A LEARNING THEORY APPROACH TO STRESS AND
STRESS MANAGEMENT

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by
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A LEARNING THEORY APPROACH TO STRESS AND
STRESS MANAGEMENT

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Drake University
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The purpose. The purpose of this research was three-
ofd: (1) to review and evaluate stress theory and litera-
ture, (2) to construct a learning theory approach to the
fields of stress research and stress management, and (3) to
design stress-management instructional materials based on
the reconceptualization.

Procedure. A review of stress theoretical and research
literature was conducted. The results of that review indi-
cated that a sound and consistent theoretical approach was
lacking. In addition, there was little connection between
any theoretical conceptualization and stress management
strategies.

The relevant areas of learning theory and research were
then applied to the stress concepts and treatment techniques.
This allowed a repositioning of stress theory and associated
human problems within a behavioral framework.

Conclusions. There is a congruency in certain of the
theoretical positions. That congruency, although limited,
does allow the necessary assurance that the two approaches
are, in fact, addressing the same problems. The positioning
of stress within theoretical behaviorism provides a compre-
hensive theory and principles to explain the stress response,
its acquisition and maintenance. Behavioral technology
offers effective procedures to reduce the occurrence of
stress and its effects.

It is the position of this project that a more detailed
analysis of the kinds of learning that contribute to the
development of the stress response and the maintenance of
its associated problem behaviors may clarify the conditions
under which such learning takes place as well as suggesting
more effective treatment procedures.

Recommendations. The first recommendation is that the
initial materials designed in the instructional section of
the dissertation be field tested. Only by employing the
analysis steps in actual attempts to assess stress problems
and to construct intervention programs to solve them, can
their effectiveness be analyzed. The position taken here is
that different learning processes underlie different stress
problems and that therefore any treatment strategies selected
should be theoretically consistent with the assessment
analysis. If that is correct, it should be supported by research which would compare the effectiveness of such an individualized assessment/treatment strategy with one or more of the traditional approaches. Such research attempts is a further recommendation.
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CHAPTER ONE
Introduction

Two factors have contributed significantly to the current interest in stress and its effects. In 1936, Hans Selye described his concept of stress. His formulation has had a great impact on the popularization of the term, the growth of related research and the creation of coping strategies from a variety of theoretical orientations.

An accompanying force has been the changes in the concept of disease and disease incidence patterns. Major factors in the orientation of modern medical theory were the germ theory of disease, known as the doctrine of specific etiology, and a report by Flexner published in 1910 which described the body as a machine and supported the idea of single source causation for disease. As a consequence, medical treatment focused primarily on the functions and malfunctions of biologic subsystems.¹ The pursuit of that orientation resulted in the solving of many of modern man's health problems, as pathogenic microbiologic agents have been discovered and attacked.

In 1900 the leading causes of death tended to be infectious disease; by mid-century, however, they had become chronic diseases. For example, in 1968 the likelihood of dying from an infectious disease was one-sixth what it was in 1900, but the death rate from heart disease had increased 268%. Current predictions are that over 80% of the male children born this year will eventually die of chronic disease.

The successful discovery of the etiology and treatment of many major diseases has therefore redirected attention to other areas of health research.

One's life-style, including patterns of eating, exercise, drinking, coping with stress, and use of tobacco and drugs, together with environmental hazards, are the major known modifiable causes of illness in America today.²

The investigation of stress-related problems has been particularly active. An estimation by the American Academy of Family Physicians is that two-thirds of appointments with family doctors are due to stress-related symptoms.³ The increased understanding that problem behaviors and life-styles may be important components in many of these stress-related physical disorders has been accompanied by the complimentary development of a behavioral technology which

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²K. Haggerty, "Changing Lifestyles to Improve Health," Preventive Medicine, 6 (1977), 276.

is available to address those problem behaviors.

**Review of Traditional Approaches and Definitions**

Contrary to what one might expect, there was concern regarding stress and the detrimental affects of social and occupational conditions as early as the 1800's. Some physicians of the period, French and German in particular, believed that the causes of certain epidemics and diseases were not so much biologic as social and economic. This view was labeled "Social Medicine" by the French in 1848.¹ By the early 1900's, a famous British physician, Sir William Osler, was even suggesting that stress and strain related to hard work and worry contributed to the development of heart disease.²

Selye

No review of the concept of stress is complete without considerable emphasis on the contributions of Dr. Hans Selye. Selye was working in the Biochemistry Department of McGill University in Montreal when he discovered that an injection of toxic substances in rats produced a common syndrome. The rats changed in the following ways:

¹Garfield, "Social Stress and Medical Ideology," p. 34.

(1) the adrenal cortex became enlarged; (2) the thymus, the spleen, the lymph nodes, and all other lymphatic structures shrank; and (3) bleeding ulcers in the stomach and gut appeared.¹

Selye called this syndrome the **alarm reaction**. Further experimentation indicated that the alarm reaction was not the entire response exhibited by the organism. If exposure to a noxious agent continues, the alarm reaction, characterized by increased activity in most of the body systems, gives way to the **stage of resistance**. During the resistance phase the pituitary glands secrete the adrenocorticotropic hormone that indicates the production of corticoids. These hormones help by either inhibiting tissue inflammation or promoting inflammation. If there are disturbances in the secretion of these adaptive hormones, the result is what Selye terms diseases of adaptation. The problem is not primarily the result of any particular pathogenic agent, but instead is due to a defect in the adaptive response itself.

For example, the excessive production of a pro-inflammatory hormone in response to some mild local irritation could damage organs far from the original site of the injury. In this sense the body's faulty adaptive reactions seem to initiate or encourage various maladies. These include emotional disturbances,

headaches, insomnia, sinus attacks, high blood pressure, gastric and duodenal ulcers, certain rheumatic or allergic afflictions, and cardiovascular and kidney diseases.1

In the final stage, which Selye calls the stage of exhaustion, the system is overloaded with the development of symptoms which are clearly manifested and this stage may result in illness or death. Selye used the term general adaptation syndrome to refer to the entire response. He provided the following explanation:

I called the entire response the general adaptation syndrome (GAS: general because it is produced only by agents that have a general affect upon large portions of the body; adaptative because it stimulates defenses and thereby helps inure the body to hardships; syndrome because its signs are coordinated and partly dependent on each other).2

Selye identified the stress response in chemical and physical terms and provided a summarized definition of stress as: "The non-specific (that is, common) result of any demand upon the body," a definition that he based on objective and chemical changes which appear after any demand.3 Selye demonstrated that when the response becomes chronic, long-term chemical changes occur which are intimately


connected to disease process and can lead to high blood pressure, arteriosclerosis, and depression of the immune system as well as host of other ills.

One of the major difficulties in the field of stress is that there is no single consensual definition of stress. Few define it in the same way or even bother to provide a clear-cut definition. Selye tried to differentiate etiological factors from the physiological responses. However, many of those who write about stress have used physiological stress as the causative factor without using a separate term for the stress response. The result is that frequently the cause and the response are both referred to as stress by many authors. Some researchers have attempted to sort through the approaches and the following three main formulations are described.¹

Stress as Condition of the Environment

In this view stress is defined as external stimuli that demand some response or change in behavior. The external factors are usually described as major events that require atypical responses from a person. The research efforts of Drs. Thomas Holmes and Richard Rahe are most compatible with this view. As defined in their work, stress

is the necessity of significant change in the life pattern of the individual. Much of the focus has been an effort to ascertain if the occurrence of "stressful" events will increase the probability of future disease.\(^1\) One criticism regarding this formulation has pointed to the problem of limiting predictive variables to the occurrence of stressful events, without considering coping resources available to the person involved. Mechanic suggests that:

> As our research develops we need to give greater attention to such variables as coping skills and supportive relationships that may intervene between the occurrence of life events and the initiation of illness.\(^2\)

**Stress as a Response**

Stress has also been conceptualized as changes in the organism, the response of the person when placed in a challenging environment. This has been the approach of biological scientists.\(^3\) Selye's theory, as described previously, is a purely physiological definition of stress.

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However, Selye expands his concept of stress by making a distinction between "good stress" and "bad stress." "Good stress we call eustress (\(EU = \text{good, as in euphoria, euphonia}\)), and bad stress we call distress which is the detrimental variety."\(^1\) It is not clear from Selye's description whether eustress and distress are to be differentiated on psychological or physiological characteristics. Certainly in his later discussions of the topic Selye has spoken of attitudes, values, and motivations that he believed influenced the individual's response to stress.\(^2\)

**Transactional Model**

The third and most recent conceptualization shifts the focus to mediating psychological processes. Lazarus, Holroyd and Michenbaum and Turk all emphasize the transactional nature of the stressful situation.\(^3\) Stress is not defined solely in terms of the environmental changes the individual confronts or solely in terms of their responses to them. The transactional theorists include both of those

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\(^1\)Selye, Selye's Guide to Stress Research, p. xi.


components and highlight the cognitive processes they believe mediate them. The terms most commonly used to describe those processes are appraisal and coping. Appraisal refers to how the individual evaluates the event, both in terms of its significance for the individual's well-being and also in terms of the resources available to the individual to respond. Coping is what the person does to manage or control the stressful event. For this model, the definition of stress rests on (1) a person's perception of the environmental demand, and (2) their interpretation of resources available to them to respond to the demand. The definition is not limited to the condition of the environment nor the response as generated.

The Categorization of Stressful Events

Most authors dealing with stress and stress management supply a section in which they describe stressful events. Tables 1 and 2 provide some typical systems of organization.

As was indicated previously in this chapter, Holmes and Rahe have made the categorization of stressful events a cornerstone in their general theory of stress. In addition to listing stressful events, they have attempted to create a rating scale to identify stress levels and susceptibility to disease. Much of subsequent stress research has been related to the Holmes-Rahe view of stress as a reaction to unusual or particularly demanding events. This research on
Table 1
Major Causes of Stress - Girdano and Everly

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<tr>
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<tr>
<td>Adaptation</td>
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<td>Frustration</td>
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<td>Nutrition</td>
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<th>Personality</th>
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<td>Self-Perception</td>
<td>Anxiety</td>
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<tr>
<td>Behavioral Patterns</td>
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Table 2

Major Causes of Stress - Spielberger$^a$

<table>
<thead>
<tr>
<th>Category</th>
<th>Causes</th>
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<tbody>
<tr>
<td>Human Development</td>
<td>Pregnancy, labor, toilet training, etc.</td>
</tr>
<tr>
<td>School Environment</td>
<td>Separation from family, discipline, learning to read, changing schools, etc.</td>
</tr>
<tr>
<td>Career and Job Stress</td>
<td>Choosing a career, competing for a job, poor working conditions, time pressures, etc.</td>
</tr>
<tr>
<td>Marriage and Aging</td>
<td>Conflictual relationships, decline in physical capacity, increase in physical disorders</td>
</tr>
<tr>
<td>Environmental Stress</td>
<td>Earthquakes, wars, heavy traffic, water pollution, noise</td>
</tr>
<tr>
<td>Stressful Life Events</td>
<td>Those events listed in the Social Readjustment Rating Scale by Holmes and Rahe</td>
</tr>
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</table>

major life events has been a dominating orientation, although criticism of the approach has been substantial.\textsuperscript{1}

It is also interesting to note that the evidence accumulated to date for the correlation of life events with health outcomes has not been impressive. Rabkin and Streuning conclude that the average relationship is 0.12.\textsuperscript{2}

In a shift, but clearly related life events position, Richard Lazarus and co-workers at the University of Oregon have addressed the importance of what they call "hassles" and "uplifts."\textsuperscript{3}

Hassles are the irritating, frustrating, distressing demands that to some degree characterize everyday transactions with the environment. They include annoying practical problems such as losing things or traffic jams and fortuitous occurrences such as inclement weather, as well as arguments, disappointments, and financial and family concerns.\textsuperscript{4}

The description of uplifts provided by Kanner et al., is as follows: ". . . daily uplifts, that is, positive experiences

\textsuperscript{1}Mechanic, "Discussion of Research Progress on Relations Between Stressful Life Events and Episodes of Physical Illness."


\textsuperscript{4}Kanner et al., p. 3.
such as joy derived from manifestations of love, relief at hearing good news, the pleasure of a good night's rest, and so on.\textsuperscript{1} Richard Lazarus and his fellow investigators have proposed that these day-to-day, continually recurring events have major impact and significance for health outcomes. This view differs from Holmes and Rahe in at least two major ways, the conceptualization of the "size" and frequency of the events under consideration, and the position taken toward positive events. Holmes and Rahe, in their original consideration, positioned any major life event, whether generally described as positive or negative, as potentially damaging to health. In contrast, Lazarus views positive events as protectors from stressful reactions. He describes the importance of the psychological appraisal of an event and indicates that if such an appraisal is positive, it strengthens coping resources of an individual rather than weakening them. As indicated earlier, Selye too differentiated between "good" stressors and "bad" ones. He clearly categorized them as two types of stress, but emphasized their "common objective manifestations."\textsuperscript{2} Lazarus believes that Selye's descriptions of "good" stressors (e.g., a commitment to accomplishment) and "bad" stressors (e.g., frustration) are inappropriate labels.

\textsuperscript{1}Kanner et al., p. 6.

\textsuperscript{2}Selye, Selye's Guide to Stress Research, p. xi.
and are not properly called stressors, but instead describe responses that depend on the individual appraisal of situational events.

**Stress from a Personality Theory Framework**

Some authors on stress provide yet another framework for the discussion of stress. They include the language system of personality theory for the consideration of stress categories. The terminology that is used and the system employed does not appear to result from the linkage of either empirical or logical connections between the results of stress research and the chosen theory of personality. Girdano and Everly focus on "self-concept" and describe it as "perhaps the single most influential factor in determining human behavior." Within their broad category of self-concept, those personality factors described by Girdano and Everly as particularly important to stress reactions, are an individual's: perception of being in control, self-evaluation and feelings of hopelessness. Girdano and Everly define personality as including values, attitudes and behavior and state that, "if you can in some way alter your personality, you can significantly reduce your

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2 Girdano and Everly, p. 106.
level of stress."¹ This essentially phenomenological orientation is in contrast to a theorist such as Charles Spielberger who turns to the psychoanalytic concepts of Freud when he speaks of personality and stress.² The popularization of "stress" as a problem of modern society has resulted in many workshops, publications and self-help suggestions being directed toward the public. A large number of these materials are organized around a favorite theory of personality or incorporate personality theory explanations in some portion of what they offer.

Fear and anxiety. It is within this literature pertaining to stress and personality structures that one most often encounters the confusion surrounding the use of the terms fear and anxiety as they relate to each other and to stress. Common language usage finds them interchangeably employed, and that is true of some orientations of the stress literature as well. In the view of Charles Darwin, the purpose of fear was to alert and activate an organism to deal with a threatening situation. Darwin's description of physiological characteristics of fear were quite similar to those described by the Harvard physiologist Walter Cannon's "fight or flight" response and the

¹Girdano and Everly, p. 144.

²Spielberger, Understanding Stress and Anxiety, p. 52.
alarm reaction in Hans Selye's general adaptation syndrome. Many of the characteristics Darwin noted were observable evidences of fear (e.g., perspiration, dilation of pupils, changes in voice quality, heart palpitation). The fear reaction has been of interest to man throughout the period of written history and before, but anxiety is a psychological term and its use began in this century. Sigmund Freud believed that anxiety was the central problem of neurosis and he made a distinction between fear and anxiety.¹ For Freud, anxiety was an unpleasant emotional state for an individual, and it was experienced as,

subjective feelings of tension, apprehension and worry. The physiological arousal and behavioral manifestations that contributed to the unpleasantness of anxiety states included heart palpitation (tachycardia), disturbances of respiration, sweating, restlessness, tremor and shuddering, nausea and vertigo (dizziness).²

It is apparent that many of these effects were similar to those characteristics of fear set out by Darwin. The distinction between fear and anxiety made by Freud rested on separating the sources of danger. If a person exhibited the described behavior in response to an outside danger, Freud labeled it an objective anxiety which he believed to be synonymous with fear. On the other hand, if the symptoms

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²Spielberger, Understanding Stress and Anxiety, p. 52.
occurred in response to internal impulses, Freud labeled the response, neurotic anxiety. Freud believed that the internal impulses that created the anxiety reaction were impulses that were expressions of repressed sexual and aggressive desires. Within Freud's system, if a child is severely punished for natural impulses, intense neurotic reactions may result. When the response is enlarged by derivatives of repressed thoughts, the intensity of the emotional state is greater than would be expected as typical to the triggering event. The response would consequently be identified as an anxiety reaction.

The research of Neil Miller provides yet another example of an incorporation of these terms into a theoretical system. Miller describes fear both as an emotion and a drive. According to Miller, fear and anxiety are properly distinguished from one another. Miller uses the term anxiety to indicate that the "source is vaguely defined or ubiquitous."¹ Miller equates fear with psychological stress and appears to define it both in terms of the stimulus and the behavioral reactions, i.e., urinating, defecating, pushing, biting, etc.²


² Miller, p. 132.
Tension. Tension is another term that is frequently used synonymously with stress, but similarly to the usage of terms previously discussed, there is a distinction drawn between stress and tension by some researchers. There is an American Association for the Advancement of Tension Control. The Association's research and publication topics overlap those of stress. Dr. Robert E. Rhineheart, defines the two terms thusly:

Tension as referred to here, is habitual or persistent reflex contraction of voluntary muscles. This habit pattern arises through involuntary practice, because of bracing to real or imagined uncertainties and/or to painful stimuli. Stress is defined as the reaction(s) of the organism to any noxious stimulus. Therefore tension is simply one form of stress comparable to shivering, inflammation, or any other reaction to unpleasant or harmful stimuli.  

Psychosomatic Illness

A closely related and oftentimes parallel area has been the investigations and theories concerning psychosomatic illness. As has been pointed out in relation to other terms in this review, the use and definition of the terms psychosomatic disorders and psychophysiological disease have also been under debate. Some researchers have objected to the use of the term psychosomatic as being too inclusive.

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The argument is that no illness is unaffected by psychological and sociological variables. Currently there is a tendency for many authors to combine several related terms under the psychosomatic label.¹ Depending on the orientation of any particular author: conversion reactions, hypochondriasis, somatopsychic disorders, stress induced illness, and psychological changes produced by physiological changes in the nervous system may all be treated under the heading of psychosomatic problems. In the past these terms were traditionally distinguished from one another. The present inconsistent situation is that the terms are distinguished from each other by some authors and not by others. A distinction commonly drawn is that the use of the label psychosomatic should be restricted to physical alterations in the body that are psychological in origin. If, for example, the stress response (as described by Selye) is chronically present, the result will be end-organ (the organ with which the symptoms are involved) tissue destruction. The term psychosomatic in those instances is being applied only to disfunctions and pathologies identifiable in the structural system. In contrast, the term conversion reaction has been used to describe functional impairments in the motor or sensory systems. These impairments may

result in blindness or loss of movement, but there is no tissue damage. Both of these examples would then be psychogenic in etiology, but would also retain a clear differentiation. Whitehead, Fedoravicius, Blackwell, and Wooley, in their discussion of psychosomatic illness also retain the separation of terms. They define psychosomatic symptoms as those that:

(1) are associated with abnormal physical changes in organs innervated by the autonomic nervous system and (2) are influenced by environmental events possessing psychological (i.e., symbolic) significance. Thus we are maintaining the traditional distinction between psychosomatic symptoms such as peptic ulcer and hypertension, on the one hand, and conversion reactions involving musculoskeletal or sensory anomalies and hypochondrical complaints such as chronic pain syndromes, on the other hand.¹

During the 1940's and the 1950's there was much interest generated in psychosomatic disorders. The primary theoretical formulations were based on psychological and personality characteristics and the explanations for those characteristics were psychoanalytic in nature. Etiology was variously located in conflicts, unconscious symbolism, maternal dynamics, attitudes, personality types, etc. The explanatory rationale across these formulations was the same. Individuals with certain personality variables were

predisposed to develop certain psychosomatic symptoms. That view prevails in many quarters. The "specific emotion" hypothesis as proposed by Alexander, French and Pollock formed the foundation for psychosomatic diagnosis in the Diagnostic and Statistical Manual of Mental Disorders of the American Psychiatric Association. Although this view has been dominant, particularly in medical practice, it has failed to receive support from empirical research.¹

Drs. Meyer Friedman and Ray Rosenman, both cardiologists, have explained the fact that people respond differently to stressful situations by describing two distinct individual patterns of reaction to environmental stress.² Friedman and Rosenman believe that the major cause of coronary artery and heart disease is a complex of emotional reactions they call the Type "A" behavior pattern. Type "B" individuals are described mainly by the absence of these patterns. In their conceptualization Friedman and Rosenman did not address the problem from the traditional psychosomatic conceptualization, that being neither their training or orientation, and although the references are quite often to Type A and Type B "personalities" the theoretical view is not that of any of the traditional personality theories. A

¹Whitehead et al., pp. 66-71; Holroyd, pp. 200-201.

²M. Friedman and R. Rosenman, Type A Behavior and Your Heart (New York: Knopf, 1974).
substantive body of research is now in place which supports the connection of Type A reactions and coronary heart disease. A review by Jenkins in 1976, cited twenty-one studies that tied Type A behavior to coronary problems.¹

The assessment procedure used by Friedman and Rosenman (also generally supported as the most accurate assessment procedure for Type A behavior), is a standardized stress interview. Overt behavior is observed in that interview, e.g., body movement, interruptions, and explosive speech patterns. It is the observance of the combination of these behaviors that result in the Type A behavior label. The descriptions are not in terms of personality traits nor intrapsychic events. So, although sometimes included in stress and personality sections of the stress literature, clear distinctions exist between Type A behavior patterns and traditional personality theory explanations, both in terms of assessment and conceptualization.

CHAPTER TWO
Conceptual Problems

Mason describes the current situation concerning stress definitional issues as being one of "chaotic disagreement." Roskies says "the crisis in stress research is a chronic one." The concerns regarding the problems of stress theory and methodology have been stated repeatedly in the literature. The central trouble is with the definition of "stress" itself. As indicated in the introductory chapter, those various definitions and uses of "stress" can be generally divided into the categories of: stress as a stimulus, stress as a response and stress as a transaction. The definitional varieties impose obvious difficulties on research efforts. When psychologists, biochemists, endocrinologists, educators and others define the concept differently, both research and intervention efforts are hampered. While Selye initially conceived of "stress" to


describe a biological phenomenon, i.e., the physiological response pattern seen in animals exposed to noxious stimuli, its use as a theoretical base has extended far beyond the initial formulation. Application efforts have moved from animals to humans, from physical to psychological stressors, and from observation of a physical condition to a large number of "solutions," without a logical or experimental bridge to close the gap. The term stress is widely employed in explanations for a variety of problems, along with many suggested procedures for its alleviation, even though tenuously connected to Selye's original experimentation. Many of those working with psychological stress and human problems in particular, have tended to somehow assume a conceptual and experimental link between the work of Selye and their own. The expansion of the concept to new problems and new disciplines would be desirable if the theoretical foundation was strong and consistent. Even Selye himself at different times, "was inclined toward defining 'stress' variously in terms of either stimulus, response or interaction between stimulus and response."¹ The transactional view of Lazarus described by Mason, in his review of stress research, as "encompassing the whole range of interdependent factors, including not only stimuli and

response, but also the intervening factors which ultimately determine stimulus-response relationships," gains from including relevant dimensions of the problem, but suffers from debilitating broadness. If the above definition describes "psychological stress" the term loses its usefulness as a concept on which to base research in any specific sense. How would it be operationalized? Does it apply with equal meaning to all components of the complex action and reaction system that is included? There is no question that complicated multiple factors are involved. The question is whether a term to encompass it all can perform at the level required for scientific analysis and manipulation. There are ramifications at the experimental level as well as in the scientific communication between researchers in the field.

Mason himself says of the Lazarus approach, "first by its very comprehensive nature, it tends to give the term 'stress' a highly abstract quality and would perhaps limit its use mainly to phrases such as 'stress research,' 'stress phenomenon,' 'the stress field' and so on."¹

Definitional problems may be increased due to the fact that stress was a word in general language use prior to Selye's attempt to provide its scientific base. Selye described his initial use of the term as meeting with

¹John W. Mason, "A Historical View of the Stress Field, Part Two," Journal of Human Stress, 1, No. 2 (1975), 34.
considerable criticism because it was generally used to indicate nervous strain or mental tension. As described in the introductory chapter, the confusion regarding the use of the terms fear, anxiety, and tension, as they relate to stress, remains to the present day.

A further criticism of the field as a whole has been its willingness to propose both a variety of theories to account for stress, and extensive programs to solve stress problems without experimental data to support either. As Beech notes, "unvalidated explanations abound." This criticism applies not only to those who have followed Selye. Mason states in relation to Selye's work itself, perhaps the most wide spread critical objections centered on the judgment of many scientists that Selye had underestimated the size and nature of the data base which would be required to support generalizations of such sweeping scope as those embodied in his theories.3

As noted previously, even one of the most widely accepted areas of stress research, the design of the Social Readjustment Scale by Holmes and Rahe has not escaped methodological and conceptual criticism. Kanner et al.


describe the position that the readjustment required by major life events increases the risk of physical illness, as having only "modest empirical support."\footnote{Kanner et al., p. 2.} It is one of the most basic assumptions of the Social Readjustment Rating Scale, that change, whether for "good" or "bad" makes one more susceptible to disease. In this view, the direction of the change does not matter, only the magnitude of the change is of import. However, more recent research has indicated that "the predictive power of the SRRS is a function of only the undesirable items on the schedule and that cumulative occurrence of desirable life events does not increase the probability of the disorder."\footnote{Peter M. Lewinsohn and Joseph Talkington, "Studies on the Measurement of Unpleasant Events and Relations with Depression," \textit{Applied Psychological Measurement}, 3, No. 1 (1979), 84.} Hudgens et al.\footnote{R. W. Hudgens, J. R. Morrison, and R. G. Barckha, "Life Events and Onset of Primary Affective Disorders: A Study of 40 Hospitalized Patients and 40 Controls," \textit{Archives of General Psychiatry}, 16 (1967), 134-45.} make the additional point that many of the items on the SRRS may relate to potential consequences of illness. In other words, an item indicating a change in sleeping patterns, may be an early sign of the subsequently identified disorder rather than being antecedent.\footnote{ }
discusses the physiological theory of stress, most usually that of Selye. There is often a fairly extensive description of the nervous system and Selye's general adaptation syndrome, a discussion of models which link stress to disease and most typically some examples of techniques used to measure stress. In a chapter on measurement, Everly and Rosenfield include the following: chemical measurement, electromyographic measurement, cardiovascular measurement, electrodermal measurement, and several psychological personality scales. The next step is typically treatment suggestions which may include: relaxation training, meditation, biofeedback, exercise, hypnosis and "personality engineering" among others. The theoretical conceptualization uniting (1) the observation of a problem to (2) an accurate and appropriate measurement of that problem (given the range of measurement devices in the list cited above, it is unclear what one would be attempting to measure) to (3) an effective treatment strategy, is only vaguely, if ever, addressed. The rationale for the move to any particular intervention procedure is confusing to non-existent.¹

For many stress management programs the attention to individual assessment is limited. Even Selye, whose training and research would not be expected to provide much

information concerning individual assessment for psychological interventions, states:

Stress tests are useful to the degree to which they can be individualized. Most of the current questionnaires on physical or chemical stress tests have been accepted as measuring stress on the basis of averages taken from large populations. To my mind . . . they say nothing about the individual patient himself because no one is average.

A major challenge to Selye's theoretical formulations has been described carefully by Dr. John W. Mason, an endocrine physiologist. Dr. Mason describes the "concept of physiological nonspecificity of the stress response" as the "key premise upon which Selye's stress theory rests." Selye's view, as described earlier, was that any demand on the organism generated a common response. Exercise, cold, heat, adrenalin, insulin, or any noxious agent would similarly activate a nonspecific response of the pituitary-adrenal cortical system. Dr. Mason points out that one of the results of stress research since the 1960's has been a demonstration of the importance of psychological and social influences on the pituitary-adrenal cortical system. Stress research prior to twenty years ago focused on heat, cold, trauma, etc., the "physical" variables, as the important ones, with the "psychological" variables dismissed as

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1 Selye, Selye's Guide to Stress Research, p. xii.

variables of minor influence. Dr. Mason proposes a funda-
mental reorientation to the interpretation of some of the
past research. Dr. Mason suggests that the commonness of
the reaction may rest, not on the fact that there is a non-
specific response to very different agents, but instead on
reactions of the apparatus involved in emotional arousal.
The unifying link may be emotional arousal. Recent work
has demonstrated that many hormonal changes are evidenced
when paired with emotional arousal and that the general emo-
tional arousal may be the better explanation for:

The high frequency of adrenal-cortical responses
in laboratory situations involving "noxious"
stimuli or stressors. In other words, this
distinction fundamentally changes the view from
that of a hormonal response being elicited by a
greater diversity of stimuli to that of a hor-
monal response being elicited largely by a single
stimulus, or stimulus class, common to a great
diversity of situations, namely the ubiquitous
factors which elicit emotional arousal.¹

This position does not remove psychological processes from
their physiological base. The effects of physical factors
and psychological factors both play out their results on
a biological field, but Mason suggests that they are dis-
tinguished by the "general levels within the central nervous
system at which neuroendocrine responses to diverse stressors

¹Mason, "A Historical View of the Stress Field, Part
Two," p. 25.
are integrated."¹ Mason raises the issue that if subsequent research continues to support present indications, what appeared to Selye to be nonspecific physiological responses to any demand on the organism, may in fact be better described as indications of the pervasiveness of emotional arousal "superimposed upon the general tendency for most endocrine systems to respond to multiple stimuli. . . ."²

It is also Mason's view that this may well increase the importance of the field of psychological stress. The research has supported the extreme responsiveness of the pituitary-adrenal cortical system to stimuli that are not narrowly physical in nature and enhanced the value of psychological variables in physiological research.

CHAPTER THREE

A Learning Theory Approach to Stress

Given the number and variety of theoretical explanations regarding stress, the question may well be raised as to whether yet another theoretical framework would be useful. If a consistent, generally accepted theoretical orientation were already in place, the answer might well be no. That, however, is not the case. If a single view were to be put forward, as holding a central and accepted position, it would most likely be that of Selye. In that regard, Mason makes the following statement:

There are still some workers who accept Selye's views of stress, some who use modifications of them, some who regard them as yet unproven working hypotheses, and some who simply reject or ignore them. This is not to say, of course, that "stress" does not remain a widely used term or concept, but only that relatively few workers at present use the term exactly according to Selye's particular definitions and formulations.¹

In spite of the definitional and conceptual problems discussed earlier in Chapter Two, the area of investigation, now labeled stress, encompasses important processes of human

adaptation. It remains a significant field of research. Many authorities are pessimistic that a clear direction and common terminology will emerge. Lazarus has simply proposed that each of those working within the field define carefully the particular terminology they are using.¹ The statistics that are cited regarding the human and monetary costs of stress-related problems, point to the need for effective procedures.²

Application of traditional therapies have not demonstrated much effectiveness.

Kellner's (1975) review of the psychotherapeutic treatment of . . . psychosomatic disorders suggest that insight-oriented psychotherapy is relatively ineffective, and the primary treatment of psychosomatic disorders continues to be pharmacological or surgical management of symptoms.³

It is Whitehead's view that traditional approaches have obscured the etiology of psychosomatic disorders.

The position taken here is that many of the traditional explanations of the sources of stress-related behaviors have masked and avoided the finer grained analysis necessary to discover their origin. Consequently, it is proposed that an attempt to place some of the terminology


² Beech et al., p. 12; Wallis, p. 48.

³ Whitehead et al., p. 71.
and concepts of stress research within a behavioral framework may be of use. A theoretically sound classification system is required to guide both research and treatment. For all the effort and interest in stress research across disciplines, the communication between them is particularly limited due to confusion in theoretical rationale.

**Advantages of a Behavioral Framework**

There is an abundance of data available to any student of human behavior; the organization of that data is the critical factor. The substance of a behavioral approach consists of a rather limited number of basic functional relationships and some others that are derived and more complicated. Those relationships emphasize the importance of environmental effects, and indicate rather precisely how those effects influence behavior according to established learning principles. If it is possible to position a concept of stress within these principles of human behavior, it would provide a connected rationale to a very broad theoretical framework. It would give access to all the technology resulting from that orientation. The framework rests on a scientific method of investigation; the learning concepts are derived from psychological experiments. Many would argue that it is the methodology that results from this operational and empirical approach that is the greatest contribution of the behavioral field. Because the
experiments are constructed as they are, certain theoretical issues are clarified. One of these components, long-term data collection procedures, allow stable behavioral effects to rise from the typical complexity of a learning environment. There have been many important results from behavioral methodology, and one that is particularly relevant has been its appropriateness to questions regarding problem behaviors. In this arena, group comparison data suffers because the form of the problem is typically unique. Behavioral methodology provides a method to approach a clinical problem with a technology relevant to clinical questions, that is, how can we modify the problem in addition to simply describing it. It leads us necessarily to prescriptive formulations. The more traditional clinical approaches, i.e., using global personality characteristics tend to simply describe behavior instead of providing prescriptive information. A technology is in place to record observations regarding a problem, present the data in graphic form, and to draw conclusions regarding its reliability.

A body of experimentally validated interventions has derived from the procedures. The result is a conviction that these established principles can be very effective in changing maladaptive behavior. There have been repeated experimental demonstrations that this is so.

Behavioral procedures lend themselves to an
individualized approach. There are methods to assess the useful versus the irrelevant elements of interventions and to make it possible to design and redesign specific treatments for specific problems. In contrast, many forms of psychotherapy and stress management suggestions provide essentially one method of treatment, regardless of the presenting complaint. Behavioral procedures adapt easily to educational and self-help programs. Given the pervasiveness of the types of problems in question, wide dissemination of techniques to reduce them should be valued. If those techniques can be clearly taught and self-administered, it would be beneficial.

Mason has indicated that should future research support the position that the non-specific physiological responses in Selye's triad were primarily the result of the broad and consistent effects of emotional arousal "it would shift the interest and implications of Selye's work largely into the field of psychological stress, rather than the physiological field as originally conceived."¹ If Mason is correct, then placing a major focus on "psychological factors" plus an approach which is specific and individually designed would desirable. According to Wilson, "one of the major challenges emerging for the coming decade is the application of

behavioral principles to problems of physical health and illness.\(^1\)

**Theoretical Parallels**

Skinner does not use the term stress in any technical sense. Although the word occurs occasionally in his work, it is clear that he employs it as part of the common language. The theoretical discussions in the behavioral literature which most clearly relate to the current "stress research" field are those covering the topics of: aversive stimuli, emotion, conditioned reinforcement, respondent conditioning, escape, avoidance, punishment, anxiety and fear.

A review of that literature reveals some parallels between the views of Selye and Skinner. Both would agree that certain aversive events hold that position due to the biological nature of the organism, and that yet others are aversive as a result of learning. For example, a sudden loud noise or an extreme environmental temperature, both appear to result in responses that are a part of the original repertoire of the organism. Whether the etiology is explained by the necessity of maintaining the physical

stability of the organism or in terms of the evolutionary consequences, these responses require no learning experience. The aversiveness of a cocktail party, on the other hand, while perhaps very powerful, is clearly the result of the learning history of the individual. In a discussion of this topic by Whitehead et al., they describe a category of environmental events that are aversive to almost all people regardless of their learning history. The items cited as examples of this category are: "having to work very rapidly to avoid aversive consequences," "time pressure," and "responsibility." Although Whitehead et al. are probably correct in their assertion that the described situations are perhaps widely aversive, it is also clear that their examples are ones which involve learning. Individual reactions to these events will depend greatly on the learning histories that have preceded them.

Skinner and Selye also refer to the "non-specificness" of the generators of the considered physiological responses. "Now, if these indicators . . . appear, the phenomenon is stress by definition, irrespective of any other specific changes that may occur after exposure to one or the other 'stressor' or 'stress-producing agent.'" Similarly, Skinner says,

1Whitehead et al., pp. 73-74.
In spite of extensive research it has not been possible to show that each emotion is distinguished by a particular pattern of glands and smooth muscles. Although there are a few characteristic patterns of such responses the differences between emotions are often not great and do not follow the usual distinctions. Nor are such responses diagnostic of emotions in general, since they also occur under other circumstances—for example, after heavy exercise or in a chill wind.1

A Behavioral Position

It is proposed that stress be seen as a pathophysiological response to the environment. It is the result of both unconditioned and conditioned responses to aversive stimuli. Stress is the pathophysiological emotional pattern generated by those aversive events. It is the continuing nature of those emotional responses that causes trouble for an individual. As Skinner says:

Frequent or chronic emotional responses of glands and smooth muscles may injure the individual's health. Disorders of the digestive system, including ulcers, and allergic reactions have been traced to chronic responses in fear, anxiety, rage or depression. These are sometimes called "psychosomatic disorders."2

If there were no damaging effects resulting from these chronic responses, the position would simply be that the organism is responding effectively to environmental stimuli and no intervention for problem behavior would be required.


Of course, both healthy and unhealthy responses reflect an individual's learning history but the current focus on the area of stress is because the responses of interest are "unhealthy" ones. Behavioral psychology does not need an additional term, i.e., stress, to conceptualize or treat these problems, but the conceptual "bridge" to stress research is helpful to organize stress literature and to foster communication when the stress research and stress management framework is being used.

There are other researchers and theoreticians within the behavioral field who support the connections of emotional response patterns and physiological damage. Many are addressing these problem areas within the context of behavioral medicine. For example, Whitehead et al. cite studies by Weiss (1970, 1971), Cobb and Rose (1973), and Jenkins, Tuthill, Tannenbaum, and Kirby (1977) among others which provide documentation that,

stressful emotional circumstances can lead to abnormal physiological responses in some individuals, and that these abnormal responses may develop into psychosomatic symptoms if exposure to the stressful situation is prolonged.¹

In Ullman and Krasner's theoretical discussion of psychophysiological disorders, they say:

the argument would be that prolonged experience in any one role which elicits continual anger and frustration would lead to physical damage.

¹Whitehead et al., p. 75.
The argument would run that various stress situations arouse emotional tensions. The continued physiological components of the emotion may eventually lead to structural damage.¹

Stimuli Leading to Stress

Stimuli and events that are antecedent to the stress response are the punishing aversive aspects of the environment. There are two sources of aversive events for an organism. There are those which are "natural" to the species and those which are learned. The naturally punishing stimuli include for example, physically painful events, temperatures beyond species comfort limits, excessively loud noise, continued physical restraint or interference with behavior, failure to receive accustomed reinforcement, any extreme deprivation, and so forth. The relation of these examples to contingencies of survival and natural selection are obvious. Skinner discusses this point: "It is not difficult to show that an organism which is reinforced by the withdrawal of certain conditions should have an advantage in natural selection."² "Some of the behavior involved in emotion is apparently unconditioned, however, and in that case the grouping must be explained in terms of evolutionary


The second source of aversive events are learned or conditioned reactions. As was noted in Chapter One, it is common practice in current stress literature to discuss and to provide lists of "stressful" events as though they were very easily identified and consistent across individuals. If the views of Spielberger were adopted, one would be hard pressed to find any element of human existence escaping the label of a "stressful event." Given the shared human condition, it is reasonable that many of us experience similar conditioning histories and in fact have many conditioned emotional reflexes and operant behaviors in common. But aside from the "innate" aversives we cannot assume the content of a class of aversives. A stimulus is known to be aversive only if its removal reinforces responding or its presentation reduces responding. Lewinsohn and Talkington attempted to construct an instrument for the measurement of aversive events. In doing so they described their assumption that:

There exists a large universe of events, consisting of stimuli (e.g., electric shock); situations (e.g., arguments with spouse, separations); and behaviors (e.g., cleaning up a mess), which are experienced as aversive (unpleasant, painful,

1Skinner, Science and Human Behavior, p. 163.

2Spielberger, Understanding Stress and Anxiety, p. 18.
noxious, or distressing) by the individuals to whom they occur.¹

While it is true that they are listing events that are negative for many people much of the time, it is clear that some of the examples they cite, e.g., arguments with spouse, separations, and cleaning up, are, for some among us, and on some occasions, positive events.

The previous comments concern the occurrence of specific events, but sometimes the responses to aversives seem chronic and of a general nature. Skinner offers the following explanations:

When many different kinds of responses have been punished under many different circumstances, conditioned aversive stimuli may be widely distributed in the environment, and a condition of anxiety may be chronic.²

The individual may show an unusually high probability of response which is not "well adapted to reality" in the sense that the behavior cannot be accounted for in terms of current variables. It can sometimes be explained by pointing to an earlier history of control. When effective escape is impossible, for example, a highly aversive condition may evoke ineffective behavior in the form of aimless wandering or searching. Simple "nervousness" is often of this sort. The individual is uneasy and cannot rest, although his behavior cannot be explained plausibly in terms of its current consequences.³

¹Lewinsohn and Talkington, p. 84.


When we say that a death was sudden or occurred without warning, we mean that no prior stimulus was particularly associated with it. The stimuli which received the force of the conditioning were therefore the undistinguished elements of daily life. It is not likely there are any successful forms of escape appropriate to these stimuli, . . . conditioned emotional reflexes, as well as conditioned emotional predispositions, may be almost constantly activated.¹

The current interest in stress may also be due to the fact that people believe "there is more of it." The increasing complexity of tasks, and the rate of change, finds us frequently unprepared and the results of our learning histories inadequate. Skinner says in that regard:

The effective stimuli which characteristically precede positive reinforcement may be chronic in a world in which "good" things frequently happen. It is not seen in the clinic because it is not troublesome. Anxiety, which is chronic in a world in which "bad" things frequently happen, has resulting disadvantages both to the individual and to society.²

Although the point is that on occasion, aversive conditioning occurs to a wide range and typically reoccurring set of stimuli, which may be difficult to identify, that does not mean that people do not learn specific ways of dealing with specific situations. Ethel Roskies and Richard Lazarus, two active researchers in the field of "coping strategies" and stress research, criticize earlier models of stress reactions as failing to recognize individual

¹Skinner, Science and Human Behavior, p. 179.

differences in reaction.

Earlier models tended to view stress simplistically, either as an external condition generating turbulence (stressor) or as the turbulent response itself (stress response), and to postulate a linear cause-effect relationship between the two. This S-R model did not provide a means for exploring and explaining individual differences in reaction.¹

They find the S-R model troublesome when they attempt to account for the studies that continue to demonstrate individual differences in the relationship between stimulus and response.

We don't know the degree to which competent coping is purely situation-specific or the degree to which it constitutes a trait and, if so, the characteristics and correlates of this trait.²

It is unclear whether their description of "S-R models" is meant to include a behavioral analytic explanation of behavior patterns or "coping" responses. However, individual behavior patterns dictated by individual learning histories is precisely what a behavioral model would predict.

One of the most frequently cited aspects of stress research has been the view of Holmes and Rahe that "positive" as well as "negative" life events requires adjustments that


²Roskies and Lazarus, p. 56.
substantially increase the risk of physical illness. It is argued that the apparent conflict between that view and the one presented here, i.e., that pathophysiological responses are ultimately traceable to aversive environmental events, is the result of global labeling of certain life events as "positive." Although getting married may generally be seen as a "good thing" by most individuals, few would argue that there are not many negatives associated with such an event. It is those aversive elements that are the environmental circumstances responsible for the problematic emotional responses. The research on "hassles" and "uplifts" also provide empirical support for finer grained analysis of human experience and the association between only the undesirable aversive events, i.e., hassles and somatic health.¹

Respondent Conditioning/Aversive Events

In a behavioral analysis, the subject of analysis is behavior, i.e., everything that organisms do. Behavioral responses are of two types: operant or instrumental responses and respondent or reflexive responses.

Respondents

1. "Respondents are innate behavior regularly elicited by specific stimuli which precede them and largely unaffected by stimuli which follow them." \(^1\)

2. "Respondent conditioning involves the repeated presentation of a new stimulus along with the stimulus that already elicits a respondent. The new stimulus then acquires the power to elicit the respondent." \(^2\)

3. "... the frequency of occurrence of a respondent depends primarily on the frequency of occurrence of the eliciting stimulus." \(^3\)

Respondent behavior remains consistent for an organism. Respondent conditioning does not involve learning new behavior, nor does it change the rate at which the behavior occurs. What does change, however, is the stimulus that can elicit the response. Through "classical conditioning" a stimulus that is neutral acquires the ability to elicit a response which was originally elicited by another stimulus. Through temporal pairing of the conditioned and unconditioned stimuli, the conditioned stimulus also gains the power to elicit a physiological response.


\(^2\)Reynolds, p. 8.

\(^3\)Reynolds, p. 7.
The analysis of respondent behavior reveals the process by which additional stimuli can come to control certain responses. If a person is punished in the presence of a given set of stimuli, the stimuli alone will later have the ability to elicit the same emotional reaction. The results of conditioning paradigms have powerful and pervasive consequences in the life of an organism. The reflex responses in glands and smooth muscles which are first elicited by aversive stimuli and later by any stimuli which have occurred at the same time are often discussed under the headings of fear and anxiety in the behavioral literature.

A stimulus which characteristically precedes a strong negative reinforcer has a far-reaching effect. It invokes behavior which has been conditioned by the reduction of similar threats and also elicits strong emotional responses.¹

A study by Lowen et al. suggests that classically conditioned physiological reactions are important to the disease process. Their results indicate that classically conditioned emotional responses in animals cause these animals to have a lower threshold of vulnerability to ventricular fibrillation. The evidence that environmental events associated with stress responses can induce ventricular arrhythmia may relate to the phenomenon of sudden death in

¹Skinner, Science and Human Behavior, p. 178.
Classical conditioning provides a formulation to explain how certain environmental stimuli control responding.

**Operant Conditioning/Aversive Events**

Learning has occurred when a functional relationship is acquired between a response and an environmental stimulus. B. F. Skinner makes the point that:

Respondent and operant conditioning exhaust the possibilities: an organism is conditioned when a reinforcer (1) accompanies another stimulus or (2) follows upon the organism's own behavior. Any event which does neither has no effect in changing the probability of response.²

"There is no environmental eliciting stimulus for operant behavior; it simply occurs."³ "The term emphasizes the fact that the behavior operates upon the environment to generate consequences."⁴ "The frequency of operant behavior is primarily determined by its effect (the environmental event that follows it)."⁵

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³ Reynolds, p. 8.


⁵ Reynolds, p. 9.
In behavioral analysis it is the relationship or function of events that is emphasized. An operant is defined by its environmental effect. In considering the term reinforcement, for example, it is defined by its effect of strengthening behavior. A consequence is considered reinforcement if there is an increased probability that the preceding response (or class of responses) will occur in the future. In punishment, the consequence of a response is that the occurrence of that response in the future is less likely. In addition, a stimulus that reinforces a response by its presence, may serve a different function if removed. Its removal may punish responding. Furthermore, a stimulus which punishes behavior can serve to also strengthen responding if it is removed or prevented. Such removal of an aversive stimulus is called negative reinforcement. Excepting the comments regarding positive reinforcement, the functional relationships described above are often combined in the area of aversive control procedures. Aversive control includes both punishment and reinforcement by the removal or prevention of aversive stimuli. Within the theoretical rationale presented here, all aversive control procedures would be an occasion for the physiological stress reaction.

**Conditioning Autonomic Responses**

One of the traditional separations of respondent and operant conditioning has been autonomic responses. There
have been, of course, many demonstrations that physiological functioning can be respondently or classically conditioned. One of the most important current developments, both theoretically and practically, has been the demonstration that unelicited autonomic responses can be operantly conditioned. Heart rate, electrodermal changes, and blood pressure are among the responses that have been strengthened by reinforcement contingencies.¹ This research provides much support for the growing field of behavioral medicine and the importance of operantly based treatment strategies.

Categories of Operant Stress Responses

A category of operant responses to aversive stimuli is escape. In escape, a response terminates an aversive stimulus. Although escape and avoidance procedures are often discussed jointly, they are clearly distinguished. In the avoidance paradigm, the organism emits a response which prevents or delays an aversive stimulus. These responses to aversive events often occur together and their advantages for survival and a more pleasant existence are obvious.

It is also true, however, that the escape and avoidance behaviors themselves are not always in the best long-term

interest of an individual. For a person to avoid injury and threat is generally a desirable event. However, even when the organism successfully avoids an aversive stimulus, the physioemotional reaction occurs. Skinner describes the problem effects of its occurrence:

Although the biological advantage of avoidance is obvious, the emotional pattern of anxiety appears to serve no useful purpose. It interferes with the normal behavior of the individual and may even disorganize avoidance behavior which would otherwise be effective in dealing with the circumstances.¹

If escape and avoidance maintain situations in which problems are not solved and necessary skills are not learned, escape and avoidance are problem behaviors for the organism and the likelihood of learning positive behaviors is lessened.

Conditioning is no respecter of a master plan regarding "what is good for you" and consequently there is the inevitable acquisition of learned problem behaviors.

Conditioning offers tremendous advantages in equipping the organism with behavior which is effective in a novel environment, but there appears to be no way of preventing the acquisition of non-advantageous behavior through accident.²

Observers of human behavior have long noted that there are many instances in which there are no easily discernable

¹Skinner, Science and Human Behavior, p. 178.

reinforcing consequences to certain behavior patterns. Some of these situations are the results of avoidance conditioning.

A preoccupation which does not appear to offer commensurate positive reinforcement is explained by showing that it avoids the aversive consequence of some other course of action. Some compulsions and obsessions appear to have this effect.¹

Many behavior patterns are the result of some kind of effort to deal with the stress-producing problem, but which themselves present more problems to be dealt with. It is a strong tenant of theoretical behaviorism that aversive events and aversive control procedures have disadvantageous by-products. In addition to escape and avoidance, the individual may counterattack the source of aversive stimuli in a variety of ways. Possible aggressive physical or verbal behavior, although appropriate at times, may also generate very negative consequences. As Skinner notes concerning aversive events and control:

The effects may be severe. Productive patterns of behavior are distorted by strong emotional predispositions, and the operant behavior which is strengthened in emotion may have disastrous consequences.²

Another reaction to aversive control is passive resistance or passive endurance. The individual "burns out"


or "stops." Incapacitation, lethargy, and various depressive reactions, may thwart the source of aversive control, but they thwart productive activity of the individual as well.

Certain somatically related behavior patterns are quite clearly affected by the consequences they produce. Some hypochondriacal complaints, for example, may have a learning history rooted in a chronic stress response. The individual may receive much social attention and care, direct financial rewards, or clear escape from anxiety-producing events. It has long been accepted that hysterical conversion reactions are maintained by the social consequences attendant on the appearance of the behavior. The most recent edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM III), provides descriptions and diagnostic criteria for a group of disorders termed somatoform. Somatization Disorder, Conversion Disorder, Psychogenic Pain Disorder, Hypochondriasis, and Atypical Somatoform Disorder are included in this category. These patterns are conceptualized by the designers of the DSM III classification system as having:

physical symptoms suggesting physical disorder (hence, somatoform) for which there are no demonstrable organic findings or known physiological mechanisms and for which there is positive
evidence, or a strong presumption, that the symptoms are linked to psychological factors or conflicts.¹

Discussion of the diagnostic criteria and associated features for this group variously include: (1) receiving care from a number of physicians, (2) achievement of "primary" or "secondary" gain, (3) evidence of extreme psychological stress, (4) development of a chronic sick role, (5) exposure to others with similar symptom patterns, (6) temporal relationship between an environmental stimulus that may be related to a psychological need, (7) avoiding some activity that is noxious and (8) getting support from the environment that might not otherwise be available. Although there are some additional factors cited in categorizing these disorders, the commonalities between the above descriptors and an operant theoretical base are clear. While the terminology may differ, environmental events, avoidance of aversive consequences, reinforcement effects and modeling are repeatedly pointed out as important to the etiology and maintenance of these "disorders."

Mechanic described "illness behavior" when he investigated the over-utilization of medical treatment centers.²


The individual whose complaints are clearly not supported by medical diagnosis, and who exhibits behavior patterns that shape caretaking responses from others, has behavior maintained by operant effects.

Physiological responses vary in the degree to which their host organism is aware of them. Individuals seem unaware of blood pressure, blood sugar levels or gastric acid secretion. On the other hand, headaches, and muscle cramping are examples of responses that are easily perceived. The latter physiological stimuli may make operant control more likely. Clearly perceived effects may more frequently lead to interactions with the environment and thus to operant conditioning. For example, the individual may more often label the event, or exhibit observable effects, both behaviors which are likely to encounter environmental responses that reinforce them.

As further support for the role of operant conditioning and physiological conditions, Whitehead et al. described the results of several studies which have found,

that recurrent abdominal pain in children which appears to be a juvenile equivalent of irritable bowel syndrome . . . occurs most frequently in families where one or both parents have current gastrointestinal symptoms. This finding suggests that modeling and reinforcement play a role in the etiology of this childhood disorder. The alternative explanation that there exists an inherited predisposition for the disorder is

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1Whitehead et al., p. 76.
inconsistent with the observation that a
history of gastrointestinal symptoms as opposed
to current symptoms is no more common in
parents of children with recurrent abdominal
pain than in parents of children without this
syndrome.¹

Interaction of Respondent and Operant
Conditioning and Stress Responses

Respondent and operant conditioning of stress have been
discussed separately to emphasize the fact that they are
different operations. It is clear however, that many
physiological emotional reactions to aversive events, i.e.,
stress responses, are the effects of both operant and
respondent conditioning. Under certain circumstances the
interaction between the two processes is inevitable. In
these circumstances, the simultaneous occurrence of both
operant and respondent conditioning depends upon the nature
of the stimuli involved. If the unconditioned stimulus in
a respondent paradigm is a positive or negative reinforcer,
operant conditioning will occur at the same time. In
parallel, if the reinforcer in an operant procedure is an
uncondition stimulus, respondent conditioning will occur
simultaneously. Therefore, if the stimuli are both eliciting
and reinforcing stimuli, respondent and operant condition-
ing will both occur. When behavior relating to aversive
events is considered, it seems probable that both types of

¹Whitehead et al., p. 83.
learning are commonly involved. As was pointed out previously, although circumstances exist in which both conditioning processes occur, they are separate operations and contribute independently to the development of the stress response and to its reoccurrence in the future. Confusion regarding the "causality" relationship between operant and respondent learning is often found in discussions of emotional responses and anxiety. Many authors speak of anxiety as a respondent process and go on to describe much of the connected problem behaviors as a result of the "conditioning" of anxiety to certain events. However, quite often the problems of most concern are those operant behaviors that are interfered with by the anxiety, or that occur to escape and avoid the unpleasant emotional condition. Reynolds provides the distinction when he contrasts responses to an aversive situation as follows:

While it is true that the anxiety is elicited, the avoidance behavior may in fact be an independent conditioned operant. Neither one causes the other; rather, both are products of the same procedure which arranges for simultaneous operant and respondent conditioning.¹

Although the position taken here is that the analysis and separation of the contributions of the two conditioning processes is important to treatment considerations, there are situations in which it is very difficult to determine whether the problem is a result of operant or respondent

¹Reynolds, p. 102
conditioning. Reactions of the gastrointestinal system that may occur as part of the stress reaction provide examples in this regard. A nauseated, vomiting response may develop through classical conditioning or as a result of reinforcing contingencies. Aversive conditioning based on respondent principles, as well as operantly-based interventions are both encountered in the literature as effective treatment designs for that problem. Whitehead et al. described the case of a young woman with irritable bowel syndrome. They believed that the syndrome first occurred as a classically conditioned response. In this instance, however, the symptoms of spastic colon were reinforced by the woman's husband and mother-in-law and began to occur in situations quite dissimilar from the original circumstances in which they were learned.

As stress behavior is analyzed and individual cases are reviewed, it becomes apparent that both types of learning processes are required to account for the behaviors that are observed. The following quote from Skinner's *Science and Human Behavior* is a succinct summary of the complexities involved in the interaction of operant and respondent conditioning and stress producing events:

A single aversive stimulus contingent upon a response has at least four effects.

(1) It elicits reflexes, often of an emotional nature.

(2) It alters emotional predispositions to act in various ways.
(3) It serves as a reinforcing stimulus in respondent conditioning when paired with stimuli which precede or accompany it; these stimuli eventually evoke the responses and predispositions of (1) and (2), and any avoidance behavior which bring the stimuli to an end is reinforced.

(4) It makes possible the reinforcement of any escape behavior which brings the punishing stimulus itself to an end. In this example, then, a single event serves as an eliciting stimulus, an emotional operation, a reinforcing stimulus in respondent conditioning, and a negative reinforcer in operant conditioning.¹

Implications for Assessment and Intervention

Turning to assessment and intervention, the advantages of placing the stress response within a behavioral framework become obvious. Assessment and intervention strategies follow quite clearly. In traditional stress management literature the commonly used assessment devices are inventories and scales. The State-Trait Anxiety Inventory by Spielberger which purports to measure the general attitude of an individual (trait anxiety) as well as situational anxiety level (state anxiety), and the Social Readjustment Rating Scale by Holmes and Rahe are examples of two instruments frequently used. Personality tests of various types are sometimes recommended even though data to support their utility is sorely lacking. In a review of findings regarding the assessment of Type A behavior, Theodore Dembroski says,

These findings suggest that the pattern reflects attributes relatively independent of those measured by traditional personality tests. In fact, it is currently the norm to refer to Type A as a behavior pattern rather than a personality construct.\(^1\)

Holroyd, in a discussion on the assessment of psychosomatic disorders states the position even more strongly:

More than two decades have passed since personality variables were systematically proposed as etiologically significant factors in psychosomatic disorders. However, there is still no reliable evidence indicating that either trait or psychodynamically based assessment procedures are capable of identifying personality variables that are pathogenic for specific psychosomatic disorders. As a result, the psychosomatic hypothesis formulated during the last few decades appear less tenable than they did when they were proposed, and interest in these formulations appears to be declining.

On the other hand, the utility of behavioral assessment procedures for identifying psychological factors contributing to stress-related disorders has yet to be systematically evaluated. Recent research on the coronary-prone behavioral patterns suggests the results with behaviorally focused assessment procedures may be quite different than those obtained from tradition assessment procedures.\(^2\)

Perhaps equally often in general stress management programs no assessment is conducted at all, with the "stress management instructor" moving immediately to recommended stress reduction procedures. Interestingly, the commonly

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\(^1\)Theodore Dembroski, rev. of Behavior Patterns, Stress and Coronary Heart Disease, by David C. Glass, Biofeedback and Self-Regulation, 5, No. 1 (1980), 127.

\(^2\)Holroyd, p. 201.
suggested interventions turn out to be behavioral in theoretical rationale and design, e.g., relaxation training, biofeedback, and assertiveness training.

A careful assessment is critical for the implementation of behavioral strategies. It is a distinguishing feature of the approach. The assessment search is based upon the view that it is environmental situations that both occasion and effect stress responses. It may sometimes be correct to say that an emotional reaction produces a physical problem, as is the case when a chronic response of glands and smooth muscles causes tissue damage. Chronic anger is sometimes described as causing ulcers; however, both the anger and the ulcer are physiological responses and the source for both responses is in the environmental history of the person. It is not sufficiently informative or prescriptive to identify frustration or anger as the cause of behavior. Frustration and anger may be medically related to the structural change leading to an ulcer, but it is necessary to know how the emotional state is triggered and how it may be changed. The assessment must identify the emotional behavior and the environmental variables of which that behavior is a function.

In studying the environmental control of behavior, two determinants are considered, the current and the historical. The behavior to be analyzed is occurring not only because of contemporary factors but because of the organism's previous
experience. While that is assuredly the case, most often how the behaviors began may not be so important as how the response is currently maintained.

The general procedures of a behavioral analysis are well established. They are employed in this context to identify the problem behavior in observable terms, to identify specific eliciting and discriminative stimuli, to identify consequences and responses, to identify patterns of events that are antecedent, that accompany and that follow the pathophysiological reactions, and to provide data for the dissection of those interactions.

**Respondent Assessment**

The assessment is an effort to locate the conditioned environmental stimuli that elicit the inappropriate or undesirable behavior. The focus is on stimuli that precede the targeted responses. The current antecedent stimuli must be identified. As noted before, the antecedent stimuli responsible for the development of a pathophysiological emotional response could well be different from those that are maintaining it. Conditioned respondent effects are likely if the frequency, the intensity, and the duration of the responses are out of proportion to the situations that appear to elicit them. If a toy snake causes an intense reaction, speaking in front of a class creates panic, walking into a hospital causes nausea, or proximity to a plastic flower precedes an asthma attack,
the possibility of a respondently conditioned response should be entertained. If there is no evidence that reinforcing consequences are contingent, that the response is not differentially effected by the responses of other people for example, the hypothesis of respondent conditioning is supported. It is also more likely if the stress problem occurs only in specific situations. The latter point is not definitive, since the specificity of the circumstances may be serving as discriminative stimuli instead.

Operant Assessment

The search is for relations among three components: the situation in which the behavior occurs, the behavior itself, and the consequences which follow. Sometimes those relations are subtle and complex. If the response appears instrumental in avoiding or escaping aversive events, operant conditioning is considered. Is the child allowed to leave school when her stomach is upset, does drinking with co-workers avoid preparation of a work report, do headaches let mom go to bed and be "cared for"? In order to answer these questions, a detailed analysis of environmental consequences is required. How are parents, spouses, peers, employers, and so forth responding? Is there evidence of family training for similar patterns of behavior? The investigation of parental experiences with absenteeism, substance abuse, headaches, ulcers, use of medical service facilities, and so forth may provide clues for further
analysis.

As described earlier, some types of pathophysiological responses are more likely to have operant elements than are others. If the stress response is easily discernible to the individual or quite uncomfortable, if it happens to be visible to others (perspiration, blushing, etc.), then it is more likely to set up and encounter environmental shaping effects.

The process of assessment may indicate deficiencies in interpersonal or problem solving skills. Individuals who lack the skills to successfully deal with aversive, stress promoting events, are more likely to attempt to escape and avoid them. Responses which aid them in doing so are reinforced. If that arrangement begins to emerge, a more extensive assessment of social skills, assertiveness skills, academic skills, and so forth would be required.

The environment must also be analyzed to determine if it is shaping and teaching the creation of aversive patterns. Type A behavior is a premiere example in this area. The naturally occurring training package (more deliberately trained in some business settings), composed of punishing and reinforcing events for "work faster," "work longer," "avoid failure," "everything is critical" results in behavior tied to physiological stress. Many of the professions and arenas for such competitive reactions increasingly involve several aspects of an individual's life. It
is not only the work setting, but recreation, voluntary work and entertaining that are relevant as well. When "everything is important to success," there is a fertile field for the conditioning of superstitious behavior and a widening number of stimuli that hold aversive power.

A further aspect to consider are the kinds of reinforcers that appear strong for an individual. Do the consequences that are being studied as possible reinforcers for the problem responses match those that have maintained other frequent patterns of behavior for the person? Does social reinforcement seem to be a strong reinforcement for the individual in question? Are there other significant instances of responsiveness to that reinforcer in their history?

Assessment Techniques

Interviews, questionnaires, self-observation, direct observation, and behavioral rating scales by others in the environment are recommended methods of assessment.

The interview, along with questionnaires, can be used to explore both current and historical environmental events. In addition to obtaining information regarding the learning history and stress, the interview serves as a setting to obtain a sample of current behavior patterns. Observations regarding muscular tension, speech patterns, breathing rate, frequency in movement, etc., may be useful. Some interviews are specifically designed to occasion stress
responses. The currently recommended procedure for assessing Type A behavior is an interview of this kind.

Interpersonal responses observed in the interview are instructive as well. The interviewer can begin to entertain hypotheses regarding social and assertive skills, and should also observe what responses are reinforced in the interviewer themselves. Does the individual reinforce and solicit caretaking responses and comments by the interviewer?

It is often difficult to assess a stress reaction on the basis of an interview, because many of the pathophysiological events are not perceived by the person being examined. A method which should always be included is self-monitoring. The person must record aversive events, physiological reactions, response descriptions and environmental situations over a sufficient period of time to allow patterns to emerge. An individual must learn to discriminate the target behavior and to monitor its frequency, duration, or intensity as the problem dictates. It is one of the functions of the interview to define the problem so that such observation is possible. That may prove difficult to do when the individual describes chronic "nervousness" and anxiety. Some people find it hard to determine any situations at all that covary with the response. It may be helpful in that regard to have the self-recording of tension level prompted by frequently occurring stimuli; using an
alarm watch, the ring of a telephone, traffic lights and other stimuli peculiar to particular situations. On occasion this problem may be fostered by the fact that the person does not possess the operant of labeling the aversive events. Although interactions with a spouse may in fact be aversive and occasions for stress, they may never have been labeled or so identified by the person and thus not described as events to be tracked when target behavior is being defined. The physiological reactions take place, labeled or not. If specification is a problem, sometimes an individual may find it useful to review a "general" aversive events list to suggest some possible areas to monitor. The Hassles Scale by Kanner, Lazarus, and their research group, is one to consider for this use.

Behavior rating scales to be completed by others who can observe and who wish to help offer yet another source of information concerning behavior.

Direct observation, one of the hallmarks of behavioral procedures, is always recommended if it is possible to arrange. Observation techniques are numerous and well described elsewhere. Observation tools and procedures should be chosen according to established criteria for the assessment and intervention of the particular selected target behavior.
Treatment

If pathophysiological changes are the result of a conditioning history, then they can be effectively treated with behavioral interventions. Treatment strategies must focus on the functionally related behavioral activity. Efforts are directed either toward the operants which alter the antecedent, consequent relationships in some fashion or to the respondents elicited by aversive events. The choice is between operants to be trained or respondents to be treated. For some time, the majority of stress management techniques have been those that attempt to mitigate the effects of emotional behavior, i.e., the respondents. Relaxation training, hypnosis, autogenics, and systematic desensitization are all examples.

In the only reference encountered which discussed placing a value on types of coping or interventions, Billings and Moos offer the following:

we did find that more reliance on active attempts to deal with an event and fewer attempts to avoid dealing with it were associated with less stress. The use of these more "effective" coping strategies was more prevalent among those with more education and income, implicating them as intervening links in the inverse relationship between socioeconomic status and psychopathology.\(^1\)

Treatment/Respondents

To eliminate an unconditioned pathophysiological response to an aversive event, the choices are either to remove the stimulus, if possible, or to present a stimulus for an incompatible response. The latter is Wolpe's conceptualization of systematic desensitization. Wolpe believed that responses such as relaxation, assertion and sexual arousal were responses incompatible with anxiety, and functioned as a type of reciprocal inhibition that eliminated the anxiety response. Conditioned respondent behavior can be treated by classical extinction procedures if they are elicited by a limited number of identifiable situations. Extinction of the response occurs when the conditioned stimulus is presented without the unconditioned stimulus a number of times. The response diminishes as the conditioned stimulus is presented without the conditioned stimulus. Using systematic desensitization with conditioned respondents as well, the person can be gradually exposed to the harmless situation in vivo or with imagery until the conditioned response no longer occurs. As Walker indicates,

the procedure constituted a combination of counter-conditioning (conditioning a new, relaxation response to the stimulus that previously produced anxiety, thus eliminating the anxiety) and extinction (repeatedly presenting the stimulus while preventing the anxiety response from occurring).¹

The numerous relaxation training procedures often recommended as intervention strategies are often not connected to results of an assessment. The relaxation treatments largely ignore the way environmental demands influence stress responses. They are suggested because of the evidence of physiological benefits to persons who complain of chronically present "general tenseness" or who cannot, due to other factors, remove themselves from an ongoing stress producing situation. The trend to more refined measures of the physiological effects of relaxation has demonstrated positive decreases in heart rate, respiration rate and muscle tension.

Treatment/Operants

If pathophysiological conditions develop through contingent attention and other reinforcing consequences, it should then be possible to intervene and modify those emotional reactions by operant extinction procedures and differential reinforcement. It should be noted that extinction in operant conditioning is not the same as in respondent conditioning. In operant extinction procedures, the response must occur and not be reinforced. Such programming efforts can be enacted by the therapist, by self-control programs or by training others in the environment. Once the problem response is operantly maintained it is ineffective to treat only the emotional response itself. As discussed
previously, one of the learned responses to punishing, aversive events may be maladaptive avoidance behavior. Solomon and Wynne reported in 1954 on research to overcome a persistent avoidance pattern in animals. The animals had learned to avoid an area to get away from electric shock. A tone had been classically conditioned with the shock. Solomon and Wynne placed the animal back in the area and prevented the avoidance response. The tone was sounded but no shock administered. Following many trials the tone no longer elicited anxiety and the animals no longer avoided the area. With shocks never presented, avoidance extinguished for lack of reinforcement.1 School phobia, for example, may develop into a persistent avoidance pattern. In order for extinction to occur, the reinforcement must not be allowed to take place, e.g., going home, going to the nurse's office, and so forth.

Discriminative stimuli are those stimuli which signal the probable reinforcement of an operant. If these stimuli are setting the occasion for problem behavior, they can be controlled by avoiding them, by changing them or by not responding to them. Certain co-workers may be discriminative stimuli to "goof off" (avoid) instead of engaging in boring, aversive tasks. One can avoid the co-workers, shape

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different behaviors in them or ignore them. Many of the management procedures for stress are properly classified as self-control programs. These programs still alter the variables of which the problem response is a function. Behavior which succeeds in doing so is reinforced. Skinner describes it as follows:

When a man controls himself, chooses a course of action, thinks out the solution to a problem, or strives to an increase in self-knowledge, he is behaving. He controls himself precisely as he would control the behavior of anyone else--through the manipulation of variables of which behavior is a function.¹

The data that comes from situational analysis can be used to determine if new responses are needed and to discriminate when they should be used. Miller describes physiological benefits from learning such a discrimination that occur in addition to "solving a problem."

Observations in psychotherapy and in combat indicate that two important facts in reducing fear are learning to discriminate when it is dangerous and when it is safe, and learning a coping response to reduce the danger. Rigorously controlled experimental studies confirm those observations. They show that learning a discrimination can reduce the level of chronic fear and its psychosomatic consequences such as stomach norepinephrine. Furthermore, animals who learn a simple coping response to control the painful electric shock show less fear as measured by interference with eating, levels of plasma corticosterone, and stomach lesions than do those who receive exactly the same electric shocks without being able to control them. But if the coping response involves

¹Skinner, Science and Human Behavior, p. 228.
enough conflict, having to perform it can increase the amount of stomach lesions. One of the first steps in controlling fear is learning to locate the source of the danger and to discriminate real from imaginary dangers. The next step is to devise plans and carry out coping actions to reduce the danger.

Performing a simple, effective coping response can increase the level of brain norepinephrine, an effect analogous to that produced by drugs that combat psychological depression and induce euphoria. Inability to do anything about pain or fear can reduce the level of brain norepinephrine, an effect analogous to that of drugs that induce a psychological depression. Depression of brain norepinephrine interferes with the subsequent ability to perform coping responses.¹

The range of behavior modification technology is available to alter aspects of the environment or of the individual to control stress responses. An individualized approach to stress management is required because individualized programs are required to address the problems. Resolving marital difficulties, job retraining, the gamut of human difficulties which lead to stress responses can be reduced by behavioral techniques if they are correctly selected and applied.

¹Miller, p. 162.
CHAPTER FOUR

Stress Management Instructional Materials

The material in this chapter is designed to be used to analyze individual stress problems and to suggest the directions for treatment and intervention. The analysis steps are based on the theoretical position outlined in Chapter Three.

The Stress Management Interview should be administered by therapists whose training and experience allows them to pursue more information when the obtained responses warrant. The interview provides a structure to investigate relevant areas, but the interviewer should use additional questions as necessary until the purpose of the question is served.

The self-assessment material is to be used in an instructional setting which provides a knowledgeable guide through the process and interpretation of the collected data.
1.0 Description of Problem:

1.a When did it first occur?

1.b What was the situation?

2.0 Has the problem changed over time?

2.a How is it different?
2.b When did you notice that it had changed?

(Description of that circumstance)

3.0 Situational Determinants:

3.1 Where does problem occur?

3.2 What happens just before it occurs?

3.3 What happens afterwards?

3.4 Who is there?

3.5 What do they do?
3.6 What do you do?

4.0 Review typical day (if problem frequently is appropriate):

5.0 Environmental Awareness:

5.1 Do you think other people are aware of the problem?

5.2 Do you let other people know when it is occurring? How?

5.3 It is visible to them in any way? How?
6.0 Type A Indicators:

6.1 Are you in a hurry much of the time? __ _____
6.2 Must you work hard? __ _____
6.3 Do others expect you to do more? __ _____
   at work?
   at home?
6.4 Is your work organized? __ _____
6.5 Do you have more to do than you can accomplish __ _____

7.0 Family Experiences:

7.1 Did your parent(s) or anyone in your family have a similar problem? __ _____

7.2 Or one of the following? __ _____

Headaches
Stomachaches
Backaches
Muscle Tension (specify)
Teeth Grinding
Rapid Breathing
Sighing
Fatigue
Dry Throat
Poor Concentration
Irritability
Accidents and Breaking Things
Sleep Interruptions
Anger Episodes
Other

7.3 What happened in the family when the problem was evident?

7.4 What was the experience of parent(s) or anyone in immediate family with:

absenteeism -
alcohol -
drugs -
workaholic behavior -
job hopping -
social withdrawal -
8.0 Help-Seeking:

8.1 What medical or psychological facilities and personnel have you utilized for any type of problem (including the one presented)?

8.2 Over what period of time?

8.3 Number of contacts per year?

8.4 How is that utilization pattern different or similar to the one experience in the environment in which you were reared?

9.0 Caffein Consumption:

<table>
<thead>
<tr>
<th></th>
<th>Cups Per Day</th>
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<tbody>
<tr>
<td>Coffee</td>
<td></td>
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<tr>
<td>Tea</td>
<td></td>
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<tr>
<td>Diet Pop</td>
<td></td>
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<td>Other</td>
<td></td>
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10.0 Nicotine:

<table>
<thead>
<tr>
<th>Tobacco Product</th>
<th>Number Per Day</th>
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<tbody>
<tr>
<td>Cigarettes</td>
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<tr>
<td>Cigar</td>
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<tr>
<td>Pipeful Tobacco</td>
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11.0 Medication:

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<tr>
<th>Medication Type</th>
<th>Use</th>
<th>Number Per Day</th>
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<tbody>
<tr>
<td>Antidepressants</td>
<td>___</td>
<td>___</td>
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<tr>
<td>Tranquilizers</td>
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<td>___</td>
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<tr>
<td>Sleeping Pills</td>
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<td>___</td>
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<tr>
<td>Pain Relievers</td>
<td>___</td>
<td>___</td>
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<tr>
<td>Other Drug Use</td>
<td>___</td>
<td>___</td>
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12.0 Alcohol:

<table>
<thead>
<tr>
<th>Alcohol Type</th>
<th>Use</th>
<th>Glass Per Day</th>
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<tbody>
<tr>
<td>Wine</td>
<td>___</td>
<td>___</td>
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<tr>
<td>Liquor</td>
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<td>___</td>
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<tr>
<td>Beer</td>
<td>___</td>
<td>___</td>
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13.0 Exercise:

<table>
<thead>
<tr>
<th>Activities</th>
<th>Times Per Week</th>
<th>Time Spent in Activity</th>
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14.0 Sleep Patterns:

14.1 Number of hours per day? ___ Consistent? ___

14.2 When to sleep? ___ When wake up? ___ Consistent? ___

14.3 Sleep interruptions? ___ Consistent? ___ If so, when? ___

This section to be completed following interview.

15.0 Interviewer Observations:

15.1 Speech Patterns: __________________________________________

15.2 Breathing Patterns: _________________________________________

15.3 Posture: ___________________________________________________

15.4 Muscle Tension: ____________________________________________

15.5 Finger/Foot Tapping:________________________________________
15.6 Other: 

16.0 Target Behaviors to Record (Specific and Observable):

16.1 

16.2 

16.3
SELF-ASSESSMENT AIDS

The following material is to be used in an instructional setting which provides a knowledgeable guide through the process and data interpretation.

Introduction

Stress causing events affect each of us in both personal and work related situations. When we face too many changes and responsibilities at one time, encounter unexpected problems and delays, cope with an assortment of demands and deadlines, or simply live with on-going commitments, we may experience stress. We respond in different ways. We may have headaches, upset stomachs, emotional arguments, suffer constant tension or avoid coming to work.

Researchers have found that the stress response is a contributor to a wide range of health problems, such as arthritis, high blood pressure, heart disease, ulcers and migraine headaches. Continuous or prolonged stress puts the body on constant alert, which over time makes us more susceptible to illness.

Stress is frequently related to one's occupation. Time pressure, financial responsibilities and decision making; perhaps also complicated by a lack of clarity in what is expected, contribute to stress in the work place. The task is to learn to control our responses and our environments,
so that we function well, although exposed to stressful situations.

**What Is Stress?**

Stress is what happens to us when we encounter what psychologists call "aversive events". We have negative reactions to these "aversives", which may be people in our environment, or things that happen to us. When these aversive events occur we have a physiological reaction. We may begin to breathe quickly, to perspire, our stomach jumps, our muscles tense, our hearts race, etc. We also feel mad, or hurt, or afraid or "burned out". Depending on how "bad" the situation is, our responses range from being barely noticeable to near collapse.

We also may do something about the situation. We try to get away, we fight back, we try to ignore what is going on, or we try to solve the problem. The following diagram illustrates the concept:

![Diagram of Stress Inducing Experiences and Stress Reactions]

- **Stress Inducing Experiences**
  - Work Hassles
  - Marital and Family Problems
  - Receiving Negative Input

- **Stress Reactions**
  - Physiological Reactions
  - Emotional Reactions
  - Behavioral Reactions
Sometimes our own reactions cause us problems themselves. Certainly the physio-emotional reaction is neither comfortable or healthy, but also the "things we do" about aversive events may ultimately make things worse. We learn to do things that are disadvantageous for us in the long run, if they seem to pay off in the short run. Having a snack may temporarily make us feel better if we can put off writing a painful report, but the report will be even later and our weight problem is not helped either.

To do something about stress and its effects on you, we need to change your environment or change your responses to your environment. In order to do that we must learn about both elements. We must know more about the situations that lead to the reaction and we must know about the reaction itself.

**SELF-ASSESSMENT**

1. The first step is to begin to identify the aversive events that are causing your problem reactions. The following categories were developed by researchers at the University of Oregon.\(^1\) Circle the items that apply to you and add your own areas if they are not included.

Work Hassles
1. Having too much to do
2. Working when tired
3. Working under pressure
4. Being rushed
5. __________________________
6. __________________________

Marital and Family Discord
1. Arguments
2. Being dissatisfied with spouse
3. Having spouse dissatisfied with you
4. An unsatisfactory sex life
5. __________________________
6. __________________________

Receiving Negative Input
1. Being criticized or constantly evaluated
2. Being disagreed with
3. Being insulted
4. Having to do something you don't want in order to please someone
5. __________________________
6. __________________________
2. After you have identified the general event(s), select one to work with in the following exercises.

2.a You may feel tense, tight and perhaps just chronically upset, with no particular event or situation that seems tied to your condition. Recording your tension level at various times during the day will sometimes help locate problem precipitators. Ask the instructor to help you select the tension-level monitoring form you should use (see forms on following pages). Record tension levels on this form for one week. Once a situation is identified, you can proceed through the remaining steps.

Problem Selection:

3. To identify more precisely what you experience, circle the tension symptoms (physio-emotional reactions) that apply to you.

1. Headaches
2. Stomachaches
3. Backaches
4. More to do than can get done
5. Teeth grinding
6. Rapid breathing
7. Sighing
8. Chronic fatigue
9. Dry throat
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Scheduled Monitoring

Tension: 0 = Most relaxed, 1 = Headache, rapid breathing, etc.

Symptom: 1 = Most relaxed, 2 = Headache, rapid breathing, etc.

Symptom: 1 = Most relaxed, 2 = Headache, rapid breathing, etc.

Symptom: 1 = Most relaxed, 2 = Headache, rapid breathing, etc.
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**Transient Symptoms:**
- Excessive, headache, rapid breathing
- 10 or more times I have ever been
- 0 times I have ever been

**Transitory Sensation:** Record when prompt occurs (prompt occurs)
10. Poor concentration
11. Frequently mad
12. Accidents/breaking things
13. Always in a hurry
14. Sleep interruptions
15. Crying
16. Yelling at people
17. Feel afraid often
18. Muscle tension (where located? ____________ )
19. Other __________________________________

4. Can I do what I need to do (keep my job, stay with my spouse) and not get into the situation?
   yes ___  no ___

We will eventually talk about each of the possible answers to this question, but will first consider those situations that we cannot avoid.

Unavoidable Aversive Events

We cannot avoid all situations that result in stress reactions. Events such as caring for a chronically ill parent or losing a job due to company reorganization, these are the kinds of things that will reach us all at one time or another.

Receiving training so that you may experience periods of deep relaxation is one helpful strategy for those problem
situations we cannot avoid. Considerable research has supported the benefits of bodily changes that decrease heart rate, lower metabolism and decrease the rate of breathing.

There are some instances when we must perform, even if the situation is stress producing. It may help us to focus on a factor in the situation (or add a new one) that helps us behave differently. For example, we may tell jokes or smile strongly, when something is going on that is likely to make us cry. If a child is leaving for college and a happy send-off is desired, we may deliberately seek out elements that will amuse us. When we are giving a speech to a large crowd, we look for a face of a friend. The point is to introduce a stimulus that leads to a response in us that is incompatible with the fear and anxiety that we may be feeling. Another example of providing "positives" in "bad" situations is that of a person who notices tension and stress when they drive a car. This experience may follow a dangerous trip, or being in an accident. Taking along tapes of music that makes them feel relaxed and happy or packing good things to eat, interferes with, and reduces the negative reactions.

We also know that gradual exposure to aversive events helps us deal with them. For example, when a child must go to a new school, it is a good idea to go before school begins; to tour the building, meet the teacher(s), find the bathrooms, and so on. If a salesman finds it particularly
difficult to make "cold calls" and a quota is hanging over his head, he can design a program to gradually increase the number of cold calls per day or per week until the desired level is reached.

If you schedule limited exposures to unpleasant or frightening situations, you can gradually increase the encounters until you reach the level of performance you wish.

**Avoidable Aversive Events**

Fortunately, for many of the circumstances in our lives, there are several aspects that might effectively alter the problem we are having. This section introduces additional stress solution categories.

**Antecedents**

You previously identified the situation in which you experienced symptoms of stress. We now want to turn our attention to those precipitators or circumstances that precede our reactions or responses. For example:

"I got started too late this morning and every part of my schedule is running into the next one."

Or

"I said 'yes' to that speech six months ago; now the time has arrived and the sponsor keeps requesting my materials."

Or

"My co-workers are baiting me about my opinions concerning union representation. The arguments that follow are extreme and ugly."
Example

You can control the antecedent when you start your schedule by changing the precipitating event. (Set your alarm earlier, get up earlier, decide on clothing the night before, etc.) This is planning new antecedents for non-stressful responses.

Or

You can control the number of commitments you have by setting a limit on the number you will accept. You will refuse all requests after a certain doable amount. This is a way of controlling an antecedent by eliminating it.

Or

You can ignore the comments of co-workers (or leave the area), to prevent the start of a negative chain of events. This eliminates the problem by not responding to the antecedent.

Your Situation

Can I control the antecedent? Yes ____  No ____

Can you plan new antecedents in your example?

Can you eliminate the antecedent?
Can you not respond to the antecedent?

Responses

When knowing about antecedents and changing them does not resolve the problem, the next step is to consider whether you can change the response. For example:

"My boss continues to ask me to work late and I am afraid to refuse, although the overtime is not really necessary to reach our department's goals."

Or

"The workers I supervise are driving me crazy because they don't do the work as I want it to be done. I lose my temper and do it myself."

Example

Sometimes we know there are better ways to accomplish what we would like, but we don't know how to do them. We may be able to change our behavior by working on it ourselves or we may need to take some specific training. In this example, a lack of assertiveness may be a problem for this individual in many settings.

Or

It is often the case that what we do makes matters worse. In this example the supervisor may be introducing many negative elements. He may not be providing directions that are clear enough to be
followed. By doing the work himself he reduces the chance that the workers will learn. Also, the supervisor himself becomes an aversive, stressful stimulus in the situation.

Your Situation

Would improving your skills in some area reduce the problem?

Can you change what you are doing that may be producing the problem itself?

Consequences

The final strategy is to turn our attention to the consequences of our responses. What happens after we respond will have a great effect on whether we respond in that same way more often or less often or change the way we respond.

Sometimes the consequences of our actions "trap" us into doing things that cause us problems in the long run.

For example:

"My family treats me like a maid, I pick up and pick up after them until I am so upset that I lose it and scream until I can't talk. They sure pick up better for a while, but I am exhausted".

In this circumstance, the irritation builds over time creating a chronic physio-emotional reaction. An equally
large problem however, is the pay off the mother receives for having an extreme emotional reaction. The "trap" here is that the family shapes up, but the mother has learned to be upset and to scream, and she will do it more often in the future. She is being trained to be upset partly because she sees it as the only way to accomplish what must be done. One way to solve this trap is to find non-stressful ways to reach goals.

Example

Very often there is more than one way to deal with the problem. Possible alternatives would be to (1) "catch them doing what you want them to do" and reward that behavior, or (2) set up a family plan that would remove privileges if chores were not completed. There are many possibilities here. The major point is to design ways to solve problems that eliminate or reduce pay offs for negative emotional reactions, or reward you for doing things that are better for you.

Your Situation

Are you being "trapped" with short-term consequences? Can you arrange to be rewarded for behavior you prefer?
We have now completed an armchair "work-through" analysis of the antecedents, responses and consequences which may occur in conjunction with an aversive event.

The quality of our information concerning stress producing situations in your life and your responses to them will improve greatly as we begin to keep an actual record over time.

Our next step is to select a problem area (it can be the same one we have already considered or you can choose something else) and to monitor it for a week using the data sheet on the following page. The problem you select does not have to be the most severe or important. Remember that you are learning a method, and you may change targets to work on as you choose.
Self-Monitoring Form

Target Event ____________________________

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<tr>
<th>Date:</th>
<th>Antecedent (What Happened Before)</th>
<th>Behavior (What I Did)</th>
<th>Consequence (What Happened Afterwards)</th>
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WORKSHEET

Describe:

1. Aversive event: __________________________________________
   __________________________________________
   __________________________________________

2. What is my reaction/response? ____________________________
   __________________________________________
   __________________________________________

3. Avoidable? yes ___ no ___

3.1 If "No":

   Can I learn and use relaxation?
   __________________________________________
   __________________________________________

   Can I provide positive elements in a bad situation?
   __________________________________________
   __________________________________________

   Can I gradually experience the situation?
   __________________________________________
3.2 If "Yes":

What are the antecedents?

________________________________________________________________________

Can I plan new antecedents?

________________________________________________________________________

Can I eliminate the current antecedent?

________________________________________________________________________

Is it possible not to respond to the antecedent?

________________________________________________________________________

4. Can I change my response to the situation?

Can I learn new skills or ways to behave (time management, assertive skills, better health habits)?

________________________________________________________________________

Am I behaving in ways that make the problem worse?

________________________________________________________________________
5. What are the consequences of my behaviour?

How can I eliminate traps?

How can I create positive consequences for non-stressful responses?
CHAPTER FIVE

Summary and Recommendations

Stress and its accompanying problems have been typically treated as "new" concepts. Many times cited as a product of living in the 20th Century, the position of stress as a recent phenomenon has been emphasized, along with the implied need for new techniques to reduce its effects. There have been few attempts to incorporate or translate the concepts of stress and the findings of its research efforts, into established psychological theoretical positions to provide linkage to earlier findings. The theoretical "crossing" that has taken place has been patchwork, missing the advantages of a logically coherent theoretical position. For "stress" to be systematically studied, not only is it necessary to have a theoretical rationale, but also to have methods for describing what is observed and to evaluate the results of problem interventions. Consequently, it was the purpose of this research to construct a learning theory approach to the concept of stress and stress management.

The results of the stress and stress management literature review revealed four major problem areas. The
most obvious area of deficiency is the lack of a clear and consistently used definition of stress. Secondly, there is no theoretical rationale to provide meaning and direction for assessment procedures. The proposed assessment procedures range from almost non-existent to very extensive, but a framework and focus of purpose is not evident. The third problem is that a connection between assessment results and treatment procedures is conspicuously absent. A large number of practitioners provide the same management techniques regardless of problem descriptions or assessment results. Fourthly, the majority of authors who write about stress and its treatment lack data to support either their theoretical positions or the efficiency of the suggested treatments.

The positioning of stress within a behavioral orientation addresses all four concerns. The definition of stress supported here is consistent with established principals of learning theory. The effort may appear to be an exercise in labeling, but the labeling has consequences. The "fit" of stress within behavioral terminology gives access to the range of behavioral technology and empirical support.

The area of behavioral assessment offers many procedures and continues to expand. The extensive literature addresses procedures for problem specification, observation techniques, data collection procedures, and data
presentation and analysis. There are suggested guidelines for matching assessment tools and procedures with problem areas. A clear advantage of behavioral assessment procedures is the resulting prescriptions for intervention design. In other words, once we can "behavioralize" the problem, we have the logical chain of behavioral assessments and intervention design at our disposal.

Chapter Three provides a behavioral orientation to stress. Areas of agreement and disagreement between traditional views of stress and a behavioral position are discussed. Basic learning paradigms, as they apply to stress, are reviewed. Stress producing events and responses to stress are classified behaviorally. The positioning of the concept of stress within behavioral theory increases the specification of terminology. For example, the statement that "a person is experiencing a lot of stress" is quite different prescriptively from the statement that "there is a pattern of reinforcement supporting observed escape behavior." An experimental literature concerning organisms and escape paradigms is already established. This indicates the sort of link to known facts and relationships that is so advantageous.

Stress management instructional materials were designed based on the resulting learning theory orientation. The materials include an assessment interview format and a self-assessment workbook to be used in a stress management
instructional setting. It should be stated that the materials are preliminary in nature and require evaluation. To use the materials one must have a thorough background in behavioral techniques. Subsequent steps to this project should include field testing the instructional materials. Allowing individuals to work through the procedures using actual stress problem situations will reveal difficulties in conceptualization or strategy. The thesis presented here is that a behavioral analysis of the learning paradigms involved in stress related problems will lead to more efficient and effective treatment programs. Research designs comparing treatment effects based on that analysis versus those resulting from traditional approaches will provide the data necessary to decide among possible treatment procedures.
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Books


Periodicals


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