usefulness of SPARS.

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27. Do you now see benefits for your clients as a result of SPARS? What are they?

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28. Was it possible to get accurate information asked about the client with these forms?

- \_\_\_\_\_ Yes  
 \_\_\_\_\_ No

If "No", why not? \_\_\_\_\_

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33. In terms of testing the SPARS, how much influence did your immediate superior have?

\_\_\_\_\_ Great deal of influence  
 \_\_\_\_\_ Some influence  
 \_\_\_\_\_ No influence  
 \_\_\_\_\_ Don't know

34. In terms of modification, how much influence did your immediate superior have?

\_\_\_\_\_ Great deal of influence  
 \_\_\_\_\_ Some influence  
 \_\_\_\_\_ No influence  
 \_\_\_\_\_ Don't know

35. In terms of carrying out the procedures of SPARS, how much influence did your immediate superior have?

\_\_\_\_\_ Great deal of influence  
 \_\_\_\_\_ Some influence  
 \_\_\_\_\_ No influence  
 \_\_\_\_\_ Don't know

36. How helpful did you feel you were in assisting the beginning of SPARS?

\_\_\_\_\_ Very helpful  
 \_\_\_\_\_ Somewhat helpful  
 \_\_\_\_\_ Not very helpful  
 \_\_\_\_\_ Not at all helpful

37. Did you perceive at the beginning of the SPARS that the social workers in general showed:

\_\_\_\_\_ Great deal of resistance  
 \_\_\_\_\_ Some resistance  
 \_\_\_\_\_ No resistance  
 \_\_\_\_\_ Some cooperation  
 \_\_\_\_\_ Great deal of cooperation  
 \_\_\_\_\_ Don't know

38. Did you perceive at the beginning of the SPARS that your immediate supervisor in general showed:

\_\_\_\_\_ Great deal of resistance  
 \_\_\_\_\_ Some resistance  
 \_\_\_\_\_ No resistance  
 \_\_\_\_\_ Some cooperation  
 \_\_\_\_\_ Great deal of cooperation  
 \_\_\_\_\_ Don't know

39. Did you perceive at the beginning of the SPARS that the people in the State level of the Division in general showed:

\_\_\_\_\_ Great deal of resistance  
 \_\_\_\_\_ Some resistance  
 \_\_\_\_\_ No resistance  
 \_\_\_\_\_ Some cooperation  
 \_\_\_\_\_ Great deal of cooperation  
 \_\_\_\_\_ Don't know

EVERYONE SHOULD ANSWER THE REMAINDER OF THE QUESTIONS.

40. In your opinion, how does the Service Planning and Reporting System (SPARS) lend itself to being tried out on a small scale?

Very Difficult	More Difficult Than Easy	Easier than Difficult	Very Easy
_____	_____	_____	_____

41. When you first heard about SPARS, did you feel it was an effective way of accounting for funds spent under IVA and VI service regulations?

\_\_\_\_\_ Yes  
 \_\_\_\_\_ No  
 \_\_\_\_\_ Don't know

42. Did you feel it was an effective way of coordinating services received by a particular client?

\_\_\_\_\_ Yes

\_\_\_\_\_ No

\_\_\_\_\_ Didn't know

43. Did you feel it was an effective way of tracking a client's change in progress after receiving services?

\_\_\_\_\_ Yes

\_\_\_\_\_ No

\_\_\_\_\_ Didn't know

44. Do you know of other places where a procedure similar to the Service Planning and Reporting System has been in use?

\_\_\_\_\_ Yes

\_\_\_\_\_ No

If "Yes", please tell where. \_\_\_\_\_

\_\_\_\_\_

45. Do you know if it has been used for accounting of funds in other places?

\_\_\_\_\_ Yes

\_\_\_\_\_ No

46. Do you know if it has been demonstrated in dealing with coordinating services received by a particular client in other places?

\_\_\_\_\_ Yes

\_\_\_\_\_ No

THE FOLLOWING LIST INCLUDES SEVERAL KINDS OF INFORMATION THE SERVICE PLANNING AND REPORTING SYSTEM IS THOUGHT TO PROVIDE STATE-LEVEL MANAGEMENT. PLEASE NOTE HOW MUCH INFORMATION YOU BELIEVE IS BEING PROVIDED FROM THE FORMS.

	Much Info.	Some Info.	No Info.	Don't Know
47. Number of people being served by IVA and VI funds	_____	_____	_____	_____
48. Number of IVA and VI services provided	_____	_____	_____	_____
49. Caseload information for staff allocation and staff justification	_____	_____	_____	_____
50. Number of people with special problems	_____	_____	_____	_____
51. Services unavailable in agency or community	_____	_____	_____	_____
52. Data base for legislative budget request	_____	_____	_____	_____

53. Do you approve or disapprove of the utilization of the SPARS forms?

\_\_\_\_\_ Approve

\_\_\_\_\_ Disapprove

Why? \_\_\_\_\_

54. At this point, in terms of the following list, please note if you prefer that the Service Planning and Reporting System be continued or discontinued for any of the following purposes:

	Continued	Discontinued	No Preference
(a) case coordination	_____	_____	_____
(b) to insure continuance of federal funds	_____	_____	_____
(c) accountability of funds	_____	_____	_____
(d) feedback concerning utilization of staff	_____	_____	_____
(e) types of client services	_____	_____	_____

55. To what extent do you think direct service workers should have been involved in the development of SPARS?

\_\_\_\_\_ Service workers should have been more involved

\_\_\_\_\_ Service workers should have been involved about the same

\_\_\_\_\_ Service workers should have been less involved

56. If you were given the assignment to coordinate a task force of, for example 10 persons, for developing the Service Planning and Reporting System, how would you staff the task force with respect to the following personnel. PLEASE GIVE THE NUMBER OF EACH KIND IN THE SPACES.

\_\_\_\_\_ Staff from Division of Administrative Services

\_\_\_\_\_ Case Worker Supervisors

\_\_\_\_\_ Staff from office of the Secretary of HRS

\_\_\_\_\_ Direct Service Workers

\_\_\_\_\_ Staff from Division of Planning and Evaluation

\_\_\_\_\_ Director of your Division

\_\_\_\_\_ Regional office of your Division

\_\_\_\_\_ District office of your Division

\_\_\_\_\_ Planning and Research staff of your Division

\_\_\_\_\_ Staff from other HRS Divisions

\_\_\_\_\_ Staff from agencies not in HRS

THE REMAINDER OF THE ITEMS ON THIS QUESTIONNAIRE DEAL WITH YOUR PERCEPTIONS. PLEASE CONSIDER EACH ITEM CAREFULLY.

Please name the position of your superior \_\_\_\_\_

READ ALL FIVE REASONS CAREFULLY, THEN NUMBER THEM ACCORDING TO THEIR IMPORTANCE AS TO REASONS FOR DOING THE THINGS YOUR SUPERIOR WHICH YOU NAMED ABOVE SUGGESTS OR WANTS YOU TO DO. GIVE RANK "1" TO THE MOST IMPORTANT FACTOR, "2" TO THE NEXT, ETC.

- \_\_\_\_\_ (a) I respect and like her (him) personally, and want to act in such a way that merits her (his) respect and admiration.
- \_\_\_\_\_ (b) I respect her (his) competence and judgment about things with which she (he) is more experienced than I.
- \_\_\_\_\_ (c) She (he) can give special benefits to those who cooperate with her (him).
- \_\_\_\_\_ (d) She (he) can apply pressure or penalize those who do not cooperate.
- \_\_\_\_\_ (e) She (he) has a legitimate right, considering her (his) position, to expect that her (his) suggestions be carried out.

If there are any reasons not covered in the list as to why you do what your superior suggests or wants you to do, please list them.

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PLEASE READ EACH QUESTION CAREFULLY AND CHECK THE RESPONSE YOU FEEL BEST DESCRIBES YOUR VIEW OF YOUR AGENCY.

Never      Seldom      Sometimes      Often      Always

- |     |  |       |       |       |       |       |
|-----|--|-------|-------|-------|-------|-------|
| 58. | How often do you usually participate in the decision to hire new staff?                                | _____ | _____ | _____ | _____ | _____ |
| 59. | How frequently do you usually participate in the decisions on the promotion of the professional staff? | _____ | _____ | _____ | _____ | _____ |
| 60. | How frequently do you participate in decisions on the adoption of new programs?                        | _____ | _____ | _____ | _____ | _____ |
| 61. | How frequently do you participate in decisions on the adoption of new policies?                        | _____ | _____ | _____ | _____ | _____ |

	Definitely True	More True Than False	More False Than True	Definitely False
62. I feel that I am my own boss in most matters.	_____	_____	_____	_____
63. A person can make his own decisions without checking with anyone else.	_____	_____	_____	_____
64. How things are done here is left up to the person doing the work.	_____	_____	_____	_____
65. People here are allowed to do almost as they please.	_____	_____	_____	_____
66. Most people here make their own rules on the job.	_____	_____	_____	_____
	Definitely False	More False Than True	More True Than False	Definitely True
67. The employees are constantly being checked for rule violation.	_____	_____	_____	_____
68. People here feel as though they are constantly being watched to see that they obey all the rules.	_____	_____	_____	_____

IN THIS GROUP OF ITEMS, PLEASE CHECK THE RESPONSE THAT BEST DESCRIBES HOW YOU FEEL ABOUT CHANGE.

	Definitely False	More False Than True	More True Than False	Definitely False
69. There is really something refreshing about enthusiasm for change.	_____	_____	_____	_____

70. If I were to follow my deep convictions, I would devote time to change movements. \_\_\_\_\_
71. The current situation in the community calls for change; we should do something now (we must respond at once). \_\_\_\_\_
72. If you want to get anywhere, it's the policy of the system as a whole that needs to be changed, not just the behavior of isolated individuals \_\_\_\_\_
73. Any organizational structure becomes a deadening weight in time and needs to be revitalized. \_\_\_\_\_

THANK YOU FOR COMPLETING THIS QUESTIONNAIRE. IN ORDER TO OBTAIN THE COMPLETE PICTURE, I SHALL BE TALKING PERSONALLY WITH SEVERAL INDIVIDUALS TO FURTHER ELICIT THEIR COMMENTS TO SOME OF THESE AND OTHER QUESTIONS. IF YOU FEEL THAT YOU HAVE ADDITIONAL COMMENTS OR WOULD LIKE TO FURTHER DISCUSS YOUR COMMENTS, PLEASE COMPLETE THE FOLLOWING BOX.

Name \_\_\_\_\_

Agency \_\_\_\_\_

Phone number preferred for contact and appointment:

Office \_\_\_\_\_

Home \_\_\_\_\_

ALL COMMENTS ARE CONFIDENTIAL.

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### BIOGRAPHICAL SKETCH

Marcia Ruth Steinbauer was born May 7, 1940, at Miami, Florida. In June, 1958, she was graduated from Miami Senior High School. In June, 1960, she received the degree of Bachelor of Arts, with honors, with a major in Political Science from the University of Florida.

As an undergraduate, she received summer scholarships from the Universidad de San Carlos in Guatemala. She attended classes there during the summers of 1960 and 1961.

She was awarded a Fulbright Fellowship in 1963, for a year of study and residence in Argentina.

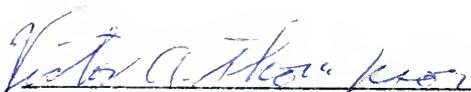
In 1965, she enrolled in the graduate program of the Department of Political Science of the University of Florida. She received the degree of Master of Arts in March, 1969.

In 1970, she was awarded a Legislative Intern Fellowship for a year in a staff position with the Legislature of the State of Florida. During the period, she drafted the Land Management Act of the State of Florida.

From 1971 to the present, she has been employed by the Florida Department of Health and Rehabilitative Services in the Division of Planning and Evaluation.

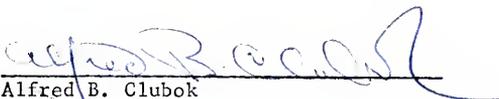
Marcia B. Steinbauer was president of Pi Sigma Alpha. She is a member of Phi Kappa Phi, American Political Science Association, and Florida Council on Aging.

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.



Victor A. Thompson, Chairman  
Professor of Political Science

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.



Alfred B. Clubok  
Professor of Political Science

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O. Ruth McQuown  
Professor of Political Science

