

## LINKING SYSTEM RESEARCH AND DELIVERY SYSTEMS

### *The Example of Health Care*

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Major difficulties apparently block useful interchange between research and service delivery systems. In order to shed light on how this interaction might be improved, psychotherapy is taken as a paradigm case of one system (the therapist/change-agent) generating knowledge for the use of a second system (the client) in enabling change. Health services and health services research are examined to illustrate how findings from research into prognostic factors in psychotherapy may throw light on the ways in which research may be linked constructively to delivery.

*How can the output of researchers have an effect on delivery systems? How can decision-makers get research which can be used to improve delivery?* The barrier between research systems and delivery systems is a recurrent subject of national concern in fields as diverse as industry, health care and police work. Caplan (1979) has called the barrier the "two communities theory". This paper considers prognostic factors which may predict useful cooperation between researchers and policy- and decision-makers.

Review of the literature reveals numerous references to the implementation and credibility gap between research systems and delivery systems: for example, between academic science and industry (Docksey Report, 1970; ACARD Report, 1983), between criminological research and the police force (Heal, 1983), between management science and managers (Huysman, 1970; Heany, 1985), between psychotherapy researchers and psychotherapists (Gurman, 1983), between education researchers and education departments (OECD, 1971; Dahlstrom, 1979), between health services researchers and health care delivery systems (Rothschild, 1971; Kogan et al, 1980; Bico, 1980) and, in general, between social researchers and public policy makers in government (National Science Board, 1969; Moynihan, 1989; Weiss, 1977; Cherns, 1972; Aaron, 1978).

Within each domain, researchers and policy-makers often seem unaware of the general nature of the barrier problem as they exchange familiar complaints, accusations, counter-charges and exhortations. In health services research in the U.S., for example, blame has tended to fall on researchers for remaining aloof from practical and political considerations, lacking insight into the way the real world operates, producing irrelevant results, and not packaging findings in ways that are accessible and readily comprehensible (Myers, 1973; Gordon et al, 1974; Williams and Wyszong, 1977; Eichhorn and Bico, 1973). The researchers' riposte to this catalogue is that

policy-makers have unrealistic expectations of research, present incoherent and inconsistent demands, operate with a far too short time-scale, block access to people, situations or data, and unfairly misinterpret or misuse results (Mechanic, 1978; Gibson, 1978; Williams, 1978; Shortell and LoGerfo, 1978). Such comments on both sides of the barrier could be found in any of the domains mentioned in the previous paragraph.

The gulf between researchers and real-world practitioners is a general characteristic of domain-based work on real life problems. Such a divide is absent in disciplinary sciences where researchers focus on problems as defined by the leaders in the discipline or by the fashion of the day. The world of organised social activity, conceptualised in terms of domains rather than disciplines, is often said to call for multi-disciplinary or interdisciplinary research. Although the barrier exists in research of many varieties, including technology, policy, organisation and management, the particular concern of this paper is research which implies or calls for change potentially throughout the domain. Such research must overview the domain as a whole: hence I choose the label "system research".

Because the barrier problem is not domain-specific, it should be susceptible to a "systems" analysis. The assumption therefore on which the paper rests is that general principles do indeed exist which determine the probability that a change may be brought about in one human system, the delivery system (the client system), by another human system (the change agent system), engaged in generating practical knowledge about the client system with a deliberate intention to effect change.

This proviso of intentionality is a significant restriction, but legitimate in that accidental change cannot, by definition, be planned for and cannot resolve the barrier problem. For example,

it must be asked whether researchers are directly committed to changing the real world. If they are not, then they are unlikely willingly to modify their own deeply valued activities or attitudes simply to increase their influence. There is evidence that insofar as researchers are primarily discipline-based rather than domain- or field-based, they are unlikely to be fully committed to seeing themselves as change agents. A discipline base is often important socially as well as psychologically: for example, career progression is often discipline-linked and universities may even be hostile to less prestigious applied work (National Research Council, 1978). Discipline-oriented research can usually expect to exert only indirect influence on a delivery system. This may be significant nonetheless. For example it has led to a substantial research literature on innovation in health services (cf. Kaluzny, 1974). Lindblom and Cohen (1979) noted that many changes in society stem from research findings and other forms of professional social inquiry even though the work was produced disinterestedly. This is the argument, and I believe a strong one, for maintaining an independent, non-change-oriented research base in universities. In this paper, however, we are concerned with research which does aim to produce helpful change with researchers committed to this end.

#### THE GENERAL PROBLEM AND ITS HOMOLOGUE

Let us restate the problem in its general form. How can one human system which generates knowledge about the workings of another human system most appropriately interact with the latter system such that the latter system uses the knowledge as one of its tools in changing itself and the social world? As indicated earlier, we may call the former system the change-agent system and the latter the client system.

Both the change-agent and client systems are human systems, that is to say their component elements are people. Nothing of significance happens in either system without a person being in some way responsible, or at least involved. If essential parts of either system are not manned or it is not clear who takes responsibility to make something happen or recognise that something is happening, then dysfunction is the almost certain result.

Ackoff and Emery (1972) and others have emphasised that person-based systems are fundamentally different from other systems like molecules, muscles, mountains or the Milky Way. The difference lies in the elements of such systems being people. Such elements display will; they may choose to leave, support or subvert the system; they have purposes, values, meanings, choices and other inner experiences; they interpret the world and act accordingly. The larger system itself comes to be imbued by such processes in a manner which is poorly understood.

The organisation development literature repeatedly emphasises that "the greater the emphasis on understanding the role of individual beliefs and values, the greater the effect on behaviour" (Leavitt, 1965; Mitchell, 1977). It is this commonsense view (Scheibe, 1970) that what a person does (his behaviour) depends on what he wants (his values) and what he considers to be true or likely (his beliefs) that lies behind the frequent recommendations for more personal and informal contacts between researchers and practical men. In looking for ways to increase the impact of systems research on the delivery system, it seems appropriate to start from the notion that system change is, at the end of the day, individual change, and to be clear that change involves changing the minds of people (cf. Kinston, 1982). We may then inquire what empirical evidence exists about the main factors associated with successful change in individuals by other individuals.

Psychotherapy is such a change process involving change-agent and client systems. Figures are hard to come by but it is likely that many hundreds of thousands of people are now treated annually. This extensive resource commitment has led to the growth of psychotherapy research, especially in the U.S.A, with the aim of discovering in a non-dogmatic fashion just what factors enable constructive change. The developing understanding that the therapist (change agent system) has on the patient (client system) is homologous to that in the researcher-delivery system. The therapist's knowledge, like the researcher's, is inevitably partial and biased, but if properly gathered and properly fed back, it can be usefully incorporated by the patient. The patient must make and live with his own decisions in running his life, just as the delivery system does. Neither the therapist nor the researcher accepts responsibility for client action, though they both may, indeed should, acknowledge errors of their own input. Both the therapist and research system operate with rules, procedures and theories which are largely not understood, even misunderstood, and objected to, by the client system. In both cases knowledge and its gathering, though it be for immediate practical use, may lead to deeper theoretical formulations by the researcher.

Some hundreds of empirical studies looking for prognostic factors in psychotherapy have now been completed. Many postulated factors have not stood the test of extensive replication but those that are left appear to conform to general properties of organised human systems. Here we will focus on the findings which appear to have been reasonably well established. Table 1 is a modification of Luborsky's careful review of studies which were methodologically adequate (Luborsky, 1983; cf. Luborsky et al, 1971).

Table 1: Prognostic factors in psychotherapy  
(modified from Luborsky, 1983)

Characteristics of the Client System (HCDS)

Quality of function  
Intellectual functioning  
Distressing experiences  
Motivation and expectation of benefit  
Operating as a social system

Characteristics of the Client System - Change  
Agent System Interaction (HCDS - HSRS)

Experience of a helping alliance  
Client system involved and reflective  
Change Agent system appreciative  
Similarities between the two systems  
Duration of contact  
Method of project assignment

HEALTH CARE AS AN EXAMPLE

In order to examine the prognostic factors specified in Table 1, and to provide concrete illustration, I intend to consider the health care delivery system (HCDS) and the health services research system (HSRS). The barrier between these is well documented (v.s.) I will use the evidence from studies of prognostic factors in psychotherapy without extensive referencing to the psychotherapy research literature, and apply these to the HSRS-HCDS interaction. The prognostic factors can be divided into two types, those that characterise the HCDS, and those that characterise the HCDS-HSRS interaction (Table 1).

The HCDS is a system consisting of practitioners (including doctors), managers and policy-makers working in real time on difficult and complex problems in situations of high uncertainty and great political sensitivity. The HCDS is unable to predict, completely or probabilistically, the effects of many of its actions, nor able to assign a generally agreed value to many of the possible effects. Its problems are typically ill-structured, and there is often dispute as to the nature of the problem or even whether a problem exists at all.

The HSRS may be more or less independently financed, but even if completely financed by and therefore a subsystem of the HCDS, it produces output which is not directly operational. The HSRS output only becomes influential when it is used by a member of the HCDS -- at which point the output can then be said to have changed the HCDS.

The general question considered is: what are the conditions which will maximise the likelihood of health services research impact (for good or ill) on health care delivery? The paper suggests the example of psychotherapy might throw light on this important matter.

PROGNOSTIC FACTORS FOR HSRS IMPACT

Characteristics of the Client System: HCDS

a) Quality of function

The factor called in psychotherapy personality strength, ego strength or overall psychological health can be subsumed under the label *quality of HCDS functioning*. High quality functioning is the strongest most consistent pre-change prediction of likely benefit. It is not surprising that research input is best used when the client system is already functioning well. This produces a paradox, well documented in psychotherapy and intuitively recognised elsewhere, that systems which most need research input are least likely to commission or assimilate research.

Can we make any generalisations about HCDS function? Evans (1981) recently reviewed systems in a variety of different countries for the Rockefeller Foundation. His overriding general impression was that more effective management was necessary at all levels. Grunberg (1976) in the U.S. also saw the agencies organised in the name of public health as stagnant, uncoordinated and unresponsive. This followed from programs of health administration in management schools being weak on issues of health care, while schools of public health were weak in social policy and health services operation (Millbank Memorial Fund Commission, 1976). On the strong predictor of quality of functioning, therefore, many HCDSs and their institutional components seem unlikely to welcome and use HSR.

b) Intellectual functioning

A capacity to conceptualise, to distance oneself mentally from problems, to overview the whole system and to play with possibilities is a necessary requirement for effective substantial change (Jaques, 1976). The evidence however is that there is unsatisfactorily low calibre of administrative and finance staff in hospitals and other health institutions (White, 1973; Weisbord, 1976; Shegog, 1977; Bevan, 1980; Harrison and Kimborley, 1981). The recommendation that "training should deal with the health needs of populations not just institutions, and with the totality of resources and not just institutional support services", and should include interaction with other professions, disciplines and academics, is a disguised call for calibre (Evans, 1981, p.35). The implicit demand is for individuals capable of taking a comprehensive and forward-looking view, rather than a reactive inward-looking view focused on current problems in a delimited part of the system. Similar recommendations have been made by Blanpain (1978); Hardie (1979); and Schaefer (1980).

The call for calibre is not new. Schuster in 1959, argued that the NHS in the U.K. needed to assign prestige and salary commensurate with a post and person who would command the confidence of the medical professions. However, today an administrator essentially responsible for over £100 million of services in a District earns less than any

of the hundred or so doctors working under his aegis. Without individuals of calibre it is unlikely that HSR will be valued, assimilated or used well. The recent growth of multi-hospital corporations in the U.S. which attract and pay high calibre managers may provide a natural experiment in the use of HSR.

#### c) Distressing experiences

To the degree that the client system experiences distress it may encourage inquiry into its causes. Such inquiry, at least in psychotherapy, is often beneficial as judged by client and change agent, even if the distress is not subsequently relieved: The HCDS does not experience anxiety or depression or psychological symptoms but there are tensions, states of indecision or confusion and moods in the HCDS based on evidence of unmet health needs, resource shortages, technological developments of uncertain value, public discontent, professional resistance to innovation, changes in para-medical work and such like. These affect politicians and the top decision-makers in government as well as permeating the services.

In the U.K., Government Departments like the Department of Health and Social Security (DHSS) very frequently prefer to respond to such moods by creating ad hoc working groups, special panels, committees of enquiry, Royal Commissions and similar bodies rather than turn to researchers for knowledge. Sometimes such bodies themselves commission HSR - for example, the Royal Commission on the NHS commissioned 14 HSR studies to assist it in its work of evaluating the NHS.

Before listing the problems with this type of ad hocery, it is worth spelling out the advantages: i) the findings are treated as authoritative; ii) the committee's composition can be under tight control to ensure that the various political interest groups are represented and set their seal to the final report; iii) the report leads to politically expedient cessation of work on the topic by members, and dissolution of the body; iv) the method is economic of people, time and resources; v) the method leads to a definite recommendation rather than information or analysis that requires further interpretation.

The disadvantages for the HCDS are however profound and equally numerous i) the composition of the committee is often based on political representation; ii) the committee usually seeks for consensus and acceptability, iii) the report cannot be modified when errors are subsequently discovered; iv) misinterpretation or misuse of the report is not easily dealt with; v) the on-going development of methods and knowledge is not possible.

Many HSR workers attempt to tune into distressing experience of the HCDS by taking a problem-oriented or problem-driven approach. To the degree that the problem is genuinely and clearly articulated and experienced within the HCDS this would be expected to be a predictor of adoption of useful

HSR findings. Indeed this is the approach and experience of my own research unit, the Health Services Organisation Research Unit (HSORU) at Brunel University, whose work and methods I described at the 6th EMCSSR (Kinston, 1982). However to some researchers, "problem-oriented" may mean little more than "applied to a real and important problem", with little concern by the researcher as to whether the problem is felt deeply as such by someone with responsibility for it in the HCDS. Without this felt quality, HSRs influence is likely to be weak.

#### d) Motivation and expectation of benefit

When the client system wishes to benefit and expects to benefit from the change agent system, there is at least an initial concordance in approach which bodes well. This state may not last once the client system becomes aware of the time to get results, the cost, the interference with current activities and other factors of the change process. At present, it seems that Governments and probably the public as well, have not a great deal of confidence in the capacity of social research to provide useful answers. As a result, they are not particularly disposed to take this route to change. Perhaps an implication of this factor is a need for improved public relations and education. A change in culture, in which inquiry is viewed as a natural and positive attribute of man should be a long-term goal of our society. Such a goal is not always supported by researchers because of their vested interest in controlling inquiry and the resources that go with it.

#### e) Operating in social system terms

The psychotherapy variable, capacity for interpersonal relations or level of maturity, refers to the person's ability to be linked to others in a committed, consistent and reciprocal fashion. For example, anti-social features in the personality are uniformly agreed to be a poor prognostic sign. I believe that the system equivalent to this might be as subtitled above: operating in social system terms. In other words, does HCDS have a culture in which decision-makers see themselves as committed to particular purposes, especially that of helping people? Does the decision-maker see that he is part of a network of agents all of whom must relate to each other in a fair, consistent and mutually helpful manner?

Alternatively, are links denied? Do professionals not see the value of colleagues in neighbouring disciplines? Are many features of the HCDS anti-social? For example, is resource waste, if convenient, simply ignored? Do agreed policies get acted upon? Are rules and procedures followed and reviewed for their adequacy? Are contradictions, duplication and inconsistency of decision-making the norm? By and large systems thinking does not yet seem to come naturally to many HCDS staff, even those in top positions. As an example, in the U.K. the Government wished to pursue a policy of development of medium-secure facilities for patients too violent for ordinary psychiatric

hospitals but not so disturbed as to need to be in a special prison. £13,000,000 was allocated to build such Units. 8 years later not one unit had been built and over £8,000,000 had been spent on other purposes. No one was held responsible and no one knew what had happened to the money. The event was not seen as evidence of system failure. The non-system mentality is not so much evidenced by the event as by the neutral reaction to it, even though the knowledge reverberates through the NHS and must be assumed to damage credibility, responsibility and morale.

#### Characteristics of the Client System - Change Agent Interaction: HCDS - HSRS

##### a) Experience of a helping alliance

Within a very short time, the client system feels able to judge whether the relationship with the change-agent system is a positive one. In psychotherapy research this is the most repeatedly validated predictor of the interactional variables. An early positive experience links to positive outcome. If we are to take this seriously then HSR approaches in which the long-term perspective is defended (e.g. Holland, 1981) must be accepted with caution. Although the major research issues are a long-term effort it seems likely that they must be conducted with an eye on the pragmatics of the on-going and especially the early relationship with the HCDS.

Research evaluations of the HCDS using the model of the controlled clinical trial in which the researcher attempts to remain independent typically score low on this variable. Mochanic (1978) notes that "important evaluations performed from outside an ongoing system tend to be caught in a critical cross-fire from those who have something to lose, and there are innumerable opportunities to sabotage any such data collection". He advocates research which is organised in close cooperation with those involved and provides them with usable feedback.

A key tactic in generating an experience of help involves designing studies without openly confronting, opposing, or undermining current policy, practice and top personnel.

##### b) Client Systems Involved and Reflective: Change Agent System Appreciative of Client System States

These two factors are intuitively relevant. The HCDS should feel involved with HSR and should reflect on its own functioning through in-house intelligence-gathering operations. Similarly, the HSRS should appreciate and be able to mesh in with the deep problems, needs and goals of the HCDS. This is supported by empirical research study of characteristics facilitating usable research: Lingwood (1979) emphasised sensing clients' needs and direct interaction between researchers and users. Lehman and Waters (1979) and Bice (1980) have underscored the proximity of researchers to policy-makers as a factor in influence.

One way appreciative contact is being achieved in the Netherlands is by having posts part-time in the HCDS: a person may be a part-time hospital administrator, and part-time a sociology lecturer in the University. Another approach is exchange of positions for two to three years between the HCDS and HSRS; and permanent career changes might also be fostered.

Serious attempts to take into account the mental and cultural constitution of a system under investigation is sometimes lacking in health services (Willson-Pepper, 1982). However approaches exist embodying such an empathic spirit: action research (Clark, 1972; Susman and Evered, 1978), collaborative inquiry (Rowbottom, 1977), participatory evaluation (Kroeger and Franken, 1981; Feuerstein, 1978) and endogenous research (Maruyama, 1974).

Within these paradigms there are a range of methods from external consultancy to deep involvement, from survey to experiments to analysis, but all are characterized by close involvement between HSRS worker and HCDS decision-maker with jointly agreed decisions on matters like pace, focus, extent and even methods of research. Action research is however still considered academically dubious and its practitioners probably vary greatly in quality of output.

##### c) Similarities between the Client System and the Change-Agent System

Many of the previous factors are likely to be enhanced given similarity between the two systems. This refers to similarity in such features as culture, modes of expression, degree of social integration, political profile and such like. By and large, as indicated at the very beginning of the paper, differences often seem greater than similarities.

##### d) Duration of Contact

The longer the contact between the HCDS and the HSRS the greater the potential benefit is likely to be. In particular cases this implies dedication of funds to HSR, development of careers and job security for researchers, encouragement of long-term liaison of particular HCDS components with particular HSR groups.

##### e) Method of Project Assignment

There are two ways that HSR may be managed. Individual research teams may make contact with HCDS components, and develop HSR projects which are then submitted to funding locally or centrally. Alternatively requests for specific research may be channelled through a central research funding body which then puts the project out to tender with various research groups. This distinction corresponds to whether client and change agent choose each other or whether there is random or specific assignment beyond control of the actors involved. Results in psychotherapy are less satisfactory in the latter mode. The same issue of trust, confidence, shared understandings and control probably apply in the HCDS-HSRS situation.

Central control, acting as a third party, seems likely to interfere with the close links that are so vital for fruitful cooperation.

#### IMPLICATIONS FOR ACTION

Consideration of the poor links between research and practice too often skirts the systemic issues, and conferences bringing the actors together tend to generate moral exhortations. Using the intellectual stimulus of empirical evidence and ideas gathered in a homologous field, it is possible to make some recommendations which may go part of the way to improving the current unsatisfactory situation.

1. It must be accepted that a poorly functioning HCDS with little systemic coherence is a poor candidate for research input and any plans for HSR should take this into account. Perhaps the most immediate task for the HCDS in this situation is to consider whether higher calibre personnel are required. Top HCDS administrative posts require pay and gradings commensurate with the work expected, and differentials should make this clear.

2. The HCDS may need to become more aware of its own distressing experiences. HSR can aid here primarily through policy analysis or sociological critical analysis. Such research has as its main function increasing the level of awareness and sensitising actors to the assumptions and values inherent in their own action.

3. Ongoing educational and public relations efforts clearly and lucidly demonstrating the helpfulness of research, may affect the desire to commission and use HSR and the expectation of benefit. In this vein perhaps it might be suggested that early projects be chosen with care so as to lead to quick useful results. Given this groundwork, longer term more fundamental research may well be supported more comfortably.

4. The experience by the HCDS of a helping alliance with HSR appears to be so crucial that it should be a prime focus in the ongoing evaluation of any research project or in the work of any HSR unit. In the ESORU approach we attempt to be as helpful as possible to the person or institution we are dealing with right from the beginning. There are many ways that HSR groups can provide assistance, for example, by knowledge of the literature, or by providing staff expertise, perhaps statistical, for ancillary problems. Furthermore, if a long-term perspective is taken their helpfulness in one study should have cumulative effects on later studies including increases in motivation and expectation of benefit. Ideally, the HCDS should experience gratitude towards the HSRs.

5. Action research and collaborative inquiry approaches should be given funding priority and attempts to increase the quality of such work and the understanding of the methods involved should be promoted.

6. Temporary exchanges between posts in the HCDS and HSRs should be arranged, permanent posts allowing for work part-time in the HCDS and part-time in HSRs should be developed, and career moves between the two systems should be facilitated and encouraged. HCDS internal research should be increased, for example, by expecting all senior administrators to have conducted a relevant study for their service, under appropriate supervision.

7. Long-term stable funding of HSR units, especially those which have built up close contacts with the HCDS, seems essential. HSR units should be evaluated in terms of the quality and extent of their access to the HCDS. Dissemination of findings and educative contact with the HCDS should be regarded as a proper component of the work of HSR units, and not as peripheral or inconsequential.

#### CONCLUSION

The analysis and recommendations in this paper are intuitively appealing and empirically grounded. Although this paper has focused on the health care system and health services research, the argument would seem to be generally applicable to domain-based, problem-driven research.

#### REFERENCES

1. Aaron, H.J., *Politics and Professors: The Great Society in Perspective*, (Brookings Institution, Washington, DC, 1978).
2. ACARD Report, *Improving Research Links Between Higher Education and Industry* (HMSO, London, 1983).
3. Ackoff, R.L. & Emery, F., *On Purposeful Systems*, (Aldine-Atherton, Chicago, 1972).
4. Bevan, G., Copeman, H., Perrin, J., & Rosser, R., *Health Care: Priorities and Management* (Croom Helm, London, 1980).
5. Bice, T.W., *Social science and health services research: contributions to public policy*, *Milb.Mem.Fund.Q.*, 58 (1980) 173-200.
6. Blanpain, J., *Health Management Education and Training in Education of Managers in Health Services*, ICP/HSDO43 (WHO Regional Office for Europe, Copenhagen, 1978).
7. Caplan, N.A., *The two communities theory and knowledge utilization*, *Am.Behav.Sc.*, 22 (1978) 459-470.
8. Cherns, A.B., Sinclair, R. & Jenkins, W.I. (eds) *Social Science and Government: Policies and Problems* (Tavistock Publications, London, 1972).
9. Clark, P.A., *Action Research and Organisational Change*, (Harper & Co., London, 1972).

10. Dabstrom, E., Interactions between Practitioners and Social Scientists in Research and Development into Higher Education (National Board of Universities and Colleges, Stockholm, 1979).
11. Docksey Report, Report to Confederation of British Industry and the Committee of Vice Chancellors and Principals, (London, 1970).
12. Eichhorn, R.L. & Bice, T.W., Academic disciplines and health services research, in Ploock, R.E. & Samsara, P.J. (eds), Health Services Research and R & D in Perspective, (Health Administration Press, Ann Arbor, 1973).
13. Evans, J.R., Measurement and Management in Medicine and Health Services, (Hoeckelster Foundation, New York, 1981).
14. Feuerstein, M.T., The educative approach in evaluation: an approach technology for a rural health programme, Int. J. High. Educ., 21 (1978) 56.
15. Gibson, G. Methodological and substantive research, Health Services Research, 13(Fall) (1978) 219-222.
16. Gordon, G., MacEachron, A.E. & Fisher, G.P., A continuing model for the design of problem-solving research programs: A perspective on diffusion research, Milib. Mem. Fund Q/Health & Society, Spring (1974) 185-220.
17. Grunberg, E.M., Personal statement (Higher Education for Public Health, New York, 1976).
18. Gurman, A.S., Presidential Address, 14th Annual Meeting, Society for Psychotherapy Research, Sheffield (July, 1983).
19. Hardie, M., Issues and Approaches in Health Service Management in Developing Areas, (WHO, SRS/RGR, Geneva, 1979).
20. Harrison, D.H. & Kimberley, J.R., HMO's don't have to fail (Harvard Business Review, Reprint No. 82406, Boston, Mass, 1971-82).
21. Heal, K., Disseminating police research: a task for researchers and the police, Home Office Research Bulletin, 15 (Home Office Research and Planning Unit, London, 1983).
22. Henny, D.F., Is TMS talking to itself? Management Science, 11 (1965) B146-B155.
23. Holland, W.W., The organization and funding of research into public health, J. Publ. Health Pol., 2 (1981) 364-360.
24. Hujmans, J., The Implementation of Operations Research (Wiley, New York, 1970).
25. Jaques, E., A General Theory of Bureaucracy, (Heinemann, London, 1976).
26. Kaluzny, A.D., Innovation in the health system: A selective review of system characteristics and empirical research, in Abernathy, W.K., Sholdon, A. & Frimlad, C.K. (eds), The Management of Health Care (Ballinger, Cambridge, Mass, 1974).
27. Kingston, W., Improving health care institutions, Research, (North-Holland Publ., Amsterdam, 1982).
28. Kogan, M., Korman, N. & Henkel, M., Government's Commissioning of Research: A case study, Dept. of Government, Brunel University (1980).
29. Kroeger, A. & Franken, H.P., The educational value of participatory evaluation of primary health care programmes: an experience with four indigenous populations in Ecuador, Soc. Sci. & Med., 15B (1981) 535-539.
30. Leavitt, H.J., Applied organizational change in industry: structural, technological and humanistic approaches, in March, J.G. (ed) Handbook of Organizations, (Rand McNally, Chicago, 1968).
31. Lehman, E.W. & Waters, A.M., Control of policy research institutes: some correlates, policy analysis, 5 (Spring, 1978) 201-222.
32. Lindbom, C.E. & Cohen, D.K., Usable Knowledge (Yale University Press, New Haven, 1979).
33. Lingwood, D.A., Producing usable research, Am. Behav. Sc., 22(1979) 339-362.
34. Luborsky, L. et al., Factors influencing the outcome of psychotherapy: A review of quantitative research, Psychol. Bull, 76(1971)145-185.
35. Luborsky, L., Good Outcomes in Dynamic Psychotherapy: The Search for Predictors, Paper presented at 14th Annual Meeting, Society for Psychotherapy Research, Sheffield (July, 1983).
36. Narayana, M., Endogenous research vs. "Exports" from outside, Future, 6 (1974) 388-394.
37. Nchanic, D., Prospects and problems in health services research, Milib. Mem. Fund Q/Health & Society, 56 (Spring, 1978) 127-139.
38. Milbank Memorial Fund Quarterly, Higher Education for Public Health, New York (1976).
39. Mitchell, T.R., Expectancy and expected value: decision models for organizations, Org. Admin. Sci., 8 (1977) 97-115.
40. Morynson, D.P., Social science and social policy, in, Maximum Feasible Misunderstanding (Free Press, New York, 1969).
41. Myers, B.A., Health services research and health policy: Interaction, Medical Care, 11 (1973) 352-358.

42. National Research Council, The Federal Investment in Knowledge of Social Problems, Vol.1 (Study Project Report), (National Academy of Sciences, Washington, 1978).
43. National Science Board, Knowledge and Action: Improving the Nation's Use of the Social Sciences (National Science Foundation, Washington, DC, 1969).
44. OECD, Reviews of National Policies for Education, United States, Educational Research and Development in the U.S.A. (OECD, Paris, 1971).
45. Rothschild Report, The Organisation and Management of Government R & D (HMSO Cmd.4814, London, 1971).
46. Rowbottom, R.W., Social Analysis, (Heinemann, London, 1977).
47. Schaefer, M. Management training for health development (1980) (quoted in Evans J.R. op. cit.)
48. Scheibe, K.E. Beliefs and Values, (Holt Rinehart & Winston, New York, 1970).
49. Schuster, G. Creative Leadership in a State Service, (London, 1959). (Quoted in Evans, J.R. op.cit.)
50. Shegog, R.F.A. (ed), The Education and Training of Senior Managers in the NHS: A contribution to Debate (King's Fund, London, 1977).
51. Shortell, S.M. & LoGerfo, J.P. Health services research and public policy: definitions, accomplishments, and potential, Health Services Research, 13(Fall, 1978) 230-237.
52. Susman, G.E. & Evered, R.D., An assessment of the scientific merits of action research, Admin.Sc.Q., 23 (1978) 582-603.
53. Weisbord, M., Why organisation development hasn't worked (so far) in medical centers, Health Care Management Review, (Spring, 1976) 17-38.
54. Weiss, C.H., Introduction, in Weiss, C.H.(ed) Using Social Research in Public Policy Making (Lexington Books, Lexington, Mass. 1977).
55. White, K., Life and death and medicine, Sc. Am., (Sept.1973) 32.
56. Williams, A.P., Improving health services research, Health Services Research, 13 (Fall, 1978) 223-226.
57. Williams, S.R. & Wysong, J.A., Health services research and policy formulation: An empirical analysis and structural solution, J.Health Politics, Policy and Law, 2 (Fall,1977)362-387.
58. Willson-Pepper, C.R. The place of local social realities in developmental work, Publ.Admin. & Dev., 2 (1982) 195-205.