systems and the structure of myth to the naming of racehorses, but he has chosen to present his ideas in an elegantly oracular style which sometimes obscures as much as it reveals. Considering the formidable nature of his task, Leach has done a brilliant job of presenting his subject.

The organization and style of the book are admirably suited to its purpose. Leach ignores the chronological sequence of Lévi-Strauss's works in his exposition, which he divides into a series of discussions of major topics and ideas in Lévi-Strauss's work. These are arranged so as to provide a coherent introduction to the basic tenets of the structuralist position. The emphasis of the earlier chapters is upon common themes that underlie Lévi-Strauss's work as a whole, and the later chapters concentrate upon specific topics such as kinship or myth. This arrangement is well suited to the needs of a beginner, but specialists will also find new and useful insights in the early chapters: for example, Leach's demonstration that the Jacobsonian concept of the vocalic triangle as the fundamental element of the sound structure of language is the model for many of Lévi-Strauss's analyses in the areas of kinship and primitive classification. Much of the exposition of Lévi-Straussian theories is achieved by means of ingenious examples, such as the tongue-in-cheek analysis of traffic lights as a minimal binary system (red/green) mediated by a third intermediate element (yellow) which takes up much of the introductory chapter and serves as Leach's paradigm of Lévi-Straussian analysis. Some of these examples, such as Leach's analysis of Greek legendary family cycles in his chapter on Lévi-Strauss's analysis of myth, are in fact creative extensions of Lévi-Strauss's ideas and are significant contributions in their own right.

Leach's style is informal, conversational, at times blunt, and always lively. The book is easy to read and makes Lévi-Strauss's basic ideas easily accessible to the beginner. But the style also serves an important critical aim: that of demystifying, and at times of debunking. Leach pulls no critical punches, and makes clear that he is often in sharp disagreement with Lévi-Strauss. Taken altogether, in fact, this book, in its deceptively casual way, comprises the most comprehensive and penetrating critique of Lévi-Strauss's work yet published. Leach's criticisms, moreover, are far harder to brush off than those of many former critics, who were often vulnerable to the charge of having failed to understand what Lévi-Strauss really meant, or were handicapped by a lack of knowledge of many of the technical anthropological issues involved. Leach finds fault with Lévi-Strauss on a number of fundamental theoretical, methodological, and ethnographic points. He points out that the basic assumptions and theoretical conclusions of Lévi-Strauss's work on kinship do not stand scrutiny and are in many instances controverted by ethnographic fact. He objects at many points that Lévi-Strauss's analyses are unfalsifiable and therefore unverifiable, that often they depend upon "verbal sleight-of-hand" and are based upon tendentiously selected or otherwise inadequate data. Perhaps most important, he asserts that Lévi-Strauss's conception of structure itself is inadequate to account for the complexity of the structures of human cultural and social systems, and that the linguistic model upon which it is based is in some respects out of date.

Leach has for more than ten years been the most versatile and creative, if not the most doctrinaire and consistent, advocate of Lévi-Strauss's ideas in the English-speaking anthropological world. Hence this book may have a special significance in marking a turning point in his own intellectual career, and following him that of a considerable segment of the English-speaking anthropological community. Leach has never before been so sharply critical of the master, and his complaints about Lévi-Strauss's increasing dogmatism and tendency to resort to casuistry in the face of contrary evidence seem to indicate a certain disillusionment. The nub of the matter is expressed, perhaps, by Leach's comment on Lévi-Strauss's assertion that social anthropology is "a branch of semiology" and therefore is essentially concerned with the internal logical structure of the meaning of sets of symbols: "My disagreement here is basic . . . for me the real subject matter of social anthropology always remains the actual social behavior of human beings" (p. 105).

It is a measure of the skill and care that have gone into the writing of this book that Leach has managed to convey, at the same time as his own reservations, enough of the substance of Lévi-Strauss's ideas for the reader to be able to come to an independent judgment and moreover to get a feeling for the fascination and excitement of Lévi-Strauss's thought. It is thus quite possible that the net effect of Leach's relatively unsympathetic presentation of Lévi-Strauss's ideas will be their becoming more widely applied than ever before. They will certainly be more widely understood.

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Theory and Therapy

Principles of Behavior Modification. ALBERT BANDURA. Holt, Rinehart and Winston, New York, 1969. x, 678 pp., illus. $9.95.

Learning Foundations of Behavior Therapy. FREDERICK H. KANFER and JEANNE S. PHILLIPS. Wiley, New York, 1970. xiv, 642 pp., illus. $10.95.

Behavior Therapy. Appraisal and Status. CYRIL M. FRANKS, Ed. McGraw-Hill, New York, 1970. xxviii, 730 pp., illus. $15.50.

The history of psychology has been marked by alternating preoccupations, on the one hand with the determining effects of immediate influences impinging on the organism, on the other with effects of what the organism brings to situations. The first of these two orientations is associated with the development of research and theory on learning and with the various behavioristic movements; the second has been associated with the personologists and psychoanalysts. Searching for more rigorous formulations and for abstractions and simplifications suitable for controlled laboratory experimentation, behavioristically oriented psychologists have discarded those aspects of human behavior and experience that were not visible to an independent observer, for example imaginative processes (as distinguished from products), thinking, and fantasying. The other genre of psychologist has been unwilling to purchase rigor by giving up curiosity about

uniquely human phenomena. This second group is associated with theory and research on personality development and organization. Let me hasten to admit the oversimplification in these assertions. They leave out the psychophysiologists, who are concerned with biological determinants in the organism, and the social psychologists, who are concerned with the organized character of external influences, those of other persons.

The value of this particular simplified schema is that it helps us to understand what is happening in the field of psychotherapy. The two decades from 1935 to 1955 were marked by an ascendancy of those who drew on Freud and other psychodynamic theorists as a basis for understanding and accounting for man's enduring aspirations, his flights of fancy and invention, as well as aberrations in his capacity to experience joy, sorrow, and anger. Man's experience of himself and of others became a dominant subject of interest, to be examined via his direct reports on it or to be inferred from imaginative products elicited by projective stimuli, from free associations, or from other verbal or nonverbal response chains. Man was treated wholistically from a perspective gained from an examination of the significant shaping events (assumed to be predominantly interpersonal) in his past and current history.

The last 15 years have seen this tide slowly turn. There has been an accelerating resurgence of the analytical behavioristic slant in psychotherapy and in other efforts to modify aberrant behavior. This is not to say that it had disappeared in the preceding two decades. Experimenters on learning continued to work in their laboratories with rats or pigeons as their primary subjects, and some clinicians sought to extend their concepts and methods to humans. At Yale, Neal Miller and John Dollard sought to translate human phenomena of imitation and social learning and the processes of psychotherapy into the laboratory-derived terms of learning. But such efforts did not constitute a radical challenge to personological views and the treatment methods on which they were based. It was the work of Joseph Wolpe and B. F. Skinner that started a countermovement and gave birth to the term "behavior therapy," to characterize a method of treatment applied to children with behavior problems, autistic children, juvenile delinquents, hospitalized adult psychiatric patients, persons with phobic difficulties—in short, to any behavioral or emotional problem.

These three books, one by an early challenger of personological views (Bandura), one by a pair of researcher-clinicians, and one a collection of essays intended as a searching appraisal, testify to the maturity of this movement. And the movement has begun to mature. Earlier behavior therapists carried on an obligatory polemic against the "unscientific" personological concern with inferred forces and against the "imaginary" distinction between symptoms and basic sources of psychological difficulties (behavior therapists still regularly conclude case reports with the statement, "There was no follow-up evidence of symptom substitution"). By contrast, Franks, the editor of *Behavior Therapy*, comments:

> While there is no reason to accept the dogma that conditioning therapy inevitably leads to symptom substitution, the opposing point of view, as developed by Yates in his outright dismissal of symptom substitution as a psychoanalytic myth and by Ullmann and Krasner in their insistence that "there is no place in a psychological model for the concept of a symptom," would appear to be neither substantiated nor necessary [p. 3].

He goes further to point out that

> both the Pavlovian model and social learning theory make explicit the notion that, under certain circumstances, the elimination of one rewarding but deviant pattern may cause another deviant set of responses to achieve prominence [p. 4].

In a sense all three books provide good views of the current status of behavioral therapy, but as though they were three slightly differently timed cross-sections of the same process. Bandura's, the earliest, retains more of the polemical flavor but also introduces concern with such mediating processes as vicarious experiences and self-reinforcement. Bandura, who has made major contributions to understanding it, gives considerable insightful analysis to the influence of observing a model being rewarded or punished contiguously with particular actions, but treats self-reinforcement only briefly. Kanfer and Phillips give more attention to the influence of symbolic processes by which the individual controls his own behavior, though they still fall far short of satisfying personological interests in the enduring motivating states caught in concepts of self and identity. Though both books seek only to state principles and deny any intent to provide a handbook of practice, Kanfer and Phillips's immersion in practice shows through in the greater concreteness of illustration and richness of descriptive detail.

In its maturity, a movement, whether political or intellectual, is likely to loosen the tight embattled stance in which all criticisms are directed at the enemy without, and to tolerate criticism from within instead of casting out such critics. The Franks collection reveals both phenomena. Arnold Lazarus was one of Wolpe's earliest students and co-workers in the use of desensitization principles and procedures. In recent years Lazarus has grown away from strict behavior therapy and has offered a doctrine of "technical eclecticism" in which such traditional psychotherapeutic procedures as support, guidance, insight, catharsis, and even interpretation (though not psychoanalytic) are added to the behavioristic techniques of shaping, desensitization, assertive training, aversive conditioning, and the like. Wolpe, in his foreword, repudiates his former co-worker. Though Franks is much more respectful, he did not invite Lazarus to be a contributor. Yet there is lively criticism and debate among the widely ranging group of contributors, particularly Gerald Davison's hard-hitting charges that studies of operant conditioning of psychotic patients and the design of social environments in psychiatric hospitals represent incomplete treatment which neglects larger views of the psychotic's behavior, especially of mediating processes. For example, in commenting on an unsuccessful effort to eliminate a violent patient's outbursts by ignoring them as well as by reinforcing approach behavior to the nurse, Davison criticizes the limitations in the therapist's assessment of the sources of the patient's violent behavior and suggests the hypothesis that it was triggered by disturbing thoughts.

Most prominent among symbolic mediating processes through which the individual controls and modifies his own behavior are temporary and enduring attitudes toward himself. Though Bandura gives them some attention and Kanfer and Phillips more, the widest-ranging behavior-therapy treatment of such topics comes nowhere close to such personological schemes as, for example, Erik Erikson's concept of ego identity or to such practical problems as how principles of modeling and self-attitudes apply to the motivating factors in the development of lan-

guage performance and other cognitive behavior by minority-group children. These three books will be required reading for anyone who wishes an up-to-date, comprehensive view of developments in behavior therapy. Personological theorists and psychotherapists will find only the bare beginnings for a common ground.

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Clinical Views of Memory

Human Memory and Its Pathology. JACQUES BARBIZET. Translated from the French by D. K. Jardine. Freeman, San Francisco, 1970. x, 198 pp. $5.

Thoughtful men have long struggled to gain a better understanding of the operation of human memory. Although it has been clear that the brain is responsible for both the processes and the contents of memory, the precise means by which experience modifies the nervous system remains one of the major mysteries of biology. Disturbances of what is called "memory" have been described for years in patients with dementing disorders and tumors and injuries involving various parts of the brain. Ablations of certain brain structures in experimental animals have long been known to alter their ability to learn or retain certain behaviors; the variety of brain structures in which the effect has been shown is impressive. Yet until recently most such observations had shed little light on the biologic relation of the brain to memory, and instead had provided comfort to the adherents of Lashley's concept of the nonspecific "mass action" of cortex. Even the principles of memory mechanisms derived from verbal and behavioral studies of intact subjects seemed to correspond to little that could be observed in the brain.

During the last 20 years several avenues of approach to the investigation of the biology of memory have opened. In 1957 Scoville and Milner observed that bilateral removal of the hippocampal regions in man seriously impaired the ability to store new memories, yet did not interfere with other cognitive functions. This serendipitous discovery gave support to the view that this aspect of memory, at least, had a discrete anatomical substrate, and for this reason that memory storage was a biologic property of brain rather than a convenient "psychological construct." In addition, the development of the computer as a model for cognitive organization, the advancement in the understanding of central neurotransmitter biochemistry, and the sophistication of techniques for the analysis of the electrical activity of the brain all gave impetus to research along the appropriate derivative lines.

Research on memory has thus fanned out in widely divergent directions. At times it has become difficult to imagine how the claims of the "worm-runners" for the transmission of "memory" via ingested RNA could have any relation to the verbal behaviorist's rules for proactive inhibition of "memory" exerted by list A on list B. And, when the family of a patient with senile dementia says that he has a "memory problem," are they referring to the same "memory" as the cyberneticist building a computer model? The difficulty in resolving these questions, and in correlating these various approaches to memory by means of an all-inclusive plan, has led most researchers to adhere as closely as possible to the narrow boundaries of their own fields in investigating memory. Thus they can avoid the frustrating problem of finding a larger conceptual schema that might place the insights of these diverse disciplines into a useful relationship.

The clinician who takes an interest in disorders of memory is not as readily able to remain a purist, considering if he chooses only the molecular aspects of memory. Patients with "memory disorders" ranging from transient inability to store new information to global dementia may present themselves for study; he will see some whose emotional states interfere with storage or recall of information, and others whose hippocampi have been destroyed by herpes simplex encephalitis. As such a clinician, Barbizet has viewed a vast range of pathologic disruptions of memory; in *Human Memory and Its Pathology* he has attempted to set down something of the breadth of the clinical spectrum that he has observed, and to put these observations into an orderly framework.

The author's approach is an inclusive one, in which he regards memory as fundamental to almost all cognitive processes. He argues that not only is factual information stored in memory, but similarly programs for the acquisition, organization, and retrieval of information must be stored. Intelligence, he concludes, is not innate but is the product of "acquiring both experience and the programs that enable us to use effectively one or more earlier experiences in our reactions to any given situation." For Barbizet, then, the province of the study of memory includes not only the *cerebral processes* by which information is acquired, stored, and retrieved, but also the *stored information itself*, some of which in turn modifies the future acquisition, storage, and retrieval of information.

This is a clinically convenient approach, since it allows the author to approach aphasias, apraxognosias, dementias, hysterical amnesias, intellectual deterioration with aging, and impairment of memory with hippocampal lesions—all as if they are disorders of memory. It is, indeed, valid and valuable that Barbizet has addressed himself to the contents as well as the mechanisms of memory, since by far the majority of research interest has favored the study of memory mechanisms; this monograph may help to right the balance.

It is disappointing, however, that while the author has drawn the bold outlines of the scope of memory, he has had far less success in defining the boundaries of its components, either from a theoretical or from a clinical standpoint. Elsewhere, Richter has been able to provide more than 20 definitions of the word "memory" as employed in "common usage," biology, information theory, neurology, and psychology. Barbizet ignores many of these nuances of meaning; yet at one point he arbitrarily refers to "very short, short, medium, long, [and] very long-term retention," without providing the rationale for five time-based divisions of memory. His clinical descriptions of syndromes that may occur with a variety of lesions of the brain are always complete and clear. Yet it is not always evident precisely which memory mechanisms have been impaired to produce a particular clinical picture, nor is it clear what steps one might take to analyze further the nature of the memory deficit.

Overall, the major value of this book is to be found in the many keen clinical observations of an experienced clinician, as well as a number of sharp insights into the functioning of memory gained from closely examining patients with derangements of memory. Once again, however, the grand design of human memory seems to have proved