disturbance in the child. By means of what Henry calls "delusional extrication," parents are able to "half believe their children are not present," humiliatingly seeing the children as "nonhuman objects." When such a tendency is combined with others that Henry names—communication problems, a "flight from crisis," and mutual withdrawal—madness results.

The final study is of those "disoriented children" who are the aged of our society. And again, Henry faults the culture. Like the psychotic children, the aged have come to see that they are not valued for themselves. And the cruelty of our institutional handling of these elderly discards makes it plain that obsolescence is a sin. Henry concludes that this group's tragedy is really the tragedy of us all, in microcosm. It lies in a tremendous "*yearning after communication with no real ability to achieve it.* In this," he adds sadly, "we are all very much like them."

The view that what accounts for the whole also explains its parts must, of course, follow from Henry's thoroughgoing commitment to the theory of cultural configuration. His consistent holism dictates that it is the entire cultural system which causes, and thus which must be brought to bear in understanding, any single situation or condition. The relations of parents to children, of adolescent to adolescent, and of the productive to the obsolete all are determined by "the system" as a whole. The entire cultural configuration, dominated by the "pecuniary philosophy," affects in a major way all other aspects of the culture and society. The dishonesty that this philosophy introduces into impersonal, institutional dealings is no less influential in setting the pattern for interpersonal relationships, for it is the system as a whole that compels and explains its various segments.

In an assessment of Henry's book, this configurational approach becomes both a strength and a weakness. To the extent that one agrees with it, the theory that the cultural configuration as a whole is determinative of all serves as an asset. And surely it is a theory with a great deal of plausibility. But if we view the configurational claim as a *theory*, then we cannot credit Henry with it. For, as theory, the view was elaborated some 30 years ago by Ruth Benedict, who was Henry's professor at Columbia University. *Culture Against Man* adds little to the original theory. Can the book be viewed, then, as an extension of the theory, or as lending it further confirmation? Unfortunately, the answer seems to be no, and the reason lies in the way Henry went about his book. ". . . *I do not use research as proof* in any rigorous sense" and "*I discuss data as illustrative of a viewpoint and as a take-off for expressing a conviction*" are statements in the introduction to *Culture Against Man.* And there is little in the book that would challenge them.

Unless one is of that school of thought wherein a societal analysis can be verified simply on the confirmation of the "man in the street," one has doubts about conclusions based on this sort of procedure. Ruth Benedict quite explicitly espoused this means of verifying an analysis—the agreement of the man in the street stands as sufficient evidence—and it would appear that Henry, as her student, has also accepted it. With all due credit to Benedict, most contemporary views of adequate methodology do not sanction such procedure.

Other logical difficulties further serve to undermine Henry's analysis. His use of the concept of "national character" as a construct for the analysis both of the United States as a nation and of a hospital for the aged may add even further to the present confusion regarding this concept. And his semihopeful view that "culture, in creating a conflict, provides also an attempted solution," will jar some readers, because here culture mysteriously becomes self-active and self-corrective.

Yet with all this, the book must be rated highly on the basis of the insight in Henry's observations and interpretations of the American scene. Its very considerable value lies in the intuitive insights the author brings to his studies of institutional segments of our society, and in his reiteration that drivenness, affluence, and emotional starvation are overarching themes in our lives. Henry's gift of intuitive insight makes *Culture Against Man* a highly provocative source of suggestions for inquiry, and, as such, I would recommend it to social scientists and others. But so powerful is the book that the reader, who is apt repeatedly to be tempted to agree with what Henry writes, should be warned that he must ask constantly, "How does the book validate or increase the degree of confirmation of the numerous propositions that it makes?"

Science of Decision Making

A Manager's Guide to Operations Research. Russell L. Ackoff and Patrick Rivett. Wiley, New York, 1963. x + 107 pp. $4.25.

Operations Research in Research and Development. Proceedings of a conference. Burton V. Dean, Ed. Wiley, New York, 1963. xii + 289 pp. Illus. $8.50.

Operations research as a science of decision-making is less than 25 years old. By some standards, a quarter of a century is a mere speck of dust in the space of time; but such a scale seems inappropriate for a reasonable specification of how long it might take to communicate a new idea. Viewed in this perspective, it may or it may not be surprising, depending upon individual tastes, that until now an accurate, concise, and nonmathematical picture of the nature of OR had not been drawn. The need for clarification was never in question. The ability to achieve it was another matter. In fact, no such book could be written until the field of operations research had gained ample experience and the kind of confidence associated with maturity.

The Ackoff-Rivett book represents the first serious attempt to communicate, without the use of mathematics, a synthesis of the structure, philosophy, and accomplishments of operations research, not just an omnium-gatherum of facts, cases, and techniques. The publication is addressed to those individuals whose activities motivate them to understand and probably use OR. This certainly includes the community of managers and administrators that OR is dedicated to serving. Being concise and nonmathematical, the book is likely to find a receptive audience, and it should help to dissipate whatever veil of confusion presently surrounds the use of operations research.

The book should also interest the scientific community of which OR considers itself a member. In the first place, it provides an excellent history of this field. Second, the authors discuss two environments in which OR has grown up, and they compare experiences in Great Britain and the United States when such differentiation appears to be relevant. The authors are in a unique position to achieve this result. Ackoff is a past president of the Operations Research Society of America, and Patrick Rivett is president of the United

Kingdom's Operational Research Society. Third, the relation of the system's concept to operations research emerges with a sense of both primary and growing importance. Fourth, simulation techniques are repeatedly stressed as a means for resolving problems that are too complex for treatment by the methods of classical mathematical techniques.

One point about which I disagree with the authors must be cited. They overemphasize the team concept. Although circumstances exist wherein only a team can effectively perform, this condition should not be used to describe the "essential characteristics" of operations research, thereby excluding individual effort. As Aesop warned us, we must beware lest we lose the substance by grasping at the shadow.

Operations Research in Research and Development, edited by Burton Dean, contains 12 papers that were originally delivered in 1962 at a conference held at Case Institute of Technology on applications of operations research to the management of research and development.

In the past, OR has concentrated its attention on problems that can be classified as decision-making under conditions of *risk* (where reasonable forecasts could be made) or under conditions of *certainty* (where the system's behavior is invariant to noncontrollable forces). Thus, models were developed for short-term, repetitive conditions to obtain near-optimal work schedules, inventory policies, distribution systems, and so forth.

Long-range planning models laced with intangible factors and conditions of *uncertainty* were on the horizon. They still are, but the horizon seems to be moving closer. Operations research is observably metamorphosing in the direction of long-term problems; this collection of papers is additional evidence of that fact.

Three major areas appear to include most of the topics that received attention at the conference: The objectives of R&D and measures of system's performance (in the papers by Johnson, Perlman, and Martin); The use of network theory for planning and controlling projects (Malcolm, Norden, Freeman, and Ashley and Austin); The use of decision theory models for improving the management of R&D functions (Hertz and Carlson, Rubenstein, Shepard, Weiss, and Marschak).

In the lead-off paper, a hard-hitting, heavily documented essay, Ellis Johnson attempts to develop relevant measures of the effectiveness of R&D, measures which can be used to illustrate that the performance of R&D management in the United States is inadequate. Johnson suggests that a committee be formed within the American Association for the Advancement of Science to study ways of remedying deficiences in the methods by which this country applies research to technology (p. 37).

Other papers are concerned with the development of mathematical models that might provide basic insights into the R&D process. Thus, for example, Martin presents a modified version of Ackoff's model of human communication, and Norden describes a model for predicting the utilization of manpower in development schedules. Perhaps more important than any one paper are the terms that are used and the study pattern which emerges. It is not yet time to tell whether OR has any fundamental contributions to make to the management of R&D projects, but there can be no doubt that OR wishes to participate in this critical endeavor.

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Chemical Engineering

High-Temperature Inorganic Coatings. John Huminik, Jr., Ed. Chapman and Hall, London; Reinhold, New York, 1963. x + 310 pp. Illus. $10.

This short book contains eight chapters which vary from 7 to 100 pages in length. The chapters cover coating materials and coating systems, structural materials for high temperature use, methods of applying coatings, the testing and evaluation of coatings, designing with coatings, and the mechanisms that operate in coatings.

The manner of presentation combines the style of a handbook with that of an encyclopedia. There are a large number of tables and graphs with fairly short, almost entirely qualitative, discussions, a reflection of the fact that the work is being done by a large number of people in widely separated locations who are working under great pressure to achieve the desired results in a hurry. That quality of the presentations varies greatly and the material is somewhat repetitious is to be expected in a text authored by a number of persons but in one instance there is considerable repetition in two consecutive paragraphs.

The book appears to have been published hurriedly because the text needs editorial attention, and the quality of the plots and the printing ranges from fair to poor. The material is up to date and, despite its brevity, covers the subject matter.

According to the editor, the book is intended primarily for those who are beginning research in the field, for those who design and construct equipment for operation in hot environments, and as a general reference book, uses for which it is suited. Many will find its brevity an especial advantage.

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Silicon Chemistry

Volatile Silicon Compounds. E. A. V. Ebsworth. Pergamon, London; Macmillan, New York, 1963. vi + 179 pp. Illus. $7.50.

Although this excellent book is included in the publisher's "International Series of Monographs on Inorganic Chemistry," persons interested in either organosilicon or inorganic silicon chemistry should find it equally useful. The author stresses the fundamental experimental work and the hypotheses that are basic to both the organic and inorganic silicon fields.

The molecular and chemical properties of the silicon hydrides and all their known volatile inorganic derivatives are critically discussed. Where appropriate, comparisons are made between analogous carbon, silicon, germanium, and tin compounds. Properties of certain organosilicon, and to a much lesser extent organogermanium and organotin compounds, are examined where these serve to illustrate trends or concepts important to the understanding of the chemistry of silicon.

The role of $(p \rightarrow d)\pi$ bonding between silicon and an attached element is evaluated with particular care, and in the last chapter a concise but critical summary is presented, which gives physical and chemical evidence for the presence of this type of bonding in certain linkages containing silicon.

Since portions of organosilicon, ger-