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IDENTIFYING AND INVESTIGATING RESOURCE ALLOCATION PROBLEMS  
IN A STATE REHABILITATION AGENCY

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Project for Cost Benefit Analysis and Evaluation of Rehabilitation Services

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## FOREWORD

With the increasing emphasis being given program evaluation and planning in rehabilitation agencies, specialists in management science, operations research, and policy analysis will increasingly become involved in consulting to and working with rehabilitation agencies. We hope that this report will alert them to some of the difficulties they will confront as they try to adapt their theoretical paradigms and methodological tools to problem-solving and resource allocation in the area of vocational rehabilitation. We have much to learn about identifying problems and adapting planning technologies to the realities of social service programs.

Mr. Kozimor is a degree candidate in the Department of City and Regional Planning, University of California, Berkeley. Like Mr. Armstrong, with whom he worked in these research efforts with the State of California Department of Rehabilitation, he comes from a background in engineering and operations research.

## PREFACE

This paper represents the larger part of work done during the first four months of 1972 by Philip A. Armstrong and myself. We were both Research Assistants at the University of California, Berkeley, working on analyses of vocational rehabilitation programs under Professor Frederick C. Collignon and Professor Michael B. Teitz.

Our work in modeling and simulation studies was part of a larger contract held at the Institute of Urban and Regional Development. The primary purpose of this research effort was to perform cost-benefit analysis of vocational rehabilitation programs for the Rehabilitation Services Administration, Department of Health, Education and Welfare. The project was also mandated, however, to perform studies and develop models which would assist rehabilitation agencies in planning, program evaluation, and resource allocation. In carrying out this mandate, we have formed a close and continuing working relationship with the California Department of Rehabilitation and thus we were able to enter the state agency. The purpose of our work there was to be two-fold: first, to identify problems in areas where we could provide direct and immediate aid to California while keeping an eye toward similar problems which could exist in other state agencies; and secondly, during the process, to begin to construct a systems view of how rehabilitation agencies operate on

the state level. The end result of such research would not only be to help the state agency by working on specific problems, but also to gain insight into the identification of problems in other state agencies and develop a model of the rehabilitation system which could act as a framework for evaluating planned changes at the state level.

I propose first to describe the state rehabilitation process in California as we observed it, both with regard to general activities and characteristics and to particular problem areas which were identified as needing our investigation. I shall then discuss issues applicable to the identification and investigation of problems in an organization such as a state agency, with attention to the role of the researcher. Finally, I will present an overview of some of the lessons which grew from our work and a discussion of the necessary elements for problem identification and investigation in a state rehabilitation agency.

It is important to note that the California Department of Rehabilitation is highly respected for the quality of its research, evaluation, and planning activities, and that California is among the most advanced and sophisticated state agencies with regard to program administration. Thus, the problems discussed here are not peculiar to California nor to state rehabilitation agencies. They are probably experienced by most government manpower and social service agencies.

Our work could not have been undertaken without the support and cooperation of the agency's staff. We are especially grateful to Mrs. Betty Dieckman, former supervisor of Program Analysis and Development, Dr. Paul Mueller, Research and Statistics Section Chief,

and their staffs. We would also like to extend appreciation to Mr. James Walker, Deputy Director of Field Support Services, Mr. Donald Stonum, Deputy Director of Management Services, Pat Lavery, Trust Fund Coordinator, and many others for their time and helpful efforts. The observations and conclusions in this paper remain our own responsibility, however.

## WORKING WITH THE CALIFORNIA DEPARTMENT OF REHABILITATION

In a state agency such as California Department of Rehabilitation (Cal DR) work goes along either routinely or from crisis to crisis, but without major stoppage, setback or losses. Therefore, from the point of view of someone inside the organization, almost all problems are eventually solved. However, there are activities which are particularly time-consuming, complex and vexing. If an activity or crisis is a one-time occurrence, then there is nothing that an after-the-fact study can improve. If, on the other hand, activities persistently recur, an investigation and possibly even a planning model of the process may lead to better resolution of the associated problems. Therefore, it is necessary to identify both problem activities and their recurrent nature.

During the fall of 1971, Armstrong met with administrators of Cal DR to discuss their management activities and particular problems of operation. We had been searching for problems that could be solved or better managed by use of resource allocation models. The emphasis was on specific problems rather than on general activities. As a beginning, Armstrong observed and critiqued one of the final meetings of a public assistance client study group.<sup>1</sup>

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<sup>1</sup>"Analysis of a Client Evaluation Study," Philip Armstrong, project memorandum, dated December 10, 1971.

In January 1972, I joined Armstrong and we began to investigate two general problem areas that we perceived in the agency. Both were the indirect result of several discussions with staff members of Research and Statistics, Management Services, and Program Review and Development sections.

We began on the funding process with the original intention of formulating grant-getting strategies for the state agency. In finding out that California already gets all the federal funds to which it is entitled, we also were told by several people that each year \$1 or \$2 million of case service money (approximately 10% of the budget for that item) goes unspent. This was described as due to unknown levels and timing of Federal legislative appropriations, and also because there is no accurate or flexible forecasting method by which actual costs can be predicted from case service money encumbered by rehabilitation counselors for their clients. Presumably the money was turned back to the federal government. Yet discussions with the rehabilitation specialist at the Office of the Legislative Analyst (created by and serving the California State Legislature) indicated that Cal DR had never turned back any monies to the state. Because most of the money allocated to case service is matched (state and federal), he reasoned that if there had been any federal money turned back, then there would also have been state money returned. The mystery was dispelled at a subsequent Department staff meeting, at which time the Deputy Director of Management Services explained that the unspent money was redirected to the facilities development program. Although it appears that California covered all the leakage in the funding process, the money which was directed to facilities



development actually may represent hundreds of possible rehabilitations foregone.

This last-minute reallocation of funds from case services to facilities is symptomatic of the complex process of resource allocation in state rehabilitation agencies. Case service money is encumbered by counselors over the year. Although funds can be shifted between counselors and districts to cover shortages and excesses, actual costs cannot be very precisely predicted from encumbrances. Even if costs and legislative appropriations were predictable, however, the allocation of funds by the state would still pose major difficulties. There are eleven major disability classes and approximately one hundred projects, about half of which are permanent, i.e. over two years in existence. There are four major cooperative programs, involving independent organizations through which Cal DR locates clients and obtains funds to match with federal monies; for example, public offenders may be reached through the Department of Corrections. The Department of Corrections gives Cal DR money which Cal DR matches to federal sources and returns the sum to the Department of Corrections for rehabilitation of public defenders. The clients associated with each cooperative program can fall in any of the disability categories and most projects provide services to more than one disability type. Yet the financial reporting system treats cooperative program clients as if they were a unique disability group. The system reports fifteen classes of clients: eleven disability and four program groups. The overlap is ignored. The problem confronting the state agency is now to determine the range of choices which satisfy all the program restrictions and to find the trade-offs represented by alternative choices of client mixes and expenditure profiles

so that an informed decision can be made as the situation changes. Only when this problem is solved, will the agency gain true management control over its resources in carrying out the agency's objectives. At such time the excess money that currently goes into facility development could be redirected and perhaps used to produce more rehabilitations.

Our experience in dealing with this allocation problem provides an example of the difficulty of identifying problems and the gaps in information about programs. We attempted to use the linear programming technique to set up an allocation model of the process that would account for the variables involved.<sup>2</sup>

After presentation of the technique and what it could be expected to perform, we jointly decided to use it on a smaller, more distinct problem as a demonstration. The allocation problem selected by the agency staff was the administration of money and field positions to spend the greatest amount of certain restricted type of federal funds without dipping into regular case service money. However, the investigation of the special program in question revealed that the problem was not that of allocating scarce money resources, but rather was one of a deficient input to the program arising from the client referral process, a process which was not under the direct control of the California Department of Rehabilitation. There were simply not enough eligible clients coming into the rehabilitation offices from the referral sources to utilize all of the funds and personnel available through the restricted source.

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<sup>2</sup>Lawrence W. Kozimor, "Implementing Management Tools in a State Rehabilitation Agency: Linear Programming," Institute of Urban and Regional Development, University of California, Berkeley, July, 1972.

Thus, the definition of the problem had to be fundamentally changed, and the technique we had suggested no longer had applicability. Either the technique was too complex to be explained lucidly by us and understood by agency staff, or the staff could not adequately formulate the actual problem. In any event, our progress on the problem as originally defined was stalled by a justifiable reluctance to attempt a model of the entire allocation process. The experience with the pilot study indicates that great care needs to be taken in selecting and formulating even what appear to be relatively simple problems.

The second problem area that came out of discussions with the staff about their operations has to do with defining goals and measuring attainment of those goals. The federal government specifies generally who they are trying to reach and sets restrictions on how and for whom money may be spent. The state passes on the money and the restrictions to the counselors, who spend the money on clients under the supervision of district administrators. Because of this unique structure of rehabilitation systems, which provides great authority to deal with clients (the disabled population) at the lowest level of the organization (district office and rehabilitation counselor), there is a potential for districts and counselors to develop unique styles of operation. For example, to meet somewhat arbitrary performance demands in terms of number of cases closed, cases may be "creamed," i.e. simpler, easier cases may be selected so that the counselor will perform up to the standard. This is contrary to the philosophy of rehabilitation that service should be adapted to the needs of the client. The freedom from control at the lower levels in an agency creates the opportunity, in spite of official policy, for districts

to develop internally validating policies (i.e. reinforced by the district personnel, themselves) as opposed to externally validating policies (reinforced by the client-consumers). The opportunity is increased by the hierarchical nature of the Department where adjacent groups of districts are managed through regional offices.

The basic measure of service is the number of successful closures achieved by an operating unit (counselor, district) over a given period of time. The use of a single category for all successful case closures overlooks a great deal of useful information and provides incentives for administrators to respond to numerical objectives. If an easy and inexpensive rehabilitation of a client leading to placement in a job for which he is more than qualified counts as much as a time consuming and expensive rehabilitation with a job that fully utilizes the client's abilities, then there is an incentive to accept and even emphasize the easier and less complete closure. The problem is to devise an alternate closure classification system which is unambiguous and easily determined to provide a basis for rating the quality of vocationally oriented rehabilitation service a client has received. On a different level, the state agency must be able to compare the performance of districts with different client populations to uncover unique and possibly undesirable practices.

A range of approaches has been taken in responding to a state's need for understanding district performance variation. From an initial paper developing indices of cost and productivity adjusting for case mix,<sup>3</sup> work has progressed to using these indices to explore the

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<sup>3</sup>David Serot, "Output, Cost, and Productivity Indices for Evaluating and Monitoring Vocational Rehabilitation Programs: Some Index Specifications Adjusting for Disability Mix," Institute of Urban and Regional Development, University of California, Berkeley, February, 1972.

variations between districts in California for fiscal year 1970-71.<sup>4</sup> A factor analysis of expenditure patterns was performed to suggest groups of like and unlike districts by factors such as administrative style and output.<sup>5</sup> Current and future work centers around testing via multivariate regression, the relationship to district performance of variables such as local service infrastructure, district staff backgrounds and administrative style, and local economic conditions.<sup>6</sup>

Thus, two of the potential problem areas for a state agency lie in managing the complex allocation process once funds are procured, and in establishing meaningful performance measures for the organization so that the original purpose is not lost. Working papers are forthcoming from the Institute of Urban and Regional Development on linear programming allocation models and on productivity measures for comparing districts. The issue of quality of service measures is currently being researched.

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<sup>4</sup> Philip A. Armstrong, "Program Management: An Analysis of the Patterns of Cost, Output, and Productivity of the Districts in the Rehabilitation Program of a Large State," Institute of Urban and Regional Development, University of California, Berkeley, June, 1972.

<sup>5</sup> Philip A. Armstrong, "Factor Analysis of District Expenditure Patterns," project memorandum, June 16, 1972.

<sup>6</sup> Philip A. Armstrong, "Current Status of Performance Measure Study," project memorandum, June 19, 1972.

## RELATIONSHIPS WITH THE AGENCY

The role or attitude of the researcher in relation to the organization and its administrators is a key factor in identifying problems in a state rehabilitation agency. As researchers operating from a university-based research group, we constituted a particular case, but most of the discussion would apply to any outsider analyzing problems in an organization.

Organizations often do not know what problems they have outside of day-to-day minor difficulties, or cannot put what they realize to be recurrent problem areas into a form that facilitates solution. Therefore, the task of the researcher is to identify, redefine and formulate problems, long before he applies techniques aimed at solutions. To accomplish this, the primary need of the researcher is to establish a good working relationship with the client organization, with mutual respect as the key to effective operation.<sup>7</sup>

Archibald has suggested that there are three distinct but not exclusive orientations that the researcher may adapt, each with its own advantages and penalties.<sup>8</sup>

First, the analyst may act as an academic expert, addressing his applied interests in his given field to the problems. The academic

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<sup>7</sup>Chris Argyris, "Creating Effective Research Relationships in Organizations," in Readings in Evaluative Research, Francis S. Caro, ed., Connecticut Printers Inc., Hartford, Connecticut, 1971.

<sup>8</sup>K.A. Archibald, "Alternative Orientations to Social Science Utilization," Santa Monica: The Rand Corporation, P-4294, January, 1970. Also in Social Science Information 9, April, 1970.

draws legitimacy from a legacy of expertise gained elsewhere as a pure scientist in the field. He comes to the organization with impressive credentials and a theoretical background which may reveal him as an expert but may hinder him as a problem-identifier. Often the academic is more committed to his discipline than to his client, not wishing to step very far outside the bounds of seeing how well the real world problems conform to his theoretical models. The academic may try to force-fit real agency problems into frameworks with which his theoretical paradigms and methodological skills are uniquely qualified to deal. The addage for both identification and solution of problems from the academic point of view to the organization is "if the shoe fits, wear it."

The second approach for a researcher is a more client-oriented view, which Archibald calls the clinical orientation. Here the analyst focuses more directly on the organization and its perception of problems, rather than on the problem itself or on specific designs for solving the problem. The clinical researcher does not assume the problem is already in final form, and sees himself as clarifying the problem area by becoming as much as possible a part of the organization with all its ambiguities and personality conflicts. The researcher thus emphasizes developing legitimacy and perhaps expertise through interaction with the client. He assumes that organizational staff have the skills and capability for solving the true problems, and that role of the researcher is to facilitate organizational development so that these skills can be brought to bear. Since the evaluator tries to act as a change agent working in and around the problem area, the watchwords for the clinical

approach might be "if the shoe doesn't fit, then there is something wrong with your foot."

Lastly, the researcher may adopt a role of strategic advisor. While an analyst who takes the strategic approach recognizes the importance of working on specific practical problems and directly addressing the client's needs, he has a different view of the client relationship and of design plans. He sees himself as an advisor more than a collaborator, looking at decisions contained in the resources and environment of the organizational system. Drawing on whatever discipline he thinks might be useful, the strategic researcher attempts to develop and recommend solutions to the problems identified by the decision-maker who is perceived as the client. The researcher tends to identify the organization's "best interests" in terms of fulfilling its stated objectives in creating impact on the external world, rather than in terms of the internal well-being of the organization and its staff. The saying becomes "the shoe you're wearing doesn't fit; try one like this."

No research effort would conform exclusively to any of the above categories, but would act somewhere within the draw of all three poles. The academic approach is basically discipline oriented; the clinical approach, client oriented; and the strategic approach, decision oriented. The researcher must account for all three to some extent to effectively identify, formulate and solve problems in a state agency. In our case, we adopted as part of strategic role both clinical and academic styles in the initial stages of problem identification.

As a university based effort, we entered the agency using our academic credentials but then sought to emphasize a strategic



orientation in our subsequent relationships. (We must note, however, that completely abandoning the warm security of the academic approach was found to be difficult.) After receiving the mandate to do the work, our approach was to move into establishing contacts in Sacramento with the little prior knowledge of the system and the problems there might be. Our first meetings with the administrators were relatively open-ended discussions in which we would probe for gaps and bottlenecks in the system as each part was described to us. This kind of informal critiquing allowed room for both sides to sound competent without threat and led to good relationships as we began to unearth potential problem areas. The primary requirement for this essentially clinical approach is time and in this, Cal DR was generous.

However, our work on identifying and working on specific problems was oriented towards outlining decision alternatives within the environment of the state rehabilitation agency, using techniques wherever they looked potentially useful. Thus, our role in identifying problems applicable in both California and in other states was primarily strategic in orientation. A judicious mixture of each alternative role served us well. We gained entrance and initial legitimacy as academics without losing sight of the real problems by restricting ourselves to narrow disciplinary objectives. We established ourselves as helpful collaborators by working on specific problems without losing status as valid observers by becoming too much a part of the organization. We worked with a strategic, systems view without becoming cold and aloof. Therefore, the researcher should be careful in adapting his role with respect to any organization and use all possible alternatives to his advantage.

## CONCLUSIONS

The final issue is, what does all this signify? There are the many lessons we learned about identifying problems in a state agency, some of which are simple common-sense and others more subtle. Many of the elements listed as necessary for the effective problem identification have been inspired by F.C. Collignon from private exchanges and by M.B. Tietz based on his experiences in New York City.<sup>9</sup>

First, the researcher should start on problems all large organizations may have, problems as perceived by another part of the system either above or below the state level, or problems that administrators think they have (obtained by direct query). For example, in any large agency such as Cal DR, which has specialized, compartmentalized operations, different sections may drift out of communication and effective cooperation. A problem for one section may not be perceived by agency staff in another although both sections may have responsibilities in that problem area. Also, many important facets of a problem may not be overtly revealed by staff, for example, personality differences and role perceptions. Thus, careful observation of what is not said by an administrator may be as important as what is said.

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<sup>9</sup>Michael B. Tietz, "Some Observations on Policy Analysis in New York," Papers of the Regional Science Association, Volume 27, 1971.

Even with a competent research staff and a broad contractual charter to investigate problems in an organization, the analyst must recognize and account for organizational strains produced by research effort. Assuming that the researcher has established his legitimacy and interactive relationships with the staff, he must realize that his presence and work constitute a possible threat to an administrator's operations. The reaction may range from complete denial of the researcher's work and very existence to a curious phenomenon mentioned by H. Rodman and R. Kolodny, referred to as one-way humor.<sup>10</sup> This is a condition where informal and sometimes biting humor is directed at the researcher, always at his expense. It reflects the ambivalence of the administrator and the one-sidedness reflects the marginal position of the researcher in the organization. This humor should be accommodated as an acceptable release of hostilities, and the fear that causes it can be played against the desire for recognition. This does mean that the real issues should not be confronted.

Another issue is that the objective of a large organization may be more toward maintaining smooth operation than working out difficult problems to make the operation more efficient. Thus the best solution may be sacrificed for one that minimizes organizational losses due to boat rocking. Where several workable alternatives exist for a satisfactory solution or even formulation of a problem, it is advantageous to select the simplest approach for acceptance and implementation.

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<sup>10</sup> Hyman Rodman and Ralph Kolodny, "Organizational Strains in the Research-Practitioner Relationship," in Readings in Evaluative Research, Francis Caro, (ed.), Connecticut Printers, Inc., Hartford, Connecticut, 1971.

Lastly, the presentation of results is at least as important as the conduct of analysis. Presentations should be brief but effective, with the emphasis on clarity through well-rehearsed, polished narrative supported by visual aids. An important point is that the researcher should take care to learn the agency jargon or language as soon as possible so that he may use it comfortably and without errors. Documentation of complex details can be left to the final reports. On the questions of continuous feedback from the analyst during the course of his research, the dangers of influencing or changing the entity being studied are heavily out-weighed by the advantages. These advantages include not only valuable feedback on preliminary results back to the analyst, but also some assurance of continuing interest on the part of the agency. Also, if various agency sections can be involved in the analyses, coordination between these sections may improve while their skills in research develop.

In conclusion and summary, there are listed ten important mistakes to be avoided in the process of identifying and investigating problems in a state rehabilitation agency. Any one can lead to complete failure, yet in the ambiguous and paradoxical arena of problems of large organizations avoiding all these mistakes is only a clean start. Thus, the "don'ts" of problem researching are:

1. Do not try to force-fit solution techniques to the problems or problem definitions to the techniques.
2. Do not become so integral a part of the organization that personal relationships or conflicts become the primary determinant of problems or solutions selected.
3. Do not choose problems or give solutions to serve entirely

researcher-conceived purposes and thus possibly not address the real problems.

4. Do not use study designs that are too complex for agency personnel to understand, or which are bigger than necessary and sufficient for the problem, thus increasing expense and wasting time.
5. Do not accept routinely-generated data at face value.
6. Do not do work directed primarily at what the researcher is certain are not the real problems, except when it is necessary to gain initial entrance and acceptance.
7. Do not become more of a threat to the agency status quo than is useful and under control.
8. Do not ignore peculiarities of agency structure or process and thus produce irrelevant solutions.
9. Do not dismiss close and continuous contact with agency staff as unnecessary until the end of a project and risk losing commitment to using research results or working long and hard on what turn out to be inappropriate or low priority problems.
10. Do not expect any more trust and respect than is given.