
HYPNOSIS AND BEHAVIORAL MEDICINE

Edited by
Daniel P. Brown
Erika Fromm

HYPNOSIS
and
BEHAVIORAL MEDICINE

This page intentionally left blank

HYPNOSIS and BEHAVIORAL MEDICINE

Daniel P. Brown
The Cambridge Hospital

Erika Fromm
The University of Chicago

 **Routledge**
Taylor & Francis Group
NEW YORK AND LONDON

First Published by
Lawrence Erlbaum Associates, Inc., Publishers
10 Industrial Avenue
Mahwah, New Jersey 07430

Transferred to Digital Printing 2009 by Routledge
270 Madison Ave, New York NY 10016
27 Church Road, Hove, East Sussex, BN3 2FA

Copyright © 1987 by Lawrence Erlbaum Associates, Inc.
All rights reserved. No part of this book may be reproduced in
any form, by photostat, microfilm, retrieval system, or any other
means, without the prior written permission of the publisher.

Library of Congress Cataloging-in-Publication Data

Brown, Daniel P., 1948–
Hypnosis and behavioral medicine.

Includes bibliographies and indexes.

I. Hypnotism—Therapeutic use. 2. Medicine and
psychology. 3. Behavior therapy. I. Fromm, Erika.
II. Title. [DNLM: 1. Behavior Therapy. 2. Hypnosis.
WM 415 B877h]

RC495.B78 1987 616.89'142 86-19961
ISBN 0-89859-925-3

Publisher's Note

The publisher has gone to great lengths to ensure the quality of this reprint
but points out that some imperfections in the original may be apparent.

Contents

List of Figures	vii
Foreword	ix
Preface	xiii
1. Behavioral Medicine	1
History of Behavioral Medicine	1
The Clinical Contributions of Behavioral Medicine	5
The Basic Principles of Behavioral Change	6
The Standard Tools of the Behavioral Therapist	8
The Treatment Goals of Behavioral Medicine	13
A Multiple Causation Model for the Development of Illness	17
Assessment and Treatment in Behavioral Medicine	25
Trends in Behavioral Medicine	31
2. Hypnosis and Hypnbehavioral Therapy	34
What Is Hypnosis?	34
The Special Hypnotic Relationship	46
Expectation and Suggestibility	50
Clinical Implications	52
Hypnbehavioral Therapy	52
The Efficacy of Hypnosis	55
Treatment Planning with Hypnosis	55

The Problem of Evaluating Treatment Outcome; Does
Hypnosis Offer an Advantage? 57

3. The Hypnobehavioral Treatment of Psychophysiological Disorders	59
A Multimodal Approach to the Hypnotic Treatment of Pain	59
Headache	76
Hypertension	88
Asthma	102
The Hypnotic Treatment of Gastrointestinal Disorders	117
Skin Diseases	126
Hypnosis and Immune-Related Diseases	134
4. The Hypnobehavioral Treatment of Habit and Behavioral Disorders	151
Smoking Cessation	151
Weight Control	168
Hypnotic Treatment of Substance Abuse and Alcoholism	186
The Treatment of Sexual Dysfunctions	199
Sleep Disturbances	212
References	222
Author Index	262
Subject Index	276

List of Figures

1.1	Causative and Maintenance Factors in the Development of Illness	26
1.2	Multimodal Approach to Habit Disorders	30
2.1	The Domain of Hypnosis	53
3.1	Pain-Coping Strategies	63
3.2	Multimodal Treatment of Pain	75
3.3	The Causative Pathway of Headache and the Stages of Behavioral and Medical Treatment	80
3.4	Factors in the Causation, Maintenance, and Treatment of High Blood Pressure	94
3.5	Daily Blood Pressure Recording Sheet	95
3.6	Factors in the Causation, Maintenance, and Treatment of Asthma	106
3.7	Classification of Diseases Associated with Disregulation of Immune-Functioning	136
4.1	Cigarette Wrap Sheet	154
4.2	Daily Eating Behavior Record	171
4.3	The Causation and Maintenance of Ideopathic Sleep Disturbances	214
4.4	Daily Sleep Chart	218

This page intentionally left blank

Foreword

Hypnosis and Behavioral Medicine integrates advances in behavioral medicine with recent scientific findings and theories of clinical hypnosis. It is written by two experienced clinicians, one a foremost hypnoanalyst, the other the director of a behavioral medicine clinic in a teaching hospital affiliated with the Harvard Medical School. The book represents their distillation of years of experience in the use of hypnosis and behavioral medicine interventions to treat patients with psychophysiological disorders and behavioral problems. The authors' perspective reflects the growing sophistication of behavioral medicine interventions used by practitioners. They also illustrate how our understanding of hypnosis has advanced over the past twenty years. Yet, curiously, the clinical and research literature both in behavioral medicine and in hypnotherapy have developed largely independently of each other. Each of these clinical areas typically has ignored the major advances in the other field. To bridge the gap between the practice of hypnosis and the practice of behavioral medicine, the authors have written this book to help educate the behavioral medicine audience to the usefulness of hypnosis as part of a comprehensive treatment program and also to educate the clinical hypnosis audience to the major advances in behavioral medicine. The book is written for practitioners in both fields.

Hypnosis and Behavioral Medicine is set within the context of contemporary trends in behavioral medicine. Previous hypnosis books that have attempted to integrate behavior modification and hypnosis into some form of hypnobehavioral therapy have had only a limited focus: Behavior modification has been cast primarily in terms of conditioning models of learning and systematic desensitization. The authors of *Hypnosis and*

Behavioral Medicine have expanded the scope of clinical behaviorism to include recent neobehaviorist trends. They emphasize the movement of contemporary behaviorist thinking beyond the restricted confines of conditioning models (classical and operant conditioning) to a self-regulation model of behavioral change and have likewise broadened the horizon of behaviorism to incorporate new theoretical developments in environmental control, cognitive-behaviorism, social modeling, and coping theory. Along with an increased appreciation of the complexity of human behavior and related theoretical advances, behavioral clinicians have developed an armamentarium of sophisticated clinical procedures, some of which have been substantiated by clinical outcome studies: self-monitoring, stimulus control, self control of internal states, behavioral self-regulation and contingency management, skill in internal perception, systematic desensitization, cognitive therapy, and relapse prevention. Chapter I presents a selective review of the field of behavioral medicine. Beginning with a discussion of the historical development of behavioral medicine as a new field, it reviews some of the major theoretical advances, explains a number of standard treatment procedures, discusses treatment goals, and concludes with a section on assessment of the many complex factors that contribute to a psychophysiological disorder or behavioral problem.

This book is also set within the context of a contemporary understanding of hypnotic phenomena. Chapter II presents a selective review of scientific and clinical knowledge of hypnosis. The domain of hypnosis is defined as comprising at least three important dimensions: expectations regarding hypnotic effects; an altered state of consciousness, or trance; and a special hypnotic relationship. The effects of hypnosis are in part determined by the idiosyncratic meaning that the hypnotic situation has for the particular patient and the specific expectation of change attributed to hypnotic procedures. Hypnosis is, however, conceived as something more than a placebo phenomenon. It is seen as involving an altered state of consciousness characterized by cognitive, sensory, and perceptual changes. Hypnosis is also seen as a special type of patient-therapist relationship, in which the patient is more receptive to the suggestions of the hypnotherapist, more receptive to internal physiological events in the stream of consciousness as structured by the hypnotic situation, and more influenced by the hypnotic transference. The authors argue that the clinical efficacy of hypnosis and self-hypnosis in behavioral medicine lies in the ability to directly effect sensory/physiological changes and cognitive/perceptual changes in the service of greater bodily self-regulation, improved coping capacity, and the control of behavior.

The balance of the book integrates hypnosis and behavioral medicine into a systematic framework for the treatment of a variety of psychophy-

siological disorders (chronic pain, headache, hypertension, asthma, gastrointestinal disorders, skin conditions, and immune-related disorders) and habit and behavioral disorders (smoking, obesity, substance and alcohol abuse, sexual dysfunctions, and sleep disorders). The major contribution of the volume is its presentation of detailed and comprehensive clinical protocols for the treatment of a variety of psychophysiological and habit disorders—detailed in its spelling out each step of the treatment procedure and comprehensive in its integration of a variety of treatment procedures and theoretical perspectives into a single treatment plan (with a decision tree for determining which aspects of the overall treatment protocol need to be emphasized for a particular patient). The authors have tried to integrate well-established, state-of-the-art clinical procedures, along with new developments, into their treatment protocols. The book can be said to be a clinical manual of sorts in behavioral medicine. Even if hypnosis were not emphasized as its primary treatment perspective, the book could serve as a useful guide to practitioners of behavioral medicine who were less familiar with hypnosis.

Each section of the clinical manual is presented in roughly the same framework. The section on headache, for example, begins with a discussion of assessment, both psychiatric and behavioral. Next, the authors discuss the psychobiological mechanisms that contribute to the cause and maintenance of the headache. Then the authors discuss the typical medical and pharmacological treatment of headache and go on to introduce a multimodal hypnotherapeutic protocol for the treatment of headache. The systematic protocol includes: direct hypnotic suggestions for symptom relief; daily self-monitoring of the vicissitudes of symptoms; analysis of which situations alleviate and exacerbate headache symptoms; stimulus control; behavioral self-regulation; hypnotic relaxation; hypnosis, biofeedback and combined hypnosis/biofeedback for the development of voluntary control over specific physiological processes contributing to the disorder; hypnotic suggestions for altering the cognitive factors that maintain the symptoms (e.g. attitudes, beliefs, self-statements); use of group hypnotherapy when indicated; hypnotic suggestions for skill development and symptom challenge; recommendations for life style rehabilitation; procedures for relapse prevention and maintenance of treatment effects; hypnotic suggestions to deal with the acute exacerbation of symptoms; and adjunctive life style interventions. The authors also offer recommendations for the use of short-term hypnotherapy and hypnoanalysis for those patients who are unresponsive to the hypnotherapeutic treatment, but suggest that the reader consider their other recent book, *Hypnotherapy and Hypnoanalysis*, for a more detailed account of these procedures.

Each treatment protocol ends with a discussion of clinical outcome.

Although the authors recognize that outcome studies on hypnotherapy are sparse and inconclusive, they remain optimistic. Most poor outcomes, they speculate, are the result of asking the wrong research questions, not of the ineffectiveness of hypnosis. They argue that it is too simple to evaluate simply whether or not hypnosis is effective in behavioral medicine. Rather, outcome studies must consider the type of presenting problem, the characteristics of the patient and the therapist, the quality of the therapeutic relationship, the conditions under which the treatment is being conducted, the approach taken toward the hypnosis, the style of hypnotic induction, and the specific nature of the hypnotic suggestions given. Clearly, a multidimensional, systems approach to research and practice is called for.

The emphasis of the book, and its main strength, lies in its presentation of a multidimensional perspective in which various systems of treatment are integrated. The authors believe that illness development is complex and that most presenting problems are a mixture of a number of contributing factors, some causing, some maintaining the condition. Behavioral assessment and treatment consist of "partialling out the variance" in an attempt to determine the relative weight of each factor contributing to the psychophysiological disorder or habit disorder and then to develop a treatment plan that addresses each component. According to the authors, these disorders have multiple causes. In addition, a number of factors—conditioning, illness behaviors, medication overuse—maintain the disorder apart from what caused it. The task of the clinician is to assess the relative contribution of each of the contributing factors and to individualize the treatment plan accordingly. The authors also recognize distinct subgroups of patients within the population of, say, headache patients, for whom certain single treatment strategies may be effective, for example, direct hypnotic suggestions, self-monitoring, and the like. At the same time, they recommend a comprehensive, multimodal, and individualized treatment plan that meets the needs of a heterogeneous patient population and increases the probability of successful outcome in a wide range of patients.

In many ways, this book is integrative and refreshing. Psychologists, physicians, and nurses interested in clinical hypnosis and behavioral medicine should find this book rewarding.

Gary E. Schwartz, Ph.D.

Preface

This book was written in response to the needs of many professionals who are actively treating patients who have psychophysiological disorders or behavioral problems associated with medical illness. We have tried to fold into a single volume a synopsis of the modern scientific understanding of hypnosis and a comprehensive review of clinical procedures and research in behavioral medicine. The book represents fifteen years of collaboration by its authors on clinical hypnosis and, in the last eight years, an attempt to apply our knowledge of clinical hypnosis to the field of behavioral medicine as part of the Program in Behavioral Medicine at The Cambridge Hospital/Harvard Medical School and as part of a group private practice specializing in hypnosis and behavioral medicine. Over these years we have gained clinical experience with large numbers of patients presenting with the problems typical of a behavioral medicine clinic; have had the opportunity to teach hypnosis and behavioral medicine to psychology interns, psychiatric residents and medical residents and to mental health and health professionals; and have been able to engage in clinical research on hypnosis and behavioral medicine.

While the book represents what the authors have learned from each other, it also represents what we have learned from others. No work is written in a vacuum. We have tried to build upon the scientific understanding of hypnosis, and in this sense our work shows the influence of Ernest R. and Josephine Hilgard and others. We have also tried to build upon our understanding of the advances in the rapidly developing field of behavioral medicine, and our work shows the influence many leading experts in the field. The discussions at the annual meetings of the Conference on the Voluntary Control of Internal States (Council Grove

Conference), the Society of Clinical and Experimental Hypnosis, and the Society of Behavioral Medicine have given us the opportunity to learn of the newest developments in the field and of state-of-the-art clinical interventions. In particular, our understanding of asthma has been shaped by the work of Thomas Creer, Ph.D., of sleep disorders by that of Ralph Turner, Ph.D., and of weight problems by Kelly Bronwell, Ph.D., through their presentations of workshops at the Society of Behavioral Medicine. We especially wish to acknowledge our debt to Steve Fahrion, Ph.D., of The Menninger Foundation. Our understanding of behavioral interventions in hypertension was shaped by discussions with him. Dr. Fahrion was generous enough to share his clinical protocols with us, and our chapter clearly shows the influence of his excellent unpublished paper, "Etiology and intervention in essential hypertension: A biobehavioral approach." Likewise, our understanding of behavioral interventions in cancer was shaped by discussions with Pat Norris, Ph.D., also of The Menninger Foundation.

We are thankful not only to our teachers but to our associates who have worked closely with us in the development of our ideas, notably, Jean Kristeller, Ph.D., who helped in the initial development of the Behavioral Medicine Program at The Cambridge Hospital, and Deborah Hulihan, Psy.D., the current Associate Director of that program; and to the associates in our group practice, with whom we have had many rich discussions of cases in hypnosis and behavioral medicine: Howard Berens, M.D., Deborah Block, M.A., Deborah Hulihan, Psy.D., Stephanie Jones, M.Ed., Steve Kahn, Ph.D., Harris McCarter, M.A., Dee Dee Pike, Psy.D., and Lena Theodorou, Psy.D. We are also thankful to our many patients and students, from whom we have learned so much. For each of us there has been no greater joy than to watch a patient utilize hypnosis to discover coping resources and develop a sense of genuine mastery over symptoms, or to watch a clinical student or professional discover the phenomena of hypnosis, assimilate hypnosis into his or her clinical behavioral medicine practice, and then grow to become a seasoned practitioner. In this respect, we hope that this work will serve a new generation of clinical students and their patients.

A work like this could not have been written without the hard work of many others who assisted us at various stages of the process. We are grateful to our research assistants. Michael Dysart and Stephanie Morgan did an enormous amount of work collecting the many hypnosis and behavioral medicine papers reviewed in this book. Mary Hallowitz, Betty Johnson, Lisa Lombard, and Stephan Kahn were of considerable help in critically reading the manuscript in its near-final stages. We are especially grateful to Sarah Skinner for her preparation of the various drafts of the manuscript on the word processor. Her dedication, insightful editorial

comments, critical judgment, and conscientious diligence helped produce presentable and readable drafts. We are also especially grateful to Estelle Keren, who faithfully tackled the tedious task of putting the extensive references on the word processor, and checking and rechecking them for accuracy. She also coordinated each stage of the project and facilitated smooth communication between the authors and the editor. We also want to thank Marushka Glissen for her help in checking the reference list against the original published works and for proofreading. We especially want to thank Eleanor Starke Kobrin for her consistently reliable editing and for expediting the publication schedule. Last, we want to express our deepest appreciation and gratitude to our families and friends for their patience and tolerance while we were so deeply immersed in writing this book.

This page intentionally left blank

1 Behavioral Medicine

HISTORY OF BEHAVIORAL MEDICINE

Behavioral medicine is a new field in which clinical methods and theories derived from the behavioral sciences are applied to the treatment and prevention of medical illness. Since the early 1970s, behavioral medicine has emerged as a scientific and clinical discipline in its own right. Behavioral medicine developed, in part, out of a growing dissatisfaction by medical practitioners with consultation/liaison psychiatry and its roots in psychosomatic medicine, whose beginnings were in the 1940s, with psychodynamic explanations of specific illnesses (Alexander & French, 1948) and the search for personality factors associated with specific illnesses (Dunbar, 1943). After nearly two decades of research, which for the most part yielded negative results, interest in psychodynamically based psychosomatic medicine began to wane in other ways. Consultation/liaison psychiatry, however, remained useful to medical practitioners in the diagnosis of mental illness in patients who also were physically ill, in treatment by therapeutic and pharmacological means, and in sensitizing clinicians to the need to refine interviewing skills. Although psychotherapeutic and pharmacological interventions were useful to the physician in treating certain psychiatric patients, these methods simply did not address the general needs of the physician confronted in everyday practice with large numbers of patients who had a significant behavioral component associated with their medical illness. These methods disregarded, for example, compliance with treatment regimens associated with chronic illness, the effects of attitudes and beliefs on illness, illness behavior, psychophysiological disorders, and the impact of health-risk factors in a person's lifestyle on generating and preventing disease.

Over the same interval behavioral scientists, predominantly psychologists, began collaborating with physicians. One area in which behavioral scientists in the last 25 years have offered procedures directly relevant to medical practitioners is biofeedback. Since the now classic work of Miller (1969) and his associates on operant conditioning of physiological processes, behaviorally oriented clinicians have begun to develop methods of applying these principles directly to the treatment of a wide range of psychophysiological disorders: pain, headache, cardiovascular disease,

asthma, and gastrointestinal disorders. As biofeedback procedures gained more and more popularity, professional societies began to form (for example, the Biofeedback Society of America), and annual reviews of the growing clinical studies now regularly appear in the literature.

At the same time, there appeared a surge of scientific interest in altered states of consciousness (Tart, 1969). In the 1960s and 70s, hypnosis became an area of legitimate scientific inquiry, largely through the works of Ernest Hilgard (1965) at Stanford and Martin Orne (1959, 1977) at the Psychiatric Institute of the University of Pennsylvania. New investigations began into mental imagery and daydreaming—once an area disdained by the conventional scientific community (Holt, 1964). Clinical applications—the so-called imagery therapies—began to proliferate by the mid-1970s (see Jerome Singer's *Imagery and Daydreaming Methods in Psychotherapy and Behavior Modification*, 1974). Scientists, both experimental and clinical, also began to assimilate Eastern meditative methods (Carrington, 1977; Shapiro, 1978) into the growing repertoire of what are now called self-control strategies.

The integration of independent contributions from research on altered states of consciousness and on biofeedback began in 1970, with the annual conference on the Voluntary Control of Internal States and were sponsored by the Green family at the Menninger Foundation. The conferences were attended by those in the forefront of research on altered states of consciousness (hypnosis, meditation, drug-induced states, imagery, and nontraditional healing) as well as by the researchers on biofeedback. From these dialogues, biofeedback researchers began to realize the important contribution of the patient's internal state to the outcome of biofeedback training. Paralleling these developments, imaginal and meditative methods began to find their way into clinical practice.

During the 1960s and 1970s, behaviorism also underwent a significant revision. Behaviorism had traditionally been associated with conditioning and learning. The classical conditioning model of Pavlov (1927) and the operant conditioning model of Skinner (1953) both assume that punishment and reward are the main means of changing behavior. The early clinical procedures based on a conditioning model were largely aversive procedures, such as eliminating a behavior problem like smoking or alcoholism by inducing nausea and vomiting. As outcome studies began to accumulate, it became clear that positive reinforcement of healthy and desirable behaviors was more effective than negative reinforcement of problem behaviors. These results necessitated a shift from an eliminative model to a constructional model of behavior modification (Delprato, 1981). Behavioral therapists began to think less about the elimination of specific maladaptive behaviors and more about the generation of new adaptive repertoires.

Behaviorists also began to approach the complexity of human behavior. The attempt of early behavioral interventions was to isolate specific, easily identifiable problem behaviors or target behaviors. The focus was on behavior per se, independent of the context in which it occurred. Behaviorists began to focus now on behavioral-environmental interactions (Kanfer, 1977). Major advances in the treatment of weight problems (Stuart, 1967) and insomnia (Bootzin, 1977) occurred with this treatment strategy.

Beginning to appreciate the complexity of human behavior, behavioral scientists began also to focus on the patient's internal resources rather than only on behavioral change. Emphasis on discrete problem behaviors were superseded by emphasis on general coping resources applicable across many situations and types of problems. Lazarus (1966) was the first to emphasize the importance of assessing the range and adequacy of coping strategies available to patients in times of stress. In addition, behaviorists began to shift to an understanding of cognitive processes. Interest in a pure stimulus-response model of learning was replaced by an interest in covert processes as mediators of behavior change. As cognitive psychology began to emerge as a legitimate field of inquiry within psychology in the mid-1970s, behaviorists also began to soften their historic rejection of the importance of internal processes in behavioral change. The *Annual Review of Behavior Therapy* considered 1976 as the "Year of Cognition" (Wilson, 1980) for behavioral therapists, and a new generation of cognitive-behaviorists emerged in the writings of Beck (1976) and Meichenbaum (1974). Ellis (1962) had already worked towards this goal years earlier.

While the theoretical underpinnings of behavioral therapy were undergoing a radical revision in the 1970s, behaviorists were making consistent gains in clinical research methodology. Clinical outcome studies of psychodynamic therapy had earlier been notoriously poorly designed and had not provided control cases. Behaviorally oriented clinicians had learned from these mistakes. The outcome studies on behavior modification of anxiety, phobias, weight, and smoking were carefully controlled and had more sophisticated designs. Advocates of behavior modification succeeded where dynamically oriented therapists had failed: they were able to substantiate and measure treatment gains. Since medical training emphasizes the use of measurement in routine medical diagnosis and treatment (e.g. laboratory data), behavioral therapists who emphasized outcome measures were able to put their clinical findings in a form more familiar, credible, and relevant to physicians than had been the case with the contributors from consultation/liaison psychiatry.

All of these independent and concurrent trends came together in the mid-1970s. The *Zeitgeist* had changed. The time had ripened for the

emergence of a new discipline, behavioral medicine, a term that can be traced to an anthology of early biofeedback papers called *Biofeedback: Behavioral Medicine*, in which the editor, Lee Birk (1973) tried to reassess the behavioral science underpinnings of biofeedback. But the field did not blossom into a full fledged discipline until the leading scientists converged to discuss and articulate the basic questions and concepts that ultimately came to define the field. Their dialogues began in 1969, with the Banff International Conference on Behavior Modification. The 1976 Banff Conference on Behavioral Self-Management in particular addressed the changing field of behavior therapy.

The first formal definition of behavioral medicine was presented at the 1977 Yale Conference on Behavioral Medicine in which invited scientists came together to articulate the dimensions of this developing field of inquiry. According to the Yale conference, behavioral medicine was defined as follows:

Behavioral Medicine is the field concerned with the development of behavioral science knowledge and techniques relevant to the understanding of physical health and illness and the application of this knowledge and these techniques to prevention, diagnosis, treatment and rehabilitation (Schwartz & Weiss, 1978, p. 7)

That meeting constituted an official statement of the new discipline. Since then, the signs of the discipline's obvious development have included the formation of an Academy of Behavioral Medicine Research and The Society of Behavioral Medicine, and the appearance of new journals, for example, the *Journal of Behavioral Medicine*, *Behavioral Medicine Abstracts*, *Health Psychology* and *Advances*. Departments of behavioral medicine have been established in most major academic and medical institutions. The majority of hospitals and health maintenance organizations now include behavioral medicine interventions in their repertoire of treatment strategies. A later revision of the definition of behavioral medicine by the Academy of Behavioral Medicine Research emphasized the interdisciplinary nature of behavioral medicine and the integration of behavioral and biomedical knowledge and practice (Schwartz & Weiss, 1980). The current practice of behavior medicine is an integration of behavioral therapy, an understanding of physiological processes, cognitive therapy, self-control strategies, and an understanding of altered states of consciousness and biofeedback.

What we present in this book is written in the hope of strengthening the fusion of the many disparate threads that have come to define the discipline of behavioral medicine. The contributions of clinical hypnosis have

not yet been fully integrated with the major advances behavioral medicine has made over the past decade. In fact, the discipline of behavioral medicine and the advances in clinical hypnosis have evolved nearly independent of each other over this period. On the one hand with some important but rare exceptions, few practitioners of behavioral medicine have utilized hypnosis extensively with their clients, nor have scientists-practitioners conducted nearly as many outcome studies with hypnosis as have been conducted with progressive muscle relaxation, stimulus-control, self-monitoring, cognitive therapy, and the like. Even where hypnosis is used by practitioners of behavioral medicine, their approach does not show a sophisticated understanding of the many advances made in clinical hypnosis during the last 25 years (Fromm, 1986). On the other hand, clinical literature on hypnosis, as reported in the major journals (*American Journal of Clinical Hypnosis*, *International Journal of Clinical and Experimental Hypnosis*, and *British Journal of Medical Hypnotism*) seldom cite the major advances in behavioral medicine. Some attempts have been made to integrate hypnosis with behavioral therapy (Dengrove, 1976; Kroger & Fezler, 1976). However, these so-called hypnobehavioral therapies take into account neither the significant theoretical revisions and major advances in clinical methods made by behavioral therapists over the past decade, nor the increasing sophistication of their research design.

It is our belief that practitioners and researchers of both clinical hypnosis and behavioral medicine could benefit from an integration between the two disciplines. Each has something to offer to the other. It is also our belief that such an integration represents one of the cutting edges of clinical hypnosis. (The other, we believe, is dynamic hypnotherapy and hypnoanalysis [see Brown & Fromm, 1986]). Rodolfa et al. (1985) recently surveyed some 500 members of the American Society of Clinical Hypnosis to assess current and future trends in hypnosis. The survey showed that practitioners agreed that behavioral medicine was "the general area with the most promising future for the application of hypnosis" (p. 24).

THE CLINICAL CONTRIBUTIONS OF BEHAVIORAL MEDICINE

Behavioral medicine offers procedures for the treatment of a wide range of clinical problems. These methods are directly relevant to the majority of patients seen by physicians, because many medical problems seen by physicians have some behavioral component. Behavioral medicine has made significant advances in the treatment of psychophysiological disor-

ders: acute and chronic pain; headache; cardiovascular disease such as hypertension, Raynaud's Syndrome, tachycardia and other coronary heart syndromes; asthma and chronic obstructive pulmonary disease; gastrointestinal disorders; skin disorders; immune-related disorders (autoimmune diseases, allergies, and cancer) and genitourinary disorders. Behavioral medicine also has made significant contributions to the treatment of various behavioral and habit disorders, such as smoking, overweight, ideopathic sleep disturbances, and sexual dysfunctions. Furthermore, it has contributed to preventive medicine through the identification and counteraction of the health-risk factors involved in smoking, overweight, stress, type A behavior, alcohol or substance abuse, and too much or too little physical activity. Behavioral medicine is designed to assess lifestyle and identify factors that contribute to health or risk of illness, as well as to develop interventions to alter lifestyle in the direction of health. Concerned only with symptom relief, traditional medical practices failed to take into account the contribution of lifestyle to the etiology of disease (Schwartz, 1979). We now know that nearly half of all mortalities are directly attributable to lifestyle problems (Milsom, 1980).

Behavioral medicine is also concerned with areas traditionally canvassed by psychosomatic medicine and consultation/liaison psychiatry. These include the treatment of anxiety disorders, phobias (particularly agoraphobia), and the somatizing and hypochondriacal disorders. Behavioral medicine addresses itself to the learned and behavioral components of the disorders that cannot be helped by medication alone. In addition, behavioral medicine is concerned with the development of treatment strategies for the behavioral and psychological components associated with chronic physical illness. They include: noncompliance with treatment regimens, for example, the diabetic's diet and medication; failure to integrate chronic illness into one's self-concept; or the impact of the family system on the etiology and maintenance of symptoms. Although the scope of behavioral medicine has expanded considerably, this book concerns itself with those areas which have generated the bulk of clinical literature in behavioral medicine, namely psychophysiological disorders and habit and behavioral disorders.

THE BASIC PRINCIPLES OF BEHAVIORAL CHANGE

Conditioning and Learning

Classical conditioning or respondent conditioning was first derived by Pavlov (1927) from his studies of salivation in dogs. Dogs were presented with an unconditioned stimulus (UCS) to which they responded with

salivation, an unconditioned response (UCR). Pavlov then demonstrated some of the basic principles of learning by pairing a neutral conditioning stimulus (CS)—the sound of a bell or a tuning fork—with the UCS, or sight of the food. Through repeated trials pairing UCS and CS, he discovered that presentation of the CS alone (the bell) elicited the UCR (salivation). The dog had learned to produce the physiological response to the previously neutral stimulus. In this manner, adaptive and maladaptive behaviors can be learned through their association with an unconditioned stimulus and an unconditioned response. For example, the nausea and vomiting commonly associated with chemotherapy may be a consequence of classical conditioning. The drugs (UCS) typically used in chemotherapy cause nausea and vomiting (UCR). After four or five sessions, certain patients learn to associate previously neutral stimuli with the unconditioned stimulus. The sight of the hospital, the examining room, or the doctor (CS) may produce the nausea and vomiting (UCR) before the actual administration of the next drug trial. The patient now has conditioned anticipatory nausea and vomiting.

Operant, or instrumental, conditioning was devised by Skinner (1953). Whereas classical conditioning pertains to the associative link between the unconditioned stimulus and the conditioned stimulus, operant conditioning pertains to the consequences of behavior. Any behavior may produce its own positive or negative reinforcers, depending on the nature of the response contingencies and the schedule of reinforcing responses. The type of learning that occurs depends on the environmental consequences that shape the behavior. Through operant learning mechanisms, some patients learn chronic insomnia. Patients may experience an acute disruption in sleep for any number of reasons—depression, worry about a pending examination, anticipation of a vacation. They respond to the acute sleep disturbance by drastically altering sleep routines. They may ordinarily read difficult material or watch exciting television in bed. By bringing these activities into the bedroom, patients no longer utilize sleep stimuli like the bedroom and bed as discriminatory cues to trigger the sleep-onset mechanism. Instead, they carry waking activities into the sleep-onset period and thereby maintain the sleep disturbance (Bootzin, 1977). In a similar fashion, insomniac patients who regularly take sleeping pills and headache patients who routinely take Ergot medication learn to produce chronic instability of the physiological mechanisms underlying sleep-onset and vasomotor response, respectively. Operant learning plays a large role in the maintenance of many maladaptive psychophysiological disorders and in the acquired maladaptive lifestyles that contribute to illness (Schwartz, 1977).

Many techniques devised by behavioral scientists to treat various disorders are based on a mixture of classical and operant learning theories

(Keefe & Blumenthal, 1982). Whereas animals have been used to develop classical as well as operant conditioning models in pure form, human behavior is so complex that it is best understood and treated by means of a combination of classical and operant methods (Kanfer & Phillips, 1970). The relative contributions of classical and operant conditioning to the etiology and maintenance of psychophysiological symptoms may be difficult to assess. Both may be important, as in the development and maintenance of anticipatory asthma (Creer, 1979). It is perhaps more accurate to speak of the conditioning of symptoms and of treatment as deconditioning or desensitization. Deconditioning or systematic desensitization (Wolpe, 1958) and contingency management (Pomerleau & Brady, 1979) are the main tools used for therapy by behavioral scientists.

Social Modeling

Much learning occurs by following another's example. Sometimes we are more likely to repeat the exemplified behavior if we are rewarded for following the example of others. We may spontaneously imitate another's example without practice. These examples of observational learning (Gilmore, 1968) are quite relevant to the clinician (Kanfer & Phillips, 1970).

Cognitive-Behavioral Learning

Behavioral scientists have become increasingly aware of the role of cognitive processes as mediators of behavioral change. Irrational beliefs (Ellis, 1962), cognitive distortions (Beck, 1976), and negative self-talk (Mahoney & Mahoney, 1976; Meichenbaum, 1974) all contribute to the development of maladaptive emotional states and behaviors ranging from anxiety, problematic eating and smoking, to depression. Normally covert cognitive processes however, can come under the scrutiny of the patient's awareness and the therapist's observations. The patient learns to recognize cognitive patterns as they occur in the stream of consciousness and as they pertain to the development and maintenance of his symptoms and problem behaviors. Patients learn to restructure cognitive processes directly and thereby develop healthy adaptive behaviors.

THE STANDARD TOOLS OF THE BEHAVIOR THERAPIST

Self-Monitoring

Self-monitoring, the systematic self-observation of behavior (Kazdin, 1974; McFall, 1977; Nelson, 1977), is an effective treatment strategy at the onset of treatment (although, according to Kazdin (1974), it does not effectively maintain behavioral change. The patient, given instructions to

keep daily records of the fluctuations of symptoms, thus is enlisted as an active collaborator in the treatment process. He systematically records the time any change in a symptom occurs and notes its context—what he is doing, thinking, and feeling at the time the symptom changes; whether he is alone or in the presence of others, at home or at work. The patient thus sharpens self-observational skills and becomes more consciously aware of the character of his symptoms. Self-monitoring is a way of observing daily behavior in a thorough and comprehensive manner. It is especially effective after the patient has learned to monitor a few very specific behaviors, recording the change in behavior precisely when it is noted (McFall, 1977). Patients learn the principles of self-control, which are very important to behavioral change and its maintenance.

Through self-monitoring, the patient receives immediate feedback on which factors contribute to an increase and which to a decrease of symptoms. He may discover certain high risk times, times when symptoms are more likely to occur; and he may discover certain high risk situations in which the symptoms typically occur. Through self-monitoring, the patient also develops internal performance standards that guide behavioral change. Sometimes self-monitoring alone—without any additional treatment intervention—helps to alleviate the symptoms. This phenomenon, known as reactivity, is more apparent in the earlier stages of treatment.

Stimulus Control

Through learning, otherwise neutral events—certain behavioral routines or the nature of the physical surroundings or objects in the environment—can become stimuli for maladaptive behaviors. We are conditioned daily by the very environment we live in. Stimulus control is the method by which the patient learns to identify which cues in the environment foster maladaptive or adaptive behaviors and then alter the environment and the behavioral routines accordingly (Kanfer & Phillips, 1970). For example, habitually leaving food around the house may trigger maladaptive eating habits. In therapy, patients learn to become better “environmental engineers” (Mahoney & Mahoney, 1976), that is, to modify their behavioral routines and eliminate environmental cues which maintain behavioral problems.

Self-Control of Internal States and Skill Training

Behavioral scientists have employed a variety of means to gain access to and develop control over internal states. Jacobson (1938), who pioneered progressive muscle relaxation, systematically taught patients to tense and relax each of the main muscle groups of the body. Regular practice of progressive muscle relaxation results in deep relaxation, which is subjec-

tively convincing and is accompanied by distinct physiological changes (Paul, 1969)—notably decreased sympathetic arousal (Stoyva & Budzynski, 1974), especially if the patient is able to develop an internal representation of the relaxed state (Stilson et al., 1980). Some have gone so far as to consider the relaxation response to be the “final common pathway” of the treatment of psychophysiological disorders (Silver & Blanchard, 1978).

Hypnosis and self-hypnosis are yet different ways to gain access to and control of internal states. Hypnosis often does involve relaxation, but it is more than that. It also characteristically involves cognitive and perceptual alterations (Frankel, 1976; Orne, 1977). There are considerable individual differences in hypnotic responsiveness. People who are hypnotizable may upon suggestion produce significant sensory and physiological changes. Imagery (Singer, 1974) and visualizations (Epstein 1986) are increasingly being used in medical treatment to aid both in diagnosis and assessment of the course of the illness (Achterberg & Lawlis, 1978) and in its cure (Epstein, 1986; Simonton et al., 1978). These methods are especially powerful for people with a talent for imaginative processes. Meditation is a self-control method (Shapiro, 1978) that uses skillful and sustained deployment of focused attention (Brown & Engler, 1980) and has led to the development of a variety of clinical techniques (Carrington, 1977; Shapiro, 1978). Breathing exercises directly produce beneficial physiological and psychological states (Stone & DeLeo, 1976). Biofeedback uses technology to enhance internal control over physiological processes based on operant conditioning (Miller, 1969; Wentworth-Rohr, 1984).

Outcome studies comparing these strategies for self-control of internal states have yielded equivocal results. When large numbers of subjects are compared, no differences show up regardless of whether progressive muscle relaxation, hypnosis, imagery, meditation, breathing, or biofeedback was used for the attainment of self-control. All are equally effective for the control of internal states; not all, however, are equally effective for the same patient. Highly hypnotizable patients respond better to hypnosis; good visualizers, to imagery and visualization. Various meditation and breathing exercises are better suited to those individuals who are able to concentrate. Although progressive muscle relaxation and biofeedback are generally applicable to most people, there are marked differences in the rate at which these techniques are developed as skills. We recommend careful assessment to determine which method for developing self-control is best suited to a given patient.

Behavioral Self Regulation, Contingency Management, and Self-Management

Behavioral self-regulation is the means by which the patient decreases the likelihood of continuing maladaptive behaviors and increases the proba-

bility of promoting healthy behaviors through self-monitoring, developing accurate means of self-appraisal, establishing appropriate self-imposed performance criteria, and setting up means of self-reinforcement (Kanfer & Phillips, 1970). The patient first learns self-regulation by following the therapist's model and then takes on an increasingly active role in the treatment, eventually becoming able to maintain self regulation without the presence or aid of the therapist. Through self-monitoring, patients learn to become skillful analysts of maladaptive and adaptive behaviors (Kanfer, 1977) and their respective reinforcement contingencies. Behavioral self-regulation can be applied to the analysis of various types of behaviors, as well as to the degree to which the behavior is engaged in and its frequency of occurrence (quality, quantity, and frequency). The patient learns to set a realistic schedule of behavioral change and to identify specific goals and accomplishments. For example, in order to gain control over maladaptive eating habits, the patient may establish a schedule that can help him modify poor eating patterns, by altering the quality and quantity of food consumed and the frequency of consumption until the desired weight-loss goal is reached. To stop smoking the patient can schedule a systematic reduction of the number of cigarettes smoked each day until the desired goal of quitting smoking is achieved. Patients also learn to become good problem solvers. They learn, for example, to analyze patterns of problematic eating such as snacking or the habitual, almost unconscious "lighting up" that smokers often indulge in.

Systematic Desensitization

Systematic desensitization (Wolpe, 1958) entails the progressive exposure to stimuli or feared situations. The patient first learns to relax deeply, and a hierarchy of less-to-more feared stimuli is then constructed. In imagery scenes and while in a relaxed state, the patient is systematically presented with these less-to-more feared stimuli until he can maintain the relaxation even while imaging the formerly feared stimulus (*in vitro* desensitization). He may also construct a hierarchy of less-to-more real-life situations or events. Eventually, the therapist instructs the patient to encounter the feared events in real life (*in vivo* exposure). In this way, the patient learns to produce a response antagonistic to anxiety (a relaxation response) in the presence of the anxiety-provoking stimulus. He is systematically counterconditioned.

Skill Development Regarding Internal Perception

There are great individual differences in the capacity to perceive internal changes (Pennebaker, 1982). Most people are poor discriminators of all but general and pervasive physiological changes or not very specific, localized physiological events (Pennebaker, 1982). Certain classes of pa-

tients are notoriously poor discriminators, for example, patients with obesity, asthma, or irritable bowel syndrome. The capacity to distinguish among a variety of internal sensory changes and classes of internal experiences is known as visceral perception (Brenner, 1977). Obese patients are very poor visceral perceivers. They cannot easily tell whether they are hungry or are feeling an emotion (Schachter & Singer, 1962). Individuals vary considerably in their ability to determine whether internal sensations are to be considered symptoms or normal bodily events. They need to be taught symptom perception. Some patients, notably those with irritable bowel syndrome, are especially inaccurate in deciding whether perceived bowel activity at any given moment is normal or symptomatic of the illness. They behave as if there were some dysfunction between actual bowel activity and subjective experience (Latimer, 1983). The ability to identify the sequence of internal changes that culminates in the full manifestation of symptoms is known as symptom discrimination (Creer, 1979). Asthmatics, for example, are poor symptom discriminators; they report asthma symptoms when objective respiratory functioning is within normal limits and feel normal when objective respiratory function indicates a high risk of attack (Rubinfeld & Pain, 1977a, 1977b). These related abilities in sensory perception—visceral perception, symptom perception, and symptom discrimination—are considered together as examples of what has been called internal sensory perception (Mason, 1961).

Skills training in internal perception is a newly emerging tool of behavioral scientists. Behavioral scientists have developed methods to train patients who are deficient in internal sensory perception. Patients can learn the skills of visceral perception. For instance, an obese patient can learn to recognize, discriminate, and label a multitude of internal states and, most important, to distinguish between hunger and a variety of emotional states. Patients can also learn to tell the difference between experiencing normal physiological events and symptomatic sensations. Patients with irritable bowel syndrome can be taught to monitor bowel activity in order to discriminate between normal activity and an underactive or overactive bowel. Asthmatic patients can learn skills to detect the sequence of events leading up to an asthma attack, from the subtle changes in breathing or the just noticeable tightness in the chest, to the recognition of an impending attack, to the actual attack. By differentiating each link in the chain of events culminating in the attack, the asthmatic learns to utilize coping strategies to cut off the attack early in the sequence.

Cognitive Therapy

Cognitive therapy deals with the maladaptive types of thinking a patient habitually engages in. The patient's attitudes may be faulty: He may not

have an aversive enough attitude towards harmful behaviors, for example, smoking, and may not develop positive attitudes towards beneficial health behaviors (Spiegel & Spiegel, 1978). Patients may also harbor irrational beliefs, especially about emotionally arousing situations (Ellis, 1962). Most people carry on an internal dialogue, consisting largely of negative statements to themselves. These negative self-statements, often not fully in awareness, defeat the patient's attempt at healthy behavioral change (Mahoney & Mahoney, 1976; Meichenbaum, 1974, 1978). Some patients show serious distortions in their thinking (Beck, 1976). Assuming that one lacks the ability to effect change (lack of efficacy expectations) also significantly hinders behavioral change (Bandura, 1977).

Using cognitive therapy, the therapist helps the patient to identify the negative attitudes, irrational beliefs, cognitive distortions, and inadequate efficacy expectations that result in maladaptive behaviors and the inability to effect behavioral change. The patient must learn to change them to more positive ones.

Cognitive therapy also deals with the design of adequate coping strategies (Lazarus, 1966). The therapist assesses the patient's current repertoire of coping strategies and helps the patient to strengthen them and develop new ones appropriate to the management of his behavioral problems and symptoms.

In addition, cognitive therapists concern themselves with the representations of health and illness. Patients often evidence distortions in body image and self-concept associated with their symptoms. The therapist helps the patient to identify and correct these distortions and develop a healthy body image and self-concept. In the case of obesity and smoking, it is unlikely that the treatment gains will be maintained unless the patient is able to alter his self-concept and body image in the course of treatment—to develop an internal representation of himself as a nonsmoker or as a thin person. In the case of chronic illness, the work entails the integration of the chronic illness into the self image (Nerenz & Leventhal, 1983).

THE TREATMENT GOALS OF BEHAVIORAL MEDICINE

The goals of treatment are largely dependent on the model of behaviorism used to guide the treatment. The behavioral therapies represent a variety of techniques that are not integrated into a consistent theoretical framework or even a single learning theory (Kanfer & Phillips, 1970). Although behavioral scientists might agree that the overall goal of treatment is to change behavior, approaches to behavioral change have become more diverse as the field has grown, and so there are now many perspectives on what it means to change behavior. From the perspective of operant learn-

ing and contingency management, the goal of behavioral intervention is to eradicate maladaptive (often pleasurable) behaviors and to cultivate adaptive gratifying ones in their stead. Delprato (1981), for example, speaks of eliminative versus constructional models of behavioral therapy wherein problem behaviors are eliminated through negative reinforcement and new healthy behaviors are established through positive reinforcement. Others have made similar distinctions between strategies for treating maladaptive and adaptive behaviors; for example, Kanfer and Grimm (1977) talk about extinction of behavioral excesses and fostering behaviors in areas where there are behavioral deficits. These behavioral therapists stress that elimination of harmful behaviors alone does not necessarily lead to healthy functioning. Health is not simply the absence of illness. Sometimes it is necessary to target unhealthy behaviors with the goal of reducing their occurrence, for example, smoking, problematic eating, and overuse of substances conditioned by anticipatory panic reactions regarding symptom onset. Sometimes it is necessary to define and cultivate healthy behaviors that are absent, for example, self-monitoring, the ability to relax, physical exercise, compliance with the treatment regimen. With most patients, *both* approaches are indicated, and the subtotal of eliminating the maladaptive behaviors and cultivating adaptive behaviors is the establishment of a healthy lifestyle. Furthermore, inasuch as the neobehaviorist is usually sensitive both to the context in which behavior occurs and to the internal state of the patient, the treatment plan is also likely to include stimulus-control and cognitive therapy.

Because of the shift away from conditioning models of behavioral change towards cognitive models, neobehavioral treatment goals are often conceptualized in terms of some variation on the theme of self-regulation. Kanfer (1977) reconceptualizes behavior modification as a self-regulation model. He emphasizes the importance of the patient's own self-generated behavior and the capacity for self-reinforcement as the vehicle of behavioral change. According to Kanfer, the patient presents with well-learned and entrenched maladaptive behaviors. Once these are disrupted by such methods as self-monitoring and stimulus-control, and the practice of positive self-statements, self-regulatory processes become activated. The patient begins to become his own behavior analyst, to solve his own problems, to set the criteria by which to measure his performance, and to provide his own positive reinforcement for the behavioral change, for example, the intrinsic satisfaction that comes with successful performance.

While Kanfer's (1977) theory of self regulation is still set within the context of a reinforcement model of behavioral change, Schwartz (1977, 1979) advocates a cybernetic information-processing model for bodily functioning that more definitely departs from the conditioning models of