

quacy of these principles is tested by applying them to a variety of concrete problems.

It seems doubtful that readers of a different persuasion will be convinced that notions of "drive" and "incentive" are superfluous—their absence is too often felt in this book. Moreover, Bindra's own concepts of "motivational phenomena," "goal direction," "habit strength" (an unfortunate term, since what is meant is not what Hull called by this name but rather something closer to his "reaction potential"), and "arousal" are defined by conventional complexes of symptoms that admittedly lack consistent intercorrelation, and thus suffer from the awkwardness and tentativeness ascribed by Bruner, Goodnow, and Austin (in *A Study of Thinking*) to such disjunctive concepts.

On the other hand, most of the text stays very close to experiment, and here it will be hard to surpass. The carefully detailed and well-documented descriptions of those forms of behavior upon which the author has centered his attention are admirable. The experimental work, which has been chosen carefully for its relevance, is analyzed clearly and economically and is evaluated shrewdly. The frequent suggestions toward further research are uncommonly realistic and stimulating. For these reasons, what is true of few new books in psychology can be said of this one, that one wishes it were twice its present length.

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**Soviet Economic Aid.** The new aid and trade policy in underdeveloped countries. Joseph S. Berliner. Published for the Council on Foreign Relations by Praeger, New York, 1958. xv + 232 pp. \$4.25.

Why does the Soviet Union render economic aid to underdeveloped countries? How does its effort in this direction compare with that of the West? What is the connection of Soviet aid with trade? What is the balance of economic and political advantage? It is to questions like these that this book provides serious, thoughtful answers. At a time when exaggerated, alarmist nonsense is all too common, Berliner's moderate and well-documented exposition deserves every welcome. Of course, it cannot be wholly up-to-date, but nothing that has occurred since the manuscript was sent to the printer affects the validity of the basic arguments of its author.

It is important to avoid the unbalanced ultra-"political" attitude which is so often met with whenever Soviet ac-

tivities are the subject of discussion. We hear of "tremendous Soviet aid drives"; the arrival of a group of Soviet technicians is assumed to be evidence in itself of plots and subversion; by some curious logic, a Soviet credit or arms delivery is regarded not merely as an inconvenience to the West (which it often is) but also as a politically immoral act, though no one has yet explained by what moral principle only the West is entitled to grant economic or military aid to third parties.

Berliner shows that there are more sensible ways of looking at these problems. He rightly emphasizes the predominantly political motivation of aid—how could it be otherwise?—but finds such Soviet activities quite logical in the circumstances. "The Soviet leaders may have felt they had little choice but to get into the aid business, if they wanted to exercise continuing influence on the course of events in underdeveloped countries" (page 17). This influence is exercised not so much by direct "cloak-and-dagger" subversive maneuvers, which are relatively rare and do not play a decisive role, as by a more general and more long-term effort to win friends and influence people. The actual scale of Soviet aid has been a small fraction of that of Western aid—smaller than would appear from a straight comparison of the relevant statistics, because the figures usually cited for Soviet (but not Western) aid include commitments to supply goods in future years, and also because almost all Soviet aid consists of interest-bearing credits, while the bulk of Western assistance takes the form of outright grants. When all this is allowed for, the actual annual flow of aid from the Soviet bloc can scarcely amount to more than 3 to 4 percent of that from the West. Nor has the rate at which new credits are granted shown any upward trend since 1956.

Why, then, has the political effect of the aid program been so disproportionately large? Berliner advances some good reasons: novelty, the anti-imperialist traditions of the U.S.S.R., the attractiveness of the Soviet example of rapid transition from backwardness to industrial might, and the alleged lack of "strings" or of irritating controls over the objects on which the money is spent. These and other points receive a careful assessment. Berliner also analyses the causes of the partial Soviet retreat from the extreme autarchy which characterized the late Stalin period—the gradual realization that there are economic as well as political advantages to be gained from having more dealings with the outside world. Yet, as he shows, autarchic tendencies remain, and they tend to obstruct the extension of Soviet ties with non-Soviet countries. Soviet resources are heavily

committed to sustaining extremely ambitious programs of internal growth, and it is by no means clear that much larger quantities of capital goods can be made available for export outside the Soviet bloc in the near future, though as Berliner rightly points out, much depends on political decisions about priorities.

There are a few points at which critical remarks seem to be called for. Thus, the treatment given to trade (as distinct from aid) on balance tends to understate the economic advantage of commodity exchange to the Soviet bloc and, therefore, to overemphasize by implication the purely political element in trade policy. Then there are two statistical errors, which operate in opposite directions. On the one hand, the share of foreign trade in the Soviet national income is understated, because of a quite insufficient allowance for the overvaluation (in terms of internal prices) of the *valuta* ruble in which foreign trade statistics are expressed. On the other hand, the share of machinery exports in total output of machinery, as given by Berliner, reflects a significant underestimate of the output of Soviet machinery, the error being due to a misinterpretation of official Soviet indices. This may be explained for the statistically-minded as follows: The error consists in treating the "repairs" component of the "machinery and metal-working" index as if it referred only to "special railway rolling-stock repair plants," whereas this is but one of ten known categories of "repair" activity falling under this head, and this upsets Berliner's calculation of the share of machinery within this category, which is based on the assumption that "repairs" were only of negligible importance.

But these are minor criticisms, which in no way detract from the value of this admirable and timely book. Not the least of its merits is the clarity and conciseness of the style of writing. May there be more like it.

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#### **Techniques of Population Analysis.**

George W. Barclay. Wiley, New York; Chapman and Hall, London, 1958. xiii + 311 pp. Illus. \$4.75.

The purpose of this volume is to provide training (without benefit of lectures) in techniques of population analysis to persons who are not statisticians and who have had no prior experience in analyzing census or vital registration statistics. As a result, the book is written in simple fashion and is quite nontechnical.

The subjects covered range from "The

nature of demography" through "Rates and ratios," measurement of birth and death rates, measurement of the growth of population and migration, and, finally, measurement of "Manpower and working activities." Illustrative materials are drawn from the population censuses and vital statistics of countries throughout the world.

Considering the purpose for which this volume was prepared, the author has done an excellent job. Only the chapter on "Manpower and working activities" is weak; it fails to get at the heart of the definition of working force and of the methodologies available for studying this subject. This topic is by far the most difficult in all population analyses and very probably cannot be treated in as simplified a fashion as some of the other topics.

Various other volumes have been written on demographic techniques, some by actuaries, some by United Nations personnel, and some by university people and other demographers. Without exception every other such volume which I have seen was written for readers who had some statistical or mathematical training and some familiarity with censuses and vital statistics. When writing for these "more learned" audiences, obviously, it is possible to include more sophisticated techniques and to examine all the procedures much more carefully than Barclay was able to do when writing for a relatively unsophisticated reader.

This book can probably be used as a text in high schools, and certainly in the first or second year of college. For more advanced American college students it will be useful as supplementary reading.

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**Landmarks of Tomorrow.** Peter F. Drucker. Harper, New York. 1959. xii + 270 pp. \$4.50.

Anyone with a clear memory of the world of 25 years ago knows how fantastically different that world was from this one—different not only in the level of production and income but different also in national policies and international relations, in the problems that concern individuals and governments, in man's expectations and aspirations for the future. Yet the world of 25 years ago was the modern world of big business, high-speed transportation and communication, Freud, revolutionary scientific theory, new invention, and social change.

What then is this world? Drucker calls it the "post-modern" world and describes one of its fundamental features

as a changed attitude toward change itself. In the past, change was sometimes thought of as fate, and sometimes as inevitable progress. Change now—and this is the starting point of Drucker's analysis—is deliberately planned. Man has learned enough of science and of management to be able to invent, on demand and to specification, new goods and new social, industrial, and political devices to suit his needs; witness polyethylene, voluntary medical insurance, the Marshall Plan. The basic method is what Drucker calls the organization of ignorance—the systematic review of what must be learned, developed, and constructed to make the desired invention work. This is not new; in this sense Mendeleev "invented" the periodic table, and the Federal Government "invented" TVA. What is new is that innovation is now the norm; man knows how to organize his ignorance; he is prepared to take the risks involved, and to expect enough successes to overbalance the failures. Change is no longer fate or inevitable progress but man's own doing, and thus man must accept responsibility for the future.

Against this background the author sweeps over a wide range of problems: the fate of Communism, the upward struggle of underdeveloped nations, the problems of government, the relations of various centers of power in an industrialized economy, the role of research, and, most emphatically, the need for a philosophy, a theory, a discipline—"a strict discipline of qualitative and irrevocable changes such as development, growth, or decay. We need rigorous methods for anticipation of such changes. We need a discipline that explains events and phenomena in terms of their direction and future state rather than in terms of cause—a calculus of potential, you might say, rather than one of probability. We need a philosophy of purpose, a logic of quality and ways to measure qualitative change."

Drucker does not try to develop this philosophy or discipline. All he does is to ask a lot of hard, thoughtful questions, here and there to show why yesterday's methods cannot possibly solve today's problems, and to organize a wide range of information to show how fundamental and pervasive the change has been. Many of the things he says have been said by others; indeed one of his points is "how obvious the unfamiliar new already is." Sometimes I read with disagreement, sometimes with shock, and sometimes with gratitude for a stimulating synthesis. The whole is provocative reading indeed, for the social scientist or social philosopher, for anyone responsible for management, and for anyone interested in education or the social aspects of science.

Any such book must be partly sermon. The theme of this sermon is responsi-

bility: educated man must accept responsibility for determining the "Landmarks of Tomorrow"; the responsibility lies heaviest on those nations which have acquired the greatest experience and skill in innovation.

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**Investment in Innovation.** C. F. Carter and B. R. Williams. On behalf of the Science and Industry Committee [British Association for the Advancement of Science]. Oxford University Press, New York, 1958. ix + 167 pp. \$2.40.

Beginning more than a decade ago, arguments raged in the United Kingdom about the inadequacy of the research and development effort, both in quantity and in effectiveness of organization, and the slowness of industry to invest in innovation. Many conflicting suggestions were advanced. The authors, who are British university economists, have spent most of the intervening period collecting concrete information on these and closely related subjects.

This book is only the filling in a sandwich. A predecessor, *Industry and Technical Progress* (1957), dealt in a particularly thorough manner with the supply of technical personnel. The follow-up study is to be called *Studies in Company Finance*.

After a rather prosaic discussion of the origins of innovation, and an increasingly interesting evaluation of the bases for deciding when and if investment should be made, the authors very sanely conclude that no generally applicable set of rules exist. Before reaching this position they introduce the questions of opportunity (as provided by research and invention), uncertainty (usually greatest in marketing aspects), motivation (profit is seldom the dominant conscious aim in the choice), institutional environment (40 percent of the decisions were forced by external circumstances), capital supply (only a small volume of useful industrial innovation seems to be inhibited by credit restrictions), and the influence of changes in interest rate (which are small as long as the rate moves in the 2 to 7 percent per annum range). Typical resolutions of these questions within individual firms are illustrated in six brief case studies.

The writing seems to be directed to civil servants, directors, managers, and educated policy makers. In a valuable appendix the relevant economic theory is reviewed, and it is demonstrated to colleagues in the economics profession that the present state of Keynesian theory is not very helpful, and that alternative formulations are not at all ex-