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Commentary

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COMMENTARY

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The Churchman-Schainblatt paper is gratifying in many ways. It calls attention to a significant issue which is explained in meaningful terms; it suggests a useful taxonomy for comprehending the nature of the implementation problem; and a formal statement is developed to describe the domain of the problem. Also, this paper undertakes to catalogue the opinion of researchers by initiating a survey of some literature; and, the authors state a definite position with respect to these opinions. Namely, that *mutual understanding between managers and researchers* is the *only* approach to implementation that they can accept. As a culmination to their line of reasoning, the authors suggest two areas for intensive research, viz., the politics of decision making and the management of scientific creativity. These provide us with important insight concerning what the authors mean by *mutual understanding*.

The notions of the paper which have been summarized above constitute a positive approach and a rewarding contribution to the literature of management science. But the authors have called for debate and this is not difficult to furnish. The problems of implementation are deeper than a paper of limited length can hope to convey. They are too complex to be contained adequately by a four cell matrix representation of the relationships that may exist between managers and researchers. Undoubtedly, the authors are aware of this fact which accounts for the use they have made of the term 'dialectic' in titling their paper.

Definitions and Hypotheses

As a convenient starting point for our discussion, let us consider the definition of "mutual understanding" as it is employed by the authors. To paraphrase them—understanding is said to exist if the response of the system to a given input is effective in moving the system toward the attainment of the goals which have been assigned to it. "Mutual understanding" requires that this condition exist for both of two sub-systems that interact with each other. A quote taken directly from the paper can help to amplify this point,

"An individual understands a stimulus if he responds to the stimulus in an efficient manner relative to the ends. For example, the assertion "the manager understands the researcher" means that the manager reacts to what the researcher is trying to do in a manner that improves the manager's chances of attaining a purpose empirically assigned to him."

This definition is not inherently useful to us because it produces (and is the product of) circular reasoning. Since "mutual understanding" is said to exist when an effective output is obtained, then it cannot be helpful to conclude that "mutual understanding" is the state required to obtain an effective output.

The researcher and the manager are treated by this definition as though they

were hidden somewhere within a black box. The relationships (or circuitry) that can describe "mutual understanding" are not delineated. Yet, what we want to know is how to "wire" the manager and the researcher together so that an effective input-output relationship is achieved.

As was previously stated, the Churchman-Schainblatt paper indicates that it is precisely the nature of these relationships which they feel should be subjected to intensive study. And they have described this study in terms of the politics of decision making and the management of scientific creativity. Then, Churchman and Schainblatt, by implication, if not by direction, might be said to hypothesize that "mutual understanding" increases as the level of interconnection and involvement between the researcher and the manager increases; and accordingly, the probability of successful implementation increases—as well.

Having set things up in such a way, we can then question whether "mutual understanding" (defined in the above fashion) must necessarily be the arrangement that always produces the best result. Or more specifically, we can take issue with the hypothesis that the highest level of interconnectivity is certain to be the most advantageous for effective implementation.

To begin with, let us note that implementation procedures cannot be divorced from those of model-building (problem-solving and decision-making). Model-building is an activity that has a symmetrical relationship to implementation. In the case of model-building we abstract from the real world to create the model. Next we operate on the model in its convenient isolation from the real world. Then, we undertake to implement our results, that is, we adapt the transformed abstraction—now in its solution state—to the real world. Presumably, a proper model is so constructed that it can be returned to the real world with effectiveness. This process (of abstraction and implementation) continues to cycle when we evaluate the results of our decisions in order to provide further adaptations of the system.

The relations of managers and scientists are inherent in the total process. It is misleading to separate them by intention (either explicitly or by implication). The problem of implementation begins with the first model-building decision. We expect that discussions of implementation will include this gestalt; this unified concept of the "total process." When the authors talk about separate functions, surely the first place to look for any separation of indivisible activities is in the relations of model-builders and implementers—whomever they may be. It is in this relationship that the seeds of "mutual understanding" must be sown if their benefits are to be reaped at a later time.

Once it is granted that model-building and implementing cannot be treated as separable functions, then we can view the relationships of the manager and the researcher in terms of this union. From a practical point of view there are distinctly different problem areas. In some cases, high-level interconnectivity between researchers and managers would be warranted while in other cases it would be wasteful. The same can be said for both median and low-levels of interconnectivity. Let us distinguish between three basically different problem levels. We shall also hypothesize that the optimal degree of interconnectivity (i.e.,

level of "mutual understanding") in an operational context is a function of the problem situation and the organizational level to which it is assigned.

Problem Levels and Degrees of Interconnectivity

The so-called *tactical level* seems well-suited to the kind of relationships that the authors describe as *separate functions*. By tactical level we mean problems where the broad outlines of action have already been set down as policies. High degrees of technical specialization and researcher attention are frequently required at this level. Lower degrees of managerial generalization and conceptualization are required to achieve results that will benefit the organization in a manner that will satisfy the manager. A substantial body of *precedent* exists which assures the manager (without need for persuasion) that his organization can profit from the application of such relatively independent researcher attention. Problems at this level frequently can be resolved as decision problems under conditions of certainty. When stochastic descriptions are required, they are (typically) involved with highly stable systems.

The attainment of "mutual understanding" (in the Churchman-Schainblatt sense) at this level constitutes an over-enrichment of the problem area with both talent and time. It can be an unnecessarily costly and (consequently) non-operational relationship. It is not expected that the manager will entirely disassociate himself from tactical activities—but he relies upon (and trusts) the researcher to ask the pertinent questions and to obtain that information from him and *other* managers in the organization which is required to properly resolve the problem. (It is with this same kind of trust that the patient offers information to the doctor. The more specialized, experienced and knowledgeable the doctor, the easier it becomes for the patient to invoke such trust).

The possibility is raised by the authors (in presenting the viewpoint of persuaders) that under some circumstances, a problem might be solved at the wrong level. To quote,

"Many of the experienced operations researchers have come to feel that most of OR is thoroughly naive, simply because it ignores the important issues facing the manager. It assumes, for example, that inventory control or price optimization are really serious managerial problems, when they may in fact be trivial housekeeping matters for the manager. With such a naive concept of the manager in mind, the operations researcher will waste his time."

There is no gainsaying the truth of this proposition, but it is an idealist's position. We cannot escalate all problems out of their respective sub-systems into the upper echelons of top management awareness. The principle of conservation of energy applies to managers and machines alike. The assumption that all problems should receive top management adjudication is unrealistic. In some cases, the penalties of delays that are involved with such procedures might be prohibitive. The cost of simple projects would be inflated; often well beyond the savings that could be realized.

But then we are faced with the question, "How does one determine the level at which a problem should be solved"? This is an issue that requires under-

standing of both the politics of decision-making and the (equally) illusive counterpoint of scientific creativity. The only practical answer would seem to be that *precedent* can be used to indicate the appropriate level. Special circumstances, perceived by the researcher or by the manager (and sometimes by both together) might modify this conclusion. It should be noted that the Churchman-Schainblatt paper highlights individual characteristics that differentiate one manager from another. For whatever reason, it bypasses the prior problem of determining the appropriate managerial level at which it is reasonable to develop an adequate relationship.

In the same sense, we can ask a number of illuminating questions. Can "mutual understanding" be developed and maintained between the researcher(s) and several managers whose responsibilities exist at varying organizational levels—simultaneously? (What about the relationships of the researchers among themselves?) Is the meaning of "mutual understanding" invariant to the level of the manager with whom a researcher *must* deal? Of what benefit is such understanding if the manager and the researcher disagree concerning the appropriate level for resolving a problem? Whose standards are to be used? For example, what about the case where two managers (at the same organizational level) have conflicting views? Can the researcher find "mutual understanding" when faced with conflicting sets of standards?

With these questions in mind, let us now move to the next (the second) level which we can call the *strategic level*. It is perhaps most easily defined in terms of what it is not. Namely, it includes neither tactical problems nor global problems. The global domain—which will be our third level—is intended to contain those problems which are quite generally recognized as being in the province of top management.

At the strategic level we can (at least) rationalize the use of persuasion. (The word "persuasion" may have semantic overtones that tend to mislead. There is an unintended Machiavellian component. Is it possible that the word "convince" might be used to achieve the same objective without having to flirt with concepts of seduction?) In any case, this position assumes that it will be of greater benefit to the enterprise for the researcher to understand the manager's domain than for the manager to understand precisely what the researcher can do for him. Since, at this level, the manager lacks sufficient precedent to take the researcher's approach for granted—he asks to be convinced.

At the same time, it is characteristic of the strategic level that the researcher cannot rely entirely on well-known formats, analogs and models. His work requires some unique contributions of his own making. And it is quite likely that at this level several conflicting sub-systems will demand inclusion in his model. These conflicts can be resolved by obtaining the optimal configuration of the opposing forces . . . which only exists at an organizational meta-level. In this sense, the researcher alone can be expected to rise above the sub-system conditions and to penetrate the enterprise level. Freedom from the shackles of lower-level managerial "mutual understandings" would appear to be an advantage under such (expected) conditions of organizational conflict.

Furthermore, in approaching problems that possess unique aspects, a degree of researcher invention is expected. We know so little about the determinants for creativity. If the researcher in that special activity of attempting to be innovative can function best under conditions which the authors call separate functions, why should he be inhibited by "mutual understanding"?

The belief that a team approach is the most effective for all activities has not been substantiated in practice—especially with respect to creativity. (We should be prepared for long and intensive research concerning individual attributes and administrative configurations related to scientific creativity.) If anything, in this area, the implications of "mutual understanding" emphasize a tendency to stereotype developments. And, following up on this line of thought, the researcher *may only appear* to be using the separate functionalist approach. His knowledge of the situation might be sufficiently comprehensive so that he would qualify as a persuader (unless his verbal and presentation abilities operate as limitations).

Churchman and Schainblatt in surveying some literature with respect to categories of relationships may even have been led astray. Up to the present time, there has really not been very much that one could write about "mutual understanding" except to say that one is for it (and also for researching it). We can assume, therefore, that obscure relationships at all levels of complexity exist between the researcher and the manager although they are not explicitly stated by the researcher when he attempts to explain the characteristics and behavior of a model to his colleagues in the literature. Even an ardent exponent of separate functions for all management science activities will be observed to interact with managers, persuading, lecturing, educating and eating lunch with them. Is it really naive to assume that a host of mutual relationships which resist description arise as a result of such personal contacts? (We speak of a host of relationships instead of just the four that the authors enumerate because a 2 x 2 arrangement overlooks the combinations of relationships that can exist and the rich spectrum of ways in which they might be manifested).

At the (*global*) top management level, the manager is far more readily identified with the enterprise and its goals than at the (*strategic*) middle management levels. Problems in this area are characterized by unstable risk systems and fundamental uncertainty. Precedents are vague being somehow stored as associative nets of experiences with intractable patterns of similarities. Formal methods break down; fine-honed intuition is at a premium. What power can the researcher bring to bear at this level? It seems reasonable to suggest that at this level the power of the researcher will be a direct function of the level of "mutual understanding" that he can establish. The motivation for management to enter into such a relationship is the promise of what might be realized under such circumstances.

The ENTERPRISE CONCEPT of "mutual understanding" between a researcher and (say) two mid-level managers whose three-way operations bring conflict into the open requires that at least one individual with some kind of jurisdiction rise above the antagonisms of the sub-systems. The researcher is well-suited for this job but he must be able to identify himself with the enterprise.

Thus, the ideal state of "mutual understanding" exists between the researcher and the enterprise. To the extent that he understands the plurality of middle managers, the efforts of the researcher will become more effective; but the converse effect will also occur as he succeeds in deriving a relationship of "mutual understanding" with the management of any one of the sub-systems.

Perhaps this discussion indicates that when Churchman and Schainblatt talk about the manager they are in fact referring only to the top manager. But if so, the operational considerations, previously raised, concerning the limitations of time and energy of the top manager apply.

It seems reasonable to suggest that "mutual understanding" between researcher and manager can be most effective at the enterprise level. It is also clear that top management must always expect to ration its own (scarce) resources. The creation of multiple positions at the top management level cannot be used to solve the problem of providing more of these same scarce resources. As is the case with air traffic control, decision redundancy can be disastrous. And, at the same time, it will certainly inflate the cost of solving many lower-level problems.

The researcher is uniquely able to represent the enterprise position from below. His effectiveness will increase as his access to information at the upper echelons increases. While this is not equivalent to mutuality of understanding, the availability of top level information would constitute a major advance in the relations of the researcher and management. Of course, such information makes the researcher privy to valuable knowledge, which transforms into power, and which is, accordingly, reserved for the inner sanctum.

Following Churchman and Schainblatt, it can be asked, How can we trust that the researcher will be sincere and competent in his representation of the enterprise? He might, for example, have personal, competitive or societal goals in mind. Surely, we are not going to use a polygraph in conjunction with a battery of aptitude tests because these are neither quite certain in their effects nor in their results. It would seem to be that as in all aspects of human relations a certain amount of faith and trust is essential. To the best of our ability we grant it; and we do this on the basis of our intuitive responses to the individual. If we cannot expect to find this sensitivity among our top managers, then it is harder yet to defend their other functions in the enterprise.

With the foregoing in mind, it seems useful to suggest that the authors should rename their paper, *The Researcher, The Manager and The Enterprise* to provide a sharper focus for subsequent discussion of these matters. It is also evident that their call for intensive research in the politics of decision-making and the management of scientific creativity is long overdue and should not be taken lightly.

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