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UTILIZATION OF BEHAVIORAL SCIENCE RESEARCH IN A
LARGE, OPERATIONAL SYSTEM

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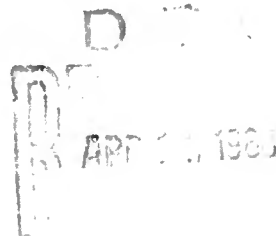
March 1968

Utilization of Behavioral Science Research in a Large, Operational System

by

William A. McClelland
with the technical assistance of
Angela D. Bentz

Paper presented at the Conference on
Social Research and Military Management
Inter-University Seminar on Armed Forces & Society
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Prefatory Note

This paper is a presentation and discussion of some of the factors and conditions that appear to have influenced the utilization of HumRRO findings by the Army. It was presented by William A. McClelland at the Conference on "Social Research and Military Management" of the Inter-University Seminar on Armed Forces and Society, University of Chicago, in June 1967. Dr. McClelland is Associate Director of the Human Resources Research Office.

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UTILIZATION OF BEHAVIORAL SCIENCE RESEARCH IN A LARGE, OPERATIONAL SYSTEM¹

William A. McClelland
with the technical assistance of
Angela D. Bentz

It is my intent to describe the interaction of a client system with a behavioral science Research and Development (R&D) organization in their mutual effort to put the results of R&D into practice. The United States Army is the client system. The Human Resources Research Office of The George Washington University is the R&D organization. Since some of you may know very little about HumRRO, I would like to begin with a brief description of what HumRRO is and how it is organized to carry out behavioral science R&D. I shall assume you *do* know about the variety of missions the U.S. Army performs.

The Human Resources Research Office (HumRRO) was created 16 years ago to carry out the terms of a contract between the Department of the Army and The George Washington University. Our objective is to provide information and to produce new techniques, methods, and general solutions to Army training, motivation, and leadership problems. These findings are used in the development or revision of Army instructional systems and operational programs.

We work very closely with the Army on all research and studies that are undertaken. Much of the work is conducted in military settings with military personnel. All of the work must be mutually acceptable to the Army and to HumRRO.

HumRRO is comprised of a central office and seven laboratories, five of which are augmented by military Human Research Units. These five are based on Army posts at Fort Knox, Kentucky; the Presidio of Monterey, California; Fort Benning, Georgia; Fort Bliss, Texas; and Fort Rucker, Alabama. Two laboratories are located in the Washington, D.C., area. Field work is conducted in a variety of military settings in the U.S. and overseas. The Central Office, composed of the Director and his staff and supporting technical and administrative services, is also located in the Washington area.

¹Acknowledgment is made to P.S. Abbott, J.D. Lyons, and COL J.A. Meads, Jr., for some of the information and ideas contained in this paper. (See also J. Daniel Lyons. *Factors Influencing Utilization of Research Findings in Institutional Change*, paper presented at the Southeastern Psychological Association meeting, New Orleans, La., April 1966; issued as HumRRO Professional Paper 2-66, April 1966.)

The HumRRO staff of approximately 280 people includes about 130 behavioral and other scientists; about 60 hold the PhD degree. The 40 scientists of senior rank average about 10 years of HumRRO experience.

The organizational structure of HumRRO parallels that of the hierarchical military command, thus providing for effective contact between civilian research personnel and military personnel at all appropriate levels. This parallel structure facilitates all stages of the work from the early decisions on research requirements to the conduct of the work and the utilization of the results.

Although much of our R&D stems from military requirements, an arbitrary set of six interrelated work areas has been developed over the years to give coherence to our annually proposed program of research and studies. The categories cover such areas as individual and unit training and performance; training for leadership, command, and control; language and area training; training technology, and training management. Within these categories the Work Program consists of work units or studies designed to answer Army needs, exploratory studies in which we attempt to evaluate the feasibility of undertaking larger studies, and small-scale, fundamental research efforts in areas related to our mission. Finally, 10% of our effort is set aside annually for Technical Advisory Service to enable HumRRO to respond quickly to unprogramed requests for technical advice, often in the implementation or utilization process.

The HumRRO program is developed from requirements related to the Army missions encompassing training and operations. Historically, most requirements have come from the U.S. Continental Army Command which is responsible for operating the 16 Army Training Centers, 26 USCONARC Service Schools, and 703 ROTC/NDCC Units. USCONARC and other major headquarters and staff agencies submit research requirements and serve as sponsors for those approved by the Office of the Chief of Research and Development (OCRD). The Office of the Army Chief for R&D is the approval authority since that office controls the funds and monitors the HumRRO contract. Operational elements like USCONARC, however, provide guidance, facilities, and personnel for the R&D efforts. We think this is a good arrangement: we are monitored by that part of the Army which understands R&D management; yet we have easy access to operational commands.

Although contractually the technical report of research is the produce of our work, utilization of the results is the topic of greater interest in this paper. Dr. Showel is presenting a paper at this conference on one such example in the area of leadership training.¹ How is implementation of research achieved? We believe that the two big factors are attitudinal and structural in nature. In regard to attitudes, although it took us several years to come to an understanding

¹A subsequent version of this paper was presented at the NATO Conference on Manpower Research in the Defense Context, London, England, August 1967; issued as "A Program for Developing Potential Noncommissioned Officers," by Morris Showel, HumRRO Professional Paper 45-67, October 1967.

and acceptance of our role as change agents, HumRRO personnel now know that the existence of the research report alone is rarely sufficient to lead to effective utilization. We view utilization as one of the major goals to be achieved by an applied R&D organization like ours. In turn, more and more major elements of the Army are dedicated to adopting or adapting our findings to their needs. The process of mutual education is a continuing one requiring efforts by both organizations.

In describing HumRRO, I have already commented on the "bare bones" of the structural element in the utilization process. Let's now move on to the description of the process of Army-HumRRO interactions.

With HumRRO functioning as an integral and continuing part of the Army's Human Factors Program, utilization of research is a vital consideration from the initial stages of planning. In a very real sense, utilization begins at the time the Army presents the problem to HumRRO. Since the military problem must be restated so that research can be effectively conducted, the researcher submits to the user a statement on how he views the problem and the way he seeks to find the solution. The research approach may have to be modified in the light of the support requirements. Sometimes it may have to be recast if the research proposed is not perceived by the Army to be appropriately responsive to the military problem.

Constant interaction between researcher and consumer takes place during the conduct of the work. Communication is achieved informally through the use of interim progress reports, periodic reviews, briefings, and discussions. The Army must be kept aware of the work taking place, and the researcher must be kept abreast of significant military changes in the parameters of the military problem. Hopefully, such communication keeps the evolving solution aligned with the client's problem.

As relevant data become available, that is, data which bear upon immediate military needs, they are provided to the user. Such communication involves both those Army elements which can effect change and those responsible for actually carrying out a decision to change.

When the final technical report is submitted to OCRD, it is reviewed and staffed with the appropriate commands and agencies. There it is examined for recommendations on utilization and for retention as a reference. Some research is not usable in technical report form because it may have been designed for background or reference use, or to provide a basis for a review of training policies and programs. In many other cases, the findings must first undergo special translation and adaptation to become operationally useful. This translation is usually a joint effort by HumRRO and the Army. Frequently, the HumRRO research team itself is active in this translation effort, providing help in the preparation of action directives, pamphlets, or regulations, or in adapting the findings to specific operating contexts.

HumRRO's research by-products, such as experimental course units or programs of instruction, workbooks, prototype training aids and devices, programed textbooks and supplemental literature, are similarly

reviewed. The incidence of these by-products' being incorporated in the Army's training program is high.

Utilization of HumRRO research often occurs while the research effort is in progress and prior to completion of the project. When the school or sponsoring agency is impressed with and convinced of the value of the work, on-the-spot implementation may occur through incorporation of those completed segments of the results into the ongoing training program.

Results of research completed some years in the past are often found to be relevant to today's Army problems. The civilian research scientist is often the key to continuity of past research and its application to a current problem. Such continuity is rarely possible within the client system itself because of military personnel assignment policies.

Essential to utilization is the dissemination of research findings among potential users. USCONARC provides an excellent example of how this is currently done. That headquarters employs several means to alert elements of the command to HumRRO work in progress and completed. There are daily bulletins to headquarters elements; monthly staff briefings by teams representing the Human Research Units, HumRRO, and the schools or center; newsletters to headquarters staff, centers, and schools; and publication of an annual report, "Utilization of HumRRO Research."

As in other stages of the work leading to the goal of utilization, HumRRO participates quite actively in the dissemination process. Written quarterly progress reports are made and final research reports are appropriately distributed, including their entry into the Defense Documentation Center (DDC) and the Department of Commerce Clearinghouse for Federal Scientific and Technical Information (CFSTI). Briefings and newsletters are used extensively. All-important are the informal and continuing contacts between researchers and potential users.

In closing, I would like to share some thoughts on the factors that seem to affect utilization of our research efforts. Among the characteristics of our unsuccessful implementation efforts, we should list the following:

(1) Poor communication. Neither our briefings nor our reports effectively communicated the validity and operational value of the research.

(2) Lack of timeliness. The product of the research effort did not meet a valid, contemporary requirement. It was available too late or too early, or it was too tangential in nature.

(3) Degree of change. Too many changes in operating procedures were required. For example, training was shortened (or lengthened) too much or the existing Army structure was incompatible with the indicated change. Existing or traditional practice may have been too strongly threatened.

(4) Lack of strong command support. Not enough people at high enough echelons wanted to change.

(5) Costs. Funds and personnel required had not been programmed and could not be obtained.

(6) Lack of engineering capability. The Army experts required to translate the research findings into more operationally usable form did not exist or were not available.

(7) Policy problem. There was a lack of doctrine under which to fit a new or improved training or operational capability.

(8) Insufficient "salesmanship." HumRRO did not devote enough effort to "selling" the product. At one time, for example, we believed this was not the job of the research agency.

Possible reasons for successful implementation are largely the obverse of this list. Some of the characteristics of research or by-products that were adopted are:

(1) Timeliness. A recognized instructional gap was filled. The work was obviously relevant to a planned or ongoing revision in Army practice.

(2) Command interest. There was a strong operational command interest, including that of a subordinate command. Interest existed at both management and working levels.

(3) Engineered product. The end-product was concrete. It was a material, plug-in item, specifically engineered for a given situation requiring little additional Army effort to adapt it to the operational setting and requiring no doctrinal changes.

(4) Earlier acceptance by others. Some other service or civilian institution had accepted and successfully used the product or a very similar one.

(5) Personal interest. An individual Army officer or group of officers or key civilians associated with the work were convinced of its worth and were willing to serve as forceful proponents.

Let me summarize what we have attempted to do in this paper. We have described the nature of HumRRO and its relation to the Army. We have sketched the kinds of interactions that take place between the Army and HumRRO behavioral scientists. Finally, we have offered some speculations on factors influencing Army decisions on the utilization of research findings.

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13. ABSTRACT The operation and organizational framework of the Human Resources Research Office are described with particular emphasis on the research and development relationship with the U.S. Army as a client. Some of the factors and conditions which appear to have influenced the utilization by the U.S. Army of HumRRO findings are presented and discussed.		

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