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Reducing Occupational Stress



U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Public Health Service
Center for Disease Control
National Institute for Occupational Safety and Health

REDUCING OCCUPATIONAL STRESS

Proceedings of a Conference
May 10-12, 1977
Westchester Division, New York Hospital-Cornell Medical Center

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PREFACE

This publication contains the proceedings of a conference held at the Center for Occupational Mental Health, New York Hospital-Cornell Medical Center, White Plains, New York, May 10-12, 1977. The conference was supported by the National Institute for Occupational Safety and Health (NIOSH).

Wide latitude was given to the subject matter for the conference and also to the writing style, since the approach to occupational stress is multidisciplinary in nature, with a broad representation of interest. Thus, some presentations offer personal notions of the problem based on the experience of the author. Some describe actual models or theories, with or without verification. In some cases, contributions represent complete pieces of research or a review of the literature on a given topic.

Thus, the papers presented herein are a sampling of the state of the art, with diverse views, experience and levels of sophistication. Occasional variations are required in methods of annotation and definition. Certain subjects may appear peripheral; for example, a paper on hypnosis in burn cases may not seem germane to a conference of on-the-job stress, yet one is presented here as an example of intervention techniques possible in the wake of a stress reaction.

The editors hope that this compilation of ideas will stimulate professionals in such diverse fields as medicine, psychology, sociology, management, labor and government to seek innovative approaches to the problem of stress in the workplace.

ABSTRACT

American, British and Scandinavian methods of dealing with relationships between occupational stress and health are presented in the proceedings of a conference on occupational stress held at the Center for Occupational Health in May, 1977. The role of the health professional in stress management, the role of the organization, legislative and government programs, preventive and remedial approaches to the problem of occupational stress and mental illness are discussed.

Analyses of the work environment; social support for workers under stress; effects of computerization on work environment; management, white collar and blue collar stressors; and stress and its relationship to specific health problems such as myocardial infarction, alcohol abuse, schizophrenia, and work-related accidents are covered.

Taken together the 24 papers show the similarities and differences in approach among some industrialized nations, and the extent to which restructuring of the work environment has begun to take precedence over attempts to alleviate the effects of stress created by the work environment.

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INTRODUCTION

THE REDUCTION OF OCCUPATIONAL STRESS: AN OVERVIEW

Alan McLean

The vast literature about the individual coping with work stress comes from many and diverse disciplines. It originates in psychiatry, clinical and social psychology, sociology, cultural anthropology and occupational and internal medicine. And there is significant contribution from such widely different fields as behavioral toxicology and personnel and management. While each discipline is concerned with so-called "psychosocial stressors," each has traditionally spoken primarily to other members of the same discipline. Lawyers, for example, tend to speak mainly to other lawyers about employer liability. The union leadership tends to communicate most often with peers. Clinical psychologists speak to their colleagues about reactions to stressors at work but in a different language from many of the psychiatrists who are equally concerned. Even social psychologists and industrial sociologists seem to find it sometimes difficult to exchange data. Indeed, the exchange and use of findings between practitioners and those in the basic sciences is the exception rather than the rule.

Another problem is transcultural. At times psychophysiologists, concerned with neurohormonal reactions, have difficulty communicating with their colleagues in eastern Europe who prefer to talk about "higher nervous function."

There is a growing common concern. Theories and practices in each discipline are beginning to cross-pollinate other disciplines and to exert a positive influence toward understanding stresses of the work place and workers' reactions.

It is the many denominators of concern for an employee population under stress which is the unifying theme of these incisive papers. As a field of concern, occupational stress is beginning to gel. Sound knowledge is developing in each field along with the evident chaff. The area is increasingly of interest not only to those in union and management, but to the health professionals who serve as their consultants. And social science research is beginning to stimulate legislation. In the Scandinavian countries, for instance, employers are required, in some instances, to provide meaningful work and appropriate job satisfaction with a minimum of occupational stress. There is then increasing awareness and expertise focused on both theoretical and practical problem solving.

For more than a dozen years both the International Committee on Occupational Mental Health (ICOMH) and the Center for Occupational Mental Health (COMH) at Cornell have been working to promote interdisciplinary communication on occupational stress. Each has been concerned with carefully planned conferences

and proceedings for a wider audience; each, in its own unique way, has been drawing an increasingly wider audience.

The Center has monitored literature, prepared regular publications which have included five books and some 60 issues of journals, and held numerous conferences. This work was the result of efforts of a network of people representing many disciplines who are interested in various facets of occupational mental health and occupational stress.

ICOMH, born of the World Federation of Mental Health and the Permanent Commission and International Association on Occupational Health, assumed an independent autonomy in 1964. Operating principally with a western European base, it has drawn a wide representation from an equally diverse number of disciplines. It, too, has published successful volumes of proceedings. Its meetings have, on three occasions, been held to coincide with the Triennial Congresses of the Permanent Commission.

This week we mark the second and concluding half of a project which, for the first time, brings these organizations together with the added support of the World Health Organization, the National Institute for Occupational Safety and Health, the Swedish Work Environment Fund, and the Work in America Institute as well as the enthusiastic support of several Swedish insurance and labor organizations and the International Labor Organization who were active during the Stockholm phase of our efforts last August.

For the first time we have truly transatlantic support for our mutual endeavors.

What are those mutual goals of ICOMH and COMH? Very simply, a healthier relationship between the employee and his employer--a more successful match between the individual worker and his work. Together we are: concerned with a reduction in the adverse effects of occupational stressors; dedicated to improving the work environment; and concerned with a cross-disciplinary understanding among the many professions involved with sharing of scientific knowledge. Together we hope to use the pooled resources to influence the world of work and to be more supportive of the individual enmeshed within it.

We started in Stockholm with a representative sampling of research results and theoretical models. Here in White Plains we continue, with the focus on the practical lessons which can be drawn both from the input in Stockholm and from practical experience around the world. We hope to conclude this week's endeavor with recommendations for both specific research and programmatic activity and with legislative lessons which can adapt to the many national systems. At many national and international meetings in the past few years, which focused on maladaptive behavior in work organizations, it became clear that a major need in this field at this time is for clearly summarized statements of current research defining occupational stressors and their impact on the individual worker. Even more important are thoughtful recommendations as to the most effective solutions to the destructive effects of such stressors in terms of prevention and treatment.* These two conferences call for a

* (e.g., Scientific Committee on Mental Health of The Permanent Commission and

highly selective review of these issues by some of the best available minds in several disciplines.

A vast body of data on "occupational stress" exists, including some reasonably good summaries (Gunderson and Rahe, 1974; LeLean, 1974; ICOMH, 1976), but they remain largely unfocused. The interlocking concept of the two conferences herein described is to utilize a corps of experts familiar with both research data and the implications of that data for applied prevention and therapeutic programs. Several of the key speakers prepared two documents--one for the Stockholm meeting outlining research and the current state of the art, followed by a second paper with therapeutic implications for the May 1977 discussion where prevention and therapy were the key focus.

As part of each conference, resource people with particularly keen insight into various related topics played supporting roles both as presenters of their own research and as knowledgeable chairmen and discussion leaders. In addition, time was allocated for sub-group meetings of the various cooperating organizations such as The Permanent Commission, The International Committee and the Center for Occupational Mental Health. Each of the supporting groups utilized input from the general sessions to further their own activities and to provide feedback to subsequent plenary sessions which are a regular part of their ongoing affairs.

THE CENTER FOR OCCUPATIONAL MENTAL HEALTH (COMH)

Since the Center for Occupational Mental Health was the principal sponsor of the second phase of these conferences on reducing occupational stress, background on the Center is appropriate to an understanding of present activities.

The Center has concerned itself with developments relating to the adaption of the individual to his work for 13 years. Center staff created abstracting and dissemination capabilities under a contract with the National Clearinghouse for Mental Health Information in 1965. As we observed the vast amount of published information and the number of programs concerned with fostering mentally healthy behavior and the efforts to cope with disturbed behavior of those who are ill at work, it became clear that the need was great to bring together professionals from disparate fields, whose concerns were similar, to exchange views hoping to encourage the broadening of his or her outlook. We further saw a continuing role for the Center in translating and interpreting data from the clinical and behavioral sciences for those in positions of authority in organizations and for professionals in medicine and nursing.

This concern led the Center to co-sponsor with the National Association of Manufacturers a conference in 1966 on mental health in the business community. The symposium that resulted seemed to concern all levels of work organization management. Nineteen qualified professional participants led discussions concerning a wide range of subjects. The conference tackled such questions as:

International Association of Occupational Health, Conferences at Center for Occupational Mental Health, Cornell University Medical College, Meetings of the International Committee on Occupational Mental Health.)

How does mental health relate to the work we do?

How does it relate to productivity?

Is it possible for an employer to be other than economically selfish in his concern for the mental health of those in his employ?

What should an employer do when an employee develops a mental disorder?

What is an employer's legal liability for claims related to mental disabilities induced by working?

Are top management people more prone to hypertension, heart disease, etc.?

Three hundred participants discussed these matters at a one-day symposium in New York in March 1966. A more detailed interpretation of the conference was published in the Fall of 1967. (McLean, 1967)

From 1967 to 1969 the Center concentrated on the first detailed interdisciplinary study of current thinking on several topics relating to the mental health of persons in work organizations. There were frequent meetings, and many position papers discussed theoretical considerations, programs and philosophies. The result--Mental Health and Work Organizations--designed for a professional audience, was published by Rand McNally in 1970. A nucleus of professionals has continued to meet as a study group and a core who strongly influence project direction. (McLean, 1970)

From 1970 to 1973 the Center regularly published the quarterly, Occupational Mental Health, which carried abstracts of relevant literature, original articles and commentary as well as news of activities in the field. Prior to that time the Center provided all the copy for the National Institute of Mental Health publication called Occupational Mental Health Notes.

Occupational stress has been studied and defined for many frames of reference by researchers and clinicians in several disciplines. In 1972 the Center sponsored its first conference on the subject, bringing together representatives from major concerned disciplines to present their points of view so that a picture, or at least a part of current thinking, could be discussed. Drawing from formal presentations, several small group discussions centered on definitions of occupational stress. The conclusions of that set of meetings were published under the title Occupational Stress. (McLean, 1974)

In 1974 the discussion of occupational stress was to assess the meaning of work in America. Again, 14 key speakers from several disciplines and some 75 conference participants reviewed the state of the art, using as an initial frame of reference the report prepared by a special task force to the Secretary of Health, Education, and Welfare. The results were published in a special issue of the Journal of Occupational Medicine in November 1974. One of the outgrowths of the 1974 conference was a determination that two additional

conferences be held to complete the assessment of the current state of occupational mental health and to determine areas where future work was required.

ACKNOWLEDGMENTS

While I have had the pleasant responsibility of organizing the White Plains phase of this activity, more than 100 people have worked extraordinarily hard to bring off the project. Some 50 speakers have prepared manuscripts. Both in Stockholm and in White Plains the support systems have been superb. At the Westchester Division of New York Hospital, there has been enthusiastic staff cooperation. The National Institute for Occupational Safety and Health has been extremely helpful.

Before concluding, I would like to pick up a theme of one of our conferences some seven years ago, a theme which will be developed more fully in the paper by Dr. Ralph Siu.

With the heavy European-American emphasis in our program, I felt a totally different perspective would add balance . . . and turned to the Orient for that viewpoint. Lin Yutang said in his book, Wisdom of China and India, "If there is one book in the whole of Oriental literature which one should read above all others, it is Lao Tse's Book of Tao. If there is one book that can claim to interpret for us the spirit of the Orient, or that is necessary to the understanding of characteristic Chinese behavior, it is the Book of Tao. If I were asked what antidote could be found in Oriental literature and philosophy to cure the contentious modern stressful world of its inveterate belief in force and struggle for power, I would name this book, Of Five Thousand Words, written some 2,400 years ago."

For much of The Way of Life--The Wisdom of Ancient China by Lao Tse is food for thought as we confront issues of occupational stress from a Western viewpoint. Let me illustrate this different conceptual approach to life and stress personified by Lao Tse's Way.

Number 11 (of 81)

"Thirty spokes will converge
in the hub of a wheel;
but the use of the cart
will depend on the part
of the hub that is void.

With a wall all around
a clay bowl is molded;
but the use of the bowl
will depend on the part
of the bowl that is void.

Cut out windows and doors
in the house as you build;
but the use of the house
will depend on the space
in the walls that is void.

So advantage is had
from whatever is there;
but usefulness rises
from whatever is not."

Paraphrase

This is one way to describe what Lao Tse referred to as the real Way. Does it exist? Can one isolate it and say, "This is it?" It is as real as the hole in the hub of a wheel where the axle rests. The hole is a void in the hub. It exists as a window exists when part of the wall of a house is cut away. Similarly, the Way is like the empty place in a bowl. The advantage of a bowl lies in its walls but its use depends on its emptiness. So with the Way. It is functional. It cannot be isolated, but you cannot be without it.

The thirty-third chapter is somewhat shorter and perhaps more contemporary. At least contemporary to modern psychiatrists.

"It is wisdom to know others;
it is enlightenment to know one's self.

The conqueror of men is powerful;
the master of himself is strong.

It is wealth to be content;
it is willful to force one's way on others.

Endurance is to keep one's place;
long life it is to die and not perish.
(Blakney, 1955)

COMMENT

These couplets are not plucked bits of popular wisdom. They are constructed by the mystic in praise of self-knowledge, self-mastery, quietude and acceptance of one's place in the scheme of nature.

The Way gives life and the Way gives death: who will object? Certainly not one who knows himself, or is master of himself, or has learned contentment. Such a person knows his place in nature and keeps it. He accepts death as he accepts life and, accordingly, does not perish; for he belongs to the eternal scheme of things.

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OCCUPATIONAL STRESS AND HEALTH

CHAPTER 1

OCCUPATIONAL STRESS, SOCIAL SUPPORT AND HEALTH*

James S. House and James A. Wells

Although the title of this conference is "Reducing Occupational Stress", the basic concern of those gathered here is not the reduction of stress per se in any or all of its different meanings. Rather our concern is to improve physical and mental health, and reducing occupational stress constitutes one means of improving health. Thus, our primary goal is actually to reduce the deleterious impact of occupational stress on health. It is important to keep this primary goal in mind for two reasons. First, many including Harold Bridger, would argue that experiencing certain types and degrees of stress can have beneficial rather than deleterious effects on physical and/or mental health. Second, as with any potential disease producer, the deleterious effects of stress can be alleviated not only by reducing the level of stress itself but also by bolstering the resistance of human beings to its disease producing effects. Thus, even in situations where we can not or will not reduce the level of occupational stress, we may still be able to mitigate the deleterious effects of stress on health.

While we must seek to reduce or eliminate noxious forms of occupational stress wherever possible, it is likely that a considerable amount of such stress will prove most irreducible. A multitude of factors constitute, or contribute to, what we label as occupational stress, and thus consequential residual amounts of stress are likely to remain even after concerted efforts at stress reduction. Further, the goal of reducing occupational stress and/or the means necessary to do so will often have to be weighed against competing goals and priorities.

Since, as discussed below, occupational stress is the product of an interaction between persons and their work environments, reducing stress entails modifying persons and/or work organizations--a difficult task especially if stress reduction may have to come at the expense of other individual or organizational goals or needs. The very modest success of efforts to reduce other health hazards such as cigarette smoking or many environmental hazards--the nature and effects of which are much better known than those of occupational stress--suggest the kinds of problems efforts at stress reduction may confront.

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Thus, I would like to discuss a potential social mechanism for mitigating the deleterious effects of occupational stress on health which has received increasing attention in recent years under the rubric of "social support". Though this concept is often treated very vaguely in the literature, people may be said to have social support if they have a relationship with one or more other persons which is characterized by relatively frequent interactions, strong and positive feelings, and especially perceived ability and willingness to lend emotional and/or instrumental assistance in times of need. The appeal of social support as a concept and mechanism for health improvement is reflected in its recently having been chosen as the central topic of invited addresses by two of America's leading social epidemiologists--Sidney Cobb (1976) and the late John Cassel (1976). However, it is also important to recognize that "social support" has been studied explicitly as a potential mitigator of the effects of stress on health for less than a decade, though a variety of work dating back to at least the beginning of this century is relevant to our current concerns. Thus, conceptual and empirical understanding of social support is still fragmentary. One goal of this paper is to highlight what we know and especially what we still need to learn about the nature of social support and its effects on relationship between stress and health.

A second goal is to discuss potential applications of our knowledge. Despite the relatively immature and fragmentary nature of our knowledge of social support, there are a variety of reasons for undertaking efforts to improve health by attempting to increase social support. Efforts to improve social support are probably desirable on other grounds than that of reducing the negative impact of stress on health; and such efforts involve relatively few risks or costs. We also have already the basic elements of a "technology" for enhancing social support in the current literature and practice of applied behavioral science. Thus, although as will be discussed below, we do not yet know with certainty whether, how and why social support ameliorates the effects of stress on health, we should still attempt to enhance social support in hopes of alleviating the disease-producing effects of stress.

Such efforts at application, however, must be closely integrated with further research in this area. The distinction between "basic" and "applied" research or science is really quite arbitrary, and efforts to maintain this distinction are generally harmful to both types of work. Actual field experiments are particularly essential to adequate scientific understanding of social support and its effects on stress and health. Conversely, until our knowledge base is much firmer, intelligent and effective efforts to improve health by increasing social support must include a research and evaluation component. Thus, application of scientific knowledge provides a critical test of its scientific adequacy, while scientific study of the efficacy and process of such application provides information essential to maintaining and improving the utility of future applications.

CONCEPTUALIZING THE PROBLEM

Before turning to results of our own and others' research it is necessary to clarify what we mean when we say social support mitigates (i.e., "buffers" or "conditions") the effect of occupational stress on health. Both common sense

and existing empirical evidence strongly suggest that supportive social relationships with superiors, colleagues, and/or subordinates at work should directly reduce levels of occupational stress for a variety of reasons. Supportive co-workers are less likely to create interpersonal pressures or tensions; and the experience of support satisfies important social or affiliative needs for most people and hence tends to make them feel more positively about themselves and their jobs. Thus, social support should reduce known occupational stresses such as role conflict and ambiguity, job dissatisfaction, and low occupational self-esteem; and available empirical evidence is quite consistent with this expectation. Its direct stress-reducing properties provide one strong reason for attempting to enhance social support. But our concern here is with a different, and more unique, type of effect of social support--its ability to "mitigate", "buffer", or "condition" relationships between occupational stress and health.

The idea here is that social support from persons outside the work setting as well as those within it can alter the relationship between occupational stress and health. Whereas in the absence of social support, physical and/or mental disorders should increase as occupational stress increases, as levels of social support rise, this relationship should diminish in strength, even perhaps disappearing under maximal social support. This hypothesis is graphically depicted in Figure 1.1. In multiple regression terms, the slope of the regression of disease on stress should be clearly positive when social support is absent or low but should diminish steadily as social support increases, perhaps declining to zero when support is high. This change in slopes constitutes a statistical interaction between stress and support in predicting levels of disease or ill health. It is this interaction, or the changing slopes of regression lines in Figure 1.1, which is the essence of the hypothesized "buffering" or "conditioning" effect of social support and this effect may occur regardless of whether social support has any direct effect on levels of stress and/or health.

Thus, although support from others at work tends to reduce occupational stress directly, it may, in addition, have this buffering effect. Further, even if social support has no direct impact on levels of occupational stress, as would generally be expected in the case of support from persons outside of work, it can still mitigate and perhaps even vitiate completely the deleterious impact of occupational stress on health. Our further discussion of research and application will focus entirely on this potential conditioning or buffering effect.

Cassel (1976) has suggested an analogy between this buffering effect of social support and other processes, ranging from immunization to proper nutrition, which increase people's resistance to disease-producing agents or phenomena. But how and why should social support increase "resistance" to the deleterious consequences of stress? Although we need more empirical research on this question, consideration of the basic nature of psychosocial stress suggests some answers. The term "stress" has been used in so many confusing and contradictory ways that Cassel (1976:108) concludes that "the simple-minded evocation of the word stress has done as much to retard research in this area as did the concepts of the miasmas at the time of the discovery of microorganisms." Nevertheless, an increasing number of researchers (McGrath,

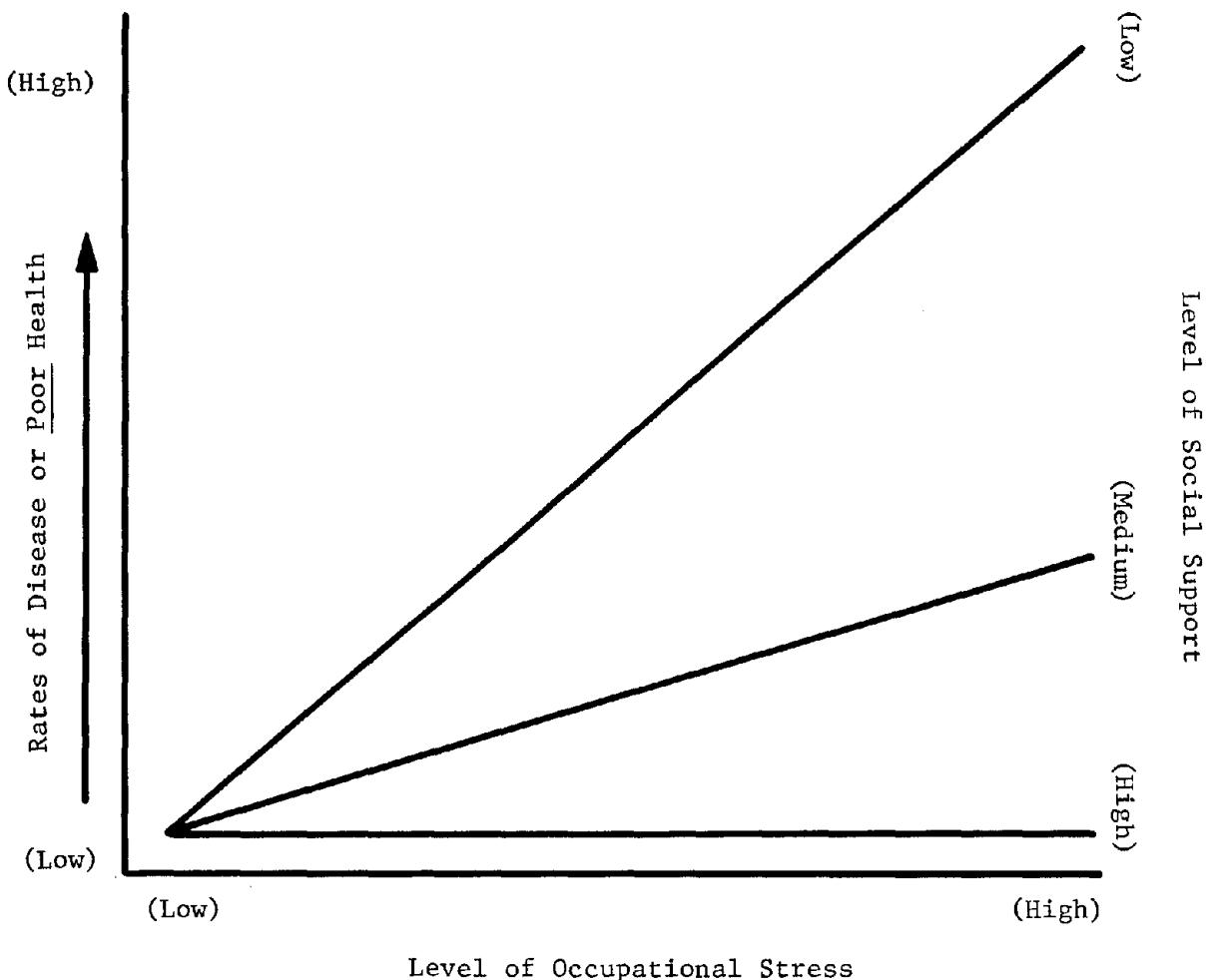


Figure 1.1

The "Conditioning" or "Buffering" (i.e. Interactive) Effect
of Social Support on the Relationship Between
Occupational Stress and Health

1970; Levine and Scott, 1970; French et al, 1974; Kagan and Levi, 1974) have converged on a similar conceptualization of the nature of stress as a phenomena or process. Figure 1.2 presents a paradigm of stress research (from House, 1974) which reflects this convergence.

This paradigm posits that "stress" is ultimately in the eye of the beholder and, in general terms, is perceived by people when they confront a situation in which their usual modes of behaving are insufficient and the consequences of not adapting are serious. These will be situations where the demands on people exceed their abilities or where they are unable to fulfill strong needs or values (cf. McGrath, 1970; French et al, 1974). Except perhaps for extreme situations such as disasters or concentration camps, no objective social or occupational situation will necessarily produce perceptions of stress or resultant physiological, psychological, or behavioral responses and outcomes in all people exposed to the situation. Rather, how people perceive a given situation depends on other individual or situational factors, labeled conditioning variables in Figure 1.2 of which social support is one. We have considerable evidence from social psychological experiments that the presence of other people alters initial perceptions of objective social stimuli (cf. Lazarus, 1966; Tajfel, 1968). Thus, social support could mitigate the effect of potentially stressful objective situations (such as a boring job, heavy workloads, unemployment, etc.) by causing people initially to perceive the situation as less threatening or stressful and hence leading them to manifest less of those psychological, physiological, or behavioral responses productive of disease (cf. Cassel, 1976; Kagan and Levi, 1974 for discussions of how psychosocial stress produces physiological, as well as psychological and behavioral, responses and outcomes).

Even if a situation is initially perceived as stressful, however, social support may still lessen or eliminate the tendency of this perceived stress to lead to responses productive of disease. Figure 1.2 indicates that once a situation is perceived as stressful a variety of responses are possible, some of which may serve to modify the objective social conditions (arrow labeled "coping") and/or the person's perception of it (arrow labeled "defense") so as to reduce or eliminate the perception of stress and hence to alleviate its impact on health. Cobb (1976:311) has suggested that these are the most important ways in which social support helps to buffer persons against stress.

In cross-sectional research such as that reported below, some of these kinds of effects will be reflected in a direct or zero-order relation between support and perceived stress, as well as in interactions of these two types of variables in predicting health outcomes. Longitudinal or experimental studies are crucial to documenting processes of coping and defense and the role of social support in them.

However, where efforts at coping and defense fail to reduce the perception of stress, social support may still alleviate the impact of such perceptions on other sets of physiological, psychological, or behavioral responses which are productive of more enduring health or disease outcomes. Without altering the perception of stress *per se*, social support may reduce the importance of this perception to the person and hence his/her degree of reaction to it. Below, for example, we note that support from spouses may mitigate the impact of

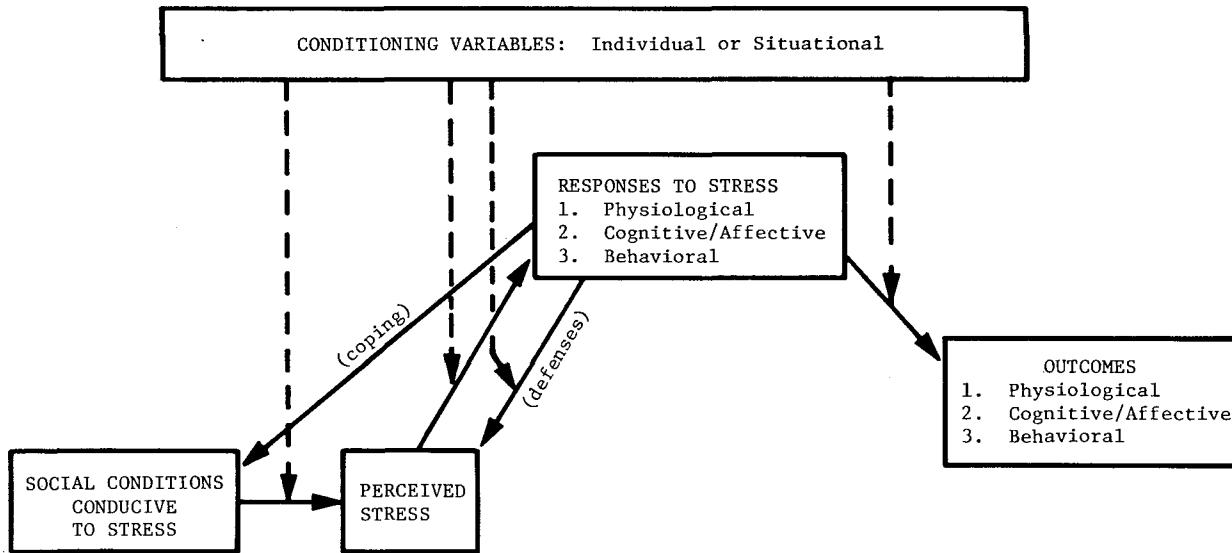


Figure 1.2 A Paradigm of Stress Research

NOTE: Solid arrows between boxes indicate presumed causal relationships among variables. Dotted arrows from the box labeled "conditioning variable" intersect solid arrows, indicating an interaction between the conditioning variables and the variables in the box at the beginning of the solid arrow in predicting variables in the box at the head of the solid arrow.

job dissatisfaction on health by helping the person to recognize that the job is not so important in the total context of life and that dissatisfactions with it may be compensated for by satisfactions and accomplishments outside of work. Support may also have some kind of general tranquilizing effect on the neuroendocrine system, making people less reactive to perceived stress. Findings of "social support effects" in studies of animals are suggestive of such a process (Cassel, 1976). Finally, supportive others may facilitate certain kinds of behaviors (e.g., exercise, personal hygiene, proper nutrition and rest) which may increase individuals' abilities to tolerate or resist psychosocial stress as well as physical, chemical, or biological threats to health.

This discussion of potential mechanisms through which social support may condition or buffer the effects of occupational stress on health has been necessarily rather speculative. There is at least some evidence for each of the kinds of mechanisms discussed here, but as noted below more and better empirical research, especially of a longitudinal and experimental nature, is essential before we will adequately understand how social support affects the relationship between occupational stress and health. Figure 1.2 provides one paradigm for such research and clearly indicates that support could intervene at several points in the chain which links potentially stressful objective social conditions to changes in health.

THE LIMITS OF EXISTING KNOWLEDGE

Although the idea that social support can mitigate the effect of occupational stress on health is plausible and appealing, our present theoretical and empirical knowledge is limited in many ways. Cassel (1976), Cobb (1976) and Kaplan *et al* (in press) have provided general reviews of data on both animals and humans suggesting that the presence of social support can mitigate or eliminate deleterious effects of a wide range of presumed indicators of social stress on an equally wide range of health outcomes. Although the variety and scope of this work is impressive in some ways, the body of knowledge which emerges remains quite fragmentary and unsystematic (cf. Pinneau, 1976). Neither the conceptual nor operational definitions of what constitutes support are comparable across studies, and in some cases the empirical measures of "support" include components which do not assess social support as it is conceived here (e.g., the study by Nuckolls highlighted in the reviews of Cobb and Cassel includes measures of "ego strength" and subjective social class in its measure of "social" support). Measures of stress and health in these studies are also highly varied and all each study shows is that the relationship between some indicator of health varies across levels of support. In sum, this literature suggests that social support can ameliorate the effects of stress on health, but it does not really answer a variety of questions of critical concern to those who would seek to apply knowledge of support as well as those concerned with further theoretical and research developments. What are the different sources and types of social support, and how do their effects differ? Is support equally relevant or effective with respect to all types of stress and/or all types of health outcomes? By what processes or mechanisms does social support mitigate effects of stress on health?

These same questions are almost equally unanswered in the more specific literature on the effect on social support in relation to occupational stress and health. Many studies find variables indicative of social support such as work group cohesion, interpersonal trust, or liking for supervisors associated with indicators of stress and/or health. For example, Seashore (1954) found that as work group cohesiveness increased, anxiety over work related matters decreased (see also Likert, 1961; Kahn et al., 1964). Although such associations argue for promoting such forms of support in order to reduce stress and increase health, they do not establish that social support mitigates the effect of job stress on physical or mental health.

More recent studies, however, do show that social support mitigates the relationship of occupational stress to health. In a study of coronary heart disease (CHD) risk factors among administrators, engineers and scientists, Caplan (1971) finds that among those who report poor relations with their subordinates (i.e. low social support), there is a positive relationship between role ambiguity and serum cortisol level, an indicator of physiological arousal tentatively linked to CHD. Similarly, a positive relationship exists between perceived workload and serum glucose, blood pressure, and smoking among those having poor relations with their supervisor, coworkers, and subordinates. However, among those having good relations with others at work (i.e., high social support), these types of work stress are not related to CHD risk factors. In a longitudinal study of the consequences of job loss and unemployment, perceived stress resulting from unemployment produced elevated cholesterol levels, increased incidents of illness and constant depression among men with low social support, while those with higher levels of social support were protected from these consequences (Gore, 1973).

However, Pinneau (1975, 1976) has questioned the adequacy of the evidence indicating that social support mitigates or buffers the effects of occupational stress on health. Further, in his own research using measures of support from which we derived those used in our own research, Pinneau finds little evidence that social support mitigates the effect of stress on "strain" (i.e., symptoms of physical and/or mental ill health). However, his analysis strategy makes the meaning of his results ambiguous at best, and is somewhat biased against social support effects. For example, he tests for interactive or buffering effects of social support "only where support is negatively related to strain and where stress is positively related to strain" in bivariate analyses (Pinneau, 1975:94). Our earlier discussion of Figure 1.1 indicated that there is no logical reason for such a requirement, one effect of which is to exclude from consideration a variety of cases where support may not be directly related to health, but still have substantial conditioning or buffering effects (as in our own results for wife support discussed below).

Pinneau correctly points up the fragmentary nature of existing evidence, but his conclusion seems unduly pessimistic. There is much to be done in differentiating among sources and types of social support, determining what types of stress-health relationships are most amenable to effects of support, and specifying the process by which support operates to produce its effects. On balance, however, existing evidence at least strongly suggests that social support can mitigate the effects of stress in general, and occupational stress in particular, on physical and mental health. The results of our own

research, to which we now turn, lend further support to this idea and begin to answer some of the unanswered questions about social support.

FURTHER EMPIRICAL DATA

We have been studying the relationship between occupational stress and health in the hourly workforce ($N=2856$) of a large tire, rubber, chemicals, and plastics manufacturing plant in a small northeastern city. The data reported here derive from self-administered questionnaires mailed to all workers, with response rates of 67.5% ($N=1930$) overall and 70% ($N=1809$) among white males--the group used in the present analyses. The small numbers and relatively poor response rate of black and female workers precluded all but simple descriptive analyses of these groups.

The measures of perceived stress, health, and social support used in the present analyses are all derived from questionnaire responses, though we are now attempting to replicate and extend these analyses using measures of health from medical examinations and tests on a subset of the population, observers' ratings of potentially stressful characteristics of major job types in the plant, and possibly more objective measures of support as well. Although the cross-sectional and self-report nature of the present data raises questions about their validity and causal ordering which are dealt with more extensively in previous reports (House, et al, 1976; Wells et al, 1977), all of the measures are as valid and reliable as such questionnaire measures can be, and we feel our results are most plausibly interpreted as indicating that social support mitigates the effect of stress on health. Let us stress that previous analyses not reported here have showed the present results to be unaffected by controls for age, smoking, and other potential confounding variables (cf. House et al, 1976).

We have examined how perceived social support from four different sources (supervisors, wives, co-workers, and friends and relatives) taken singly and together conditions the relationship between self-reported marked symptoms of five health outcomes (angina pectoris ulcers, itch and rash on skin, persistent cough and phlegm, and neurotic symptoms) and seven indicators of perceived occupational stress--job satisfaction and occupational self-esteem (lack of either is stressful), workload, role conflict, responsibility, conflict between job demands and non job concerns, and quality concern or worry over not being able to do one's work as well as one would like. These measures are fully presented in Wells et al, (1977) and their intercorrelations are shown in Table 1.1. Most notable here is the lack of correlation between social support and health except in the case of supervisor support, and the lack of correlation of support from wives and friends with the occupational stress measures as well. On the basis solely of these correlations, one might conclude that support from such persons is irrelevant to the problem of occupational stress and health--a quite erroneous conclusion in light of our further analyses.

For each of the 35 possible combinations of a stress variable and a health outcome, we have tested whether each of the four support measures as well as a combined measure of total support from all four sources conditions or buffers the stress-health relationship in the manner depicted in Figure 1.1. Concretely

Table 1.1
 Intercorrelations of Perceived Stress, Health and Social Support Variables¹
 (Pearson r's)

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Angina Pectoris	-															
2. Ulcers	.176	-														
3. Itching and Rash	.093	.109	-													
4. Cough and Phlegm	.183	.088	.065	-												
5. Neurosis	.257	.315	.126	.221	-											
6. Job Satisfaction	-	-.056	-.122	-.083	-.195	-										
7. Work Self-Esteem	-	-.072	-.088	-	-.121	.412	-									
8. Job vs. Non-Job Conflict	-	.082	.156	.053	.183	-.445	-.257	-								
9. Role Conflict	.050	.086	.104	.099	.167	-.212	-.140	.390	-							
10. Responsibility	.074	.054	.105	.067	.094	-.109	-	.332	.581	-						
11. Quality Concern	.067	.064	.134	.071	.149	-.348	-.185	.475	.640	.507	-					
12. Workload	-	-	.114	.070	.097	-.244	-	.231	.258	.307	.372	-				
13. Supervisor Support	-.041	-.059	-.102	-.046	-.072	.377	.231	-.233	-.223	-.129	-.388	-.123	-			
14. Coworker Support	-	-	-	-	-	.220	.117	-.102	-.102	-.035	-.112	-.080	.303	-		
15. Wife Support	-	-	-	-	-.060	.065	-	-	-	-	-	-	.106	.288	-	
16. Friend and Relative Support	-	-	-	-	-	.135	-	-	-	-	-	-	.164	.322	.618	-
17. Total Support	-	-.049	-.058	-.066	-.097	.364	.194	-.171	-.186	-.106	-.286	-.103	.780	.625	.583	.637

¹All coefficients are significant at the $p < .05$ level. Nonsignificant coefficients are omitted and indicated by a "-".

this involves testing whether a multiplicative product of the stress and support variables contributes significantly to predicting and explaining the health outcome, net of the additive effects. That is, we estimate equations of the following form:

$$\hat{Y} = a + b_1 P + b_2 S + b_3 PS$$

where

\hat{Y} = estimated proportion of persons with marked symptoms of each health outcome

P = Perceived stress variable; S = Perceived social support variable

PS = Product of PxS

Since our dependent health measures (Y) are all dichotomous, the parameters a , b_1 , b_2 , and b_3 in equation (1) can be interpreted as follows:

a = The intercept or the proportion of persons with marked symptoms at the lowest levels (i.e., 0) of both the stress and support variables.

b_1 = The slope (increase in proportion with marked symptoms for each rise of 1 unit in stress) of the regression of health on perceived stress when support is lowest (i.e., 0).

b_2 = The slope of the regression of health on support (or the change in the intercept of the regression of health on stress for each unit change in support).

b_3 = The change in the slope of the regression of health on stress for each unit change in support.

From equation (1) one can derive the slope of the regression of health (Y) on stress (P) at each level of support (S). Thus b_1 is the slope of this relationship when $S=0$; b_1+b_3 is the slope when $S=1$; b_1+2b_3 in the slope when $S=2$; etc.

The theoretical model depicted in Figure 1.1 is confirmed if the b_3 coefficient is significant and the size and sign of b_1 and b_3 are appropriate. Since low levels of job satisfaction and work self-esteem are stressful, we expect the b_1 coefficients for these variables to be significantly negative and b_3 to be significantly positive (and of a magnitude that would reduce the negative shape of the regression of health on stress as support increases, but ideally not reduce it significantly past 0). In contrast for each of our five measures of job pressures high scores indicate more stress, hence b_1 should be significantly positive and b_3 significantly negative.

For each source of support (total, supervisor, wife, co-worker, and friend and relative) we have estimated 35 versions of equation (1), one for each stress-health combination. Results for the 35 equations involving total

support are treated separately since they are clearly not independent of the 140 equations involving support from supervisors, wives, coworkers, and friends and relatives.

Our measure of total support reflects the cumulative amount of support perceived from all four sources and approximates the global support measures used in much previous research. Assuming the 35 tests involving total support are independent of each other, we would expect about three or four significant b_3 coefficients at the $p < .10$ level, and in only one or two of these cases should the signs and sizes of b_3 accord with the theoretically expected pattern. In fact, the b_3 coefficient is significant in nine of the 35 equations, and the signs and sizes of b_3 and b_1 accord with our expectation in all nine of these cases--quite striking evidence that social support can indeed ameliorate the effects of occupational stress on self-reported symptoms of physical and mental health. Table 1.2 presents the regression coefficients for these equations, along with predicted proportions of persons reporting marked symptoms of each health outcome at the highest and lowest levels of the stress variable within the highest versus lowest levels of support. The last two columns of the table show that under maximum levels of social support, marked symptoms of self-reported ill health increase only slightly, if at all, as stress increases. In contrast, the two columns just to the left of these show that when social support is minimal, marked symptoms of ill-health increase dramatically as stress increases.

It is noteworthy, however, that in almost every case where "total support" produced a conditioning effect, one of the four support measures composing it does also. Thus, the results for total support primarily reflect the impact of one or two particular sources of support, and it is critical to examine the results for each source of support as well--something which has seldom been done in studies using composite measures of support. Assuming the tests are independent of each other, we would expect the conditioning effects of social support to be significant (at the $p < .10$ level) in about 14 of the 140 equations involving the four separate sources (or in about three or four of the 35 equations involving each source), with only about four to six of these conforming fully to our expectations.

The 140 tests are, of course, not totally independent, since the variables involved are not all uncorrelated with each other. However, the only correlations large enough to introduce sizable dependencies (i.e., $> .40$) are those among the job pressures, between satisfaction and self-esteem, and between wife support and relative support. Tables 1.2, 1.3, and 1.4 indicate little tendency for such dependencies to affect the results. For example, wife support and friend and relative support are the two most highly correlated variables in Table 1.1, yet they significantly condition the same relationship in no case (cf. Table 1.4). Hence, 14 is not an unreasonable estimate of the number of significant conditioning effects to be expected by chance.

In fact, 24 of the 140 analyses yield statistically significant results, and 21 of these 24 accord with our predictions--four to five times as many as might occur by chance alone. Table 1.3 gives the same information for these 21 equations as Table 1.2 gave for those involving total support. Again the last four columns indicate that perceived stress bears little or no relation to the

Table 1.2

REGRESSION EQUATIONS OF SIGNIFICANT, PREDICTED CONDITIONING EFFECTS OF TOTAL SOCIAL SUPPORT
ON RELATIONSHIPS BETWEEN PERCEIVED STRESS AND HEALTH

Health Outcome	Perceived Stress	Support Source	Intercept				Stress Support				Predicted Proportions with "Marked Symptoms"			
			a	b ₁	b ₂	b ₃	Lowest Stress	Highest Stress	Lowest Stress	Highest Stress	Lowest Stress	Highest Stress	Lowest Stress	Highest Stress
							Lowest Stress	Highest Stress	Lowest Stress	Highest Stress	Lowest Stress	Highest Stress	Lowest Stress	Highest Stress
<u>Angina Pectoris</u>	None	None	-	-	-	-	-	-	-	-	-	-	-	-
<u>Ulcers</u>														
Job Satisfaction		Total Support	.3178*	-.0253*	-.0069*	.0009 ⁺	.065	.318	.149	.042				
Esteem		"	.4825*	-.0216*	-.0124*	.0007 ⁺	.094	.483	.102	(-.014)				
Job-Nonjob Conflict		"	.0875 ⁺	.0286*	.0008	-.0009 ⁺	.088	.431	.120	.031				
Role Conflict		"	.0656	.0322*	.0014	-.0010 ⁺	.066	.452	.122	.028				
Workload		"	.0473	.0209*	.0032	-.0008 ⁺	.047	.298	.175	.042				
<u>Itch/Rash</u>	None	None	-	-	-	-	-	-	-	-	-	-	-	-
<u>Cough/Phlegm</u>														
Esteem		Total Support	.4124*	-.0141 ⁰	-.0132 ⁺	.0007 ⁰	.159	.412 (-.116)	.135					
<u>Neurosis</u>														
Esteem		Total Support	.5592*	-.0237*	-.0125*	.0006 ⁺	.133	.559	.065	.059				
Role Conflict			.0321	.0545*	.0017	-.0016 [*]	.032	.686	.100	(-.014)				
Responsibility			.1129 ⁺	.0291*	-.0009	-.0008 ⁰	.113	.462	.077	.042				

* p<.01 + p<.05 0 p<.10

Table 1.3

REGRESSION EQUATIONS OF SIGNIFICANT, PREDICTED CONDITIONING EFFECTS OF TOTAL SOCIAL SUPPORT
ON RELATIONSHIPS BETWEEN PERCEIVED STRESS AND HEALTH

Health Outcome		Support Source	Intercept a	Predicted Proportions with "Marked Symptoms"			
				Stress Support		Stress Support	
Perceived Stress	Lowest Stress	Highest Stress	Lowest Stress				
<u>Angina Pectoris</u>							
Job Satisfaction	Wife		.1211*	-.0088 ⁺	-.0136*	.0018 ⁺	.033 .121 .064 .026
Work Self-Esteem	Wife		.1412*	-.0051 ⁰	-.0195	.0012 ⁺	.049 .141 .064 .005
<u>Ulcers</u>							
Job Satisfaction	Supervisor		.2668*	-.0176 ⁺	-.0104 ⁺	.0012 ⁰	.091 .267 .117 .080
Esteem	Supervisor		.4919*	-.0232 [*]	-.0294*	.0018*	.074 .492 .128 (-.037)
Job-Nonjob Conflict	Supervisor		.0804*	.0261*	.0026	-.0078*	.080 .394 .127 .052
Job-Nonjob Conflict	Friend/Relative		.0924*	.0178*	.0037	-.0027 ⁰	.092 .306 .115 .134
Role Conflict	Supervisor		.0781*	.0246*	.0021	-.0015 ⁺	.078 .466 .208 .180
Workload	Coworker		.0302	.0160 ⁺	.0169 ⁺	-.0026 ⁺	.030 .222 .132 .136
Workload	Friend/Relative		.0679 ⁰	.0119 ⁺	.0170	-.0032 ⁺	.068 .211 .170 .082
<u>Itch/Rash</u>							
Job Satisfaction	Wife		.3829*	-.0340*	-.0216 ⁺	.0032 ⁺	.043 .383 .295 .232
Work Self-Esteem	Supervisor		.4705*	-.0168*	-.0238*	.0012 ⁺	.168 .471 .042 .129
<u>Cough/Phlegm</u>							
Role Conflict	Supervisor		.0260	.0324*	.0051	-.0019*	.026 .415 .118 .096
Responsibility	Supervisor		.0537	.0235*	.0042	-.0016 ⁺	.054 .336 .129 .066
Workload	Supervisor		.0007	.0233*	.0064	-.0014 ⁰	.001 .280 .116 .093
<u>Neurosis</u>							
Job Satisfaction	Wife		.4277*	-.0421*	-.0274*	.0035*	.000 .428 .060 .236
Work Self-Esteem	Coworker		.4698*	-.0218*	-.0335 ⁺	.0021 ⁺	.077 .470 .103 .269
Role Conflict	Supervisor		.0166	.0438*	.0053 ⁰	-.0024 ⁺	.017 .542 .112 .119
Role Conflict	Wife		.0628 ⁺	.0358*	.0007	-.0029 ⁺	.063 .492 .068 .254
Quality Concern	Wife		.0578 ⁰	.0294*	.0003	-.0023 ⁺	.058 .411 .060 .220
Responsibility	Wife		.0774 ⁺	.0267*	.0019	-.0028 ⁺	.077 .398 .091 .176
Workload	Wife		.0006	.0287*	.0123	-.0033*	.001 .345 .087 .154

* p<.01 + p<.05 0 p<.10

Table 1.4

**SUMMARY OF SIGNIFICANT, PREDICTED CONDITIONING EFFECTS OF MEASURES OF
SOCIAL SUPPORT ON RELATIONSHIPS BETWEEN PERCEIVED STRESS AND HEALTH**

PERCEIVED STRESS	HEALTH OUTCOME				
	Angina Pectoris	Ulcers	Itching and Rash	Cough and Phlegm	Neurosis
Job Satisfaction	Wife	Supervisor			
		Total	Wife		Wife
Work Self-Esteem	Wife	Supervisor	Supervisor		
		Total		Total	Coworker Total
Job vs. Non- Job Conflict		Supervisor			
		Friend and Relative			
Role Conflict		Supervisor	Supervisor		Supervisor
		Total			Wife Total
Quality Concern					Wife
Responsibility				Supervisor	Wife Total
Workload		Coworker		Supervisor	
		Friend and Relative			Wife
		Total			

Note: Cell entries indicate measures of support which significantly condition each health-stress relationship in the predicted manner. The full regression equation for each of these effects appears in Tables 2 or 3.

health outcomes at the highest levels of support, but when social support is lowest self-reported symptoms of ill health rise sharply with stress. Although 21 significant results out of 140 is in many ways a modest figure, it is important to note that these 21 effects are scattered over 18 different stress-health relationships. That is, over half of all the 35 stress-health relationships we have examined are significantly conditioned in the expected way by at least one form of social support. These results become even more compelling when we consider their patterning in terms of sources of support and health outcomes involves. Table 1.4 summarizes the pattern of the results in Table 1.2 and 1.3. Each of the 35 cells of the table represents a particular relationship between stress and health; within each cell are noted those measures of social support which significantly condition or buffer (in the predicted way) the impact of that stress on that health outcome. Table 1.4 shows first, that, as we expected, support from the most "significant" others is more effective in ameliorating effects of occupational stress on health. Of the 21 significant predicted conditioning effects of the four separate sources of support, nine occur with supervisor support and eight with wife support while only two occur with co-worker support and two with friend and relative support. The potent effects of wives and supervisors and the weak effect of friends and relatives were as expected. However, the almost total lack of effect of co-worker support was somewhat surprising to us. The organization of work in this plant (e.g. many individual and machine-bound jobs, tight management control of work scheduling and processes, high-noise levels) may make it difficult for work group interaction and cohesion to develop and also make it unlikely that workers other than supervisors can do much to alleviate stress and/or its effects. The effects of co-worker support might be greater in occupations or industries which inherently require greater coordination and communication.

A second notable feature of Table 1.4 (also evident in Tables 1.2 and 1.3) is that support mitigates the effects of stress on ulcers and neurosis more than on other health outcomes. In fact, the results for other health outcomes are not substantially greater than what might occur by chance. Again this pattern is not unexpected in light of research which has especially emphasized the role of interpersonal processes in the etiology of ulcers (cf. Susser, 1967) and neurosis (Jaco, 1970). Support buffers the effects of stress on some diseases more than others.

THE PRACTICAL USES OF RESEARCH AND THE RESEARCH USES OF PRACTICE

Kurt Levin contended there is nothing so practical as a good theory. We would argue, conversely, that practical application constitutes the ultimate test of a theory and an excellent stimulus for further theoretical and research development. Theory and research tend to become sterile if not linked to applied concerns, just as practical applications tend to become ineffectual and even harmful if not guided by sound theory and research. Efforts to apply our knowledge of social supports require that we synthesize the most solid conclusions and implications of existing theory and research and also serve to identify a range of critical unanswered questions about the nature and effects of social support. Thus, although we are researchers rather than practitioners, we regard research and practice as mutually beneficial and interdependent.

Before turning to more specific issues of application let us consider two general issues which are sometimes neglected in recent discussions of social support. First let us re-emphasize that enhancing social support can and should in no way be considered a substitute for efforts at reducing occupational stress. Rather, social support should be viewed as a potential means of alleviating that occupational stress which we can not reduce. Theory and research on social support have said almost nothing about the effect that providing social support to stressed individuals has on the givers as well as the receivers of support. Although providing effective support to others may be rewarding in many ways, it also undoubtedly entails costs as well (e.g., emotional energy, time, sometimes tangible resources, etc.). Work organizations have no right to expect supervisors and co-workers, much less the spouses, friends, and relatives of workers, to buffer employees against stresses which the organization could reasonably reduce or prevent entirely. If the effects of stress are sufficiently deleterious that social support is necessary to alleviate these effects, then we ought to be willing to attempt to reduce that stress as much as possible, utilizing social support primarily to buffer people against stresses we can not reduce.

A second general concern is that proponents of the utility of social support not lose sight of the limitations of our current knowledge base. We are just beginning to assemble adequate evidence that social support is beneficial for health, and are still quite ignorant of how and why this is the case. Thus at present, efforts to enhance social support should be viewed as field experiments or intervention trials rather than as programs of proven utility for reducing stress and/or improving health. And research and evaluation must be inherent features of all such experiments and intervention.

With these caveats, however, we think there are good reasons for attempting to enhance social support in order to reduce stress and improve health. First although solid evidence of the buffering effect of social support is just beginning to accumulate, there is a broader data base indicating that increases in social support (e.g., from supervisors) would directly reduce certain kinds of occupational stress (e.g., role conflict) and hence improve health. Second, increases in social support or closely related phenomena are likely to contribute toward a variety of individual and/or organizational goals besides reducing stress or improving health (e.g., higher morale, lower absenteeism and turnover, and perhaps enhanced organizational effectiveness). Thus, efforts at enhancing social support or related phenomena (e.g., interpersonal skills) are justifiable on grounds other than reducing stress or improving health. In sum, the potential gains from enhancing social support are many and the potential risks and costs are few. Further, the literature of applied social science (from psychotherapy to organizational development) contains many techniques which might be directly used in, or adapted to, programs for enhancing social support. Thus, we can and should begin to experiment with social support as a mechanism for buffering people against the deleterious effects of occupational stress.

Does the research and theory discussed above offer any guidelines for such intervention? We leave for more knowledgeable applied behavioral scientists the issue of how to work directly with people to modify psychological attributes and behavior. Our goal is to suggest first what it will mean to

increase social support and second toward whom intervention efforts should be directed. Existing theory and data have important practical implications for both of these issues, while coming to grips with these practical issues reveals clear needs for further research, especially in conjunction with intervention efforts.

In our own and most other research social support has been measured in terms of respondents' perceptions that others like and trust them, are concerned about their welfare, and are likely to be of aid in times of stress or need. Thus, existing evidence suggests that one, and perhaps the critical, aspect of effective social support is establishing a perception of willingness and ability to empathize and help (especially in an emotional sense) with work-related problems; and applied efforts should probably give initial priority to this aspect of social support.

However, the social support literature is glaringly lacking in information about two closely related questions crucial to effective practical application: (1) how is this perception of emotional supportiveness established and (2) how does it operate to alleviate the impact of stress on health. Intervention programs can not alter directly, for example, workers' perceptions of the supportiveness of their supervisor. Rather efforts will be made to change those aspects of supervisory behavior in relation to subordinates which give rise to perceptions of support. At present we know almost nothing about what "objective" features of supervisors and their relations with subordinates give rise to perceptions of supervisor supportiveness, though we could learn much by intensively studying the differences in personality and behavior between supervisors who are and are not perceived as supportive. Fortunately, related literatures on group dynamics, therapeutic relationships and organizational development tell us a good deal about the properties of persons and relationships which contribute to social support. This is an issue, however, which deserves much greater attention in research on social support as well as in efforts at application.

In our discussion of Figure 1.2 above, we noted that social support may operate in several ways to mitigate effects of stress and health. Greater knowledge of what emotionally supportive others actually do that alleviates the effects of stress would greatly enhance the efficacy of intervention programs. It is usually easier to teach people relatively concrete techniques and behaviors, as opposed to a more general orientation of empathy and supportiveness, and such specific techniques and behaviors may be more directly effective in alleviating the effects of stress. If, for example, supportive spouses' encouragement of good habits of rest, exercise, nutrition, etc., are critical in buffering workers against stress, these habits and their benefits might be promoted more directly and/or by other mechanisms (though, as Cobb, 1976, suggests emotional support may facilitate adherence to such regimens). In short, we need to pay attention to both research and practice to how emotional supportiveness, the focus of most existing research on support, is expressed concretely, how it relates to more instrumental or tangible forms of support, and how, when, and why support is effective in buffering workers against the effects of stress.

Assuming we know what it means to enhance social support, toward whom should

such efforts be directed? Here existing research evidence provides clear and important guidelines which have not been adequately appreciated. It appears on the basis of our own data and that of others that social support derived from one significant other can be quite effective in mitigating the effects of stress on health; and, in fact, support from additional sources may have little or no additional benefits. Comparison of Tables 1.2 and 1.3 shows that a single source of support generally produces as much of an effect on a stress-health relationship as the measure of total support, and in most cases a high level of support from a single source almost completely mitigates the effect of stress on health. Similar efficacy of a single confidant or supporter has also been documented in other research (e.g., Brown et al., 1975), and many composite indices of support often give disproportionate weight to support from one significant other person (e.g., the wife in the work of Gore, 1973).

The potential practical importance of these findings ought not to be underestimated. The term social support has been used loosely, often connoting the effect of a broad network of relationships in organizations, communities, neighborhoods, and/or families. If social support from a large network of others were necessary to mitigate the effects of stress on health, the task of enhancing social support would be large and expensive. In fact, at least in the area of occupational stress and health, the data suggest that applied programs not only can be effective, but they are also most likely to be effective, if they concentrate their efforts on ensuring that each person has a supportive relationship with just one or two significant others. Although who those one or two others should be may vary from person to person and situation to situation, the existing data point toward work supervisors and spouses as particularly significant classes of others. A high level of support from one, and especially both, of these sources appears capable of buffering persons against a wide range of stresses and with respect to a wide range of health outcomes. Thus, these two types of others constitute obvious first targets of efforts to enhance social support.

The work supervisor is an especially appealing focus for intervention programs. Not only do supervisors appear capable of providing effective social support, they are also accessible to influence through existing organizational channels and applied behavioral science methods. In fact, many current programs of supervisory training emphasize goals related to social support, though for purposes other than reducing occupational stress and/or its impact on health. Thus, the effect of supervisory support on stress and health could readily be explored in field experiments which are either designed for this purpose or could be utilized for this purpose. If the results of such experiments are consistent with the evidence reviewed above from cross-sectional studies, supervisory support will be established as a viable and effective mechanism for mitigating the effects of occupational stress on health. As we obtain clearer research evidence on the effectiveness of co-workers as sources of support in various work contexts, application programs should, of course, be broadened to include them as well.

Efforts to enhance the supportiveness of spouses or comparable others outside of work involves more complex and difficult technical and ethical issues. To routinely expect that spouses will buffer workers against the deleterious effects of occupational stress is to displace onto the spouse and/or family

responsibilities which are more rightfully those of the organization and/or individual worker. In American society at least, family and marital relationships have too often been assumed to operate in the service of individual or organizational work achievement, with little attention paid to the deleterious effects that work organizations and involvements may have on the family. Efforts to reduce occupational stress would undoubtedly benefit families and marriages as well as individuals.

Nevertheless, research clearly suggests that spouses can be important sources of support in the face of occupational stress, and hence can not be ignored from an applied perspective. Certain types of potential occupational stress (e.g., shiftwork, mandatory overtime, intensive cyclical workloads and deadlines) may impinge directly on family functioning as well as on the individual worker. In such cases spouses and other family members may need support themselves as well as constituting sources of support for the worker; and groups of similarly situated or affected spouses, couples, or families might be formed both to support each other and to share and develop modes of providing support for affected workers. With more usual types of occupational stresses, such as those in our own research which affect the worker primarily and the family only indirectly, there is no clear and obvious route to enhancing the mutual supportiveness of spouses toward each other. Workers and spouses might be given options to participate in programs aimed specifically at enhancing their capacities for helping each other deal with work-related stresses, or such concerns might be more directly incorporated into other educational programs directed at improving marital and family relationships.

In sum, current evidence suggests that social support can not only contribute toward reducing occupational stress, it can also help to alleviate the deleterious health consequences of such stress which we will not or can not reduce. Amelioration of the effects of occupational stress, like any disease-inducing or promoting agent, involves some combination of reducing exposure to the agent and increasing resistance to its effects. Social support seems uniquely promising in the latter respect. We worry at times that society, organizations and individuals may, however, leap on a bandwagon for increasing social support without awareness of the substantial limitations of current knowledge, perhaps out of a desire to avoid the often more difficult problems of restructuring work organizations and environments in order to reduce occupational stress. Social support is not now, nor will it ever be, a panacea for all problems of occupational stress and health; but it deserves increasing attention in both research and practice as a major aspect of a comprehensive effort to improve occupational health, both mental and physical.

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CHAPTER 2

COMPUTERIZATION AND SOME PSYCHOSOCIAL FACTORS IN THE WORK ENVIRONMENT

Gunilla Bradley

The technological device which in connection with administrative rationalization has had, and in the near future will have, great significance is the computer. Many of present day computerized information systems can be partially characterized as mechanization of previous manual routines. Later developments in the electronic data processing (EDP) information system seem to have large and more wide-reaching consequences. Computer techniques are used increasingly as a tool in planning, for decision-making and management of organizations. Technology has thereby not only taken over manual functions, but also tasks which are considered to be intellectual.

Thus far, too much attention has been given to developing the technological side of computers. This has been at the cost of other components such as organization design and working conditions. Studies of the psychosocial effects of computerized information systems on work environment are few.

At the Department of Sociology, Stockholm University, we are studying how work environment is influenced by computer techniques (computerization).* The Swedish Work Environment Fund is financing the project, and the central reference group is the Work Environment Committee of the Swedish Central Organization of Salaried Employees.

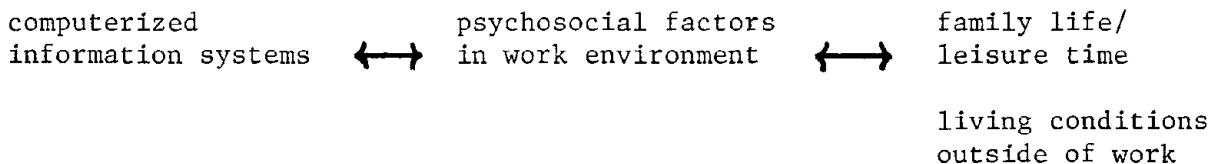
The project originated with a problem inventory of the psychosocial milieu conducted at the request of the Swedish Confederation of Salaried Employees a few years ago (Bradley, Børjeson, Lundgren, 1974).

Work environment is studied primarily with reference to psychosocial aspects and has been given a broad meaning. It is linked to the viewpoint of work environment which has to do with the influence of the environment upon the individual at different levels: the level of society, the level of the organization and the level of the individual. Problem framing in the project includes both objective, structural working conditions (especially at the organizational level), and experiences and attitudes related to work.

* My co-workers in this project are psychologists Ingrid Nilsson and Katrin Goldstein-Kyaga.

PURPOSE AND PROBLEMS

The purpose of this project can briefly be summarized as a description and analysis of the interplay between:



- What effects has the use of computer technology on working conditions and other aspects of the psychosocial environment?
- What indirect consequences does the individual's actual and perceived situation at work, influenced by computer technology, have on his/her living conditions outside of the job itself (type of leisure life and satisfaction with family and social life)?
- What health related consequences can be observed in connection with computer technology?

In Figure 2.1 a rough sketch of the project's frame is given, where the problems discussed above are set in a larger context. A few concepts are clarified in the following passage.

The computerized information system includes here both purely technological aspects connected with the computer and procedures connected with the use of system techniques. Some organizations use relatively simple machines and procedures, others use computers to control complex tasks or procedures.

The objective work environment has been operationalized for a variety of work areas which have been shown to be relevant for large groups of white-collar workers (Bradley et al, 1974). The choice of factors in the work environment is also based upon a survey of literature from the present project, and a large number of interviews in the planning phase with people who in varied ways work with the rationalization issue, and who have contact with or are affected by rationalization within businesses/administrative authorities, institutions and labor unions. The choice of these areas has been furthered by an extensive series of interviews (the qualitative phase) with employees at the studied organization.

The subjective work environment is constituted of perceptions and attitudes tied to a range of factors comparable to those in the objective work environment. The subjective work environment is closely related to the concept of job satisfaction. A closer specification of subjective as well as objective work environment is given in Figure 2.2.

Organization structure can be described here as methods for division of labor, bases for decision-making and organizational expedients. Organizational structure is further connected to the concept of work environment. The main point is not, however, the study of the connection between computer technology

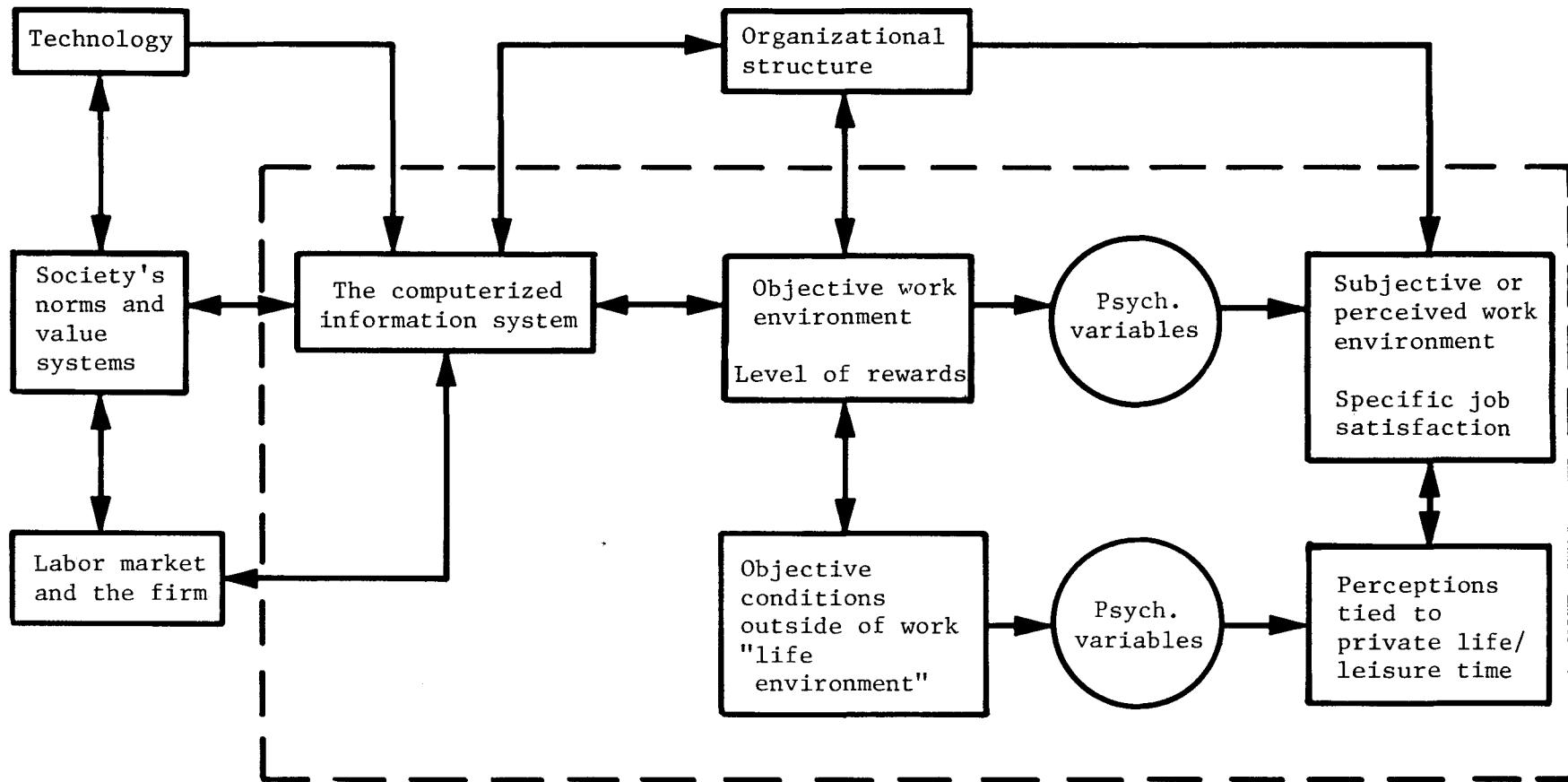


Figure 2.1 An outlined model of the relationship between computer technology and work environment

The pointed field in the above diagram gives the range of variables upon which the present project is concentrated.

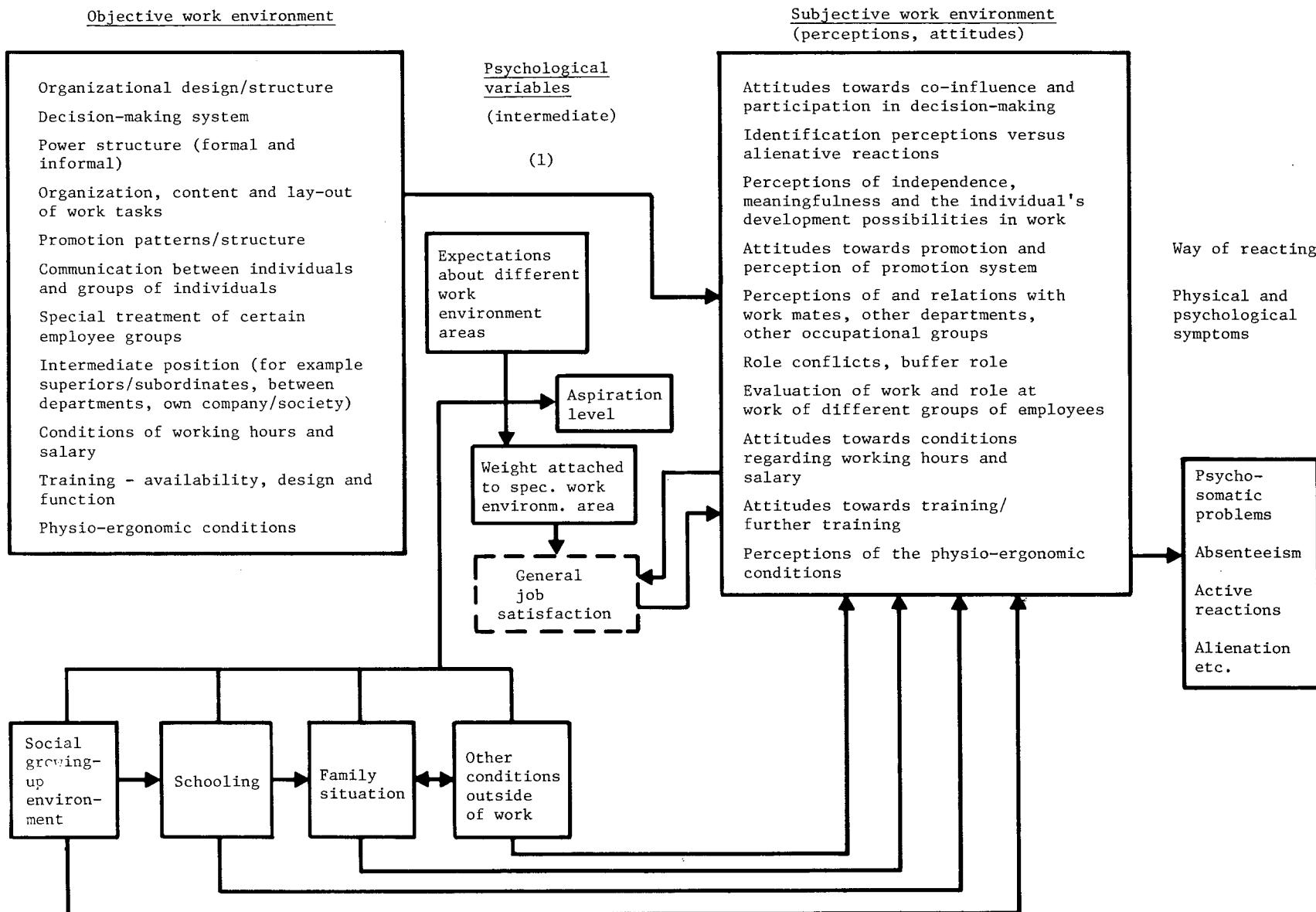


Figure 2.2 Further specification of the relationship objective-subjective work environment shown in the model in Figure 2.1.

and organization structure/organizational development. However, the design and shaping of the organization is an important factor which must be taken into account when studying the relation between EDP and work environment. It can also be seen as a part of the work environment.

Objective conditions outside of work encompasses certain behavior (such as consumption) that comprise the actual circumstances during the time away from work. These conditions can conceivably be influenced by a change in connection with the use of EDP at the place of employment. At the same time consideration is paid to analyze certain attitudes, assessments connected with private life/leisure time and family life against the background of computerization of the individual's employment.

Psychological variables are meant here to designate a range of intermediate psychologically relevant variables such as level of expectations, weight attached to job aspect, necessary in order to understand and explain both specific and general job satisfaction and its dynamics.

As stated earlier, the main focus is upon studying the effects of computer techniques upon different psychosocial factors in the work environment.

I have tried to show in Figure 2.2 the areas of work we study. The outline can be regarded as a specification of Figure 2.1.

What questions are then important in connection with the development of computer technology. I will give a few examples here:

- How does computerization affect organization design, real influence as well as attitudes to co-influence and participation in decision-making on the job?
- Does the content of work tasks change radically? Do we get new types of occupations with strict control and little possibility for people to influence methods, work pace and contacts with other people?
- Have promotion and development patterns, and attitudes toward further training changed at work?
- Are new social groups appearing at work? Can computerization make it possible to erase the traditional distinction between white-collar and blue-collar workers? Are new groups of white-collar workers arising? Will the differences between men and women in working conditions be changed?
- Are changes taking place regarding conditions of working hours, e.g., shift work and overtime? How are salary forms affected?
- We are trying also to illustrate the indirect consequences of computerization on living conditions outside of work (such as how leisure time is spent, and the degree of contentment with family and social life). Finally, we are investigating whether computerization has any provable effect on health.

SUBJECTS AND METHODS

The project's first field investigation took place at a government-owned company with approximately 5,000 employees, all of whom work in the Stockholm area.

Data was gathered by internal documentation (derived from the company's statistics, protocols, etc.) interviews of experts, semi-structured interviews, interviews with employees from the company, and questionnaires with fixed alternative answers. Certain information about absenteeism was taken from the company's personnel files. In both the qualitative phase (interviews) and the quantitative phase (questionnaire) a type of cross-section method has been used. All subjects of investigation have been exposed to the studied computer system for one year.

The questionnaire's design was based on two methodological strategies. One strategy was to study the effects of computerization (an extensive EDP system) on different psychosocial components of work environment. This was to be done by comparing groups of employees within the organization, which differ from one another in respect to their relationship to EDP. Another strategy was to use a questioning technique where the subjects were directly asked about the effects of computerization on different working conditions. These so-called "computer effect questions" come directly after the so-called "straight questions". A similar formulation of "computer effect questions" and "straight questions" was used in the same part of the research instrument. The instrument can therefore, because of this construction, be used both in follow-up studies and different types of cross-section studies.

The method for revision of data has been a qualitative analysis of interview material, descriptive statistics, and certain multivariate methods of analysis.

A stratified randomly sampled group of 424 people from different departments with fundamental differences in computer technique was selected. The following departments were included: bookkeeping (operating departments, ABDE and C), EDP department, accounting, auditing and investigation.

The percentage of nonresponse in the investigation was 14.7% of which 10.5% were sick during the period that data was being gathered. A total of 4.2% did not wish to participate.

It is evident from the results that the employees of the operating departments and the EDP department in various ways differ from other departments by mentioning different work environment problems. I will briefly describe the background data which characterize these departments.

The EDP personnel are primarily young, well educated men. Most of them have shift work, and have been employed for only a short time. The operating departments are comprised wholly of women with high average age, relatively low education level, and a long period of employment. Half are part-time workers.

RESULTS

I will briefly give here some empirical experiences which are taken from the first analyses of our project. The computer system studied concerns so-called batch-processing of information.

The employees of the company's EDP department understand most clearly that the purpose of their work in a broad sense is more for society in general, compared with other departments. At the same time, because of this and other reasons, they have difficulty relaxing during leisure time. They often go to work despite the fact that they might be ill. There is psychological pressure here which is partially related to the fact that there are no replacement workers for them. On the other hand, the employees of the operating departments feel that they are highly interchangeable, and this has indirect effects on their feelings of self-confidence.

The EDP employees have a relatively secure work situation compared with other employees within the organization. Anxiety about transferal seems most prevalent in the operating departments. The number of employees decreases successively in connection with increased automation. The level of anxiety in the company as a whole is relatively high. More than a third feel anxiety about transferal.

The introduction of a computer system naturally affects the nature and content of work. Nearly one-half of interviewed subjects had their tasks altered within their section as a result of introduction of the computer system. And what has happened with work tasks? The principle effect upon job content was noted in the operating departments which seem to have a lesser sense of satisfaction, meaningfulness and independence than other departments. The work is thought to be less interesting, have fewer work operations and is experienced as monotonous. The work is considered to be unqualified, less meaningful and with lesser opportunity for initiative-taking. Other departments are more satisfied with aspects of job content.

Several of the mentioned aspects of job content have undergone changes thought to be a result of the computer system. The operating departments have noticed negative changes while two departments and to a certain extent the EDP departments have noted positive changes.

There has, therefore, occurred an enrichment of work for certain departments (accounting and investigation departments) while for others work became more meager. However, the number of employees who had more meager work was much larger.

A striking result was that dependency on certain work routines had increased for all the departments which indicates an increased formalization and control of the employees' tasks.

Both the operating and EDP departments had noted a heavier workload than the other departments. The work is felt to be hectic and stressful, the work tempo too fast, too uneven, and too dependent on machines and equipment. Deadlines are built into the job everyday, which has caused, among other

things, an increase in psychological strain. EDP is thought to have too much responsibility and the operating departments too little.

Computerization is considered to have caused an increase on the workload for the operating departments and EDP. The workload has generally increased for all of the departments. The results should be seen against the background that the number of transactions handled also increases.

The computer system has brought about an increase of psychological strain on the EDP department in several different ways. This is evident from the results of an investigation of workload, intermediate position, promotion, salary conditions, physio-ergonomic relations and health issues (see below). An important reason for psychological pressure on employees of the EDP department was the increased risk that mistakes in their work could occur. The possibility of making a mistake has increased (47%) and thereby an increased anxiety for making mistakes was noted (42%). The consequences of these mistakes have also increased. Psychological pressure on the individual worker comes about in combination with EDP-inferred problems with correcting mistakes.

Delays in work caused by abnormal halts of the computer or manual errors have immediate consequences for working hours, especially for the employees of the operating department. Disruptions in computer procedures increase the risk of overtime. A striking number (70%) considered the technique itself to be the dominating cause whereas only 41% named manual errors.

Approximately one-half of the subjects were dissatisfied with influence at work on a whole, particularly those from the operating and EDP departments. As regards the computer system's effect on the degree of influence, both the operating and EDP departments have decreased influence. This is, however, true for different areas of work. Influence on work pace and work methods have decreased somewhat for the EDP department, and influence over planning has decreased for the operating department.

Both knowledge of how the computer system has been developed, and the possibilities for influencing the system via the labor unions is considered to be insufficient. Approximately one-half of the subjects say that there has not been any opportunity to influence the system, and many subjects have answered that they were totally ignorant about how the system functions.

Finally, the results indicate that one can talk about a general "computer anxiety". Quite a few, 83%, believe that computers will in the future decrease the possibilities for people to influence their work and life situations. This underlines further the fact that vigorous effort must be made to prevent the threat that is coupled to this technique. This must at the same time mean that the possibilities that this technique can have for mankind's ability to influence life situation must also be examined.

In connection with the purpose of the computer system, the subjects interviewed felt that technological development completely controlled the changes which occur. The subjects regard this development as largely impossible to control by human actions. The gains made by rationalization, in the form of

reductions of personnel, and thereby other closely related factors concerning competition on the labor market, have also been given by the subjects as the purpose of the computer system.

The EDP department differs from other departments in that more people have positions which give opportunity for promotion and development. More people there than from other departments expressed an interest in promotion, but were dissatisfied with the promotion policy reliance on seniority. Good possibilities for training and promotion were also highly valued for this department.

As many as 80% couple increased influence and positive stimulation with promotion. Promotion has been a way of achieving increased decision-making capacity within the present system.

Personal relations with nearest work colleagues and subordinates seem to be good. However, relations between the different departments were less satisfying. The EDP department easily becomes an isolated unit within the organization. It is principally the employees from this department who react negatively to this condition. They express dissatisfaction with the possibilities for contact with other departments. They speak about an "iron curtain".

The few people who have directly mentioned worsened contact opportunities as a result of the computer system have coupled this to noise level, stress and reliance on machines.

The intermediate position which characterizes many white-collar workers has also been studied against the background of computerization, and the associated so called buffer role. Results show that EDP can be described as the organization's "buffer department". The demands from different quarters, often contradictory, are concentrated or accentuated in the EDP department. In this department the EDP system seems to have caused an increase of demands and a row of contradictory messages within work roles. The demands come primarily from other departments or personnel groups within the company, but also from other interest groups.

The results emphasize that great physio-ergonomic problems exist today in the traditional white-collar working place. Certain problems seem besides to have been strengthened in connection with the development of computer technology. This concerns mainly the operating departments and includes the following aspects: noise/sound conditions, suitability of the work place to the work itself, work posture, and mechanical equipment.

In summary, it is the operating and EDP departments which differ most from the other departments in the organization in that they are most dissatisfied with different aspects of the work environment. This has an impact on different health aspects for the two departments. The employees in the EDP department show, however, more signs of psychosomatic symptoms than the other departments. They feel, as was mentioned previously, that the work is often hectic and stressed, that the work pace is usually too high and uneven, and that the work is too dependent on machines. They feel they have too much responsibility, and mention that the job is undermanned. Furthermore, there are clear psycho-

logical pressures, due to anxiety, for making mistakes. The consequences of these mistakes are greater for the EDP department. They are also dissatisfied with the pay.

The purpose of the so called questions concerning health issues which were included in the investigation was to indirectly illustrate the complex of the stress problems. To allow the individual himself to express how often he or she experienced problems with certain listed symptoms of somatic, psychological or psychosomatic nature naturally gives a rough picture of these conditions.

The following lists can to a certain degree illustrate the connection between symptoms and the factors in the work environment which are considered to have contributed to their appearance, as the subjects themselves have perceived it;

<u>Department</u>	<u>Symptoms</u>	<u>Aspects of work environment considered causing certain symptoms</u>
Operating	Pain in the shoulders, neck	Physio-ergonomic conditions
	Back problems	Work posture
	Headache	Extension of working hours
EDP	Sleep problems	Physio-ergonomic conditions
	Tiredness	The work itself and its content
	Irritation	Extension of working hours

I can mention here that computerization has in different ways received attention as a fundamental control mechanism, with effects on the physical as well as the psychosocial work environment. Research approaches in somewhat varying and complementary directions have been started with the intention of penetrating this area. A research group (DEMOS) is working in close cooperation with the Swedish Trade Union Confederation within the area of democratic management and planning of work. The project is partially the Swedish equivalent of a Norwegian research project.

At the Economic Research Institute (ERI) in Stockholm a project is being carried out which concerns investigation of how human values can be built into systems development. In one of Professor Gardell's research projects, phenomena concerning computerization are studied. Ergonomic oriented research on display terminal technique has been carried out by the Work Environment Committee in Sweden.

Finally, the labor unions (the computer groups of the Swedish Trade Union Confederation and the Swedish Central Organization of Salaried Employees) are

working out a remedy program and are developing information and knowledge centers concerning computer technology in relation to work environment.

I believe that within the next few years it will be possible to make a synthesis of the results and experiences that have successively grown out of this research. I have limited myself to giving a rather rough pattern of results from the research we are pursuing at the Department of Sociology in Stockholm.

DISCUSSION

It is claimed in the literature on the subject that computer technology is itself neutral, and can be used in alternative ways. If this is so (a few doubts have been expressed), then you can say that computer technology and its development are neutral in terms of its ability to help work environment to correspond to human needs.

It is difficult to generalize from the various studies, but on the whole, results today indicate that too often a system is built which worsens the work environment both objectively and subjectively.

Computerization is an example of a rationalization form which can be used in different ways. It can make difficult, or prevent, satisfaction of human needs and rights, but it can also consciously be used to construct a work environment which fulfills these needs and rights.

Much mystification today is coupled to computer technology. But within this suspicion and vigilance there is also a place for an embryo of greatest importance in the development context. Many people in Sweden and other industrialized countries have lived in a society without computer technology, they have not been born in a so-called computer society. This will increase the possibility to wonder about, ask questions, react, etc. The next generation will grow up in a computer society; already in school they will receive an education about computers, and will probably regard the computer as a self-evident medium.

A breakthrough has taken place in the Scandinavian countries regarding participation in decision-making. These conditions can benefit research work which will have great relevance for society's development in the long run as well as aiming at providing a basis for the actual practical solutions to problems within organizations.

CHAPTER 3

MANAGEMENT STRESSORS

James W. Greenwood

In recent years, the problem of executive stress has taken its toll on human enterprises, large and small, by aborting careers, limiting the effectiveness of executives and subordinates alike, and by generally debilitating the resources of those enterprises. Some degree of stress is, of course, essential to life; without any stress the organic system disintegrates. When, however, stress becomes excessive or uncontrolled, it can cause, or contribute to, sickness and even the premature death of the over-stressed individual. Much of the literature on executive stress deals with these aspects, its deleterious effects on the individual. Little consideration has been given to its effects on the organization or enterprise in which the over-stressed individual operates. This paper invites attention to the organizational implications of executive stress by identifying a potential stressor and describing a case illustrating its effects.

First, however, a few words about the magnitude of the problem of executive stress and about the manner in which executive stress arises may serve to put the matter in perspective.

THE COSTS OF EXECUTIVE STRESS

In a recent analysis, the annual costs of executive stress in this country were estimated to be between \$10 and \$20 billion--a figure higher than the gross revenue of any one of all but the three highest industrial corporations included in the Fortune 500 list (Greenwood, 1977). The conservative nature of this estimate is attested to by the fact that it covers only the directly measurable, tangible costs of executive stress--such items as: work loss days, hospitalization, outpatient care, and mortality of executives. The estimate does not include the indirect costs of such items, nor of the costs (direct or indirect) of restricted activity and decreased productivity of executives. Nor does it include the intangible costs of the observable and inobservable effects of the over-stressed executive on his associates and others, or on the organization as a whole, or on other organizations with which he relates. This same analysis indicated that the costs related to these factors and others which would have to be included to make a complete and more thorough analysis are unknown and with present methods of data collection will remain unknown. Thus, the above mentioned estimate of the costs of executives stress (based on only partially available data) constitutes a very conservative appraisal of the situation. Clearly, even with this low estimate, we have a problem whose significance is worthy of widespread attention. (A summary of this analysis may be found in Table 3.1.)

Table 3.1
Costs of Executive Stress

	Conservative Estimate	Ultraconservative Estimate
Cost of Executive Work Loss		
Days (salary)	\$ 2,861,775,800	\$1,430,887,850
Cost of Executive Hospitalization	248,316,864	124,158,432
Cost of Executive Outpatient Care.	131,058,235	65,529,117
Cost of Executive Mortality	16,470,977,439	8,235,488,720
	-----	-----
	\$19,712,128,238	\$9,856,064,119

A MODEL OF MANAGEMENT STRESS

Alan McLean has suggested that a stressor will produce symptoms only in conjunction with two other factors: context and vulnerability (McLean, 1975). Dr. McLean postulates a model (Figure 3.1) and reminds us that parts of the model are dynamic, constantly changing with the events taking place in the individual's life.

Figure 3.2 is a modification of McLean's model; it divides each of the three factors into two parts: personal and organizational. This division of each factor into the two parts--personal and organizational--is obviously arbitrary and for purposes of discussion in this paper only. There are, of course, many other sources of stressors in the environment; likewise the context contains many other aspects. For example, the model suggests that the modern manager is subject to both personal and organizational stressors.

Stresses arising in the family would tend to be personal stressors, while the introduction of a new product line might serve as an organizational stressor. It is important to note, however, that any stressor given the proper context and vulnerability will produce symptoms. Managers are also subject to both personal and organizational vulnerabilities. The individual's personality, his education, his mood following a poor performance appraisal or his concern about an upcoming reorganization would represent personal vulnerabilities. Any condition of the structure or processes of the organization which the manager senses as a potential weakness, exposing the organization to threats against its health or life, constitutes a vulnerability of the organization. For example, inadequate cash reserves, inadequate capital for expansion, weakness in sales, or poor product performance, all constitute organizational vulnerabilities.

Context may also be divided into personal and organizational categories. The management style of his organization can be viewed as part of the organizational context while the size of the individual's bank account is a factor in his personal context.

The reason for this elaboration of McLean's model is to point up specifically that the manager has a choice in how he is going to deal with the management of his own stress symptoms. First, he can take steps to reduce his personal vulnerability by a wide variety of means that are currently receiving widespread attention in the literature. For example, there are several meditative techniques from which to choose, each of which promises to induce relaxation and relieve the tension of his regular activities. Meditation is a personal approach to stress management. Likewise, by prudent personal budgetary management an individual can increase his bank account, which will tend to increase his feeling of security; thereby, affecting the context of stress situations. Given enough in his bank account, he can leave the organization and retire--thereby, effecting a radical change in the context.

Granted that the categorization we have developed by dividing each of the three factors of McLean's model into two parts represents a somewhat fuzzy classification, but our intent here is not to focus on personal solutions, rather to suggest the variety of factors giving rise to the problem of management stress.

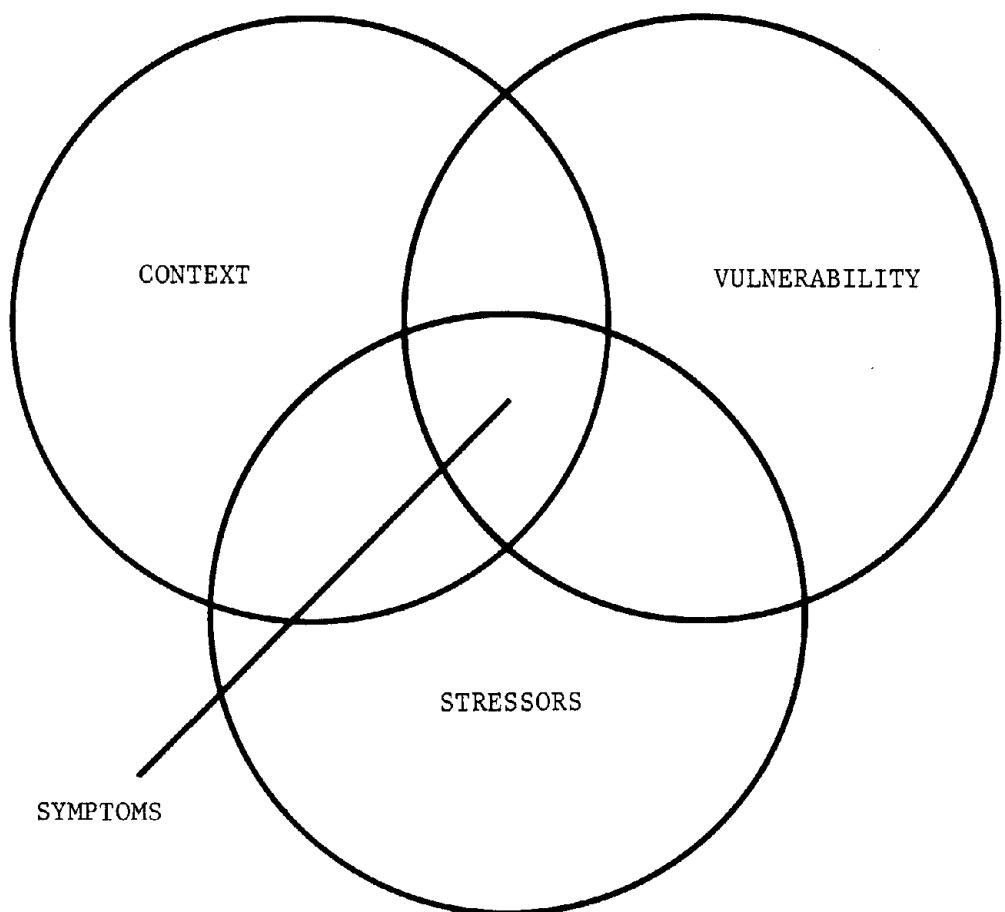
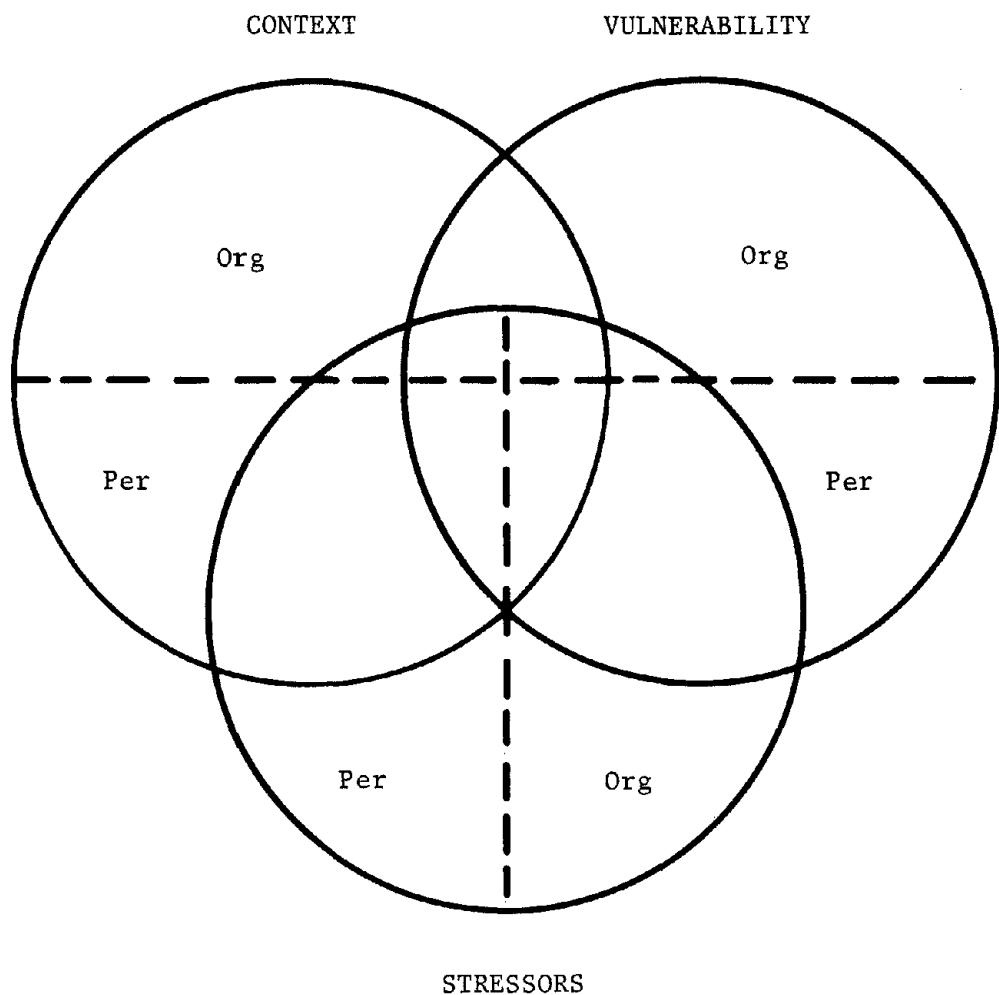


Figure 3.1 The McLean Model



Per = Personal

Org = Organizational

Figure 3.2 A Modified McLean Model

CAUSES OF MANAGEMENT STRESS

From the foregoing discussion, it becomes apparent that, given the right context and the appropriate degrees of vulnerability, almost any event may serve as a stressor for some individual, and that is one of the conclusions of the above mentioned study of executive stress (Greenwood, 1977). The triggering event may be internal (physiological or psychological), or external (environmental); it may be perceived or unperceived; it may be real or even imaginary. So long as it occurs when the individual's vulnerability is sufficiently high, and in a facilitating context, it will have a stressful effect.

Thus, it becomes apparent that even otherwise favorable events--such as pleasant weather, a promotion in rank, an increase in salary, the birth of a child, or the successful completion of a project--may sometimes serve as stressors. This being so, our next proposition should come as no surprise: the principles of management may serve as a source of executive stress.

THE PRINCIPLES OF MANAGEMENT AS STRESSORS

We have inherited from students and practitioners of management a number of guidelines in the form of so-called management principles. Some of these principles may be traced back to the Bible; while others are of more recent vintage, writings of the late 1800s and early 1900s. The so-called principles are still taught, unchallenged, in some of our better business schools. Specifically, one may refer to the works of Frederick W. Taylor and Henri Fayol. These men laid down for posterity some principles of management which many modern managers try to follow today. We suggest that these principles of management, given the right context and degree of vulnerability, represent significant stressors for management.

One reason for this, and it is rarely understood by managers, is that some of the principles of management are contradictory. Some principles, for example, advocate punitive measures to secure obedience, while others favor a more humanistic approach. Any manager who blindly tries to follow these principles of management without giving sufficient thought to their effects in modern organizations is likely to suffer some mild stress, but in some cases the stress may be severe.

The manager is literally a man in the middle. He interfaces with, and mediates the demands of, his boss and his subordinates, each with their own personal goals and desires. If he deals with the government, suppliers, or customers, he must resolve the conflicts which inevitably arise between these organizations and his own.

He has a status and success orientation and, for many managers, upwardly mobile aspirations. To achieve success he must take risks (even playing it safe can be risky). Risks are frequently the source of stress since the outcome is unknown (failure is a possibility), and the accompanying uncertainty can be the source of at least mild anxiety.

The modern manager is also suffering from the vagaries of the modern economy and its concomitant inflation. He is under pressure to either increase pro-

ductivity or reduce costs. There are pressures for higher profits from his superordinates and simultaneously he is under pressure for higher wages from his subordinates.

All of this is taking place in a time of accelerating change, the world of future shock with its devastating discontinuities. America is the first post-industrial society, a society in which over fifty percent of the people and over fifty percent of the gross national product are employed in services (Bell, 1973). One major factor in the post-industrial society is the pre-eminence of the knowledge worker, a worker hired to apply his knowledge to produce results (Drucker, 1974).

One example, among many, of the knowledge worker, is the computer programmer, with his knowledge of computers, systems, and applications. According to Peter Drucker, we do not yet know how to properly manage the knowledge worker; the old models do not work and we have yet to formulate new models. So the manager is frequently in a quandary. He needs knowledge and information to operate in a world of accelerating change, but he does not know how to manage those he must rely upon to provide much of that knowledge and information. The old, established principles of management seem not to be applicable or provide conflicting guidance.

As if that were not enough, he must contend with rapidly changing social conditions and social values. The manager who is experiencing the generation gap at home with sons and daughters is likely to have the same problem at work with younger subordinates. The various liberation movements can be merely interesting or intensely aggravating, depending on how close they come to the manager. But he and his organization must face their responsibilities for equal opportunity, environmental responsibility, and occupational safety. Society as a whole demands that the manager be responsible.

None of this assumes that the manager himself is having personal difficulty or any interpersonal difficulty in the organization. Yet, apparently, half of the managerial class suffers from workaholism, or Type A Behavior patterns (Friedman and Rosenman, 1974), while at least some of those at the pinnacle of the organizational pyramid suffer a variety of psychiatric disorders (Wolman, 1973).

That interpersonal difficulties exist is well known in corporate halls. According to Auren Uris, "... the average company is a cesspool of resentment, frustration, anguish, and hate" (Uris, 1972). This opinion is confirmed by others (Schoonmaker, 1969, and Peskin, 1973).

We shall not, however, give our attention to all of these problems here. Instead, we shall explore one simple case in which many of the factors listed above existed either implicitly or explicitly.

CONSENSUS TEAMS

The company involved is a well known manufacturer and distributor. The problem was in the data processing organization of the company, specifically in the Data Processing Operations Control Department. This is a clerical oper-

ation where computer input is processed and prepared prior to its entry on the computer. After the work has been processed by the computer, additional clerical and control work is necessary before it is distributed to final users of the data.

This department had one supervisor and ten clerks. Most were women, including the supervisor. One woman had been with the company for 32 years and another for 31 years. At the other extreme were three employees with two and one-half years of service with the company.

Specifically, the problem was low productivity, poor morale, and strained interpersonal relations. Work was highly fractionated and specialized--if any member was absent, the other department members could not cover and outside help had to be brought in. Supervision was the hovering type, the supervisor being technically oriented rather than people-oriented.

This company has a personnel system that requires the posting of job openings within the company. Employees interested in applying for these positions need only write their names on the posted announcement in order to activate a process which could result in promotion or transfer. Three people in the Operations Control Department were actively bidding on jobs--they wanted to get out of that department, and were bidding on everything. Obviously this condition reflected poorly on their supervisors.

Stress manifested itself throughout the management ranks of the company. Not only was productivity down, but there always seemed to be a crisis whose origins could be traced to this particular department. In addition, there were frequent personnel situations which required management attention.

In order to solve the problems of the Operations Control Department, and with hopes of a simultaneous reduction in stress throughout the managerial ranks, an innovative approach was taken. The supervisor was transferred to a training job and the clerks were given the opportunity to operate as a consensus team.

The most outstanding characteristic of a consensus team is the total absence of a leader, a flat contradiction of the management principles of unity of command and hierarchical organization. All team members are interdependent. Each is trying to achieve the total team productivity objective, for which they are all jointly responsible, each person making his or her contribution to achieving results.

Many managers find it difficult to visualize a group without a leader, and this is a crucial point. Leaders depend on situations--instead of having a designated leader, the consensus team allows individual contribution by relying on each individual's personal strengths. It appears that this focus on strength actually eliminates or at least minimizes weakness in the consensus team.

The consensus team actually develops a proprietary interest in the work. They know what has to be done, and when it has to be done, without being told. Productivity objectives are established jointly with management, and when

necessary, overtime is scheduled by the team (instead of by management) in order to meet deadlines, taking into account individual team members' needs and desires. With the ownership of work also comes the responsibility for getting it done in a productive way; this means timeliness and quality control.

Routine decisions are made by individuals, important decisions are made by consensus, the only exception being membership decisions, when a vote is taken as necessary. Here the majority rules. Membership is a critical decision, the team must be able to purge itself of dysfunctional members--those who cause trouble or refuse to become productive. This is an important rule and it is difficult for a team to survive very long without it. Experience has shown (for those who are concerned that membership control might be used vindictively) that consensus teams are generally quite responsible in using the membership control process.

Since the team is jointly responsible for total output, there is a very strong tendency to provide cross-training so that members can help each other. Whenever someone is absent from work, team members rearrange the work load; unless a critical number are absent, no additional workers have to be brought in. Concomitant with this cross-training and back-up is scheduling. Teams seem to deal with overtime scheduling and vacation scheduling in very productive ways--frequently employing innovations that have been overlooked in the traditional approach to such problems.

In the Data Processing Operations Control Department, the results were phenomenal. Productivity immediately increased. Morale soared. In fact, one manager stated that he had to close his door because the singing was so loud, a remarkable turnaround.

Many of the individuals learned several other jobs shortly after implementing the consensus team approach. As a result of this spread of knowledge, innovations and work-flow improvements were made. The absence of one or two workers at a time no longer required the obtaining of additional outside personnel.

Problems that plagued management before suddenly disappeared. The consensus team met its productivity objectives, and then went on to increase service to data processing users, so that instead of complaints, there were compliments. Other groups requested permission to operate as consensus teams. This obviously reduced the stress of all the managers involved.

Several months after the team went into operation, one member voluntarily left the group. The team decided not to replace the member who was leaving. They were able to continue producing as they had before. This process repeated itself three more times and each time the team elected not to replace, but the loss of a fourth member started to interfere with team operations and a new member was recruited.

From a productivity point of view, the fact that one supervisor and three team members were not replaced is a significant increase in productivity (approximately 36% improvement). Managers are generally satisfied with four

to five percent productivity improvements and delighted with six to seven percent improvements.

The possibilities for reduction of stress in this situation are fairly clear. Two approaches, the personal approach and the organizational approach, were available to management in attacking an organizational problem which was getting increasingly worse. If the managers involved had elected to try to manage their stress by using a personal approach, they may very well have succeeded, but since the problem was already intolerable and growing worse they also might have increased the stress in other organizational members. Instead of the personal approach, they elected to attack an organizational problem with an organizational solution. This approach reduced stress for all involved.

But a warning must be offered concerning the use of consensus teams. Not every organization is in a position to accept such a radical departure from traditional management tenets. One of the accepted management principles outlined in the early 1900s was that every group needs a leader. But as we see from the consensus team approach, the supervisor was unnecessary overhead and may in fact have been a major part of the problem.

CONCLUSION

It would seem then, that at least some of the stressors affecting managers today may have their origins in contradictory or obsolete principles of management. Rarely are these principles questioned. But in a world of accelerating change, even the principles of management that we develop today may be obsolete tomorrow. In a post-industrial society, one might ask whether the principles of management developed by agrarian or industrial societies are still valid.

It is also apparent that the individual manager has two options open to him in solving problems caused by organizational stressors. First, he can try to change the personal context or vulnerability or, second he can try to change the organizational context or vulnerability. In the case cited above, the organizational context was changed. To change organizational context or organizational vulnerability the manager must continually question the assumptions he brings to his job and he must test them against a current reality.

The author would like to express his gratitude to his former colleagues Felix S. Wisniewski and Van Bakshi of the IBM Systems Science Institute, who together with the author consulted with several organizations in their experiments with consensus teams. Thanks are also due to the author's father, James W. Greenwood, Jr., an advisor and a source of encouragement in questioning the cultural assumptions dealing with complex systems and management theory. Thanks are also due to the many people who have helped us conduct consensus team experiments, both in the unnamed organization described in this paper, and in the other organizations with whom we worked.

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CHAPTER 4

A STUDY OF OCCUPATIONAL STRESSORS AND THE INCIDENCE OF DISEASE/RISK

Clinton G. Weiman

The significance of occupational stress in the pathogenesis of disease was investigated in our original report. The study correlated perceived organizational stress (e.g. role ambiguity, conflict, overload and underload) with the incidence of disease/risk of disease (e.g. hypertension, ulcer, heavy smoking) discovered on a routine voluntary periodic health examination, and we found that disease and stress were indeed related. Furthermore, the relation between stressors and disease/risk was curvilinear with disease/risk occurring more frequently in those subjects who perceived themselves to be under-utilized or over-worked. This finding supported Selye's hypothesis of the stimulation continuum shown in Figure 4.1.

During 1975 non-official employees became eligible to participate in the corporate periodic health examination program. The medical staff examined 2,481 staff members during the calendar year 1975. Figure 4.2 illustrates the incidence of disease/risk for this group in the 10 stress score sub-groups. The incidence of disease/risk is again higher in the groups at the extremes of the stress score scale.

Figure 4.3 depicts the disease risk incidence in 2,917 persons examined during 1976. The pattern is again similar except for the low incidence of morbidity in stress score sub-group 3.8 - 4.0.

The data was further analyzed to determine trends in distribution of the stress scores over the years 1974, 1975 and 1976. The tabulation is shown in Figure 4.4. The results include all participants in the program for those years, some of whom entered the program in 1975 and 1976. The tabulation reveals a percentage increase in the lowest stress score group from 3.0 per cent of the group in 1974 to 4.4 per cent of the examinees in 1976. The next three groups reveal a downward trend over the years, while the groups from 2.3 through 4.0 all showed an increase. These changes were subjected to the Chi Square test and were significant at the .001 level. The disease/risk incidence for the three years plotted against the stress score groups is shown on Figure 4.5. This graph shows disease/risk tends to occur with greater frequency at the lowest stress score ranges and as the graph shows an increase in risk morbidity for stress scores 2.3 and upward.

This figure also shows a considerable increase of the total incidence of disease/risk for the years 1975 and 1976 over 1974. Those individuals who were found completely free of risk factors decreased from 77.9 per cent in 1974 to 60.5 per cent in 1976. Patients with one, two, three or more problems are on

the increase. See Figure 4.6. Some of this increase is undoubtedly due to the addition of lower level personnel to the sample, some to the increase in age of the group and some to the increased effect of stressors in the work milieu.

Follow-up observations have been made on the original study group. During 1975, 896 of the original 1,540 voluntarily submitted to a second examination and completed the occupational stress questionnaire. The stress indices for the examinees was again correlated with the incidence of the various stress illnesses and/or risk factors (Figure 4.7).

The mean stress index for the group of 896 examinees in 1974 was 2.20. In 1975 the mean stress index for this group increased to 2.32. When the means were compared with the non-independent t-test, the difference was significant at the .0001 level. This finding strongly suggests that the examinees as a group perceived their work to be more stressful on the second examination.

The 1975 stress scores were divided into ten sub-groups according to the stressor index as seen in Figure 4.6. This figure again illustrates the preponderance of illness risk at the low and higher stress score levels as it did in the original study.

One finding on this bar graph appears contrary to the original hypothesis. The disease/risk incidence in stress score group 2.0 - 2.2 is approximately double the expected. The 160 individuals in this sub-group were analyzed to explain the apparent inconsistency. Thirty-nine individuals had higher stress scores in 1974 and moved into the 2.0 - 2.2 group in 1975 carrying with them 20 disease/risk conditions. Fifty-five stayed in the same group on both examinations and 64 had scores that increased from a lower level to 2.0 - 2.2. They brought 29 instances of disease to the 2.0 - 2.2 group. Although the concept suggests 2.0 - 2.2 is not associated with increased risk of disease, it may be these individuals were previously stressed and brought their diseases with them to the new group.

DISCUSSION

Several organizational factors contributed to increased stress among these employees. During the period of observation the total work force was significantly reduced. Since the major segment of a white-collar operating budget is directly attributable to personnel costs, managers found it necessary to eliminate staff in order to continue increasing profit margins. Therefore, employees who remained with the corporation had to increase their productivity. It is likely they perceived fellow employees departing the organization in large numbers and recognized this as a threat to their own job security which is the most potent source of occupational distress.

Economic factors - recession, unemployment and inflation - were also significant factors affecting the worker's psychological equilibrium during this period. Also the increasing application of modern data processing technology continues to be a major threat to job security.

The employees in this organization who register low stress scores present an

interesting phenomenon. In the questionnaire employed, a respondent with a preponderance of responses of "never" and/or "rarely" may be considered underutilized. Since the current work requirements have placed increased burdens on the staff, it is likely that under-utilization is not the real reason for low scores. It is our impression this segment of the work force are really denying the reality of the situation. They may also be reluctant to report their real feelings to the Medical Department, for fear management may find out they are dissatisfied. Repression itself may be a significant stressor and may account for the increased disease. The sub-group deserves further study.

SUMMARY

The pathogenic effects of psychosocial stressors have again been demonstrated in a white-collar work group. The stressors which produce the pathophysiological response are role ambiguity, role conflict, underload and overstimulation. These factors were significantly increased over the period of the study and our data suggest that there is a concomitant increase in the incidence of disease/risk of disease. The aggravating and intensifying influence of economic and organizational dynamics on the levels of stress and disease is a topic for management attention.

Undoubtedly management of this organization did not seriously consider the implications of our original study. Even if they had, it is unlikely their strategy would have been modified. Although managers may acknowledge that individuals can on occasion "work themselves to death," it is difficult for them to accept this on a broad scale, as this report suggests.

As more evidence on the pathogenic effects of occupational stress is accumulated, it is hoped a more rational approach to the management of personnel will be developed. There is some evidence this organization is becoming aware of the need to accomplish this task. Recently new programs have been introduced that focus on the concept of managing people. These programs are designed to improve communication and human-resource-management skills of managers. The adaptation of Kahn's social support concept is also worthy of consideration to help mollify the pathological effects of occupational stress.

In summary, follow-up observations on a group of white-collar workers indicate the workers' perception of stress is increased at the overload end of the scale as well as the underload extreme. These changes have been associated with an increase in disease/risk. The relationship between stress and disease remains curvilinear. The dynamics of the increase in stress are discussed.

FIGURE 4.I

1974

PERCENTAGE DISTRIBUTION OF STRESS SCORES

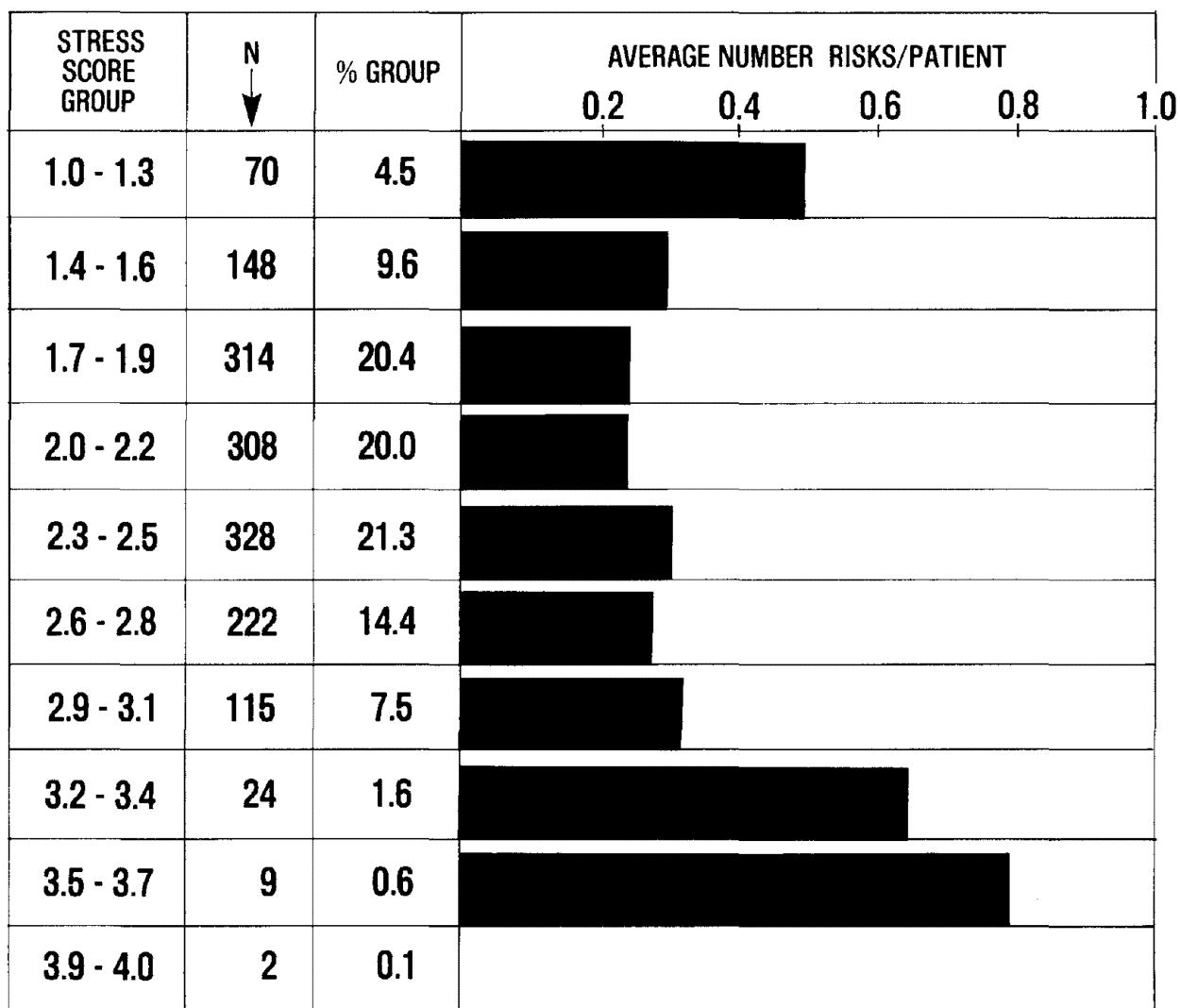


FIGURE 4.2
INCIDENCE OF DISEASE/RISK
FOR STRESS SCORE GROUPS - 1975 ALL EXAMINEES

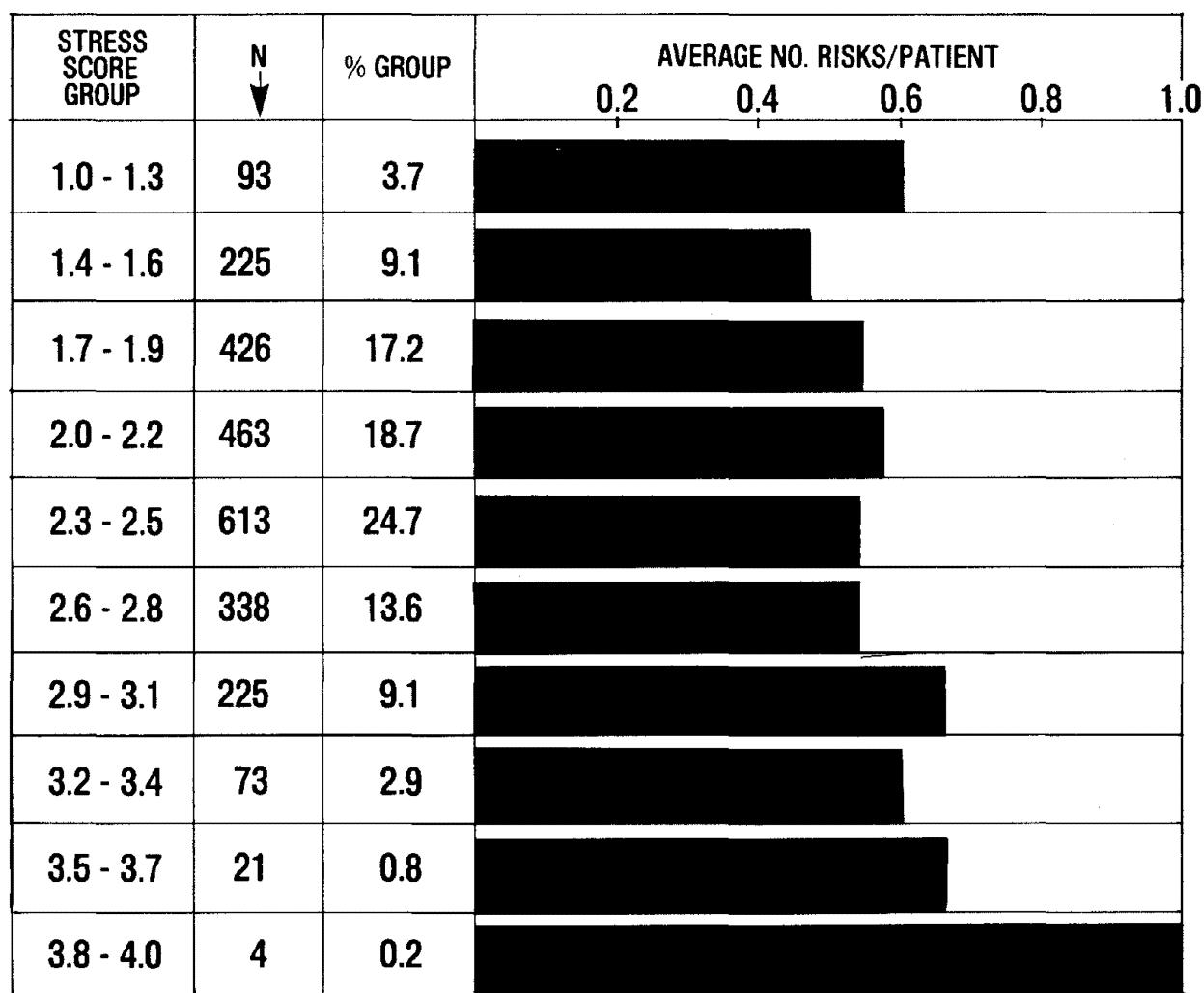
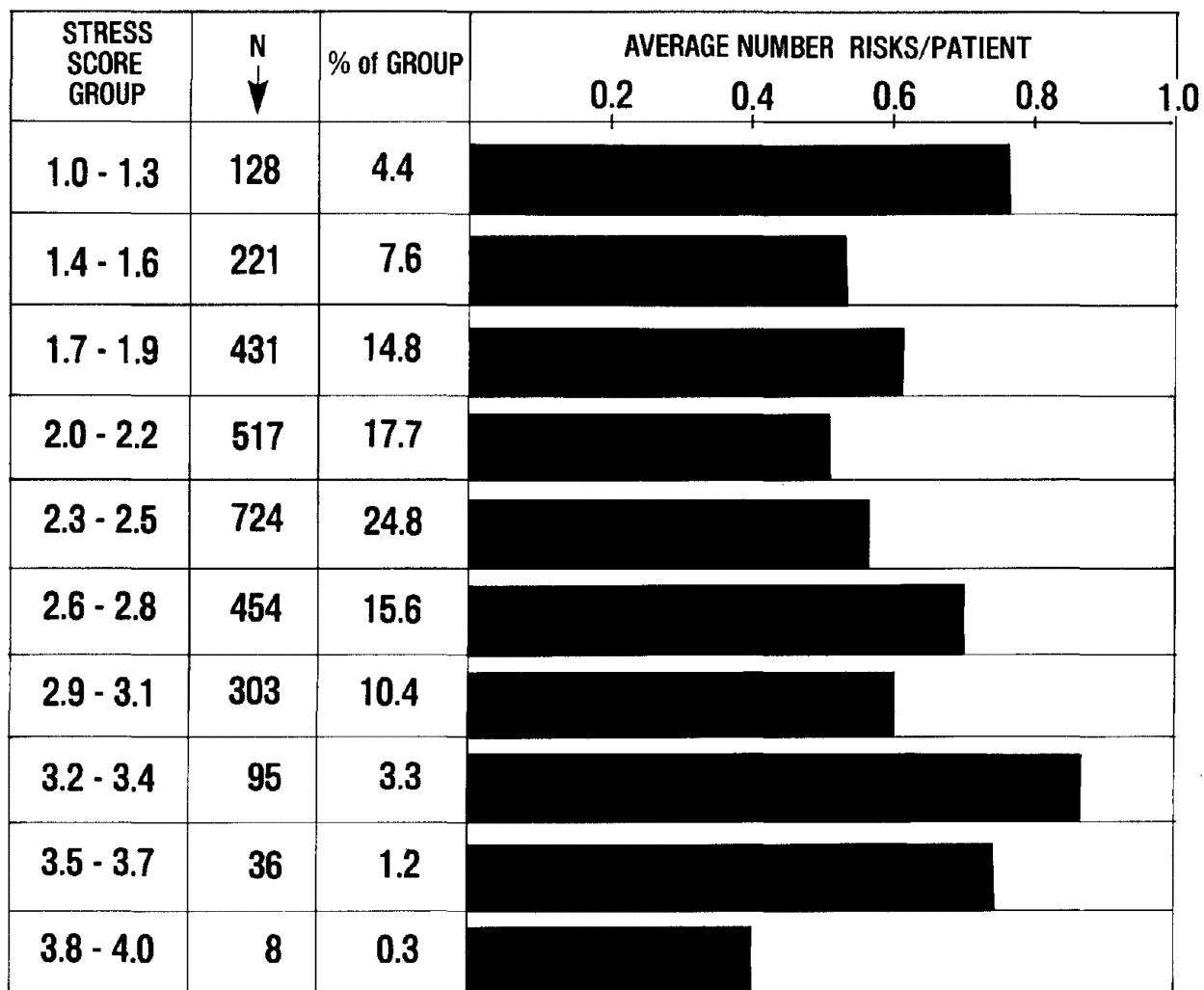


FIGURE 4.3
INCIDENCE OF DISEASE/RISK
FOR STRESS SCORE SUB GROUPS
1976 ALL EXAMINEES



2917

FIGURE 4.4
INCIDENCE OF DISEASE/RISK FOR
STRESSOR SCORE RANGES

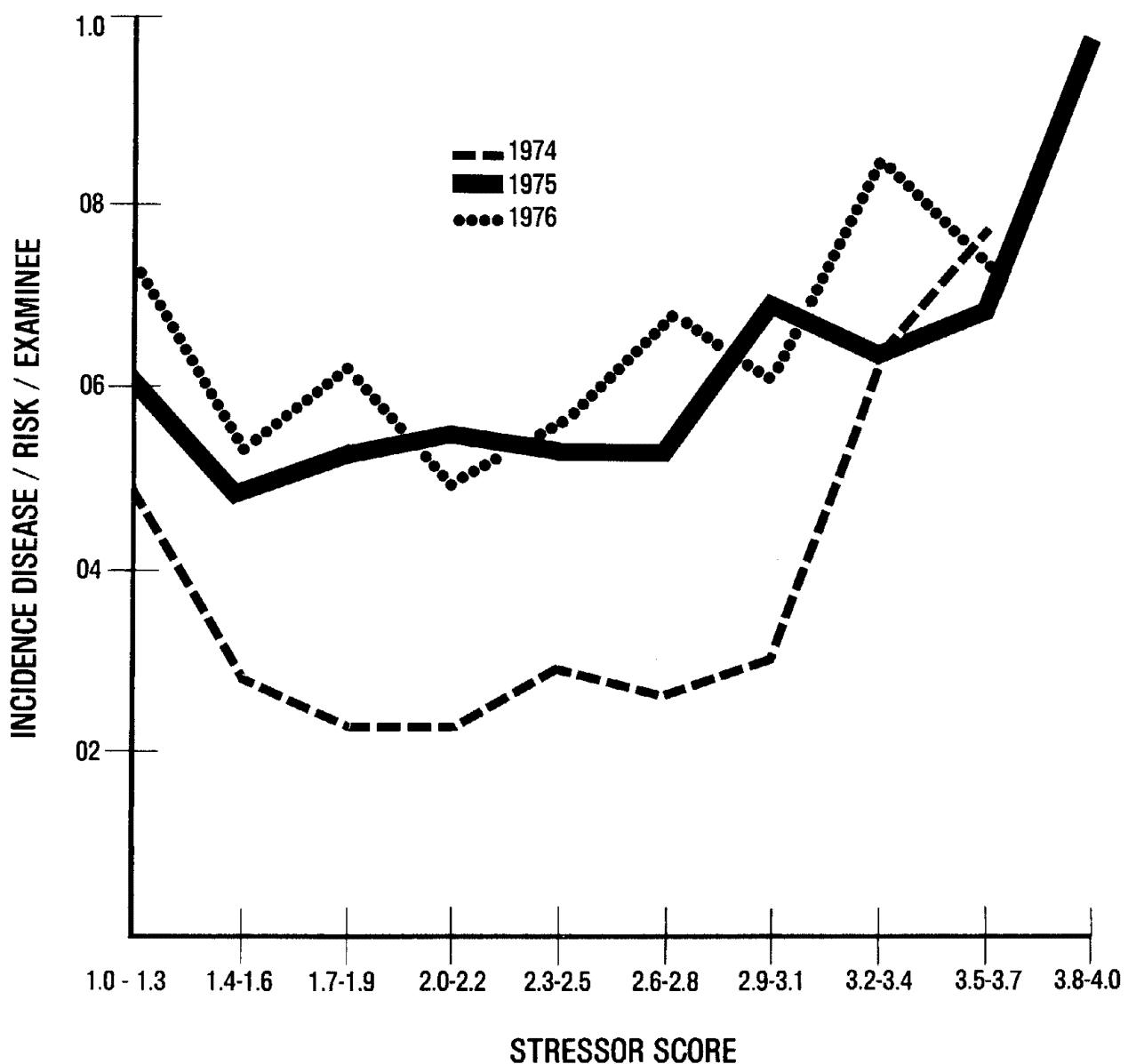


FIGURE 4.5
INCIDENCE OF DISEASE/RISK
FOR STRESS SCORE SUB GROUPS 1976
N=896

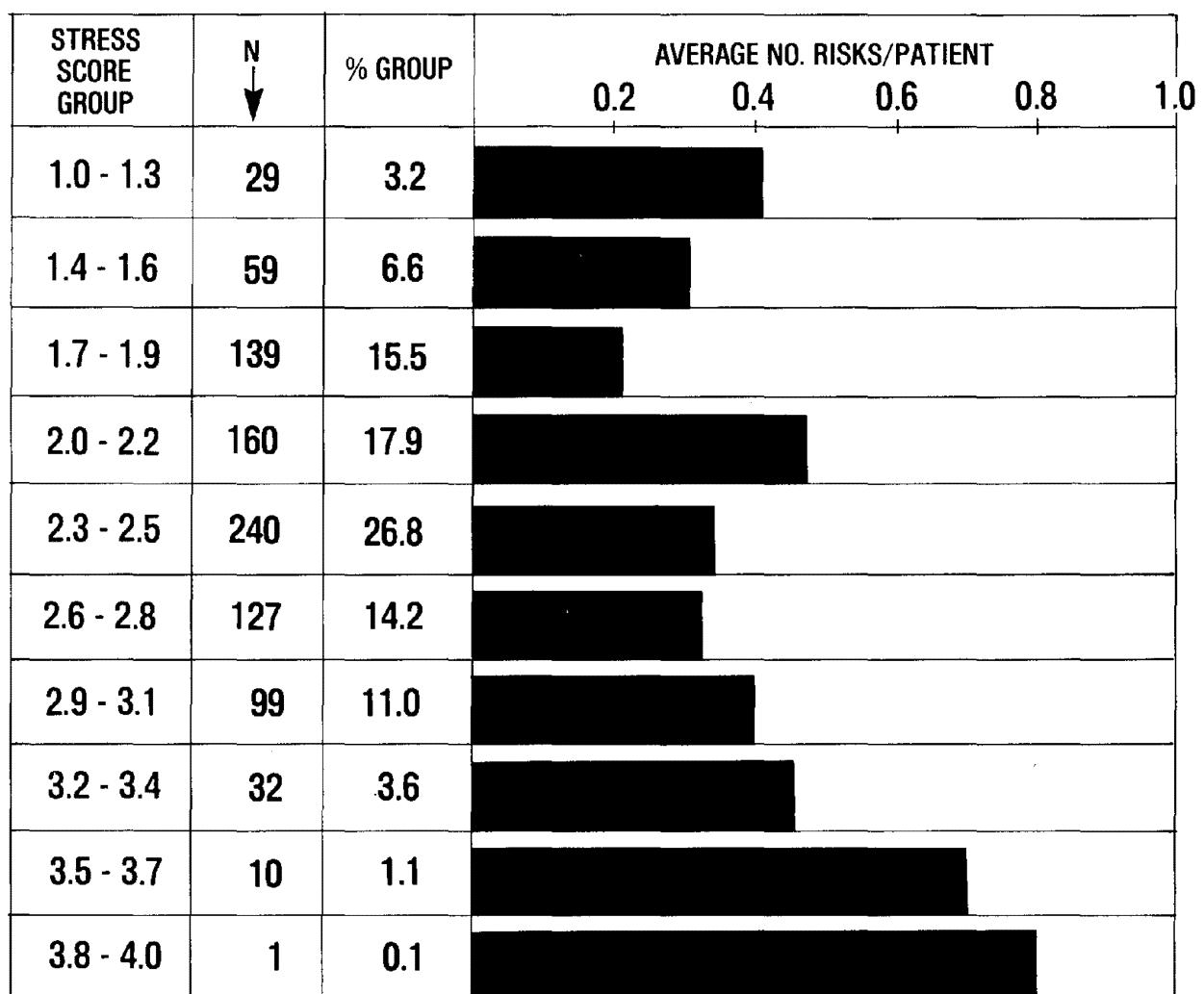


FIGURE 4.6

DISTRIBUTION OF STRESS SCORE GROUPS

	1974 %	1975 %	1976 %	% Variation 1974 vs. 1976
10 - 13	3.0	3.2	4.4	↑ 1.4
14 - 16	9.6	6.6	7.6	↓ 2.0
17 - 19	20.4	15.5	14.8	↓ 5.6
20 - 22	20.0	17.9	17.7	↓ 2.3
23 - 25	21.3	26.8	24.8	↑ 3.5
26 - 28	14.4	14.2	15.6	↑ 1.2
29 - 31	7.5	11.0	10.4	↑ 2.9
32 - 34	1.6	3.6	3.3	↑ 1.7
35 - 37	0.6	1.1	1.2	↑ 0.6
38	0.1	0.1	0.3	↑ 0.2

FIGURE 4.7
INCIDENCE DISEASE/
RISK BY YEAR

PATIENT PROBLEMS	1974	1975	1976
0	77.9	62.3	60.5
1	17.3	23.1	25.4
2+	3.9	14.6	14.1

CHAPTER 5

STRESS FACTORS IN THE WORKING ENVIRONMENTS OF WHITE-COLLAR WORKERS

Ingrid Wahlund and Gunnar Nerell

Research in recent years has improved our knowledge of the importance of stress factors in the working environment and their influence on workers' well-being and health. In the modern view, the concept of the working environment, which was formerly above all concerned with physical aspects, has come to comprise the total environment of the employee. Therefore, a discussion of hazards in the working environment can no longer be confined to the traditional occupational hazards that may be caused by physical, chemical, biological or ergonomic factors or accident risks. As the new concept of the working environment gains ground in practice, efforts will also have to be made to evaluate the psychological and social potentialities of the workplace and to chart the risks arising out of the shortcomings of the psychosocial environment. Physical factors in the environment have long been known to be capable of injuring the health and well-being of employees, and preventive measures have, therefore, focused above all on traditional occupational hazards.

Today a discussion of the importance of the psychosocial functions in the working environment can be based on a fairly comprehensive body of research. It is perfectly clear that psychosocial factors can affect satisfaction and well-being in the work situation, and connections with mental and physical functional disturbances have also been established. The role of the psychosocial factors in the origin of direct organic injuries, analogous to the role of physical factors, has not yet been fully proved. But the modern view of the working environment as a total environment embracing physical and psychosocial factors - a view founded on the knowledge we possess today - should occasion preventive measures, not only for the prevention of injury and disease but also to achieve a positive work experience and job satisfaction. This view implies that both physical and psychosocial factors in the working environment should be explored and analyzed in connection with evaluation measures and preventive programs.

In its definition of health, adopted in 1946, the World Health Organization (WHO) speaks of health as a state of bodily, mental and social well-being. With this in mind, the principal aim of measures for the improvement of the working environment should be the promotion of health in the broad sense. Although working life is aimed at the production of goods and services and at giving workers an income, these matters should not be ends in themselves but rather means whereby as many people as possible can achieve health, well-being and a quality of life, these latter conditions are to be regarded as the overriding objectives of working life.

The importance of the above thoughts concerning the psychosocial environment has been brought out in recent years in a large number of national and international contexts. Both the International Labor Organization (ILO) and the WHO have initiated action programs in the sphere of psychosocial factors and health.

At the national level, these new tendencies in the working environment sector have acquired various manifestations. In the Scandinavian countries, working environment legislation is being drafted which includes physical, psychological and social factors in its definition of the working environment. The greatest progress in this sector has been made by Norway, but the same approach can be seen in the new Work Environment Bill that has been drafted in Sweden. The report of the Swedish Commission on the Working Environment, which contains the draft text of the next legislation, also includes an appendix in which a number of prominent experts on psychosocial conditions in the working environment have described relevant factors and their practical significance in the legislative context.

An Industrial Injuries Insurance Act recently passed in Sweden opens up possibilities of compensation for completely new types of injury besides those previously incorporated in the concept of industrial injuries. Among other things, compensation is now payable for mental or psychosomatic injuries at work. The rules of evidence concerning mental and psychosomatic diseases, however, are stricter than those applying to the harmful effects due to physical factors in the environment and occasioning compensation.

Further manifestations of the broader concept of the working environment can be found in the collective agreements recently concluded in the Swedish labor market. Working environment agreements were concluded both in the private and in the public sector in 1976. These agreements govern working environment activities at individual work places, the tasks of the safety committee and the safety delegates and the organization of industrial health services. The agreements emphasize that both physical and psychosocial factors in the environment are to be included in the scope of safety organization and industrial health services. In the public sector, a decision has been taken to include in the organization of employee health services a social function of personnel welfare which, parallel to medical and technical activities, will above all be concerned with charting and evaluating psychosocial factors in the environment.

It is understandable that the widening concept of the working environment and the consequences, thereof, should have increased the commitment of salaried employees and their associations in matters concerning the working environment. It is of course important to emphasize that psychosocial factors do not exclusively concern salaried employees, but can affect all employee categories. Relatively speaking, though, the psychosocial factors in the environment weigh heavier in the salaried sector, and this is probably the reason salaried employees have taken such a vigorous line on the subject. Recent years have witnessed a transformation of the working conditions and working environment of large groups of salaried employees, often quite a drastic transformation. Organizational changes, administrative rationalization, the introduction of computer systems, and automatic routines have brought changes in work content,

in relations at work and in the allocation of roles between different groups of employees.

Already in the 1920s industrial psychologists were criticizing the philosophy underlying assembly-line production and "scientific management." They were convinced that this type of industrial production had negative effects on people's well-being and health. Scientists have tended to discuss industrial developments in terms of three levels of mechanization, ranging from a low level of mechanization, craftsman production, to automatic and remote-controlled processes. At an intermediate level between these two extremes we have the theories of scientific management, rigidly segregated, short-cycle jobs, usually conducted on some sort of piece-work basis.

More often than not, technical rationalization today involves the transfer of monotonous jobs to machines and the appointment of workers as machine supervisors and specialists instead. Research has shown that job satisfaction in various types of production tends on the whole to describe a U-shaped curve, i.e., it is high in craftsmanship production, low in monotonous assembly line jobs, and tends to rise again in jobs involving machine supervision or process control.

Researchers who have thus investigated the effects of technical progress on job satisfaction have studied mainly manual workers. The salaried sector has no clear counterpart to mechanization, although organizationally speaking one can identify a corresponding pattern of development in this sector too. At the lowest level of mechanization, the craftsmanship stage, salaried employees are relatively few in number and have such duties as bookkeeping, supervision and sales. At a medium level of mechanization, line/staff organizations emerge, bringing with them specialist functions employing salaried staff, e.g., personnel department, finance department, production department, and sales department.

During this period there is a steep rise in the number of salaried employees, but the number declines at the third and highest level of mechanization, at the same time as the demand for specialist qualifications increases. New routines, especially those based on computerization, can render traditional knowledge worthless and create widespread redundancy among elderly salaried employees. There is an increase both in the need for adaptability and the risk of unemployment. Where other groups of salaried employees are concerned, the new organization means a fragmentation and thinning out of duties in a process reminiscent of a medium high level of mechanization in manufacturing industry.

Thus, paradoxically, modern organizations can both generate a need for growing numbers of specialists and increase the number of humdrum, machine-controlled routine tasks. These tendencies may be presumed to create various kinds of psychosocial problems in the working environment of the salaried employee. Structural changes and rationalization processes are a threat to job security. Organizational changes and technical rationalization lead to frequent changes in working conditions, style management, and work organization. These changes can cause the skill acquired within a narrow subject sector to become completely obsolete.

Promotion prospects are often regarded as a benefit in the salaried sector. On the other hand these prospects demand, by definition, efforts to achieve promotion, and failure in this respect can be disastrous to the self esteem of the individual. Our society is dominated by the competitive ethos. Social pressure compels young salaried employees to work overtime as a matter of routine in order to become eligible for promotion. It forces good teachers to look for administrative positions, it forces able engineers to try to become managers. As a rule, there is no chance of stopping or of climbing down one step. Instead, one is forced to go the whole way.

Career systems can lead to social isolation, because one does not readily discuss personal problems with competitors one's own age, with managers who are to choose new managers or even with subordinates, in relation to whom one has a position of authority to maintain. This underlines the fact that relationships at a workplace are for the most part a reflection of the scheme of work organization applying there. A problematic psychosocial environment causes problems in human relations.

The salaried sector provides many examples of role conflicts or buffer roles, an intermediate position at work between groups which are liable to have contradictory interests. The work situation of the foreman is a classic instance of role conflict. Most foremen are recruited from the shop floor and appointed to direct their former mates. The foreman has to match up to the employer's demand for efficient production and the workers' expectation of fair and humane supervision. Many surveys have identified the role of the foreman as a situation of psychosocial risk.

In the medical sector, the work situation of the nurse often implies competition between conflicting interests. The employer organizes the ward, work schedules and personnel pool, the patient expects continuity of care and human contact. The actual business of medical work is fragmented by a host of paperwork routines, as a result of which the nurse barely recognizes the profession she has been trained for. At the same time her situation as a foreman involves problems because she is often forced to delegate responsibilities to personnel who are not trained for their tasks.

Policemen, too, occupy an awkward intermediate position in modern society. They carry out the decisions of a democratic community but are often accused of going by undemocratic principles of their own. They are exposed to menaces, danger, and insults, all of which are often directed at their families as well as themselves. Both the nursing profession and the police are characterized by a high standard of loyalty to their employers and to third parties, and this results in frequently recurring overtime and inconvenient shift work. Sweden is seriously discussing the introduction of three shifts in the nursing sector.

The work situation of teachers is also characterized to a great extent by a conflict of roles. Teachers have to strike a balance between the demands of their pupils, the expectations of parents, and the varying curricula introduced by school authorities. In addition to this balancing trick, the teacher is expected to cope with a classroom situation which can often be very pressing.

The above arguments are illustrated by the report of a survey carried out in 1971 by the City of Stockholm Personnel Committee concerning working conditions and health. Company doctors pointed to the following factors as particularly important causes of stress in the work situation:

- excessively wide-ranging duties
- excessively qualified duties
- insufficiently qualified duties
- teamwork, for elderly persons who are unable to match the working pace of younger colleagues or do not share their values
- concern for the future in connection with reorganization processes
- contact with the general public in controversial social questions, in social welfare or in nursing
- heavy demands for co-operation with superiors and subordinates.

I have no intention here of giving a detailed account of the comprehensive research which has been devoted to problems of stress in working life, but I would like to emphasize that a number of research programs have played a very important part in the planning of TCO's survey of the working environment in the salaried sector. Investigations carried out at the Institute of Social Research of the University of Michigan by French, Kahn, Kaplan and their co-workers, among others, and also by Kasl, Cobb and their associates, are immensely interesting because they raise and test hypotheses directly applicable to the working environment. The Swedish research projects led by Assistant Professor Bertil Gardell at the Institute for Psychology at Stockholm University and by Assistant Professor Lennart Levi at the Stress Research Laboratory of the Karolinska Institute in Stockholm are also highly interesting, focusing as they do on practical changes to the working environment.

Thus, the TCO survey of work environment conditions of salaried employees may be said to have been based on experience and on a solid foundation of research. The survey was conducted in 1975 and 1976 and was partly financed by research grants from the Workers' Protection Fund. It was carried out by Dr. Ingrid Wahlund of the Institute for Psychology of the University of Stockholm and TCO, together with Dr. Gunnar Nerell, a TCO medical expert. Work in connection with the survey is being led by a steering group of trade union representatives and scientists, the latter including Assistant Professor Bertil Gardell, Assistant Professor Lennart Levi, and Dr. Ricardo Edström.

The main points of inquiry are as follows:

- To what extent do different salaried groups experience satisfaction and involvement in their work? Which factors contribute to this?
- To what extent is work experienced as physically strenuous? Which factors contribute towards this?

- What connections are there between working conditions, work experience and various medical complaints and absenteeism?

The theoretical structure of the survey is based on previously formulated hypotheses, particularly the research program carried out by the French-Kahn group. The aim of the survey is to chart the influence of different conditions in the objective working environment, e.g., occupation, pay, type of work, employer, type of workplace and size of workplace, on work experience, i.e., the subjective working environment.

An investigation is also made of reactions to objective and subjective working environments. These reactions may be psychological, behavioral or medical, e.g., an experience of physical strain at work, unease or distaste at the thought of going to work, absenteeism, psychosomatic symptoms, and suchlike. The final stage of the research strategy involves an analysis of connections between reactions to the work environment and more long-term changes in the employee's state of health. Both individual-based factors and social background conditions are being used as interacting variables.

The survey has been carried out in the form of a postal questionnaire comprising about 100 questions which has been sent to a random sample of every seventieth registered member of the various TCO associations. The size of the sample, about 12,000 persons, has been justified by the wide range of occupations and working conditions covered by the survey. The response frequency is 87%, which is very satisfactory for a survey of this kind. During the statistical analyses, the respondents have been studied with reference to pay, age, and association membership.

To facilitate a further comparison of the working conditions of different occupational groups, the respondents have also been divided into 17 job groups, as described in the report. In order to find out what influences stress among salaried employees, one has to start by finding out whether they experience mental stress at work. Our survey showed that roughly one-third experienced work as very often or quite often mentally strenuous, while a quarter replied that they seldom or never found their work a strain. Experienced mental strain is common among teachers, policemen and journalists (60, 49, and 48% of respondents respectively).

To arrive at a picture of the distinctive features of work involving mental strain, the two groups with high and low mental stress respectively have been compared in different respects.

Confinement to work, i.e., difficulties in getting away from one's job for a short while or in taking half a day or a whole day off at short notice, proved to be connected with experienced mental strain. Almost three times as many people in the "frequent stress" group as in the other group are unable to leave their duties for five or ten minutes. Twice as many of those experiencing their work as mentally strenuous feel that they are unable to leave their place of work for half an hour to an hour or take a day or so off at short notice.

The possibilities of making one's own decisions about the planning and conduct

of work play a very important part in work experience. The number of persons feeling that they are too closely controlled in their everyday work is twice as large in the mentally strenuous group as in the other group. The differences between these two groups are still more pronounced concerning questions as to whether work is excessively controlled by customers, patients, pupils, superiors, or authorities. Thus, six times as many among those who often feel mental strain at work consider their work to be overly controlled by these conditions.

Respondents finding these conditions particularly troublesome are to be found among members of the armed forces, policemen, teachers, and nursing staff.

There are also salaried groups who find their work excessively controlled by conditions other than those mentioned above - for example, by instructions from superiors, demands for adjustment to co-workers and excessive control of work by computerized routines. These types of control, unlike the factors mentioned earlier, are closely connected with the experience of work as monotonous and as affording little scope for individual initiatives and decisions.

Great responsibility at work, opportunities of exerting influence and decision-making are often considered to be prerequisites of good job satisfaction. But these intrinsically positive factors can also contribute towards mental strain at work. Presumably, this happens when demands for decision-making and responsibility exceed the optimum level for the individual (overstimulus, overutilization).

This is above all experienced by handling officers, administrative personnel, ("decision-makers"), foremen, nursing staff, members of the armed forces, policemen, teachers, and journalists. Large groups of salaried employees are responsible for ensuring that certain duties are performed, regardless of time input, indisposition, or illness. When the employee is absent from work, there is nobody else who can do his job, so that eventually he returns to a pile of work on his desk. Even if it comes as a positive experience to many people to feel that they are indispensable, this too can constitute a stress factor, and it may be the reason why many employees, to use the term which Lennart Levi has coined for this phenomenon, are "delusively healthy."

The classical epitome of stress is the company president tearing from one meeting to another, puffing at big cigars, and answering several phones at once. We have learned that stress diseases are by no means the prerogative of senior management, and that they are not even commonest at this level. On the other hand factors such as shortage of time for the completion of duties and a large volume of tasks at work are universal stress factors. Often, too, people state that the department is understaffed in relation to its duties and that this is a cause of mental strain at work. Comparing the above mentioned high mental stress and low mental stress groups, one finds that seven times as many in the former group answer that they are often short of time in which to complete their duties; administrative handling staff, teachers, engineers, and policemen bulk large in this group.

If an attempt is made to arrange in rank order the factors the respondents feel are the main causes of mental strain at work, heavy responsibility and

and the need for close concentration are among those occurring most frequently. These are followed by shortage of time, excessive work load, and the demands and expectations of outsiders, e.g., customers, patients, pupils and the general public.

Many scientists would say that opportunities of experiencing work as meaningful and conducive to development are important prerequisites of job satisfaction. Above all, industrial psychologists have warned of the effects which industrial work has proved capable of producing in the form of sensations of monotony, futility, and alienation from work. This type of attitude to work, alternatively known as alienation or an instrumental attitude, implies that the worker abandons his hopes of deriving satisfaction from his work and, instead, sees in it nothing more than a means of satisfying his needs as a consumer, as a way of making a living. Researchers such as Blauner, Kornhauser, and Gardell have shown that this attitude towards work leads to a devaluation of work as a source of satisfaction and also to such reactions as resignation, absenteeism, loss of self-esteem and social spin-off effects, i.e. less rewarding leisure, and a lower level of political and cultural activity. Previous views to the effect that people with tedious jobs were compensated by the use they made of their leisure have proved to be mistaken.

Experience in this sector mainly refers to industrial workers. It is therefore, interesting to note that the present survey of salaried employees shows that no mean proportion of the respondents have an instrumental attitude towards their work. Twenty-seven percent declared that earnings were the main objective while 73% experienced job satisfaction. The instrumental attitude is commonest among junior salaried employees, administrative and technical personnel, and customs and police officers, while a larger proportion of people among administrative handling personnel, nursing staff, teachers, and journalists feel that their work affords them personal satisfaction. Those stating that they derive personal satisfaction from their work also feel that work content has an essential bearing on job satisfaction. In this group, the factors felt to contribute most towards job satisfaction are the ability to decide for oneself how work is to be done, the opportunity for a variety of work and for responsibility at work, work which involves doing things a person enjoys doing, and work which involves contact with people. Those regarding work primarily as a means of making a living feel that the important factors influencing satisfaction are helpful colleagues, the possibility of deciding for oneself how work is to be done, good working hours, job security, and a fairminded boss - in other words, factors which are connected with their surroundings, rather than with their duties as such.

Three types of patterns of reaction to mental strain at work have been mentioned; namely psychological, behavioral, and medical.

Psychological reactions are clearly connected with perceived mental strain. Twelve per cent of respondents in the high strain groups state that they often feel uneasy or reluctant about going to work, as against 1% in the low strain group. Forty-eight percent of respondents in the high strain group state that they are too tired after work to engage in anything active, such as hobbies or meeting friends and acquaintances, as against 11% in the low strain group. Forty-six per cent of respondents in the high strain group find it

hard to get their minds off their work during their leisure hours, as against 8% in the low strain group.

Behavioral reaction patterns are also found to be connected with mental strain. Of the people who often experience mental strain, 43% have seriously considered changing jobs as against 24% in the group of respondents seldom or never experiencing mental strain at work. The group often experiencing mental strain at work, moreover, takes more drugs - above all more sedatives and tranquilizers - and smokes more than the group experiencing little mental strain. There is no great difference between the two groups where sickness absence is concerned. The main difference concerns absenteeism said to be due to weariness or tiredness in connection with work; the high strain group reports three times as much absenteeism on this score as the low strain group.

Thus, although mental strain as such does not appear to produce greater absenteeism, one finds that there is a close connection between psychological reactions and absenteeism. For example, those very often feeling uneasy or reluctant about going to work are absent far more than those who do not display this attitude.

A far greater difference emerges if one compares those experiencing their work as satisfying with those who display an instrumental attitude. Those experiencing satisfaction in their work have a lower rate of absenteeism in terms both of the number of spells of absence and total duration of absence than those who are absent because of distaste or reluctance.

Concerning medical reactions to the working environment, one finds that those who often experience mental strain at work tend far more often than those who do not experience such strain to suffer from nervous complaints and back trouble. The differences are greatest with regard to nervous complaints, roughly four times as many people in the high strain group having definite complaints (15 and 4% for the two groups respectively). Those displaying an instrumental attitude to their work suffer from medical complaints to a greater extent than those who derive personal satisfaction from their work; they have twice the amount of gastric trouble, back trouble, and nervous complaints.

I have already mentioned distaste or reluctance and uneasiness about work, as well as, difficulties in getting one's mind off the job during leisure hours as being psychological reactions to mental strain at work. Persons reporting these psychological reactions, compared with those not reporting them, have a much higher frequency of medical complaints, above all in the form of gastric and nervous trouble. This suggests that psychological and psychosomatic reactions occur to a great extent simultaneously. One is bound to wonder whether persistent troubles of this kind give rise to manifest states of illness, mental illness, high blood pressure, cardiac infarctions, or peptic ulcers.

A high frequency of nervous complaints occurs in 11% of respondents. The corresponding figure among those experiencing their work as mentally strenuous is 19%, while among those not experiencing their work in these terms it is 5%. In the "perceived mental strain" group one finds an even higher frequency of nervous complaints among those feeling that their work is excessively controlled (24%), excessively tied to computer routines (29%) or excessively

dominated by adjustment to a colleague's style and pace of work (30%). The same goes for respondents who find their work excessively monotonous (43%) or insufficiently qualified (44%) and those who feel that they have little opportunity of deciding for themselves how their work is to be done (39%). About 35% of respondents experiencing mental strain and uncertainty concerning the way in which work is to be done, unclear working instructions, and a conflict of roles suffer from nervous complaints.

The results suggest that monotonous and rigidly controlled jobs and jobs involving uncertainty and conflict lead to nervous complaints. The frequency of nervous complaints among these groups is greater than in the group with a general experience of mental strain and greater than for respondents as a whole. Perhaps these findings can be taken to imply that mental strain gives rise to medical reactions and sickness absence if the duties experienced as mentally strenuous do not afford scope for personal initiatives, the regulation of one's own style and pace of work and the personal assumption of responsibility.

Other results pointing in the same direction are those obtained from a comparison of the absenteeism figures of respondents feeling that they are definitely able to influence decisions concerning their work, and respondents who definitely have no such opportunity. Those who are unable to influence decisions heavily predominate, as regards both the number of spells of absence and total absence, and also as regards absence due to weariness or tiredness connected with their work. Similar differences exist between those who never experience responsibility at work and those who very often experience a great deal of responsibility at work. Underlying these results there is probably a combination of mental strain and intellectual understimulus.

The survey findings suggest that the hypotheses formulated in the survey model are essentially correct. Conditions in the objective work environment, in the organization of work and in job content influence the individual person's experience of his work and generate psychological and behavioral reactions as well as, medical complaints. The psychosocial working environment has repercussions on the employees' well-being and health. It is, however, important to remember that a cross-sectional survey, however well conducted, yields primarily statistical relationships. A single survey does not justify the inference that the statistical relationships are also causal connections.

Previous research, however, has furnished evidence to suggest that the type of connection described here is actually a causal relationship. Studies of this kind have been carried out by the research groups led by Lennart Levi and Bertil Gardell and have entailed longitudinal investigations of risk groups with comparable reference groups. There is good reason, therefore, to suppose that the connections found in this survey are real. This should be verified, however, and a follow-up survey is therefore planned. The follow-up will be based primarily on available statistics, and the following sources are conceivable:

1. Statistics from the National Social Insurance Board concerning sickness absence, diagnoses, and hospitalizations.
2. Medical statistics based on data from the National Social Insurance Board.

3. The register of causes of death maintained by the Central Bureau of Statistics.

Thus, the purpose of the follow-up survey will be to try to establish whether the connections found in the cross-sectional survey can stand up to a longitudinal investigation.

Discussion of following up the survey should not prevent the survey findings from being used here and now. The survey verifies the views which TCO has propounded concerning the importance of the psychosocial working environment as a field for preventive measures. Collective agreements and legislation are slowly changing in this direction, and it is therefore important for the survey findings to be transmitted to local level, to individual workplaces. Interest in these measures has also been stimulated by the survey. For example, discussion groups have been organized and information material compiled. Study material is planned with the aim of providing safety delegates with properly composed training, and this, finally, must be the principal aim of the survey - namely, to transmit knowledge concerning the effects of the psychosocial environment to the local safety organizations so as to provide those organizations with a solid foundation for concrete improvements to the working environment.

CHAPTER 6

BLUE-COLLAR STRESSORS WORKPLACE STRESS, REFORMS, AND PROSPECTS

Arthur B. Shostak

Stress in the worklives of America's 35 million workers appears to have three major sources: anxiety over joblessness (actual or threatened); anxiety over workplace accidents or work-linked illnesses (present-day or prospective); and anxiety over workrole insults to one's adulthood (real or imagined). Linked together here are a time-honored stressor (job insecurity), a relatively new concern (job safety and health protection as a right), and a third topic so slippery and modish (job-linked self-esteem) as to cause psychological stress in the mere effort to pin it down, much less to address it constructively.

To be sure, there is much discontent over levels of job benefits, opportunities for advancement, and rivalries among types of workers (by age, skill, level, race, sex, religion, nationality, and style of life). As important as these items are, they fall in place behind the "unholy three" in significance: the fear of being forced on the dole, or being disabled or killed at work, or being denied the prerogatives of adulthood as a worker.

Taken together, these three stressors sorely tax blue-collarites here and abroad, and set us all a remedial reform task likely to confound us for many decades ahead. While progress in reform strikes advocates as considerable, and includes the likes of new campaign issues (flexitime arrangements), old campaign issues (lifetime work guarantees), and fresh legislative aids (OSHA), resistance remains dominant. Indeed, the prospects appear small for significant stress reduction in the foreseeable future. How and why this is so in the case of job-loss fears, safety and health fears, and self-esteem misgivings is explored in some depth hereafter.

JOB INSECURITIES

Despite the fact that more Americans are at work in the largest labor force in the nation's history, the number one source of blue-collar stress remains deepest anxiety over possible loss of gainful employ. With nearly 6,600,000 presently unemployed, the situation is sorely tried by a combination of unique developments:

The late 1950s were the famous baby boom years that now flood the labor force with over 2,750,000 new job-seekers annually--a record number!

Women, as well, seek jobs at an unprecedented rate, and are now 45% of the labor force, up from 33% in 1960.

Accordingly, we will need an increase of 3,750,000 new jobs to bring our unemployment rate down to 6.5%.¹ In 1976, we barely reached a 3 million job increase; and in the past 30 years, our economy has never generated more than 2,700,000 jobs in a year.²

Indeed, just to stand still and keep our³ unemployment rate from rising, we must create 1,800,000 new jobs annually.

Where blue-collarites are specifically concerned, the picture is even more trying. The "poor areas" for employment in the 1980s are expected in blue-collar and farming occupations, a trend that "will reflect the expanding use of labor-saving equipment."⁴ The changing shape of the labor force is expected to reduce the blue-collar proportion from 35 to 32% between 1974 and 1985: while white-collar ranks will grow by 28%, blue-collar ranks will expand only by 13% (total employment, in contrast, is expected to go up by 20%).⁵

To the above must be added a new trend which has American jobs being exported permanently abroad:

Unions in the textile and apparel industry, the nation's largest employer of factory workers (2.3 million), claim that "more than 144,000 of our jobs have been washed away in a flood of imports. In the last year alone, the tide rose by an added 34%. At the present rate, thousands of us are losing our jobs every month."⁶ Unemployment here reaches 20%, the worst industry record outside of auto production.⁷ Unless the situation is sharply changed, 1,000,000 jobs may be lost in the next decade.⁸

Similarly, unionists contend that the shoe industry has lost 70,000 jobs to imports in the last 10 years; the electronic assembly and basic steel industries, each 100,000 jobs; and many thousands more in novelties, wood products, plastics, leather, fur, bikes, cameras,⁹ glassware, rubber goods, dolls, toys, metal fabrication, and specialty steel.

As well, of course, the American worker loses out on the job growth that ordinarily accompanies an increase in domestic demand for products:

"If in textiles and apparel alone, for instance, domestic production had held on to its share of the enlarged market, there would be some 300,000 more Americans at work in these trades alone. Imports leave some two million idle."¹⁰

Social class warfare, never far below the surface of American realities, is sharply apparent in this controversy over the export of jobs and the import of cheap goods: typical is this sarcastic tribute from Lane Kirland, second-in-charge of the AFL-CIO:

"(We confront) the emerging principle of consumer sovereignty as it affects trade issues--that it, the proposition that the consumer has an inalienable, top-priority right to \$4 Korean shoes, regardless of the conditions under which they are made; the human, social, and economic cost of lost American jobs, and of who really gets the \$4.....

This principle is mostly expounded by those who get their shoes at Gucci."¹¹

Not surprisingly, therefore, certain major labor unions that once favored liberal trade arrangements have totally reversed their position.

Unions are now insisting on tough quotas and high tariffs to slow the "export" of American jobs and technology by global corporations. Uneasy in their roles as protectionists, the unions insist that any related price increases are preferable to the rising welfare costs of increasing thousands of newly-unemployed workers.

Another major source of job insecurity stress concerns one of the fastest-growing segments of the American labor force: the part-time segment. Today, the ratio is one for every 5½ full-timers; 10 years ago, one for 8; 15 years ago, one for 10. Part-timers constitute a low-paid, easy-to-fire, non-promotable, hard-to-unionize, and grateful bloc, an "eager work force, which delights employers."¹²

Unions find this employer favoritism especially stress-provoking:

"'With the flood of part-timers, trying to do something for the full-timers is tough,' said Walter Davis, special assistant to the president of the Retail Clerks International. About 55% of this union's 700,000 members are considered part-time workers."

". . . An economist at the AFL-CIO says employers may hire part-timers 'to avoid fringes such as pensions and health care.'"¹³

With little invested in the job, many part-timers (teenagers, oldsters, women workers) are poor investments for unionization: when finally unionized, they are commonly urged to move into the ranks of full-timers. Overall, the increasingly tense situation here finds competition growing ever more bitter between two sub-classes of workers (and job seekers): those with real benefits and guarantees, and those who voluntarily pass them up.

A third major source of job insecurity stress focuses on one particular type of part-timer, and another major cleavage in the ranks of American workers--or, the growing rift between pre-retirement oldsters and all others. Some 4,000 workers reach 65 years of age daily, and most are compelled to retire from employment at that time--although a 1974 Harris Poll found that 86% of those 65 years of age and older would prefer optional retirement.¹⁴ When the growth rate in new jobs appears inadequate to meet new demand, the pressure intensifies to force oldsters up and out, to see to it that what work there is gets shared among younger claimants.

Many involved in this social arrangement concede its unfairness to able-bodied senior citizens, and many dread their own turn in this arbitrary dismissal process. Until retirement plan benefits are raised well above the poverty line (where current social security allotments presently lie), and clearcut sets of job-related tests permit indefinite extensions of one's worklife after 65, the entire pre-retirement situation will remain a taxing mess--effectively

putting all sides in a stress-filled adversary relationship with one another.

If the job insecurities of American workers are soon to become less stress-provoking, two conventional reforms appear relevant:

Unions are steadily making gains in the campaign to win "lifetime security" through collective-bargaining negotiations. Longshoremen, printers, steelworkers, and aluminum company employees are pioneering in the effort to secure a guaranteed "job for life with a decent, respectable income for life."¹⁵

The proponents of the stillborn Humphrey-Hawkins Full Employment Act hope to earn its Congressional enactment in 1978.

Skeptics are quick to point out, however, that the unions represent only 25% of the labor force, and that their gains can still leave out the vast majority of workers unprotected. Similarly, the proposed Humphrey-Hawkins bill does not mandate any specific action for the securement of full employment. An extremely mild and watered-down bill, it merely describes a way the parties can move toward such a goal. More demanding reforms that merit discussion include these four:

- Federal job guarantees for all workers displaced because of defense cuts, environmental protection, or American measures designed to facilitate the industrialization of the Third World.
- A vast increase in public-service employment in the federal, state, municipal, and non-profit sectors--with an ensuing reduction of joblessness by 2,000,000.
- Federal programs of effective anti-inflation controls over prices in the concentrated sectors of the economy.
- Work-sharing plans, such as conversion to a 4 day workweek--with no loss in compensation--along with longer paid vacations and sabbatical vacations (such as 12 weeks after 5 years).

These ideas, and related others (such as Western European and Japanese gains in job security), find increasing currency in blue-collar ranks: interest grows in soon insuring an acceptable standard of living for all workers, throughout their lives, regardless of fluctuations in the national economy, their industry, their company, or their own jobs.

Overall, then, blue-collarites remain acutely aware that in 1976, unemployment averaged 7.8%, higher than in any year since the end of the 1930s.¹⁶ When one adds to this the record numbers of new job-seekers, the record number of jobs "exported" and lost, the shift to part-timers, the pain of forced retirement, and a record high total of unemployed workers, the continued presence of "job jitters" as the number one souce of worker stress is made poignantly clear.

ACCIDENT- AND ILLNESS-PREVENTION ISSUES

On a scale of 19 possible workplace sources of job discontent, the second highest choice, topped only by "compensation," was "health and safety hazards" --or so thought a nationwide sample of workers polled in 1971 by the U.S. Department of Labor.¹⁷ As some 14,000 workers are killed in industrial accidents annually, and another 100,000 are permanently disabled, the high ranking is grimly understandable.

Media coverage of the "silent violence of occupational diseases" grows steadily, and thereby helps intensify stress. Typical is a May 10, 1977, early-morning TV news show that advised millions of viewers nationwide that--

- as many as 14 million American workers are exposed every day at work to dangerous toxic materials;
- perhaps 600,000 such workers have already been exposed to cancer-causing materials;
- the Federal agency (O.S.H.A.) involved here has neither the necessary budget nor manpower to notify 200,000 especially endangered workers of the risk they are running; and,
- it would cost \$800 to \$1,000 per worker to conduct appropriate medical tests and surveillance measures for the 600,000, to say nothing of the costs of related medical treatment.

In a remarkable understatement, the TV news segment concluded with veteran Senator Jacob Javits (R.-N.Y.) commenting that "we are in deep trouble in this nation."¹⁸

The basic statistics on the toll of noise, dust, chemicals, laser beams, radiation, heat stress, pesticides, and fumes leads the National Institute of Occupational Safety and Health to expect about 100,000 workers to die annually from industrial diseases that could have been prevented (an additional 300,000 annually contract disabling and preventable diseases).¹⁹ The "time-bomb" dread of industrial illness, a living presence in the American workplace, is further aggravated by the realities underlying a N.I.O.S.H. 1975 study that found that 31% of the medical illnesses in a sample group of workers "probably were caused by their jobs, and another 10% might have been."²⁰

It might be argued that all has changed since the 1970 passage of the Occupational Safety and Health Act, condemned 7 years later by an aggrieved Business Week as "the hardest to live with" of all governmental intervention programs begun in the last decade.²¹ To be sure, O.S.H.A. affects every business in America, and has the rare power to fine offenders on a first citation. Admirers give it reasonably high marks, and insist it has both raised public consciousness about work hazards and also served as a valuable "bargaining lever for labor unions in negotiating a less hazardous workplace."²²

Critics, on the other hand, a group far more numerous and vocal, insist that O.S.H.A. has focused far too much on minor safety issues (5,000 new safety

standards were promulgated from '71 to '76), and far too little on tougher health challenges (15 new health standards have been issued.)²³ Overall, business critics condemn O.S.H.A. for its "Mickey Mouse" pettiness, while labor condemns it for general ineffectiveness.

A new set of directives from Labor Secretary F. Ray Marshall may help reform the situation--and eventually reduce the stress quotient of the subject. O.S.H.A. is directed to avoid "nitpicking regulations" and "get tough (instead) on the health hazards that cause irreversible injury--cancer, nerve damage, leukemia, and lung disease."²⁴ Under the new directives, "95% of O.S.H.A.'s inspection efforts will be devoted to the most serious health and safety hazards."²⁵ As well, the agency will begin issuing rules covering large groups of industrial chemicals, such as those suspected of causing cancer, rather than continuing to issue a separate rule for individual chemical compounds. As if to underline the seriousness of these reforms, the O.S.H.A. budget will go from its 1972 total of \$36 million and 350 inspectors to a 1978 total of \$135 million and 1,400 inspectors.²⁶

N.I.O.S.H. head Dr. John J. Finklea takes this further and advocates three additional reforms:

We should establish a national job security program to require employers to find jobs in less-hazardous work--without a loss in pay--for all workers whose health has been damaged while working with substances such as lead, coal tar, pitch, or benzene.

We should establish a national workmen's compensation system to provide adequate payments for workers who have developed chronic diseases such as cancer because of conditions in their work places.

We should establish a national health care system to provide low-income workers with medical treatment by doctors skilled and knowledgeable in dealing with occupational diseases.²⁷

Various economists have joined the array of would-be reformers with a striking departure from the N.I.O.S.H.-Finklea strategy. They urge that O.S.H.A.'s responsibilities be pared by substituting economic incentives for regulatory procedures. They propose laws to greatly increase the liability that companies would have for the costs of injuries, possibly by strengthening the government workmen's compensation programs, and perhaps also by requiring firms to purchase life insurance for the most vulnerable employees: "If ever business and labor shared a common interest, it is in a major change in the whole approach to occupational safety. Workers stand to gain better conditions and more reliable compensation: employers stand to gain freedom from overbearing bureaucratic control."²⁸

None of this will finally suffice, however, as it skirts the bottom-line issues the nation-as-a-whole prefers to shy away from; namely, the real costs in the price of products or number of deaths we are willing to incur in order to protect safety and life at work. Certain economists for industry, when they are not warning of the alleged inflationary impact of safety reforms, insist that workers are willing to accept a certain increased risk in exchange for money

or convenience. The unions retort in terms of the "moral revulsion" they feel toward such ideas. The public is challenged to arbitrate the entire matter:

"In a sense, once the issue of saving lives becomes explicit, the question of whether a society is willing consciously to 'trade off' lives for dollars becomes a test of the society's moral character."²⁹

O.S.H.A. wrestles with the fact that a relatively small number of workers may face a large risk; that large expenditures may be required to save relatively few lives; and that all or only some of the risk may be ordered eliminated. Until O.S.H.A.'s indecision is squarely resolved in favor of a worker's new right to work without fear, the related workplace stress will remain major in fact and consequence.

JOB-LINKED SELF-ESTEEM

At issue here, is the stress associated with the insult of allegedly immature treatment at work. Few blue-collarites would recognize or use the jargon of industrial commentators who talk and write of self-esteem, self-realization, or self-actualization. Many, however, evidence a steadily-growing sense of personal entitlement where their own adulthood is concerned: such men and women want their adulthood recognized and respected in ways that demand much that is new to contemporary work settings. They want to experience themselves more as responsible and savvy grown-ups, and less as timecard-punching, order-taking, regimented, clock-watching robots (*à la* Chaplin's *Modern Times*). . . and they want to know this new experience now!

Typical is a remarkable turnaround in labor-management relations in the auto industry. Historically, relations between GM and UAW were arms-length, mutually hostile matters. Now, however, "perhaps the most intelligently planned and most cooperatively engineered American experiment aimed at increased shop-floor democracy is the one jointly sponsored for the past three years by GM and UAW."³⁰ Entailed here are various efforts to make jobs more satisfying, efforts that range from job realignment and redesign to troubled employee programs geared to assist workers with family and mental-health problems. Basic is the "heretical notion that everybody may come out ahead if workers are recognized as grown-up human beings with useful contributions to make on how to do their jobs and even on how to run the company."³¹

Variants on this theme are many and complex, with quite a few very mixed in motivation. Some employers, for example, promote a selective and self-serving style of blue-collar adulthood, one designed primarily to serve the employer by helping to build a wall against unionization campaigns. Outstanding among the non-unionized companies exploring this tactic is the Eaton Corp., a diversified manufacturer with 18,000 workers in 52 unionized and 13 non-unionized plants (\$1.8 billion in sales in '76). Hailed by Business Week in May, 1977, for going farther than most companies in designing a "new philosophy," Eaton's 13 non-union plants treat blue-collarites much as if they were highly-prized office-workers:

- Workers no longer have to punch time clocks.

- Formal interviews in the hiring process have been replaced by informal "dialogues."
- Probationary periods for new employees have been eliminated.
- To demonstrate management's "trust" in the worker--a key element in the new approach--no formal system of rules and penalties is applied.
- Production workers are allowed to repair their own equipment and to switch work stations as bottlenecks occur.
- Production workers, or their representatives, are invited to attend weekly staff meetings, production planning sessions, and other discussions.
- Workers receive weekly salaries instead of hourly wages, participate in the corporate pension program, and get paid for sick absences.

The drawbacks include a poorer safety record and more difficulty in supervision; company gains, however, include higher productivity, lower absenteeism, smaller turnover, and higher morale.³²

Where the workforce is unionized, a variant earning serious attention at present is called the New Economic Process. Hailed as a new way of conducting labor-management relations, NEP symbolizes a shift from conflict to cooperation. Careful not to threaten labor (as does the Eaton "new philosophy" above), NEP committees at a workplace do not get involved in wages, hours, vacations, overtime, or other traditional bargaining issues. Instead, NEP committees work on programs to design new product lines, to upgrade skills, to lay out shops more efficiently, to cut waste of materials used in manufacturing, and to share gains from increased productivity.

At a typical NEP-involved plant, the committee's impact has been wide-ranging:

"It has organized training in blueprint reading, upgraded the skills of welders, recommended extending crane tracks closer to machines to facilitate loading of rolls of sheet steel, and is helping to redesign a gear-making shop. Moreover, when the company was hit hard by the recession in 1975, many workers invested in its shares to help it raise working capital."³³

NEP, by making it possible for workers to profit from their role-related ingenuity, their unique insight into how to do the job better, salutes adulthood in a distinct and welcomed fashion.

Less common, but comparably valuable are experiments underway now to test the fresh idea that employees can take a strong (adult) part in setting their own remuneration. Employers commonly assume that blue-collarites lack the necessary information to make such decisions, and cannot be trusted to keep the company's interests fairly in mind. Accordingly, decisions about pay are usually made behind closed doors. . . and pay, not surprisingly, surfaces as a frequent subject of employee discontent.

Academic researchers are intrigued by the results of a small number of participatory compensation plans. A typical evaluation finds that "the bonus plan the workers created was carefully thought out, conservative in amount, and effective in improving attendance." Professor Edward Lawler notes that such participation in pay decisions leads to greater trust and responsible behavior. Employees are "more likely to trust a system of their own design because they have contributed to its development. . .when individuals are trusted and given responsibility, they respond accordingly."³⁴

REFORM PROSPECTS

Where does all this leave the matter? Not very well off! Professor Ivar Berg warns that remediable problems in the workplace are presently the subject of "essentially trivial efforts, either public or private, to correct the abuses, the discomforts, and the difficulties....."

Berg's hard-nosed study of the subject stresses that efficiency and productivity gains are only among the ends of managers; they are not the only ends. Rather, the status quo in the workplace consists of a system of arrangements, procedures, methods and work rules painfully hammered out over long decades. This system leads to valued elements of social and organizational predictability, in which both workers and managers have considerable investment. Employers in particular are rewarded by stability and collaboration. Not surprisingly, then, many privately fear that stress-reducing work "reforms" urged by outside change agents will unsettle a status quo that employers presently find reasonably comfortable and worth protecting.

Berg is left with "the very strong impression that a revolution in managerial thinking and behavior--all of its thinking--is the most important condition for long-term successes in the redesign of work....."³⁵ Managers at present appear to consider "human capital" a resource not worth husbanding or too difficult to husband. Manpower problems do not stand in a prominent place on the agendas of employers. Indeed, "more often (work reforms) are discontinued in the short run even when apparently productive of desired changes in workers' attitudes and/or behavior, for lack of employer interest, sympathy, good sense, or need."³⁶

At the May, 1977 Conference for which this paper was prepared, Professors James S. House and James A. Wells defined "stress" as "that which is perceived by people when they confront a situation in which their usual modes of behaving are insufficient, and the consequences of not adapting are serious. These will be situations where the demands on people exceed their abilities or where they are unable to fulfill strong needs or values."³⁷

In the late 1970s, the American blue-collar labor force especially experiences stress from job-loss anxieties, safety and health risk anxieties, and self-esteem erosion anxieties. While many reform campaigns are already dramatically underway, the pressures on behalf of a (stress-marred) status quo remain considerable. Advances here will come slowly, uncertainly, and unevenly, if at all. Employers in the private sector show no special interest, and major

gains, such as the O.S.H.A. legislation, are long-delayed and markedly compromised. In all, the picture does not inspire confidence. ³⁸ Rather, it engenders considerable stress instead in those concerned academics, such as this writer, who persist as committed proponents of work reforms with putatively humanitarian consequences.

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CHAPTER 7

WORKLOAD, LIFE CHANGE AND MYOCARDIAL INFARCTION

Tores Theorell

This conference is devoted to reducing occupational stress and I will therefore try to focus my attention on three interrelated questions, which have to do with possible beneficial effects of improving the psychosocial work environment:

- 1) What elements that could be reduced in the psychosocial work environment have shown a correlation with risk of myocardial infarction?
- 2) What is the quantitative role of such factors?
- 3) Which mechanisms are involved and how great a role do genetics play in them?

ELEMENTS

One factor which has been stressed in previous studies is overtime work. According to Hinkle's studies in the Bell Telephone Company, excessive overtime work (such as a work week exceeding 70 hours/week) is clearly associated with increased incidence of myocardial infarction. This is in agreement with observations that we have made in a retrospective study in Stockholm (Hinkle, 1971).

Conflicts with superiors have been associated with increased risk in several retrospective studies, and lack of appreciation from superiors has been demonstrated to be associated with increased risk in a prospective study (Medalie et al., 1973; Theorell and Rahe, 1973).

Changes in work responsibility and problems around perceived responsibility have also been associated with increased risk. On the other hand, Hinkle has demonstrated that promotions and demotions in the Bell Telephone Company, as recorded objectively, are not necessarily associated with increased risk of near-future MI (Theorell and Rahe, 1973; Hinkle, 1971).

The quoted results do not form a complete list of factors which have been associated with increased risk, but they are the most frequently mentioned factors. The list has been obtained from both retrospective and prospective studies. Retrospective studies have serious biases, as we all know. Each of the factors, furthermore, contribute very little to the total variance. Therefore, we wanted to combine several variables, objective and subjective, in a prospective study to test the predictive power of a combination of them. In a study of 41 61 year old construction workers in Stockholm, all of whom had had no long-lasting work absenteeism (Σ 30 consecutive days) and all of whom

had responded to a questionnaire including 60 questions, the items included were subjected to a factor analysis. Figure 7.1 shows one of three clusters obtained.

As we see, all of the items have to do with changes in the work situation over the preceding 12 months; extra work, responsibility problems, conflicts in the job or threat of unemployment. We hypothesized that a person who had at least one of these factors, subjective or objective, during the preceding 12 months would run an elevated risk of developing a myocardial infarction in the near future. A two-year follow-up was performed. Figure 7.2 shows the results. Of the total MI group, 37% had reported a work problem in the preceding year. The expected figure was 23% ($p < 0.01$). Interestingly, the difference was even more marked with those who were positively stated not to have had previous symptoms (48% against 25%, $p < 0.01$). In the remaining cases there had been previous symptoms or no statement made in the records (Theorell and Flodérus-Myrhed, 1977).

As has also been observed in the studies of angina pectoris, only the survivals were associated with workload. Different manifestations of coronary heart disease have different psychosocial precursors. It seems that the most serious manifestation, death, may be preceded by a more passive situation, maybe because there are vague symptoms slowing the subject down. Increased responsibility seemed to be the most predictive variable, although several others contributed as well. There seemed to be an interaction between perceived responsibility and actual situation because, as in Hinkle's studies, objective promotion only (becoming boss of a team of workers) was not demonstrated to be associated with increased risk.

Workload did not predict any significant number of near-future cases of ulcer, serious accidents or degenerative joint disease. Nor did the two other clusters of variables obtained in the factor analysis, changes in family structure and family problems predict any significant number of myocardial infarctions.

The specificity of work problems in relation to MI observed in our study is in accordance with our previous findings in retrospective studies, that work changes are more frequently reported by MI victims during the year preceding illness onset than by controls for the same period. Furthermore, we have shown that in retrospect the MI patients see work changes as more upsetting than do age- and occupation-matched controls. This was in general not true for changes outside work (Lundberg and Theorell, 1976).

MECHANISMS

There is, in all psychophysiological processes, a complex interaction between inherited traits, learned behavior and actual environmental stimuli. Thus, as an internist I would like to state that only part of the cases of early ($<$ age 65) MIs are preceded by significant psychosocial factors. But since we are dealing with a biologically continuous distribution we find, at the extremes, cases with no and many psychosocial stigmata, respectively. In between we find the vast majority of cases with psychosocial and somatic stigmata.

Table 7.1 Prevalance (%) of the single items included in the 'workload' index for the total study group and the MI subjects.

	MI-group		
	Total study group n = 5187	Deaths and survivals n = 51	Survivals only n = 32
Change of profession*	1.3	0	0
Extra job*	4.6	8.2	13.3
Start of extra job*	4.1	2.0	3.1
End of extra job*	4.3	6.0	9.7
Change of work hours*	3.4	2.0	0
Increased responsibility*	10.2	15.6	21.9
Decreased responsibility*	1.9	2.0	3.1
Too little or somewhat too little job responsibility*	3.3	7.9	12.5
Too much or somewhat too much job responsibility*	12.5	9.8	15.6
Problems with superiors*	5.2	7.8	9.4
Problems with work mates*	3.7	3.9	6.3
Unemployed for more than 30 consecutive days*	14.3	17.6	21.9

*All questions concern the last 12 months before the study.

Table 7.2 Age-adjusted comparisons - 'work-load' and MI

	Total MI group	Deaths	Survivals	No prior history
n	51	19	32	31
Median age	55	55	52.5	53
Observed frequency (%) of workload (O)	37.3	10.5	53.1	48.4
Age-adjusted expected frequency (%) of workload (E)	22.7	22.7	24.9	24.5
Ratio O/E	1.64	0.46	2.13	1.98
Z-value	2.49	1.27	3.69	3.09
P <	< 0.01	N.S.	< 0.001	< 0.01

One of the most important risk factors in the pathogenesis of coronary atherosclerosis is blood pressure. If we initiate efforts to reduce occupational stress we should know something about the interaction between heredity and stress in the regulation of blood pressure.

In our department we have performed a twin study in order to arrive at some quantification of this association. Male monozygotic (18 pairs) and dizygotic (13 pairs) twins aged 52 - 74 (mean 63), often discordant with regard to ischemic heart disease manifestations (monozygotic not significantly less discordant than dizygotic), were subjected to a long resting period and then to a psychiatric interview during which the majority of subjects revealed conflicts regarding childhood, work or present family situation. Figure 7.3 shows the intrapair variance of circulatory measures during rest and during psychiatric interview among diazygotic pairs divided by the same intrapair variance among monozygotic pairs.

The dizygotic pair members are more dissimilar than the monozygotic pair members for diastolic and systolic blood pressure and peripheral pulse volume (vasodilatation and vasoconstriction) during interview but not during rest. This indicates that heredity may be more important for blood-pressure level during psychological strain than during rest. The size of the correlation coefficients are presented in Figure 7.4. To judge from this, heart rate is determined to a great extent both at rest and during interview by heredity, whereas the blood pressures have insignificant correlations at rest but around 0.65 during interview, accounting for about 40% of the total variance. These figures are very similar to those obtained in a much younger American twin series, which was exposed to the stressor of artificially induced local ischemic pain.

This finding obviously has applications in efforts to reduce occupational stressors, since most of the bad consequences of job stress are mediated through psychophysiological mechanisms. It is by reducing the number of stressors or the job that we can obtain a reduction in blood pressure.

The stressors we are dealing with are very obvious ones such as overtime work, responsibility problems, conflicts and threat of unemployment. Some of them could possibly be reduced, while there would be serious problems with others. When we plan controlled trials we must always take into account physical and hereditary aspects so that we don't plan too small studies for meaningful conclusions.

Table 7.3 Intrapair analysis of variance (dizygotic
monozygotic) for absolute mean
levels of five circulatory variables at rest and during psychological strain
as well as for relative mean changes during psychological strain as compared
to rest.

Degrees of freedom between 10/10⁺ and 13/17⁺⁺.

0 = not significant * = p 0.05 ** = p 0.01

		$F_2 = \frac{\text{intrapair variance DZ}}{\text{intrapair variance MZ}}$
Heart rate	rest	5.55**
	interview	5.50**
IJ ampl	rest	0.83 ⁰
	interview	0.22 ⁰
Pleth ampl	rest	0.30 ⁰
	interview	3.20*
Syst BP	rest	1.77 ⁰
	interview	3.47**
Diast BP	rest	2.10 ⁰
	interview	3.17**
Rel heart rate interview		1.23 ⁰
Rel IJ ampl interview		0.89 ⁰
Rel pleth ampl interview		9.27**
Rel syst BP interview		0.86 ⁰
Rel diast BP interview		0.78 ⁰

++ All variables except plethysmography.

+ Plethysmography only (technically unsatisfactory recordings in the remaining cases).

Table 7.4 Intra pair correlations for blood pressure and heart rate during rest and during three intermissions in a psychiatric interview.

Monozygotic series (18 pairs)						
	Rest 1	Rest 2	Rest 3	Int. 1	Int. 2	Int. 3
HR	0.59*	0.67**	0.62**	0.66**	0.60*	0.65**
Syst. BP	0.34	0.34	0.48*	0.43	0.61**	0.68**
Diast. BP	0.34	0.47	0.53*	0.52*	0.60*	0.59*

*p < 0.05 **p < 0.01

Dizygotic series (13 pairs)						
	Rest 1	Rest 2	Rest 3	Int. 1	Int. 2	Int. 3
HR	-0.18	-0.12	-0.12	-0.14	-0.07	0.01
Syst. BP	-0.05	-0.11	0.06	-0.04	-0.08	-0.15
Diast. BP	-0.17	-0.28	-0.36	-0.41	-0.31	-0.12

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THE ROLE OF THE OCCUPATIONAL HEALTH PROFESSIONAL IN STRESS/STRAIN MANAGEMENT

CHAPTER 8

THE ROLE OF THE OCCUPATIONAL PHYSICIAN: COPING WITH THE STRESS OF CHANGE

Alexis Brook

In his recent address to the Society of Occupational Medicine in London, McLean (1977) surveyed the effects of our changing world on organizations and on the people who work in them. This paper concerns itself with some aspects of stress that arise within an organization when changes are occurring for reasons originating within the organization itself. Such changes may happen for many reasons: purposes of development, the implementation of technological discoveries, administrative needs or the redeployment of staff, and as a result of pressures from the people who work in the organization. They may involve alterations to the nature of the actual job, changes of roles and role relationships, movements of people to different positions in the organization, and changes in its administration.

MANIFESTATIONS OF STRESS

Difficulties due to the process of change may manifest themselves in individuals or in the organization. Some individuals may feel worried, apprehensive, or dissatisfied, others may become resentful or lose interest in their jobs, and others may cope by staying away from work for a few days with or without medical certificates or by leaving the organization altogether. A few, however, develop definite anxiety symptoms, become clinically depressed, or exhibit psychosomatic reactions. Depending on how long the difficulties associated with the change persist, there may be a gradually rising incidence of these various manifestations and symptoms of stress in the departments involved or such group phenomena as total resistance and active opposition to change.

This paper is concerned with those aspects of change that may call for the doctor's involvement. I shall therefore first describe a clinical method for studying stress. I shall then comment on the effect of change on the average person, describe some individuals who in certain situations are particularly vulnerable to change, and indicate some factors in an organization that exacerbate stress. Finally, I shall briefly consider some problems that confront the industrial physician and the psychiatrist in assisting management to cope with the stresses of change and suggest some ways of dealing with them.

A CLINICAL METHOD FOR STUDYING STRESS

There are many methods for studying stress caused by changes at work. The method on which the conclusions in this paper are based has been fully described by Erskine and Brook (1971, 1976). It involves close collaboration between the occupational health physician and the psychiatrist who spends half a day a

week with the occupational health team with the intention of enhancing its psychological resources.

The study begins when an individual is referred to the occupational health physician. Once he has decided that the patient's problems might in some way be related to psychological conflicts, he asks the psychiatrist to interview the patient once or twice to assess the situation. The two doctors then meet to examine the problem from their respective viewpoints and, in particular, to consider together whether any factors in the interaction between the individual and the organization have contributed to his symptomatology.

Although only a few of the patients caught up in the stress of change develop symptoms needing referral to a doctor, the interview with the patient can (as a result of working in this way) become a research tool. In identifying some of the factors in the organization that have led a particular individual to exhibit symptoms of such severity as to necessitate medical referral, it has also been possible to recognize that these are the very factors that have contributed on a broader scale to lesser but nonetheless distressing degrees of impairment of general well-being or mental health.

THE EFFECT OF CHANGE ON THE AVERAGE PERSON

The effects of involvement in a period of change depend on several factors: the positive feelings that people have about it; the anxieties that it mobilizes in both the individual and the group of which is a part; and the manner in which the change is conducted. This last factor is often the most significant.

Positive Aspects of Change

A positive response to change is characterized by a welcoming attitude on the part of those affected and a feeling that it makes sense and is expected. It may come as a relief if there is a transition from an unsatisfactory situation, particularly if it offers possibilities of increased work satisfaction. Although changes are more acceptable when they are commensurate with the rates of change and the values of the larger society, one of the most important factors for a healthy outcome is that the workforce basically trust the management and believe in the organization's future.

Anxieties About Change

Some are largely rational and are concerned with such topics as job security, work satisfaction, uncertainties about the new situation, career prospects, status, pay, and differentials. In particular the individual may be far from certain that he wants to adapt to the change or has the ability to do so, and he may have many doubts about the adequacy of his skills or personality resources to meet the challenge of a new situation. In addition he may have strong feelings about the reasons for the change, particularly if it is perceived to be primarily in those interests of an organization with which he cannot identify. He may then suspect and fear that adequate consideration is not being given to his particular needs. This fear can be acute if his relationship with management is poor. It is often stimulated by feelings of resentment through being dependent on a management that has the power to make unilateral changes in such a large part of his daily life as his work.

Early Personal Anxieties

Any change reactivates deep-seated anxieties due to previous episodes of change whether at work, within the individual's family, or in his personal development. For example, a common experience in a period of change is for an adult to find himself feeling, thinking, and behaving as if he were an adolescent again. More fundamentally, however, any major change mobilizes to a greater or lesser extent infantile feelings, about very early changes in life, which are normally kept well under control. The power of these unconscious anxieties is not usually appreciated.

As the adult component of all the feeling about change is blended with the infantile component, the individual may suffer strong inexplicable fears of the unknown and feelings of confusion or helplessness. It is for this reason that while people may want to discuss their realistically perceived anxieties they may find it difficult to do so rationally because they are simultaneously partly in the grip of primitive irrational emotions. It is then that the various forms of stress may lead to the reactions and symptoms described above or spill over and interact with the anxieties of other individuals.

Group Anxieties

The customary working methods of a group form a structure which helps it to keep its anxieties under control. Change is often regarded as such a threat because it involves the removal of this special defense against anxieties. This accounts for group resistance to change. The strain of change is associated with the difficulties of coping with these anxieties until the new working method has become established. People relate to one another in their working groups both formally as a result of the established role relationships and informally through a need for emotional support that they may not be receiving in their respective roles. The ways in which they do so are important factors in determining whether the collective attitude to change is one of cooperation or resistance.

Interactions of Individuals With the Organization

There is a broad range of possible interactions between an individual and the organization in which he works. Relating this to a situation of change one finds, at one extreme, particularly stable individuals working in an organization where the process of change is being badly administered. They are unlikely to be affected. At the other extreme there are potentially vulnerable individuals who, although working in an organization where change is managed well, are more likely to have breakdowns. The majority of interactions lie between these two extremes. At this stage it might be helpful, therefore, to consider a few examples of individuals who are particularly at risk from the stresses of change and then to examine some of the more powerful stressful factors in the organization. The examples have been found in different organizations while using the clinical research method described.

EXAMPLES OF VULNERABLE INDIVIDUALS

- 1) People at phases of readjustment such as early middle age. They are vulnerable because they may be under the double burden of having simultaneously to adjust to the internal conflicts associated with entering middle age as well as to the external pressures linked with the change. They are, therefore now more liable to some form of breakdown. Alternatively, as a means of defending himself, the individual uses the unstable work situation as a receptacle into which he can project his internal conflicts in an effort to be rid of them. He then comes to believe that all his troubles are the fault of the organization and his superiors are bewildered by what they conclude is his unreasonable reaction to the change, not realizing that this is partially due to his having dealt in this way with the mid life change in himself.
- 2) People who have reached a life goal, especially if this is linked to their having reached the peak of their abilities, or who are in the late middle age and less adaptable. These individuals are often highly vulnerable to change and may react by resisting it vehemently, by suffering a breakdown, or by leaving the organization.
- 3) People in a job where the change involves a withdrawal of some of the major satisfactions. They may experience this loss as a severe deprivation with similar consequences to those in group two.
- 4) People with personality difficulties who compensate for disappointment in other areas of life by overvaluing the job and come to regard it as a "way of life". They may be very apprehensive about any change which is made in their work and the distress they experience is not so much due to any extra demands imposed on them as it is to the withdrawal of the support which their job had provided which is taken as a deprivation and a threat; in such instances a breakdown may rapidly occur.
- 5) People with marked obsessional personality structures who need the routine of their job as a reinforcement of their defenses against anxiety. Change may be experienced as a severe threat to their stability and again a breakdown may quickly take place, often in the form of a depressive illness with paranoid features.

ORGANIZATIONAL FACTORS THAT EXACERBATE STRESS

These can be considered under the headings of vulnerable roles and administrative attitudes.

Examples of Vulnerable Roles

When difficulties arise it is tempting to attribute them entirely to the personality of the man or woman concerned. However, closer examination often reveals that the fault lies in the role. Even a very stable individual may find himself experiencing stress on taking up a vulnerable role. Attributing the difficulty to the individual's personality provokes intense resentment and demoralization, especially if the change is introduced inappropriately in a vain attempt to solve a much more fundamental and perhaps insoluble problem in the

- 1) Vulnerable roles include those in which the interrelationships are unclear - for example where accountability is confused and where the role requires the incumbent to fulfil conflicting requirements within too narrow a time span. These roles are experienced as particularly burdensome during a period of change.
- 2) The role of a middle manager can be particularly vulnerable in a time of change. The occupant is often expected to reconcile pressures from above for initiation of the change in the interests of the organization with resultant resentment from below. He may then act indecisively and this may be taken by his subordinates as a justification for regarding him as inadequate and so intensifying their criticism of him. How well he copes depends on the understanding and support he receives from his superiors.
- 3) An unusually susceptible role is created in the vacancy left by a manager who retires after having held his position for a very long time. His successor finds himself in a highly vulnerable situation. The previous manager may have gradually lost touch with the needs of his department or have put off making necessary changes. The relief at his departure is usually compounded with very strong negative feelings now liberated. On the other hand, the retirement of a well-liked manager on whom the staff had become dependent may be experienced by them as abandonment and the resentment for this is often expressed towards the successor. The new manager, therefore, has the difficult task of having to resolve these various feelings as well as the usual anxieties of fresh responsibilities.

Administrative Attitudes

The need on the part of management is to understand the ways in which people react to change and the manner in which the social structure of an organization and its customary ways of working help to contain anxieties.

Experience suggests that a change that is instigated entirely in the interests of the organization without proper consideration of its effects on the people concerned is a very potent factor in causing stress. This underlines the importance of ensuring that as much attention is given to the human consequences of the proposed change as is usually given to its material aspects. It would seem that this is one of the major factors in ensuring that changes occur with minimal disruption of the well-being, morale, and health of the staff and the organization. Whether this is achieved depends on the management philosophies of the organization, the personality of the manager who has to administer the change, and on the type of change that is planned.

PROBLEMS CONFRONTING THE INDUSTRIAL PHYSICIAN AND THE PSYCHIATRIST

The doctor's traditional role is to investigate and treat casualties and to rehabilitate them as far as possible in the best interests of the individuals and the organization. He can also assist in the identification and support of vulnerable individuals and those in vulnerable roles. In these ways the doctor is working on the classic medical model seeking an illness that requires treat-

ment. In addition, as already described, the interview can double as a research tool.

A gradually developing role for the doctor is that of consultant to the organization. Here the aim is to help in the identification of those organizational conflicts the resolution of which can improve the well-being of employees, reduce the level of stress, and prevent casualties. By acting as a consultant the doctor can help, albeit indirectly, many more individuals than by remaining a specialist who deals only with the victims of change. However, through assuming this role the doctor finds himself in trouble. He may have knowledge to impart but discovers that it is resisted, resented, or ignored. The explanation for this paradox can usually be found in basic conflicts in the area of doctor/management relationships.

Doctor/Management Relationships

A manager, formulating his difficulty as due to subordinates who are suffering from symptoms of stress and who are therefore a medical problem, often only wants advice from the doctor on how to cope with them or seeks relief by a straight transfer of responsibility to the doctor. The doctor, however, on the basis of his knowledge of the organization and its structure and administration may feel that it is his duty to call attention to difficulties in these areas that might be contributing to the symptoms of stress. Thus without realizing it, manager and doctor have conflicting basic aims and so can quickly lose patience with one another.

The problem, however, is more complicated than the question of who copes with an irksome burden. In any position of responsibility people are faced with a dilemma.

For the manager this may involve determining how to overcome both the anxieties of the people over whom he has managerial responsibility and the frustrations, uncertainties, and at times sense of helplessness that may be roused in himself in the process. Where change is concerned the anxieties of those affected can generate very marked distress in the manager. For him this can be a most important problem but is usually given very low priority in any discussion of his role. For the doctor the difficulty is how to cope with both the distress of the manager and the worries and uncertainties that the latter may rouse in himself.

Thus, difficulties in doctor/management relationships derive from the anxieties of the workpeople, manager and doctor, all of which become concentrated in that area. For all concerned they are particularly marked in a period of change. It cannot be over-emphasized that problems arise between doctor and manager if they ignore these interpersonal aspects of their work. Failure to give them proper consideration can lead to the rapid breakdown of a potentially valuable working relationship. Responsibility for decisions involving change, of course, lies with management, but it is only when conflict in the doctor/management relationship is resolved that the doctor's help can be accepted.

This area has been largely neglected and requires detailed study. However, doctors and managers may be apprehensive about making a joint effort of this organization.

kind. There may be many areas of misunderstanding and the organization may be worried that a doctor's involvement in its affairs would seriously disturb its equilibrium. Personal incompatibility between manager and doctor is sometimes an obstacle, but it usually transpires that difficulties that appear to stem from this area in fact originate in uncertainties inherent in changing established relationship patterns. Recognition of this point can enable management and the doctor gradually to change their professional relationship from one in which the manager works with a doctor concerned solely with illness to one in which the doctor is also an adviser taking a special interest in human relations within the organization. It is only when this new working relationship has been established that both parties are equipped to help the organization through its period of change.

Collaboration Between the Industrial Physician and the Psychiatrist

Doctor/management relationships are an area in which the skills of the industrial physician and the psychodynamically oriented psychiatrist overlap. Both have a great deal to contribute and this is a field in which a joint effort at study could yield the appropriate techniques to enable doctor and management to work more creatively together.

There are many possible patterns of collaboration. One was mentioned at the beginning of this paper. It involves the psychiatrist becoming a true member of the occupational health team, if only on a part time basis. Another is for a number of industrial physicians and interested psychiatrists to meet regularly as a small study group. If progress is made it might be possible to invite some managers to join what would then become a multi-disciplinary group. Another option is for about 8 - 10 industrial physicians to meet weekly with a psychodynamically-trained psychiatrist to consider the psychological aspects of the problems the physicians encounter in their daily work. Experience of these different groups in other settings has proved their value for training and support.

The prime objective is for the doctor and management to establish a satisfactory working relationship. No two management styles are alike and doctors vary in their interests and abilities. Inevitably numerous working patterns can evolve. Thus, in various ways, the industrial physician and psychiatrist can help management to appreciate the implications for mental health of the changes they introduce and to consider methods of coping with them in the best interests of the organization and its workforce.

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CHAPTER 9

OCCUPATIONAL HEALTH NURSING AND OCCUPATIONAL STRESS

Edna May Klutas

According to the earliest accounts, occupational health nurses in this country and in England were concerned with all aspects of the health of the employee, and of his family. By providing nursing care in the home, as well as in the factory, they "linked the factory and the home, thus keeping continuity of nursing care and by following the patient...could provide for many of his needs" (Charley, 1954). In addition, they were involved with employee welfare programs, with English nurses being part of company welfare units. This early concern of the occupational health nurse for the "whole man" has continued with varying degrees of emphasis.

During the war years, with their demand for high productivity, nurses became alert to the fatigue of moonlighters, the pressures and/or the monotony of the assembly line, the worry about family members in the armed services. She (or he) took what steps she (or he) could to help workers cope with these matters, encouraging sound health practices, assisting with identification and use of resources, providing emotional support through listening and counseling.

The depression years presented many challenges to the occupational health nurse. They kept employers informed regarding workers' needs for assistance and were influential in the development of mutual aid societies. They noted that sick workers concerned about loss of income would return to work tired and discouraged about unpaid bills, or come back to work too soon. As one nurse reported of her welfare activities "many problems deal with personal problems (which)...grow out of illness...which created problems that (the low income) employee cannot meet..." so the nurse assisted workers to find the necessary resources whereby the worker could help himself and keep his self-respect (McGrath, 1946).

Nursing is caring, and occupational health nursing is caring in relation to the effects of occupational stressors (of all kinds) on the worker. The extent to which nurses put this caring into specific action, to assist with reduction of the adverse effects of stress, varies with the nurse. As in any profession or work group, we have the good and the bad. Usually, the deciding factors can be traced to such influences as the level of the nurse's preparation, individual interests and values, the type of industry, the company policy regarding the health program, and the availability and attitude of the occupational health physician.

The opinions or assertions contained herein are the private views of the author and are not to be construed as official or as reflecting the views of the Army or Department of Defense.

There are nurses, because of the nature of the industry, who are limited to caring for the stresses of injury or illness, which may include some "emotional first aid." But, generally, there is not time in their day for handling more than the volume of injuries that come to the health clinic. Other nurses have been restricted because the occupational health physician (or the nurse supervisor) takes over all the mental health support activities of the occupational health service. And then, there are nurses who--because of their own lack of preparation, or because of their attitudes toward nursing and people--are afraid or insecure and choose not to be involved in emotional support activities.

At the opposite end of the spectrum are the nurses who become over-involved in providing emotional support. They care too much, to the end that they interfere with the worker's development of his own self support system. However, in one way or another, the majority of occupational health nurses have been involved in assisting employees to cope with occupational stress. This may not always be a clearly defined part of the occupational health nursing program, but it has been an element of occupational health nursing from the beginning.

In 1943, a Public Health Service survey of Nursing Practices in Industry (McGrath, 1946) revealed that in addition to their primary function of nursing treatment and care of occupational and nonoccupational illnesses, in 72% of surveyed plants, occupational health nurses were sought out by workers for counseling and assistance concerning personal or family problems. In 42% of the plants, nurses were concerned with accident control and safety education, including work-site visits to observe workers at their jobs, to followup on health or other problems of workers, and to better understand the causes, symptoms, and prevention of occupational health hazards.

Increasingly, occupational health nurses have become more deeply involved in prevention and control of harmful effects of occupational stressors. They are assuming more independent roles in case finding, in program planning and implementation, and in assisting workers to cope with an ever-widening scope of health problems that affect health and productivity. For example, instead of serving merely as assistant to the physician in the physical examination program, the nurse is taking the health and work history and relating it in a meaningful way to her knowledge of the assignment, its hazards and its physical requirements. She listens and looks for possible problems and alerts the physician to them. Together with the physician, she uses the findings of the examination to counsel and guide the employee to correction of problems and improved health maintenance. Where examinations by a physician are not required, the nurse--in accordance with protocols developed with the physician--conducts the entire health appraisal, both for preplacement or periodic evaluations. Thus, nurses are identifying and taking action to control the effects of both physical and psychosocial stresses to which workers are subjected.

More and more occupational health nurses are getting out into the work environment. For example, some have become skilled in taking certain environmental hazard measurements, such as noise levels and air samples. Primarily, though, they use these visits to keep acquainted with hazards and work situations (including problems of crowding or lighting in offices), to establish and maintain working relationships with supervisors and with employees, to provide on-the-

spot safety education, including education about the prevention and control of health hazards at work, and to respond to requests for counsel or assistance with personal health problems.

In health service support of the sickness absence control program, occupational health nurses are frequently the key health care figure. Through health education and counseling, the nurse encourages employees to obtain indicated medical care or take other health protection actions. She coordinates with personal physicians by providing information about work demands and stresses and the available occupational health service resources, and by providing follow-up care or observation when the individual returns to work. Some industries continue to provide home nursing visits. In others the nurse may coordinate with the physician and the community visiting nurse service to provide this assistance to workers. And, the nurse continues to be a resource to the employee in alleviating his concern about cost and other worries of illness, by advising him about or referring him to available health care benefits and resources.

In the area of mental health, occupational health nurses are becoming more knowledgeable and are providing counseling and referral for alcohol and drug abuse control and other mental health problems. Because the occupational nurse is usually the most visible and the best known health care person, employees will frequently go to the nurse first when they are troubled. Or, because she has come to know them, she will sense that they may be having a problem and will offer her assistance. For example, the wife who calls to ask the nurse to "get after Bill, he won't stick with his ulcer treatment. Maybe he'll listen to you." Because she knows Bill, the occupational health nurse may be able to find out why he's gone off his regimen (or she may know that the workload in his department has peaked) and can encourage him to take the proper actions.

For employees under treatment for mental illness, the nurse may coordinate with the psychiatrist and occupational health physician to provide support to both the patient and the supervisor, when indicated. Or, the nurse may become aware of potential employee relations problems in a department, because of the actions of a supervisor. This presents a different type problem and nursing action will depend on company policy and organization, her relationships with the supervisor and other factors. As a nurse she can counsel with the supervisor and attempt to determine the reasons for the changed behavior, providing assistance as indicated. As a management advisor, she may need to alert the physician or management to the problem so they may take action. In any event, the occupational health nurse must know the extent and limits of her capabilities, company and medical policies, and available resources in determining and implementing nursing interventions.

These are some examples of the expanded role of the occupational health nurse. A glance through the journals, and a review of the rapidly expanding lists of a varied range of short courses being offered occupational health nurses will provide further evidence of their widening interests and concerns. There are various reasons for this. These include changes in nursing practice, *per se*, evidenced by the revised definition of nursing in state nursing practice acts which provide for the expanded role of the nurse (AJN, 1977); the establishment

of Nurse Practitioners (or Clinicians), and the credentialing of nurses to perform health assessment and manage the care of patients; the increased emphasis in nursing schools on patient evaluation, teaching, interpersonal relationships, and prevention (as well as treatment) of illness and injury; the increasing availability of educational programs relative to occupational health nursing at the undergraduate, graduate, and continuing education levels, and the resultant increased numbers of prepared occupational health nurse leaders and practitioners; the establishment of standards of nursing practice; the potential demands of and for mandatory continuing education related to certification and/or licensure; the pressures of peers, professional organizations, and consumers (labor and management) for high quality nursing care; and the increasing needs of workers for care related to the proliferation of more and previously undreamed of occupational stressors of all types.

The occupational health nurse who considers herself to be a professional has no choice but to become better prepared in order to fulfill the expanded role. This role is well defined in the American Nurses' Association Model Nurse Practice Act. "...Nursing...is a process in which substantial specialized knowledge derived from the biological, physical, and behavioral sciences is applied to the care, treatment, counsel, and health teaching of persons who are experiencing changes in the normal health processes; or who require assistance in the maintenance of health or the management of illness, injury, or infirmity, or the achievement of a dignified death; and such additional acts as are recognized by the nursing profession as proper to be performed by a registered nurse" (AJN, January, 1977).

The report of the Secretary of the Department of Health, Education, and Welfare's Committee on extending the scope of nursing practice further defines the broader functions of nurses (HEW, 1972). The qualified nurse will:

- "Secure and record a health and development history and make a critical evaluation of such records;
- Perform basic physical and psychological assessments and translate the findings into appropriate nursing action;
- Discriminate between normal and abnormal findings on physical and psychosocial assessments;
- Make prospective decisions about treatment in collaboration with physicians;
- Initiate actions and treatments within protocols developed jointly by medical and nursing personnel - such as adjusting medication, ordering and interpreting laboratory tests, and prescribing certain rehabilitative and restorative measures."

What does the occupational health nurse need to meet the demands for quality health care of the workers, to be ready to help them cope with the myriad of occupational stressors they face? She needs "substantial specialized knowledge" in such areas as toxicology; industrial hygiene; occupational diseases; epidemiology; health evaluation/assessment; emergency care; health teaching; safety; business and personnel management; interpersonal relations and commun-

cation skills; labor principles and practices; legal and regulatory aspects of occupational health; program planning, evaluation, and reporting; and nursing administration. The occupational health nurse needs knowledge and competency in these and other areas whether she works in a large or small industry, and whether it is an office or a chemical industry.

Although the depth of knowledge needed may vary, each nurse should be well acquainted with the basic principles and practices of occupational health and adapt them to the company where she works. This, in turn, requires that the nurse be well-informed about the company, its policies, the hazards and their controls, the workers, the resources in the company and in the community, and other essential factors that determine the needs, scope, and capabilities of the occupational health service. Further, she must keep her knowledge and competency current with changing practices and problems.

Equally important is the need for the occupational health nurse to establish collaborative relationships with the occupational health physician (where each respects the capabilities and responsibilities of the other) and to coordinate with management, workers, and others concerned with the health of the employee. Occupational health nursing can never be a static entity unto itself. The nurse is a vital member of a team in a world of ever changing health care needs. As such, she must be ready, willing, and able to contribute fully to the team effort.

To keep this discussion on balance, however, we must keep in mind that this "paragon of virtue" is also faced with her/his own occupational stressors. In fact, the very idea that the occupational health nurse is supposed to be such a paragon is a significant stressor. There is no way that any nurse can have all the skills, all the right answers, all the intuition, all the self control, or all of any of the attributes that would be required for the nurse to function at the 100% level. Yet, for many nurses (and the people they serve) it is not easy to acknowledge that perfection is for machines, not people, and to be realistic about the nurse's strengths and weaknesses. Because most nurses have been trained to be the strong helper, it is not easy for them to seek help when they need it. This may include help in knowing how to do a job, or it may be help in maintaining their own emotional and professional stability. As with anyone else, the nurse needs to feel free to ask for help, to take time not to be so busy with tasks so she can sort things out and get support or feedback on what she is doing or planning.

There are other stressors. The occupational health nurse repeatedly must define for others the role of the occupational nurse. This includes the employee (Why can't you give me a diet for my ulcer?), management (Why do we need a doctor, you know what our employees need?), the physician (Why do you want an otoscope?), the personnel officer (Why are all those goldbricks in your office all the time?), and other nurses and professionals (What a "cushy" job. Eight to five and just waiting for people to come in for a band-aid). One gets weary of trying to answer these questions so the consumer and the co-worker will know and understand the particular aspects of occupational health nursing that make it different from other nursing roles and an important segment of the health care system.

Closely allied with this is the stressor of demands for quality assurance and accountability for nursing care given. The occupational health nurse is accountable to more than one agent and there are conflicts regarding which has priority. My own belief is that the nurse is accountable professionally and personally: first, to herself; second, to her patient (the worker); third, to the profession; and fourth, to the employer. This could put the nurse in a double bind situation that is not easy to resolve, although it might be prevented by clear job definitions and medical-nursing service policies.

Briefly, let me review some of the other, more common, stressors of the occupational health nurse: the isolation of working alone and being separated from peers, sometimes feeling abandoned or ignored; conversely, the anonymity of being on a large staff, just another cog on the wheel with no opportunity or enticement to develop ideas or special skills; the peonage of being the hand maiden of the physician, without any freedom to exercise independent professional judgment; the frustration of inadequate preparation for the job to be done and difficulties in acquiring such preparation; the conflicts of concern for employees and their problems and the limits of the scope and responsibilities of the occupational health service; the frustration of inadequate pay and/or status in the health unit and in the company; restricted career patterns, even on larger staffs; problems related to personal values and trying to avoid being judgmental regarding other peoples' life styles or values; the threat of malpractice; the need to control "helping" instincts so as not to take over the initiative that is the patients or co-worker's; the demand of non-nursing duties and their effect on nursing responsibilities; and, for women nurses, the conflicting demands on time and energy of being a professional working woman and also a homemaker, mother, and spouse.

However, most nurses do manage to cope with their own occupational and personal stressors. In so doing, they become better able to help others learn to cope.

Exciting challenges face the nurse who wants to grow. Some nurses are already experiencing them. Others, who so choose, can be expected to join them in the foreseeable future. Increasingly, the occupational health nurse will function as an independent practitioner. When definitive medical (or psychiatric) judgment is required, the nurse will coordinate with the physician. The nurse's emphasis will be on health promotion and maintenance, helping the worker reduce or control the effects of stressors that affect his health and productivity. As stated earlier, the Expanded Nurse Practice Act definition of nursing provides for more autonomous functioning of the nurse. But it also bases this independence on a requirement for specific knowledge. They go hand in hand. With them the caring occupational health nurse can go as far as her initiative and imagination will take her. She will become ever more important as an instrument of change, in accordance with the theme of the 1977 International Council on Nursing.

Bethel McGrath's words of 30 years ago still hold true: "There is nothing easy about industrial nursing...The work is never monotonous. There is endless variety in the daily problems that challenge one's ingenuity. The pace is rapid, stimulating, and most satisfying to nurses who...feel a close relationship to the workers...People are never so alive as when they struggle to earn their

bread and to make their mark in the world. It is good to be able to make one's contribution as a nurse where people live (and work)" (McGrath, 1946).

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CHAPTER 10

PSYCHIATRIC CONSULTATION IN THE WORLD OF WORK

David Bruce Robbins

Prior to the dawn of the 20th Century, psychiatry and the world of work ignored one another, save for rare and furtive glances through opalescent izinglass curtains. The busy universe of commerce and industry had little time for, and less interest in, emotional problems. While individual psychiatrists acknowledged the vital importance of work in human existence, (e.g. Freud's comment re "arbeiten und leiben"), the profession as a whole ignored the workplace and seldom focused on job-related stress and conflict. In his comprehensive reviews of Occupational Mental Health (McLean, 1966; 1975), McLean begins the saga of the psychiatrist in the occupational community with C.C. Burlingame's work in The Cheney Silk Co., circa 1915. During the past sixty years, occupational psychiatry has cycled from impoverished curtailment to dedicated and creative expansion. Important variables have included wars, economic cycles, and fads within the psychiatric profession. There has been considerable variation in time commitment, organizational affiliation, and structural levels of intervention.

The most basic format for psychiatric consultation in industry has been the employment of a psychiatric clinician, part-time, to serve as a consultant to the Medical Department (Auster, 1967; McLean, 1966; 1975; Modlin, 1973; Ross, 1963; Warshaw, 1970). Here the role expectations are familiar to the physician, viz. diagnosis, referral, brief treatment. The opposite spectral pole involves a full-time psychiatrist, collaborating closely with several departments, including medical, personnel, management development, and highest level management (Cohen, 1969; Longaker, 1972; Warshaw, 1970). Several models have appeared in recent years, involving varying admixtures of clinical, educational, and research activities (Auster, 1967; Longaker, 1972; McLean, 1959; 1961; Modlin, 1973; Ross, 1963).

Recent advances in general systems theory and in community psychiatry have increased the potential contribution of the psychiatric consultant to the occupational universe. It is now possible to accurately conceptualize a problem, select the appropriate level or levels of intervention, and resolve a crisis promptly (Cohen, 1969). We can specify the interrelated subsystems involved, focus on their interfaces, change the dynamic interrelationships, and then allow the system to reach a new equilibrium. For example, an individual employee, suddenly depressed and possibly alcohol-dependent, manifests deteriorating job performance. We could describe this clinical situation as a series of definable, interrelated problems operating at diverse levels of organization:

- intrapsychic - loss of self-esteem, "narcissistic wound", hunger, and need for sedation;
- interpersonal - regressive demands for emotional supplies;
- work group - role expectations, attitudes toward failure to perform, morale, and esprit;
- family - role as husband, father; family's response to withdrawal, alcohol sedation;
- corporation - policy and unofficial approaches to poor work performance; intervention by management, personnel, medical departments; and
- community - resources for treatment, including A.A., outpatient and inpatient psychiatry; attitudes toward drug abuse.

A complete program of psychiatric intervention in a business community includes tripartite preventative efforts, closely integrated with management, personnel, and medical departments (Auster, 1967; Cohen, 1969; Longaker, 1972; McLean, 1975; Modlin, 1973; Ross, 1963; Warshaw, 1970). Tertiary prevention focuses upon the reduction of disability and morbidity, and includes post-hospital follow-up, job modification and equal employment opportunity programs. Detection of affected individuals, early in the course of their disease, with prompt, effective treatment constitutes secondary prevention. Here the emphasis shifts toward education and community outreach programs. And, finally, the most effective means of reducing the prevalence and incidence of a definable health problem is alteration of the human environment to remove necessary and sufficient conditions for the genesis of the problem. Primary prevention of psychiatric illness requires involvement at all significant levels of a work community with particular emphasis on stressor reduction; improvement of "hygiene factors", and consistent efforts to improve communications and mediate conflict.

I recently published a follow-up study of psychiatric patients in a large corporate community (Robbins, 1976). The consultation model is a part-time psychiatrist working within the medical department. Employees are self-referred or referred by physicians, nurses, personnel specialists, or managers. The consultant is involved in management development and maintains an active collaboration with the corporate medical director's staff.

The retention rate for psychiatric patients exceeded 60% for periods up to three years after initial consultation. More than half of these employees were rated as exceeding job requirements or outstanding by their managers. Significantly, 59% of a subgroup of 83 employees, initially rated as unsatisfactory by management, were retained in the business after psychiatric intervention and were performing satisfactorily at the time of follow-up. A more comprehensive, prospective study is now in progress.

This study illustrates the value of in-house psychiatric consultation and highlights the possibilities for successful employment of psychiatric patients. Opportunities for primary prevention, the principal topic of this conference,

require close collaboration of management, labor, and clinical support systems. Hopefully, we can implement ideas from this conference in the workplace and accomplish meaningful changes.

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CHAPTER 11

SPECIAL THERAPEUTIC MODALITIES: HYPNOSIS FOR ATTENUATION OF BURN DEPTH

Dabney M. Ewin

One of the most devastating physical and mental occupational stresses is a severe thermal burn of the face or extremity. Physical disfigurement and disability are often accompanied by deep feelings of resentment and unreasoning fear of returning to the same work environment.

The purpose of this paper is first, to review experimental work showing that in a standard thermal burn the depth and severity result not only from the heat applied, but also from the body's inflammatory reaction to the stimulus; and second, to show that in the burned patient early hypnosis can prevent the body's inflammatory reaction and thus attenuate the depth and severity of the burn.

Anyone who has had a significant sunburn knows that at the time of leaving the sun there may be redness and some discomfort, but it is only later the inflammation occurs, with the serious symptoms of burning pain, tenderness, swelling, fever, and blistering. Very little morbidity would ensue if the inflammatory reaction could be aborted and the process arrested at the time the stimulus is withdrawn. Augmenting Delboeuf's (1877) experiment, Chapman, Goodell and Wolff (1959 a) have done classic experiments demonstrating that the degree of inflammatory response and tissue damage to a standard burn can be augmented or diminished by hypnotic suggestion as well as by thermoregulatory reflexes induced by immersing the feet in hot or cold water.

But what of the patient whose burn is severe and deep, who has what we call a third degree or full-thickness burn? Can he be helped? Brauer and Spira (1966) have done a remarkable experiment showing that in a full-thickness burn, the destruction of all skin elements does not occur immediately. A standard and reproduceable full-thickness burn was applied to young pigs (whose skin most nearly resembles human skin in laboratory studies) and the burned area was excised and transferred as a free skin graft to a viable bed where the response of the body would be toward acceptance, such as occurs with any skin graft. Of 53 burn skin-to-normal beds there was an estimated 73% take, while 23 grafts of normal skin to the same burn beds had an 80% take, and 18 normal skin to normal beds had 98% take. They noted that "a delay of hours before removal of the burn graft materially influences graft survival in the new bed." This correlates with the evidence of Chapman et al., (1959 b) that the bradykinin-like substance associated with the inflammatory response is released within the first two hours of injury.

Entin and Baxter (1950), using human volunteers, plotted a graph showing

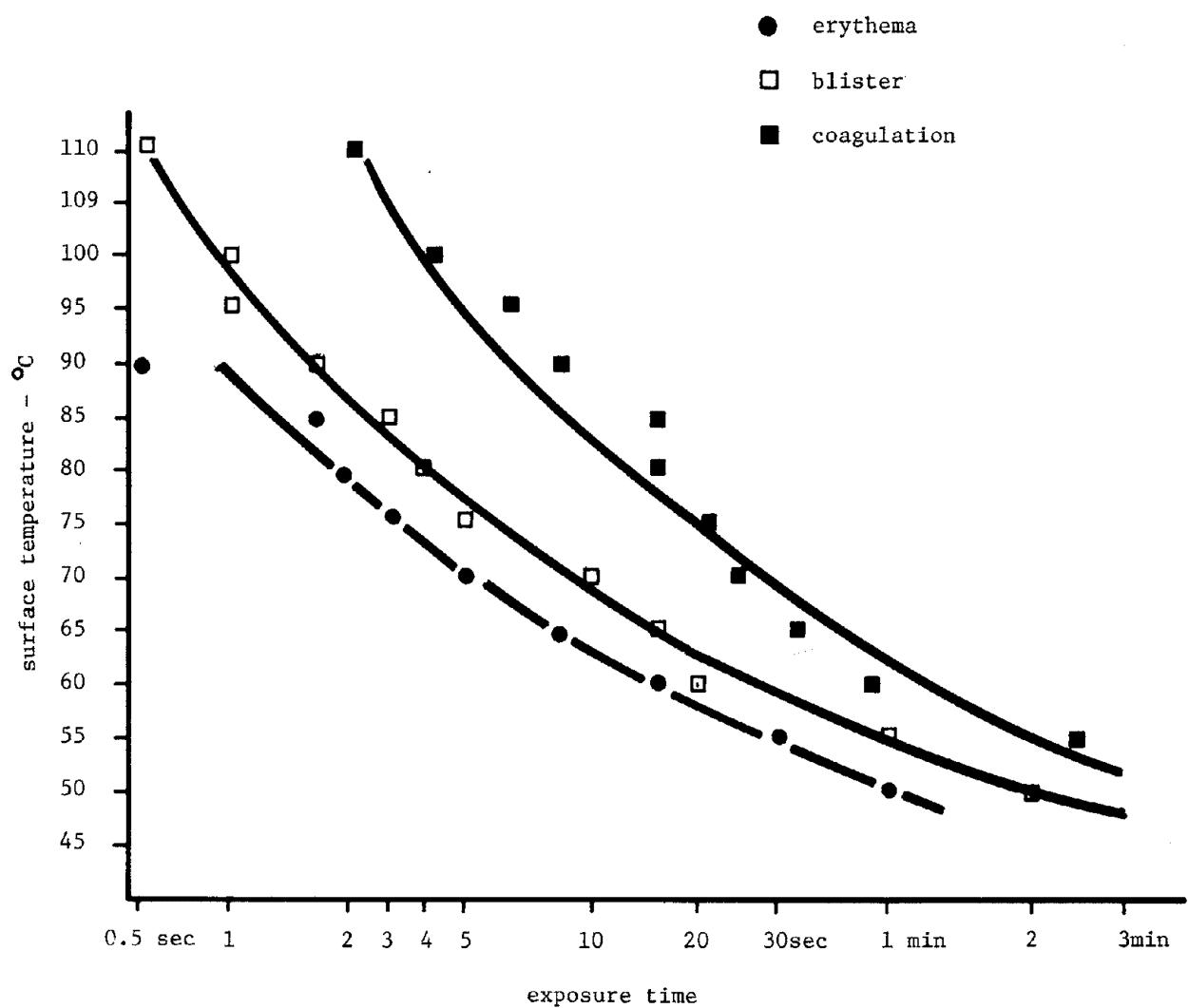


Figure 11.1 Surface temperature-time relation for different degrees of thermal injury to human skin. Entin and Baxter, 1950.

temperature-time relations for different degrees of thermal injury (Figure 11.1) at temperatures up to 110 degrees Centigrade. Coagulation of skin occurs with two seconds of exposure at 110 degrees Centigrade. No studies are available going as high as 950 degrees Centigrade.

The author has had experience with 12 significant burns of the face or extremities. One patient scoffed at the idea of hypnosis from the start, required skin grafts of his elbow and forearm, and had some permanent loss of motion of his fingers in spite of 6 months of physiotherapy. The others all healed rapidly without scarring and only one developed signs of infection on the eighth day. The most dramatic case is reported in detail.

CASE REPORT

R.G., 28 year old white male anode worker in an aluminum plant slipped and fell on August 22, 1974, with his right leg as far as the knee going down into molten aluminum at 950 degrees Centigrade (approximately 1750 degrees Farenheit). He was holding on to a stud and extricated himself quickly. First-aid attendants at the plant applied ice packs immediately and transported him in the plant ambulance directly to the emergency room where he was met by the author. The outer layers of skin were cooked brown and peeling, while the inner layers were blanched white with no apparent blood supply. He had very little pain, and pin-prick testing produced no blood and only an occasional response of sensation. Using the example of how a thought produces a blush and dilates all the blood vessels in the face, his attention was directed to the idea that what he thought about could affect the healing of his burn. He was receptive to learning how to do this and went easily into trance with a simple request that he close his eyes and focus his attention entirely on what I was saying. He had had 50 mg of meperidine (Demerol) and the ice packs were still in place. He was given suggestions that his right leg was cool and comfortable, and he readily acknowledged that this was how he felt and that it was a pleasant sensation. He was then given the suggestion that his mind would lock itself to this feeling so that his leg would continue to feel cool and comfortable day and night until it healed. He was asked to let his index finger rise to signal when he had a sense of certainty that he could accomplish this, and when he did it the trance was terminated.

Color photos were taken and the burns dressed with cyclomethycaine (Surfacaine) antibiotic. The following morning (21 hours post burn) his blood count showed 9300 white cells, with 70 segs, 25 lymphs, 5 monos. His temperature varied between 99 degrees and 100 degrees until his first dressing change on the sixth post-burn day when there was a single spike to 102 degrees. Photos were again taken. There was no clinical infection, no odor, almost no drainage on the dressing, and no edema of the foot in spite of the circumferential burn. He required one to three tablets of aspirin, phenacetin and caffeine, propoxyphene, (Darvon Compound 65) per day for relief, knowing that he could have meperidine if he requested it. On the 12th post-burn day the dressings were removed and he was started on daily whirlpool baths which were too vigorous for the delicate epithelium and caused some subepithelial hemorrhage. He was ambulatory and discharged from the hospital on the 19th post-burn day and returned to work on November 4, 1974, ten and a half weeks post-burn. The skin on the leg healed without scar tissue formation, with

regrowth of hair, and with some permanent bronzing of the skin still present 22 months later. The patient had returned to his same job and had been promoted to foreman.

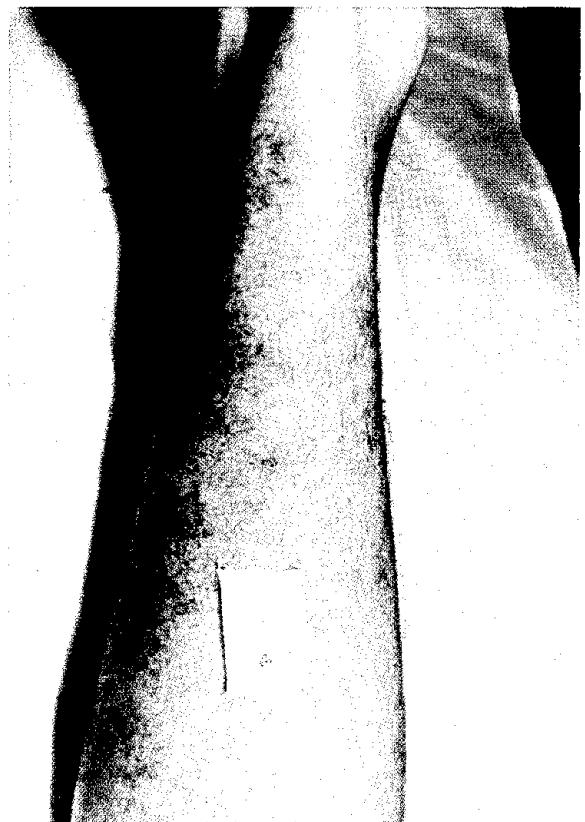
DISCUSSION

There are an estimated 2 million burns annually in the United States (Salisbury and Pruitt, 1976); it is possible that a great deal of morbidity could be alleviated by early hypnosis. Since both brain and skin have the same ectodermal origin in the embryo and the skin is the most highly innervated organ in the body, it is not surprising that the central nervous system exerts a profound control over physiological responses in the skin.

Reporting their experiences, Chapman et al.,(1959 b) conclude "that the subject's perceptions and attitudes may be relevant to neural activities that en-gender or enhance inflammatory reactions." There are multiple reports of hypnotic recollections of a previous burn (Ullman 1947, Bellis 1966, Johnson and Barber 1976) causing acute inflammation and/or blister formations at the site of the previous burn. This author has observed the same phenomenon on several occasions. Since every burned patient has had the experience of a burn, it is thus possible for his mind to maintain and enhance the inflammatory reaction by thinking about it. One of the most damaging emotions is guilt (Cheek 1962, Ewin 1973), and if present it must be removed before a patient will accept good suggestions of healing.

The patient should not only avoid harmful thoughts, he should develop a positive, optimistic attitude. Artz is quoted (Dahinterova 1967) that "the well motivated, secure individual did extremely well after even the most severe burn injury whereas individuals without these resources had considerable difficulty adjusting to the result of a massive injury." A number of clinical reports describe burn patients on a pitiful, hopeless, downhill course, who, after being hypnotized and encouraged to be optimistic, experienced a dramatic turn-around with rapid healing (Crasilneck et al 1955, Cheek 1962, Bernstein 1965, Dahinterova 1967, LaBaw 1973, Schafer 1975).

Infection will deepen a second degree burn to third degree, requiring a skin graft where primary healing might have occurred. The effect of hypnosis on infection is perplexing; the trance state might be viewed a analogous to the dormant state in trees, the cyst form on the amoeba, and the spore of the clostridium which are resistant to assaults which would easily overwhelm them in their active, vegetative existence. Esdaille (1850) had a 50% mortality rate from surgical infection which dropped to 5% when he began using hypnotic anesthesia. Chong (1976) describes the Hindu fire-walkers of Singapore on Thaipusam Day going into somnambulistic trance, piercing thin steel shafts through their skin, silver pins through the tongue and cheeks, and walking on hot coals across a pit 20 by 30 feet. He says "curiously enough, with no aseptic preparation of the steel shafts and needles no case of sepsis or tetanus of the multiple puncture wounds has ever been reported. None of the fire-walkers suffer from pain or burns, though as they walk across their feet may sink into the hot cinders up to their ankles." Schafer (1975) notes that in the patients whom he hypnotized in the Burn Unit of Orange County Medical Center "There was no infection of any burns"; he then attributes this to good surgical care.



CASE REPORT - R.G.

It is apparent in reviewing the case reports in the literature that the hypnotist tends to be the last healer called in, and then only in desperation. I find only one patient treated early, namely, case 3 of Crasilneck et al., (1955).

"A 32 year old non-white man was admitted to the hospital with a mixed superficial and deep dermal burn over 35% of the body surface. He was subjected to hypnosis after arriving at the hospital about four hours after the injury. No narcotics were required during the acute phase of injury or at any time during his 18 days of hospitalization. Complete alleviation of pain was obtained with hypnosis in this man throughout his hospital course."

I quote this case in its entirety because it describes the usual course of these patients in my experience as treating surgeon and hypnotist. An occasional patient will laugh at the whole idea and have a poor response, as some of Schafer's (1975) did. It should be noted that the work of Chapman et al (1959 a) showed that icing a burn holds the inflammatory process in check for several hours. Since icing is now standard emergency room care in the U.S., there would be ample time to call a qualified hypnotist if the primary physician is not skilled in the technique of hypnosis.

SUMMARY

- 1) In burns, there is no substitute for prevention, but having been burned, nothing could be more desirable than to limit the depth of the burn.
- 2) Experimental work shows that this can be done with early hypnosis, and clinically it has been my experience that these patients heal rapidly with increased resistance to infection, very little pain, and with an optimistic expectation of early return to normal activity.
- 3) It is emphasized that the suggestion "cool and comfortable", or suggestions of anesthesia are effective; the word "normal" is to be avoided because in experimental studies these subjects developed a "normal" burn.
- 4) A case is reported of a young man whose leg was immersed in molten aluminum at 950 degrees Centigrade; he was hypnotized within 30 minutes, developed only a second degree burn, and although antibiotics were not used, had no infection. He was discharged from the hospital on the nineteenth day and healed without scar tissue formation on the leg.

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THE ROLE OF THE ORGANIZATION IN STRESS/STRAIN MANAGEMENT

CHAPTER 12

THE VALUE OF THE ORGANIZATION'S OWN SYSTEMS IN COPING WITH STRESS

Harold Bridger

"A 'change of heart' is in fact the alibi of people who do not wish to endanger the 'status quo.'"

"...two viewpoints are always tenable. The one, how can you improve human nature until you have changed the system? The other, what is the use of changing the system before you have improved human nature? . . . The central problem how to prevent power from being abused - remains unsolved."

George Orwell

Tensions and stress, whether in the form of a challenge to engage our energies or of a disabling nature to sap our capabilities, are concomitants of living. The main themes of this short communication are, therefore, concerned with the need to identify and use the various kinds of stress exhibited by an organization in order to understand more about the ways it is working and the degree of effectiveness attained. In turn, to develop alternative and more effective forms of organizational life which compel us to confront those issues of stress in a new light. But this is easier said than done, as the quotations from George Orwell indicate.

FORMS OF STRESS AS AN ORGANIZATIONAL CHARACTERISTIC

Before I came to this conference, a close friend showed me a report by Damon Stetson in the New York Times, on the recent conference on Occupational Stress and Productivity held here. I was particularly struck by the repetitive nature of the factors and forces which were described - as well as the proposals and remedies for dealing with them. I use the word "repetitive" in two senses; first, all the speakers were describing similar or complementary phenomena even though the content of the cases, or the window through which the speaker was looking, were different. Second, these pictures and the problems are repetitive in that they form a consistent subject, at regular intervals, for articles, conferences and press warnings over the years.

I am as much a part of that scene as anyone else. In a chapter "Towards a policy for the health of the manager" (Bridger, 1972, pg. 240-255), I drew attention to stress in the context of the enterprise as a system, and the need to consider the distinction between appropriate and inappropriate stress as an intrinsic feature of the strategy, values and operational activities of an organization. There is a stress price tag associated with each of the choices made by organizations and their subsystems, when deciding on and

attaining certain objectives by selected means. The choice of product or service, with their concomitant sets of technologies, functions, marketing techniques and procedures; the choice of structures and roles to fulfill the activities required, together with the reward, appraisal, selection, training, grading and salary subsystems introduced to facilitate the effectiveness of the human resources, all play their part in deciding the degree of stress on individuals concerned. The pressures on the institution as a whole from the various environments in which it is operating, complicate the issues still further (Figure 12.1).

IMPLICATIONS FOR OCCUPATIONAL HEALTH TEAMS

In more recent years, because they have had a dominant effect, these changing pressures enable us to repeat our researches and articles on stress with different pictures and different ogres. This is not just the problem of industry and commerce, of profitability and chasing the dollar; this is inherent in every kind of institution and community. Nor will simpler solutions or return to the noble savage (Rousseau) or small-is-beautiful (Schumacher) provide answers on their own. Everyone can provide structures, technologies and even products to achieve containable stress but, has the price tag been assessed? Is containable stress for groups and individuals a reasonable objective for the institution? Should the occupational health team of an organization simply be another subsystem alongside those of salaries, training and grading, independent of organizational objectives and values, or should occupational health be part of the health of the enterprise as a whole, and therefore be an intrinsic element in corporate planning?

The policies and values inherent in such choices are far-reaching. They can be embarrassing too. For example, the implications for organizations, for doctors and nurses, for the competences and attributes required would be far from inconsiderable. A very full exploration of such a serious and systematic approach was made in 1960-1963 in Unilever Limited. It has had the reaction it deserved for its temerity - high praise and no action!

The late Dr. O'Dwyer, principal medical adviser of Unilever, was a courageous man and for many years devoted himself to the nature of the problems we are addressing here. We set about testing the hypothesis that stress patterns could be identified as a key characteristic of an organization's life. It was in association with him that the long-term study of the doctor and sister in industry was completed (Bridger, Miller & O'Dwyer, 1963). In the course of this work and since, the conflicts and satisfactions which doctors, nurses and others experience, the decisions and compromises they make in balancing the objectives and values of their profession with the objectives and values of the organization of which they are also members (or external advisers), serve in themselves to illustrate and reflect on the stress patterns characteristic of their organization (Figure 12.2). Later, Dr. O'Dwyer initiated a network of doctors, nurses and others as a precursor to the setting up of this International Committee.

I am well aware that few organizations readily accept the health of the enterprise as one of their critical objectives, although most would verbally agree on its desirability or pay lip service to the philosophy. The health of

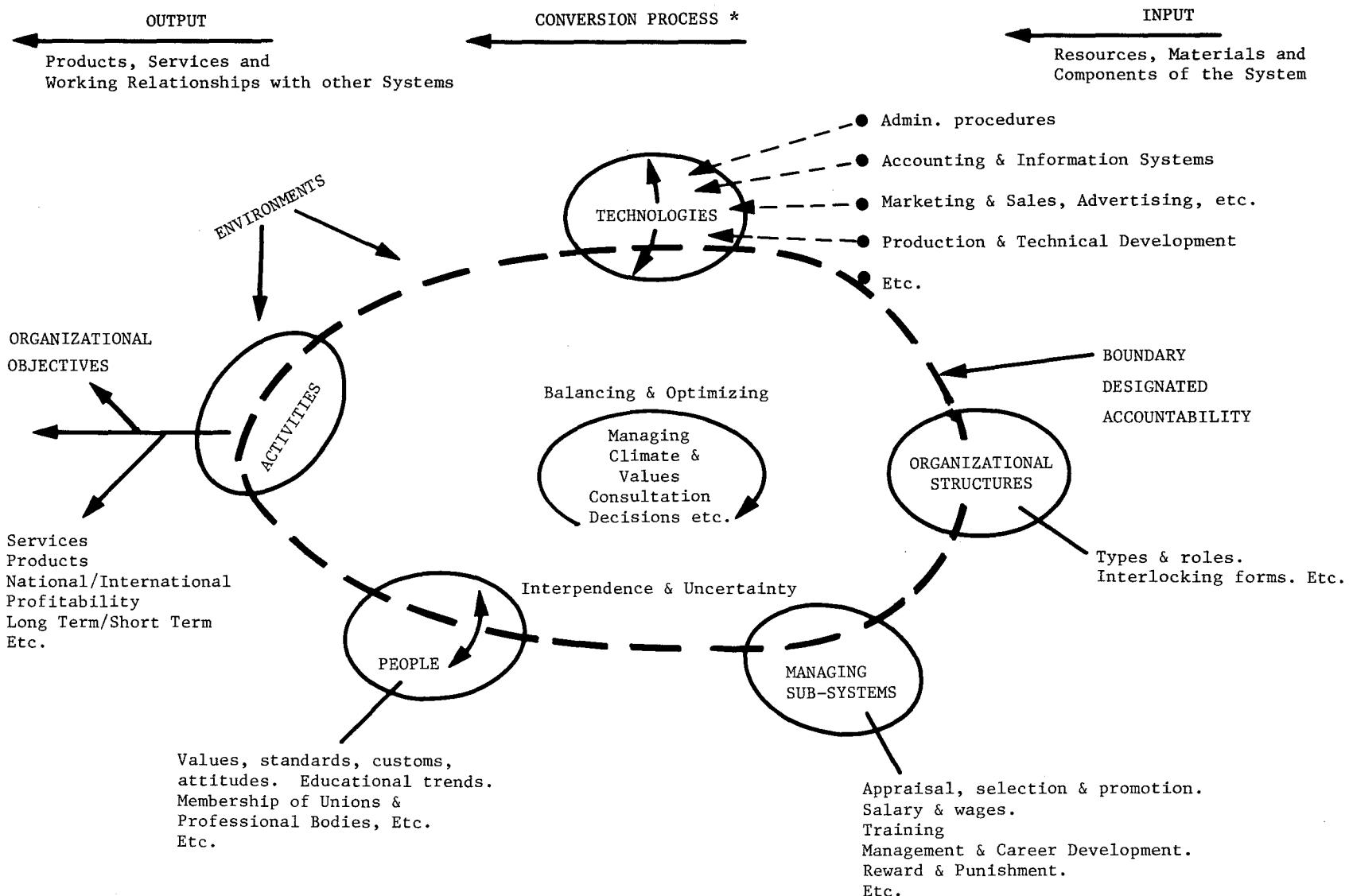


Figure 12.1 ORGANIZATIONS AS SYSTEMS

* Using the 'Pentagram Model' for developing interdependence and integration of "Business Institution" "Learning Institution"

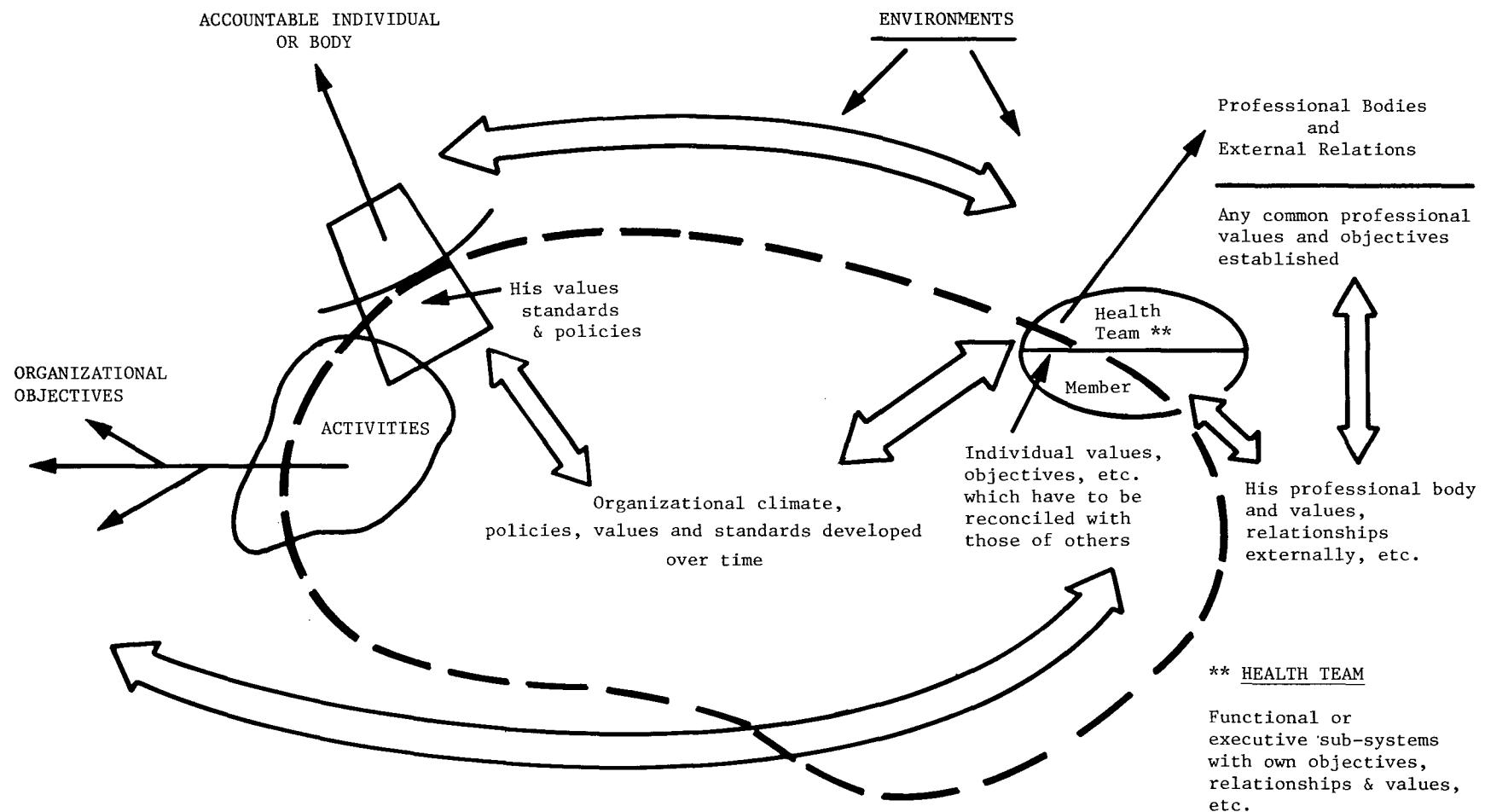


Figure 12.2 TENSION SYSTEM FOR PROFESSIONAL AS MEMBER OF HEALTH TEAM IN ORGANIZATION*

* Healthy resolution of tension system of professionals as an essential pre-requisite for "health of enterprise".

the enterprise may often provide a further objective in conflict with the deployment of people, finance and technology in attaining other more immediate objectives and results, whether the institution is a civil or public service, an education or medical system or an industrial or commercial enterprise. Balancing and optimizing forces and resources then becomes harder and more complex.

If, however, this additional dimension and complexity is not taken into account the stress price is paid by the people who undertake roles and functions affected by such decisions. Sometimes that stress can be regarded as an implicit deal, conscious or unconscious, for the achievement of other personal aspirations, but sometimes inadvertently or faute de mieux. At the other extreme there are the health-team members who only see their function as dealing with a captive practice of individuals and the immediate toxic hazards, while the business side of the organization is not regarded as being of any concern of the doctors and nurses. This is not what is said or written down; there may well be certain concessions made to the health of the enterprise as it was referred to in the Unilever study.

On the other hand if health-team members are to have and feel a greater integrity in the open-system organizations of today, then some may discover an interest and competence in combining their medical/nursing interests with a greater understanding of organizational systems, processes and behavior. Alternatively, health team members may, when relevant, form part of those internal organizational resource projects which frequently overlap and take over the health-of-the-enterprise function from the occupational health team. A third possibility is for the occupational health team to include an internal or external resource by bringing a developmental component into their work - until the team develops its own resource from within. It should be pointed out that a growing expertise in this direction among nurses in the National Health Service in the U.K. is extremely encouraging. Perhaps the medical profession should take the hint, since occupational health team leadership may not always be medical. I am not having a go at doctors. In organizational life there are many other professional functions and teams with comparable issues and problems to face.

PROFESSIONS AND THE ORGANIZATION

The professions, not unlike other institutions and communities, are much more open to the forces and changing values of the external world. They are more exposed than ever before and, internally, are themselves suffused by values, conflicts, attitudes and changing standards of that external world. They no longer have that strong boundary (or protective barrier) which enabled them to maintain a front, independent of those external attitudes and happenings. Nor can they impose on members the established norms and principles developed through history and reinforced by scholarship and status.

In the past, these could be upheld regardless of external events. Now, inflation as well as changing values are, for example, forcing accountancy to review its whole outlook and methodologies, with much resulting conflict and differing schools of thought within the profession (Briloff, 1972). In this sense we begin to perceive the collegium, the community and the institution as

microcosms of the external world. As professions become less differentiated and have to balance and optimize their values and practices with those of the organizations they serve, they need to find other means of establishing a credible identity and not simply look upon the current situation as if it were a case of losing face. Of course, it may feel like that but, as with stress, it can be an indicator of the need to review the forces influencing the work, and consider new choices of role and relationships.

The following examples will explore a number of these issues. In the first, the Royal College of Nursing, we have an institution attempting to achieve several diverse as well as complementary objectives and to perform many functions for its members which may be seen as competitive with each other, while each is desirable in itself. This is common in professional institutions as well as in other kinds of organizations, and points up the necessity of developing interdependent working with those who have competitive, as well as congruent, interests.

It has been my contention that where an organization and the professionals related to it conceive their tasks to include a better understanding of the working systems, and are prepared to learn about those organizational situations that give rise to conflict and stress, they also develop methods for preventing or working through these issues and problems. Where the professionals are also prepared to review their own organizational maps and work through variances shown up in their working with other functions and within their own, greater readiness will be shown by other parts of the organization to engage in collaborative re-thinking and greater respect accorded to that profession.

EXPLORATORY STUDIES AND THE DEVELOPMENT OF INTERNAL SUPPORT SYSTEMS AND COMPETENCES

One of the most striking and courageous studies it has been my privilege to take part in was that conducted by the Royal College of Nursing in the U.K. (Bridger, Mars, etc al, 1973). It has the difficult task of being the professional body, the main trade union and an educational and training institution. The increasing complexity and number of specialist roles as well as the changing and varied character of the nursing function in the reorganized National Health Service had led to severe tensions within the membership structure. For example, although sometimes originating from an actual experience, most of the perceptions of the RCN and particularly of its administration could be recognized as a reflection of the hierarchical, authority structured hospital of the nurse's training, work place and professional relationships.

It would take overlong to indicate the wide variety of ways in which the stress within the membership and within the Council and body of officers showed itself. But in undertaking the self-study of its own institution the Royal College was also providing an implicit training experience for its members in recognizing and working with corresponding situations and stress in the areas where they worked themselves. In this case, as with the Health terms in Unilever, the original objective was working through their own reformulation of policy, values, practices, and structures. But the principle

of self-review and of taking time out to reconsider working and professional relationships also entailed disturbance of the individual's status quo. The undertaking and exploration of issues creates its own set of insecurities and anxieties, regardless of the earnest desire to be more effective with which the individual or organization began. Thus one of the main functions of the continuous dialogue in collaborating with all relevant aspects of the RCN was to balance and channel conflicts and problems where they could best be handled.

Nevertheless, in all such action-research and collaborative institution-building approaches there comes the moment when those taking part reach the critical point. "Do we really need to go to all this trouble?" "Wouldn't we really be better off as we were?" Testing-out to discover whether someone is pushing, manipulating and imposing their design, or whether those concerned can really throw out what they have achieved or experience what they are developing as their own, takes many strange forms and requires considerable understanding in the working-through process. It can be infuriating and demanding work, but developing experience in facing such issues within one's own function and roles is desirable.

In Philips (U.K.) where I have been Social Science Adviser for some years, we found some most talented people for this kind of work - from engineering, training and line executives. Over 300 managers have also undertaken - on a voluntary basis - the appreciation experience which enables them to share and collaborate with developments of these kinds. There is little or no similarity between RCN and Philips, yet the development of key people to become what I have called the "internal learning institution" (or the "invisible college") and the opportunity for informed involvement by others at all levels, are common key features.

In the case of RCN the slowly changing mode of membership structure is beginning to take shape. It is moving - not by decree but organismically - from a system of funnelling direction, purpose, coordination and control downwards, towards a network of RCN's at local level linked together through the specialist, sectional and workplace functions.

TWO HOSPITAL STUDIES

Important implications for coping with stress in a wide variety of organizations today can be drawn from two early hospital studies which will illustrate the themes better than others. The first showed what could be achieved as a therapeutic measure in treating not only mental health cases but stress in the hospital staffs. It involved all professional disciplines and patients, at whatever stage they could begin to participate, in accepting responsibility for the hospital functioning both internally and externally. My intention in design was that the hospital, as an institution in the community, should be harnessed to the therapeutic task and not just considered as the container in which therapy was conducted. This was the Northfield Experiment of 1943 - the first therapeutic community, in fact, where the term was coined (Bridger, Main, et al, 1946). The inference I would draw from this work, as well as from more recent work, is that although organizational processes and activities may not infrequently develop inappropriate stress (strain) in indivi-

duals and groups, they can also be enabled to become probably the major forces in achieving or moving towards mental health.

The second hospital study (Menzies, 1960) was conducted by a colleague, Miss I.E.P. Menzies in a large London teaching hospital where the exploration of stresses led to the most illuminating understanding of the way organizational systems (including managerial and technical ones) can tend to be designed, decided upon and operated as a defense against anxieties of various kinds - whether held generally or by specific groupings within the organization (e.g. authority and policy-making executives or other professionals of various kinds). The inference from this study, of particular importance here, is the degree to which well-trained occupational health team-members should indeed be additionally trained to contribute to the understanding, at all levels, of the way particular features or structures in the organization are appropriate or being distorted to cope with uncertainties and anxieties rather than being directed towards alternative aims.

Many forms of such rationalization can be observed in organizations which pride themselves on their primary concern with effectiveness. "Bending the organization" as it is often called depends, however, more on who and what is involved, including their political overtones, rather than on effectiveness. There is a growing form of stress which can often be perceived in attitudes towards these rationalizations in organizational life, whether in the executive, union or consultative levels. It takes the form of an increasing readiness by those with powers and authority (whether managers, unions, bureaucrats or functional specialists) to accept and rationalize certain decisions as part of the way things are. Of course, there may well be a collusive element in the shrug of the shoulders and in the increasing cynicism and fatalism. An important responsibility rests on the occupational health team members here; should they make sympathetic noises, advise acceptance of the so-called 'reality' - or what?

Before proceeding to explore some of these questions in greater depth I must make an observation which has been increasingly confirmed over recent years through working with organizations of many different kinds in many different countries. Cultural factors and values within institutions even in the same country can differ to the point where stress conditions in one organization may not be regarded as such in another (Bridger, 1973). Of course, one has always to bear in mind the distinction between apathy and no-stress, even though the former can be well disguised. For example, although not often discussed in international settings there is the well known distinction between the U.S. and European attitudes in the stereotyped sudden death approach in the former's redundancy or firing pattern as against the slow torture of discovering that you are not wanted in the latter's. Both are indicative, however, of the inappropriate ways of trying to be kind while really being overconcerned with the firer rather than the fired.

THE CHANGING EXPRESSION OF STRESS IN ORGANIZATIONS

The majority of organizations and communities of today involve not only the need to cope with uncertainties and pressures from without and within, but also the capacity to handle new dimensions of complexity to which we have not

been accustomed. The nature and character of appropriate stress and what can be regarded as inappropriate stress (or strain), have also changed. If we simply deal with the conditions of stress or strain outside this context, or as if patterns of control and coordination, authority, accountability and role-relationship had the same meaning as in the past, then we are in danger of becoming inappropriate ourselves.

People are involved in all systems and structures within the organization, but these systems and groupings can be so diverse from one another that combining them to achieve objectives or tasks can appear insuperable. The increasing rate of technological change, the intensified search for economic standards and methodology, and the kaleidoscopic social scene are but three of the many dimensions which have to be balanced and optimized in developing forms of work organization relevant to the tasks in hand. The degree of effective interdependence is difficult to achieve because of the complexity and interplay existing in a socio-technical-economic system operating in a turbulent environment. The likelihood of rejection by host-tissue in a heart or kidney transplant could be regarded as elemental in comparison. Mechanistic systems such as time-paced assembly lines, bureaucratic procedures or computer installations can make demands that social systems may reject - or seek to modify in ways which can, in turn, render the technical system ineffective or useless.

Organismic and mechanistic systems have quite different characteristics, and the people identified with the technologies may themselves demonstrate their organismic nature in quite ruthless and spontaneous ways - witness the recent wave of engineers' strikes at London Airport, which caused not a few members of the public (including some of us) great stress. Of course, looked at professionally (not at the time I can assure you), an important facet of stress behavior could be perceived, namely, the tendency of the immediate group of engineers in a stress situation engaging a wider group in its disturbed behavior. Partly this can be regarded as a way of externalizing and compensating for the difficulties they are experiencing - but partly to ensure that even wider communication of disturbance, (e.g., by passengers giving the airline some further headaches) would react beneficially to their cause. The reverse process could also be taking place. It could be that some malaise of the organization as a whole could best find its outlet in the engineering section (for a variety of reasons which would need to be explored with those concerned, especially when the particular section is chosen in some unrecognized way) (Higgin & Bridger, 1964). Those who have seen Albee's play "The Delicate Balance" will recall that the mother introduces her daughter as "the one who has the divorces for all of us".

In an Information Services Department it began to become evident to the Medical Officer that members of a small subgroup were apparently taking turns to be off sick. Although, at first sight, one might jump to a rather more obvious interpretation, the doctor concerned could not reconcile what he knew of the individuals involved and that conclusion. Furthermore, neither the sub-group nor the department seemed conscious of the phenomenon. Adopting a different line of inquiry with the patients concerned and then, with their agreement with the management of the wider department, it soon became clear that these individuals had become the holders, or representatives, of a department

malaise. In fact it might be said that the larger part of the department had been enabled to remain well and fulfil its tasks at the cost of those whose particular make-up self-selected them for that job. It must also be added that the diagnosis and exploration were, in themselves, only a beginning.

The preparedness of management and those concerned to understand and study the implications of the situation initially was followed by a difficult period of working through problems concerned with meeting the demands of various consumer units (and also data suppliers) in the wider organizational environments as well as reconciling the social and technical systems within the department. Indeed, the actual group which was under stress - but avoiding strain by the unrecognized transfer to an available subgroup - was the top management, the head of the department and his immediate functional people. Although often on the point of giving up the review of the basic issues and concerns, the eventual self re-structuring engaged in by the department also involved negotiating different relationships with other key units in the wider organization, a change of role relationships within the department and very many other features. Not least, in the process, the department was able to establish better working relations with other corporate functions. These were able to assist in the reviews and, in the process, all gained a strength, readiness and capability to meet future self-reviews and awareness of inappropriate variances.

Of course, the successful working through and testing-out of such authority and sociotechnical systems is still relatively rare. Frequently there is a settling for a lower level and good enough result which often includes a less conscious form of assessing that total situation with those concerned. That conscious recognition and understanding the point and our circumstances at which the good enough position should happen is critical. There is a fallacious idea that following such studies and working through, life should become easier for those involved. In my experience, the working life and organizational relationships may be better, but it is almost always harder than before since this is an additional responsibility for phases of review as a continuous process. Putting this another way, the anticipation and prevention of inappropriate stress/strain or working through an understanding and review of it when it is evidenced, may hopefully reduce or eliminate conditions of strain, but it is likely to distribute more appropriate stress throughout the organization.

THE CONSTRUCTIVE USE OF STRESS TO REVIEW ORGANIZATIONAL EFFECTIVENESS

If we are to tackle stress conditions and sensitive areas in any serious way then we will not only pay attention to those human support systems which will prevent, alleviate or eradicate stress through the use of health and social services and the relevant medical, nursing and other specialist skills, but will relate those stress patterns to its wider contexts and examine the organizational, managerial and sociotechnical implications. We will then be giving equal thought and creativeness towards developing systems and conditions which enable individuals, working groups and organizations not only to understand the influences and forces involved, but to take appropriate rather than defensive action (Bridger, 1977). One of the costs lies in recognizing

the implications for the alternative environments of any stress condition.

Using the terminology of gestalt psychology the "ground" can be the culture, climate and systems developed by the organization over time and in the course of its operations. The "figure" can be the people, conditions and circumstances of stress on which we focus our attention at a point in time. If we shift our attention from the latter to the former by reversing figure and ground and considering both as aspects of a total system we can add new dimensions to our skills, to the effectiveness of the organization. There is no end to this process - we never reach a condition of no stress, the process is a continuous, inherent characteristic of organizational life which is almost entirely neglected - and yet essential in the open-system world we live in. We have however to understand why it is so neglected and seek steps to develop the capability of working through the resistance to change involved and tolerate the testing-out of explorations and reactions as part of organizational life.

To achieve this we have to move towards the notion of organization as being both a business institution (whether that business be public or private, civil, military, industrial or commercial, professional and/or trade union) and a learning institution - one prepared and capable of reviewing itself both in the short and long term, and ready to take into account not only its bare survival approach but its values and climate of living. In one form we can see it already, in the corporate planning function but most groups of that nature are basically financial, marketing and economic in character.

In many cases, far from anticipating stress it is likely to aggravate it, by excluding other factors in the total business situation as contingent on this economic one. However, it will be increasingly in the direction of developing the learning institution that progress will have to be made. In these terms we will not only be considering the business objectives (again, whatever that function or service happens to be) but also the health of the enterprise, as we called it in the Unilever study. Naturally, and in contrast to the gestalt pictures, each of these objectives will reinforce and enhance the other, thus making for the greater integrity. We can, however, be under no illusion that this is simply a crusading task ahead. It is fraught with all the problems of change in complex sociotechnical institutions.

So far we have tended to keep these two organizational facets unaware of each other. We like to learn from experience - time will take care of our ills and difficulties: time will be the healer; time will enable the culture to engage with the "business systems" and modify them. Naturally we will use all the expert skills we have - professional, social and otherwise. We also pay considerable attention to the knowledge-based aspect of organizational life and its practical concerns for success and survival. Today, we have not got the time, if we are to control our uncertain, complex and highly interdependent environments with their turbulent characteristics. We must therefore face working with a whole system approach (see Figure 12.1) and develop relevant competences in the organization's members, the officials and representatives of the trade unions and other bodies as well as in the professionals who are called upon to work with and within the organization.

It is not sufficient to be skilled at any job; consultative capabilities have become essential at all levels, whatever the degree of managed/self-managing is appropriate to any subsystem of roles in the organization. By the same token, the appropriate stress in the system can best be regulated (controlled) by the relevant concern with the double task of combining attention to the business institution with that of the learning institution.

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CHAPTER 13

ORGANIZATIONAL STRUCTURE AND MID-CAREER STRESS

Ben Ami Blau

Until the last two decades or so the general population considered middle age as a natural phenomenon that was taken for granted. By the same token, once an individual found or was put into a career path, it was taken for granted by the majority of the work force that it would not change. Career choice contained a large component of security needs satiation. Middle age was perceived as a point in time when the slope of one's life plane peaked and began a downward direction. This was accepted and dealt with as an inevitable fact of life. This is not to suggest that contentment with work and acceptance of the aging process were universal and of no concern. These were, as now, significant milestones in individual life cycles. However, responses to these concerns were not acted out via behavioral manifestations which were as overt, as strong, or as widespread as they are today.

Today when we attempt to look at the phenomenon of stress in the work environment and the stresses of middle age, two separate, and yet very intimately interactive entities are observed. Changes in technology and cultural standards have resulted in significant alterations of lifestyles and value systems of many individuals. For many, work and careers are not only an economic necessity, but are also looked to as a source of intrinsic need satiation. Changing social norms and individuals' inability to deal with conflicts in changing family relationships, personal roles, and dissatisfaction with traditional behavioral guides can result in stress for many. Changes in the work place in the form of task overload, job ambiguity and conflict with an organizational culture are equally as stress producing.

The world has grown smaller. Commerce has decreased distances between countries. This has resulted in a much faster-paced industrial environment, creating more demands on people than previous generations have had to face in similar positions. Adaptation to new work requirements has been a difficult and complex process. It is suggested that while management has become fairly astute in equitably dealing with financial and physical resources, the age of enlightenment in dealing effectively with the human resource is, relatively speaking, just beginning.

The human resource, on the other hand, has also undergone considerable change in value systems and self-image. On the average, people are living longer, are healthier for a longer period of time, are better educated, and have a much changed perspective of social and moral issues and the role they see themselves playing and of their role in the working environment.

Increasingly larger numbers of workers, both blue-collar and white-collar, are

no longer satisfied with the concept of security as the only premise for accepting a lifetime career in a given occupation. Nor are they as accepting of organizational autonomy in the ways that their fathers or mothers were. The worker today is responding to a set of needs that includes not only security in the form of financial compensation and job safety, but also job satisfaction and an opportunity to contribute to one's own personal growth in a non-materialistic way. The concept of quality in working life is taking as significant a role in many individuals' life systems as is a quantitative aspect of work which has generally been tied to financial remuneration and job security.

Today more and more people are in the "mid-career" stage of life. This is a broad stage that may range between the chronological ages of 35 to 55 plus. The people in this age range are subject to a dual set of pressures within their life systems. One set is from the work place, in terms of their perception of expectations and demands made upon them for performance and achievement within the organization. Added to these pressures are those exerted by their social and family environments that place them, as values and standards change, in many conflicting situations.

Mid-career stress is generally not a phenomenon associated solely with the job. In many cases, the job may precipitate a problem, but the etiology of variables that come together to precipitate a crisis in a middle-aged individual can interact in a most complex fashion.

There are relatively few research studies of mid-career phenomena which objectively and systematically define cause and effects. How do we know there is a problem? Subjectively, we see a larger number of individuals above 35 becoming drug involved, particularly through the use of alcohol. The divorce rate among older people is increasing. Second and third marriages of individuals in their forties and fifties are becoming more and more commonplace. Within the industrial setting, expressions of lack of job satisfaction and desire to change careers and do something that will have more intrinsic value is being expressed more and more via worker attitude surveys designed to get at such feelings. An increased trend towards worker participation in career tasks is being expressed as a need by workers at all organizational levels. Many develop unrealistic aspirations as to what they can do or where they think they are expected to go from a job achievement point of view. Many organizations reinforce traditional behavior by placing high value on aggressive, competitive behavior that leads to stereotypes of organizational success, but not necessarily individual satisfaction.

Expressions of conflict and anxiety about career paths that are not psychologically rewarding or demand a personal price of organizational conformity, time away from families, of an unpalatable organization role that one feels compelled to play are becoming more common. These may add a high factor of conflict to an already marginal adaptation to life in general of the individual. The responses to these anxieties are often directed towards the work place and seem to occur more frequently at the "midpoint" of career cycles when the reality of one's relative success or lack of success in life is recognized.

From a business point of view, all of these considerations can lead to a less-than-effective individual in the work place with impacts on decreased productivity, health costs, morale of peers and/or subordinates involved, and the increased demand on management time for dealing with a troubled human resource.

Mid-career stress must be approached in two aspects: 1) a better understanding of the etiology and dynamics and 2) developing the best means for dealing with the realities of the symptomatologies presented on an operational basis. Both approaches must consider the problem from a prophylactic and treatment point of view.

In dealing with etiology, efforts must continue in the direction of the dynamics of the individual, but the dynamics of the organization within which the individual works also must be considered. Unlike memberships in other groups, one's membership in an industrial organization creates the perception of a much stronger bond and need to adapt. This is the result of the recognized ability of the work place to provide economic and social needs. Non-adaptive behavior in response to either real or imagined organizational stimuli can have repercussions on the individual.

The disassociation or desire to disassociate from a work group or job in mid-life because of inability or unwillingness to adapt to an uncomfortable role can be very traumatic. The results of such conflict manifest themselves in work relationships and also the quality of adaptation that the individual makes with the rest of his or her environment external to the work situation. The practitioner who deals with mid-career stress must learn to understand the dynamics and personality of the organization which contribute to and/or precipitate the anxieties of its members who find it difficult to adapt to the realities of the organization.

We know, for example, that task ambiguity, job loading, lack of recognition and lack of autonomy can cause an individual who feels that autonomy should be a part of the work environment, varying amounts of stress. We also know, however, that these variables do not cause stress in all individuals. There are some who thrive on difficult situations and perceive them as challenges to overcome.

The social phenomena contained within the culture of many organizations are also stress producers for some people. The organization can establish or imply a set of standard behaviors or expectations that again can be perceived as contrary to one's personal code of behavior or can produce conflict in time, allegiance and energies expended.

This kind of pressure can produce stress in the industrial environment, particularly at the mid-career point where individuals often reevaluate their lives to see where they've been, where they are, and where they may perceive they are being forced to go. These variables, in addition to others, bear very strongly on the behaviors of people at work. Yet, few practitioners who deal with patients with work-related or precipitated anxiety have a well-rounded understanding of organizational dynamics as they relate to their particular patients.

Not only must more be learned through expanded research about what specific variables can induce stress in what individuals in the work environment, but means must be sought to convey to therapists and those dealing with industrial stress the realities of organizational dynamics and the practices engaged in by various management systems which result in mid-career stress. If these are better understood by therapists and counselors of individuals suffering from mid-career stress, they will be in a better position to help their patients achieve a more adaptive relationship with their work environment.

Since we are dealing with two highly complex and interactive systems, the individual and the work organization, it is suggested that it is of utmost importance that the organization, and its management representatives who deal with the human resource, increase their understanding of the role the organization plays in creating career stress. Many managers are unaware of how their actions can create anxiety on the part of their subordinates. Even with today's improved attitudes and understanding of mental health, most managers are still uncomfortable in dealing with emotional problems expressed by their subordinates and would prefer not to get involved. This preference is not based on a learned negative attitude towards mental disorder, but is rather based upon the recognition of their inability to deal with behaviors that are deviant from the norm. Dynamics of behavior in the human resource must be understood by managers in a manner which is conceptually equivalent to the manner in which they understand financial and physical resources. This does not mean that managers should become psychologists, psychiatrists, or para-professional therapists. It does mean, however, that if the human resource is to be managed better, those responsible for accomplishing objectives through people within industrial organizations must gain a better understanding of how that human resource operates and what kinds of variables management and the organization contribute to the behavioral manifestations of the human organism.

Managers can be taught to recognize significant changes in their subordinates' behavior as it relates to job effectiveness and how to deal with symptoms. Initially, mid-career stress, as is any other kind of work stress, is dealt with in relationship to changes in performance quality and quantity. Managers must also be taught how to recognize what they should not deal with in an employee. This means that managers should develop recognition and referral techniques and have the availability of professional services to refer to.

In addition to increased understanding of human resource dynamics, the reduction of mid-career stress, from an organizational point of view, must involve increased management insight into job structure, selection, placement, and techniques of managing. While management cannot motivate its human resource, it can influence individual motivation and attitudes towards work by the work environment it creates and the quality of leadership provided. The quality of leadership must be high in human resource management as well as business or technical management. While mid-career stress cannot be prevented by optimizing work-place perceptions and relationships, the severity of such stress can be reduced by minimizing contributing factors that are work related.

Why should we be concerned about mid-career stress now? As was pointed out earlier, there are more and more people coming into the age bracket which is commonly considered that of mid career. This means that a larger number of

people who will react and respond to those middle year stressors in their total life environment. These responses will have outlets in the work environment which will affect interpersonal relationships, productivity, and cost to the organizations in terms of the psychological costs of a disturbed individual affecting those in the immediate work environment, the cost of managerial time in dealing with such personnel problems, and finally the cost of treatment which will often be incurred by many organizations through their medical programs in dealing with these problems. These costs can be significant to the organization, as well as to the individual.

CHAPTER 14

THE TAO OF ORGANIZATION MANAGEMENT

R. G. H. Siu

The word Tao represents the essence of the ancient Chinese philosophy Taoism. It has been translated into a number of terms, such as the Way and the Principle of Nature. But none of these really describes what the Tao is. According to the Taoist view of things, the very attempt at a direct definition of reality distorts it. All descriptions are only indications of reality. Reality itself is to be found in what is not said.

In the present paper I would like to probe that ineffable reality of management, through which productivity and progress of the organization is maintained above a highly satisfactory level and at the same time the occupational stress upon the workers is kept below a very reasonable level. I would call the chief executive operating in harmony with such a Tao of management, a philosopher-executive.

When we talk about the philosopher-executive we picture a person as possessing a firm philosophical base and a strong strategic posture. He or she is endowed with a reflex readiness that can absorb what the situation throws against him or her and come up smelling like a rose. Such a manager reminds me of a great, deep, steadily-flowing river. The winds may churn up violent waves on the surface or a rock may cause ripples to appear. But all of these disturbances gradually but assuredly disappear back into the great, deep, steadily-flowing river as it moves inexorably along.

In line with Dr. McLean's wishes, I shall offer some allusions about the indescribable manner in which the philosopher-executive goes about getting things done, yet hanging loose, keeping cool, and being nice at the same time.

This discussion will be divided into three parts. These are:

- First, can we identify the singularly essential art that characterizes the philosopher-executive?
- Second, can we frame the five basic management principles flowing from this strategic artistry?
- And third, can we encapsulate the master's style of leadership into ten simple guidelines for day-to-day activities?

THE ESSENTIAL ART

Before addressing the first question, let us get our bearings as to the kind of milieu in which top executives operate. I shall try to do this through just one example.

This example pertains to the debate not too many years ago regarding the deployment of the anti-ballistic missile system in this country. When President Nixon took office, he asked Congress for authority to deploy the anti-ballistic missile system to protect a few American cities against small scale nuclear attack. When Congressional opposition mounted a fairly strong argument against the proposal, President Nixon suddenly announced that the purpose of the ABM was not that. That was not practical. His actual purpose was the protection of our own inter-continental ballistic missiles so that they would be able to survive a foreign attack and deliver a counter-blow. Such a shift caught the opposition off-guard and Mr. Nixon obtained approval for the deployment of two ABM sites by a one-vote margin in the Senate.

The following year the President came back to Congress for more funds to deploy additional ABMs. By this time the Congressional opposition had consolidated its own analyses to show that the use of ABM to protect our ICMs was not cost-effective. But no sooner did it begin to make points, when Mr. Nixon casually stated in a news conference that the ABMs were not designed to protect our own missiles but to protect all American cities against small scale nuclear attack. The carefully prepared brief on the part of the anti-ABM cadre was again caught off base at the time and point of action.

With this example of the milieu in which top executives operate before us, we can take up the first question with greater clarity. Can we identify the singularly essential art that characterizes the philosopher-executive? The answer is yes -- easily. The singularly essential art is Chinese. By the way, how many of you have ever played the game of Chinese Baseball? No one?

Well, the game of Chinese Baseball is played almost exactly like American Baseball -- the same players, same field, same bats and balls, same method of keeping score, and so on. The batter stands in the batter's box, as usual. The pitcher stands on the pitcher's mound, as usual. He winds up, as usual, and zips the ball down the alley. There is one and only one difference. And that is: after the ball leaves the pitcher's hand and as long as the ball is in the air, anyone can move any of the bases anywhere.

In other words, everything is continually changing -- not only the events themselves but also the very rules governing the judgments of those events and the criteria of value. The secret of Chinese Baseball then is not only keeping your eyes on the ball, but also keeping them on the bases -- and doing some nimble-footed kicking of the bases around yourself.

This kind of situation is alien to the scientific tradition of fixed boundary conditions, clearly defined variables, objective assessments, and rational consistency within a closed system. In the ball game of life, everything is flux and all systems are open. There is no such thing as an occupational stress problem which can be solved for all times and forgotten about, like a

mathematical problem of two plus two equals four. There are only occupational stress issues -- never fully delineated, never completely resolved, always changing, always in need of alert accommodation.

BASIC MANAGEMENT PRINCIPLES

So much for the prime art of Chinese Baseball. We will now address the second question and present five of the fundamental management principles flowing from this strategic artistry.

The first management principle pertains to what some traditional Chinese philosophers would regard as the mark of a wise person. This is: Act from an instantaneous apprehension of the totality.

I would like to invite your attention to the key word -- apprehension. This stands in contrast to the word understanding. It is important to understand things with the mind. But that is not enough. Even if a person can give a very logical explanation of events he or she will never become a master of action without an unerring intuition about situations. Only after a person has developed a sensitive feel about things will he or she be able to reach into a mass of conflicting data and opinions and pull out the right thing to do and do it at the right moment.

One of the chief weaknesses of forceful young executives brought up in the modern techniques of system analyses, operational research, and the like and suddenly catapulted into positions of considerable social complexity is their entrancement with rationality and the so-called scientific management. They have yet to appreciate fully the forte and limitations of science and logic. They fail to use scientific approaches when they should be used and fail to disregard them when they should be disregarded.

Let me relate two simple stories to caution against the intrinsic uncertainties of the scientific method when inappropriately applied. The first concerns the law of cause and effect. It lies at the root of scientific work and has served science well. Actually the law itself has never been proven rigorously. This is shown by the story of the little chicken which ran away in fright at the sight of man. After the man left, the chicken came out of its hiding place, only to find some corn on the ground, which it then enjoyed eating. The sequence was repeated over and over again --- 999 times. In terms of the law of cause and effect, this would mean that whenever the man appears, the corn must also appear. So when the man came out the thousandth time, the scientific chicken ran forward to thank the man for the delicious corn -- only to have its neck wrung for supper that night. Obviously, the assumed law of cause and effect failed the chicken miserably the last go-round.

The second story concerns the fundamental issue of objectivity. Most scientists claim objectivity as the foundation of their observations and conclusions. There are many situations, however, in which objectivity simply cannot be invoked. This is shown by the story of the Mormon graduate student, who wrote a critical thesis on Mormon history. Came the day of the final oral examination, one of the professors asked the student, "Do you think that you, who are a Mormon, can be objective enough to write a fair critique on Mormon

history?" Whereupon the student replied, "Yes, if you, who are not a Mormon, can be objective enough to judge it."

These stories indicate why it is that wise individuals are seldom over-awed by rational arguments, scientific theories, and computerized models as the final arbiters on matters of considerable social consequence or critical corporate significance. The philosopher-executive recognizes that scientific methods provide critical inputs for answers to only one of the three crucial questions that must be confronted before making the final decision. These are: (a) does it add up? (b) Does it sound okay? (c) Does it feel right?

Science and logic contribute primarily to the first question: does it add up? They contribute less to the second, does it sound okay? And even less to the third, does it feel right? The master executive always massages his or her critical decisions so that they answer all three questions affirmatively. And this he or she can do not through understanding but through apprehending the situation.

The other important word in this first management principle is totality. There is no need for us to belabor the common sense admonition about seeing the big picture or getting the full story. But you might be interested in some preliminary comparisons of the effectiveness of the so-called wholist strategy versus the so-called partist strategy in resolving issues.

When faced with a dilemma, the wholist strategy begins with the totality, so that all possible factors are included within the net of consideration. The unnecessary and less relevant components are then successively eliminated, until the desired equilibrium is obtained. In this case, the tentative decision at any given time is always correct but imprecise due to the varying degrees of extraneous chaff and noise, until the final answer is found.

In contrast, the partist strategy begins with a small group of factors assumed to be necessary and sufficient to solve the dilemma. Different combinations and permutations are then successively tested and discarded until the final satisfactory answer is obtained. In this case, the tentative answer at any given time is always precisely stated but wrong, until the correct one is found.

The tests showed that given infinite time, either strategy will deliver the correct answer. When only limited time is available, however, the wholist strategy is superior. When we take the game of Chinese Baseball into consideration, the odds are overwhelmingly in favor of the wholist strategy. In other words, act from an instantaneous apprehension of the totality.

The second management principle pertains to the social meaning of one's own operations. Just as it is impossible to demonstrate the rigor of a mathematical system from within, so must one go beyond his or her own operations to give it meaning and vector. This is accomplished by the second management principle, which is: Subsume yourself but resonate.

In applying the technique of subsuming and resonating, the executive will have to be clear as to the level of one's own operational concern and the level and nature of the context in which it is imbedded. The person then imparts social

significance to the operations by subsuming it in the larger context and looking at it from the viewpoint of the larger context alone. Yet since the executive must remain operationally responsible for his or her own contributing entity, he or she must continue to maintain its autonomous identity and vitality. The synergistic benefits are then sustained by constantly resonating the operational element against the subsuming whole.

We may use modern scientific research to illustrate the application of the principle of subsuming and resonating. The progress of science has now reached the point when the subsuming of the scientific community as an integrant of mankind has become a very practical and urgent question for all people. If scientists subsume themselves as part of mankind, then their choice of areas of research would be greatly influenced by what they as human beings feel would not endanger their fellow human beings. Furthermore, they would welcome others having some say in what they are doing, for the population at large after all are going to be the beneficiaries or victims of the consequences. On the other hand, if the scientists do not subsume themselves as part of mankind, then they would feel free to indulge in whatever investigations their fancy take them. The public at large and its representatives should then have no business butting their noses into whatever the scientists are doing.

This dichotomy is being spotlighted in the current controversy over research in genetic engineering. Laboratory experiments have demonstrated that new viruses and bacteria can be developed by splicing genes together. This achievement has been advanced as predictive evidence that, if the research on genetic engineering is allowed to continue as it has in the past, new and uncontrollable, virulent, disease-causing agents will wittingly or unwittingly be produced.

Some biologists have therefore called for a halt to such research. Most workers in the field, however, insist on their continued untrammeled freedom of inquiry. A third group has tried to mediate by offering a set of guidelines for careful experimentation. After three years, the controversy appears as intractably heated as ever.

In the meantime, our anxiety-laden society is following the debate with dismay and concern. If society had been convinced that scientists do genuinely embrace the principle of subsuming themselves into mankind and resonating with it, then society would have heartily endorsed the granting of full freedom without worry that this will lead to society's own ruin. But if society suspects that the scientific community will never sincerely subsume itself into mankind, society will assuredly over-react to rumblings of frankensteinian threats and resort to thought-control. This is a deadly serious potentiality at this juncture in time. As a matter of fact, the first step in this country has already been taken. A month ago, a high government official asked Congress to enact a genetic research licensing law. This might well lead to the nation's first proposed ban on basic scientific research. Should the request become law, it would mean that no unlicensed person may do certain kinds of research. Couch it any way you please, this is pure and simple thought-control, which may or may not be completely justified or necessary.

In any case, it may be well to see the ramifications clearly. Once a govern-

ment embarks upon thought-control to solve a possible threat, it takes a Solomon's guru to strike the proper balance. The degree of thought-control of scientists may increase or decrease with time in this country. To a large extent, this will be determined by how much society at large is convinced that the scientific community is committed to the principles of subsuming and resonating. Past generations of scientists have steadfastly refused to follow such a principle. Whether or not the coming generation is ready to embrace it and explicitly incorporate this principle into its operational ethics remains to be seen.

The third management principle stemming from the art of Chinese Baseball pertains to the tactics of accomplishing things. It states: Maintain multiple tactical targets within attainable view until the last moment of final commitment.

The Roman slave Publius Syrus had said, "Bad is the plan which is not susceptible of change." In other words, be sure that your strategy is sufficiently flexible. This generality is well understood by managers. The trouble is that many of them mistake flexibility for a lack of specificity of objectives. This is not flexibility, but fuzziness.

The particular kind of flexibility we are talking about is the freedom of tactical movement within a given strategic thrust. In other words, do not be committed to only one tactical target from the very beginning. This would lock you into a rigid course of advance, which can be much more readily frustrated by the circumstantial changes in the interim.

General William Tecumseh Sherman's campaign through the South during the American Civil War illustrates the point on the battlefield. The Confederates never did know which of several towns he was going to strike until he turned at the last minute from his general direction of march. By then it was too late for the defending forces to respond effectively.

The AMK Company's take-over of United Fruit not too many years ago illustrates the principle of alternative tactical targets in business. Up to the last minute, AMK could have either clinched control of United Fruit by acquiring more shares or made money by selling the shares it had acquired. AMK finally chose to gain control.

A third illustration of multiple tactical targets is provided by the story of the prisoner of the Sultan of Persia. The Sultan had sentenced two men to death. One of them, knowing how well the Sultan loved his stallion, offered to teach the horse to fly within a year in return for his life. The Sultan, fancying himself as the master of the only flying horse in the world, agreed.

The other prisoner looked at his friend in disbelief. "You know horses can't fly. What made you come up with a crazy idea like that? You're only postponing the inevitable."

"Not so," said the skillful tactician. "I have actually given myself four chances for freedom. First, the Sultan might die during the year. Second, I might die. Third, the horse might die. And fourth, you know, I might just teach that horse to fly."

The fourth management principle pertains to elegance and style in getting things accomplished. It consists of two simple words: Be propitious.

The axis of propitiousness is good timing. There is no need to remind a sophisticated group like you about timing. But there have been relatively few among the large number of executives with whom I have had personal contact who possess a really keen sense of timing. They simply do not know how to use the instrument of time. They are unable to allow precisely for lead time, lag time, incubation time, time to build up a head of steam, time to forget, time to get bored, and so on. They do not have the feeling for matching the duration of different acts to come into fruition against their respective times of need. They fail to lay the basis for the resolution of conflicts before their actual onset. As a result, they only struggle with the fortitude of facing crisis after crisis. They never glide with the art of de-existing them.

A frequent variety of poor timing among my acquaintances is premature closure. Many junior executives and quite a few senior ones are very impatient in mapping out a course of action of implementing a given plan. They want to arrive at a decision or a consummation as soon as possible instead of when the decision or a consummation is required and/or when the time is ripe. As a result, they do not allow enough time to reconnoiter the situation adequately; they do not allow enough time to acquire essential data; they do not even allow enough time for the problem to go away on its own, when such might well occur. They keep making tentative fixes when the basis is not yet at hand. The net effect is a continuous defending of successive tentative judgments along the way, thereby biasing themselves when faced with the final decision.

The worst kind of premature closure is exhibited by impatient leaders who think they are winning. They launch into the final push before they have gained a psychological advantage. The favorable outcome, if attained under such circumstances, is always extra costly. And they may very well fail.

I have even come across many an executive who just can't seem to get the sequencing of their actions straight in the implementation of a well-drawn up plan. They remind me of the Texan who wanted to become an Alaskan. When Alaska was admitted as a state into the Union, the Texan moved up there because he wanted to continue living in the largest state of the Union. Even after spending quite some time there, however, he did not seem to be accepted by the natives as a real Sourdough. In his deep discouragement sitting at the bar one day, he bemoaned his troubles to the bartender. The man took pity on him and finally told him the secret. "What you need to do to become accepted as one of us are three things. First, drink a fifth of whiskey in one swig. Second, make love to an eskimo girl. And third, shoot an Alaskan bear." The Texan grabbed the bottle of whiskey, downed it in one long gurgle, then stalked out of the saloon. Eight hours later the Texan staggered back -- all bloodied and battered, clothes all torn to shreds, but still undaunted. He beat his chest and bellowed forth: "Noaaw, where's that eskimo gal ah'm s'posed to shoot?"

The fifth management principle is especially close to your own interest in occupational mental health. This is: Enrich the ch'i and control the virtual presences.

Ch'i is another one of those ancient Taoist essences that cannot be put into words satisfactorily. The term has been variously translated as "passion nature," "creative power of heaven," "vital force," and the like. It has been used for thousands of years in many different associations, from personal conduct to acupuncture. The first of the Six Cannons of Chinese Painting, formulated in the sixth century, instructed the apprentice to capture the ch'i in his painting. The most famous Japanese swordmaster of the seventeenth century urged his pupils to go beyond the mere mastery of physical techniques and move with the inner strength of the ch'i. We have adopted an extension of this ch'i as the basis of a unified concept of human behavior.*

We sense the ch'i as something not materialistic in the nature of chemistry and physics. Yet it appears to be something which can be utilized to create something else. A concrete example might help. In an inanimate system, such as tuning forks, the same equation of motion objectively describes the physical vibrations, regardless of the kinds and sequences of sounds. In the case of subjective man, however, something new is created when certain combinations and permutations of sounds are presented, even though the energy involved remains exactly the same. This new realm is called music. Man is able to transform something other than energy into a heretofore nonexistent entity -- a song. The nonmaterial stuff which has been transformed we have called ch'i.

We have therefore speculated that ch'i is the raw stuff which is metabolized in the living process, just as energy is the raw material which is modified in the inanimate process, that the living organism is the harmonious union of the two processes in a single structure, and that death ensues when either process breaks down and the organism reverts to inanimate dust.

I am sure that all of you have sensed the workings of ch'i in your interpersonal relations, especially when you feel that you are on the same wavelength with others. The sharing of insights and rapport with someone else is the generating and exchange of ch'i between the two of you. Empathy is a state of reaching for compatible ch'i from the other person. Ch'i then constitutes the content of communication among living things.

Our speculations go on to suggest that the capacity to metabolize ch'i increases in sophistication during the process of evolution. Man stands at the peak of the progression, as the animal capable of metabolizing the most varied and the most complicated forms of ch'i into other forms. Accordingly the scope of ch'i metabolism determines the person's fullness of living. An unnatural constraining of ch'i metabolism would induce neuroses and psychoses. The philosopher-executive recognizes that social ethics must be based on an equitable distribution not only of material goods but also of ch'i, and not only of ch'i as such but also of ch'i of a reasonable quality. He or she, therefore, arranges conditions such that the flow of ch'i to the members of the organization is continually being enriched.

*Ed. note: The original speculation was presented in Siu's book, entitled Ch'i (Cambridge: MIT, 1974). It has been developed more fully in an as yet unpublished manuscript.

The highest form of ch'i, which is unique to human beings among the animals, is that group associated with what we have called virtual presences. A virtual presence is something which is not real in the space-time sense, yet it exerts a practical effect as if it were. An example of a virtual presence in mathematics is the square root of minus one. There is no such thing in actuality. It cannot be plus one, because plus one times plus one equals plus one -- not minus one. It cannot be minus one, because minus one times minus one equals plus one -- not minus one. Yet this purely imaginary number is used very effectively in calculations involving real events, producing very worthwhile and practical answers that cannot be obtained in any other way. There would not have been any modern physics in the sense we know it today had not the virtual presence of the square root of minus one not been invented.

Much of man's psychological well-being is a function of virtual presences. There would not have been such mental anguish, had not the capacities for producing such virtual presences as hallucinations and schizophrenics selves been engendered through the unfortunate confluence of genetic endowments and deficient and/or distorting ch'i from the environment.

Much of our social activities are driven by virtual presences. There would not have been such rapid cultural progress of the kind we know today had not the virtual presences of all kinds of myths been blandished before the young by their elders. There would not have been such massively destructive wars had not the virtual presence of patriotism been drummed into the citizenry by its leaders.

Having assumed a social role of influencing others, the philosopher-executive remains continually aware of the basic axiom of social dynamics, which is: The fashioning and controlling of virtual presences is the leverage of power. The real effects of his or her own virtual presences are on balance always socially beneficent. And so it is that the philosopher-executive is able to meter the optimal blend of stresses to be applied under various organizational situations by not being preempted by considerations of mass-energy alone but by paying sensitive respect to the fifth management principle, which is: Enrich the ch'i and control the virtual presences.

DAY-TO-DAY GUIDELINES

So much for the five overall management principles that the philosopher-executive intuitively follows. Let us now consider ten time-proven, self-explanatory, specific guidelines for day-to-day activities. As a concluding offer, here are ten proverbs for the journeyman executive trying to become a philosopher-executive -- five for planning and five for operation.

The five proverbs for planning are:

1. The shrike hunting the locust is unaware of the hawk hunting him.
2. The mouse with but one hole is easily taken.
3. In shallow waters, shrimps make fools of dragons.

4. Do not try to catch two frogs with one hand.

5. Give the bird room to fly.

The five proverbs for operations are:

1. Do not insult the crocodile until you have crossed the river.
2. It is better to struggle with a sick jackass than carry the wood yourself.
3. Do not throw stone at mouse and break precious vase.
4. It is not the last blow of the ax that fells the tree.
5. The great executive not only brings home the bacon but also the apple-sauce.

RECAPITULATION

To recapitulate, we have discussed the central artistry of Chinese Baseball, five basic management principles flowing from it, and ten guidelines for day-to-day activities.

It may be well to remind ourselves in closing that we have separated these categories only for discussion purposes. It seems that we can think and talk about things only in an abstracted and analytical mode. But this is not the way events occur in Nature. Happenings do not stand still for our slow-witted thinking. To be smoothly effective in our actions, we must catch the instant on the wing in an agglomerate gut-feeling fitness. Like my knocking on a lecturn, the sound does not wait for the completion of the knock before issuing forth. Knock and sound, cause and effect, cause and effect, plans and operations, means and ends -- all merge in the instant of action.

This, I would say, is the hallmark of the philosopher-executive, who abides in the Tao of organizational management.

LEGISLATIVE PROGRAMS FOR THE MANAGEMENT OF PSYCHOLOGICAL JOB STRESS

CHAPTER 15

CHANGING ATTITUDES TO WORK AND LIFE STYLES

Jerome M. Rosow

Problems of traditional forms of work organization can best be understood within the broader context of the economic and social system as a whole. The workplace is only one institution among many which affect the lives of people in society. Therefore, the workplace should be placed in perspective to external changes which have a bearing upon employee behavior and attitudes. A considerable number of relatively rapid changes are occurring in Western industrialized society. Let us examine eight changes which are relevant to traditional work organizations.

CONTEMPORARY ECONOMIC PROBLEMS

Workers in Western industrialized societies are buffeted by a number of economic and social problems which have a definite and persistent effect on their attitudes, their confidence, and their performance on the job.

Slow Growth

The 1960s were marked by expansive industrial growth in all of the Western industrialized countries and in Japan. The broad-scale worldwide recession of 1974-75 has interrupted, and in some cases actually reversed, the growth in real gross domestic product per employee. As shown in Table 15.1 for the period 1973-75, the average annual compound growth rates have declined in Canada, Finland, Italy, Sweden, the U.K. and the U.S. This slowdown in economic growth has fed the forces of unemployment and reduced the ability of Western nations to absorb the new people seeking to enter the labor force.

High and Persistent Unemployment

The full employment boom was largely ruptured by the energy crisis. This compounded the business cycle decline in 1974-75 and produced record unemployment in Western Europe, the U.S. and Canada. For the first time in four decades, government leaders in the West were using terms such as "depression" to describe the serious impact on production and the labor force. This general condition reflects on under-utilization of capital resources with substantial spare capacity; a reduction in productivity; balance of payments problems; reduced exports; painful inflationary pressures; and an enlarged burden of social costs to support the non-working population. It also has created an intensified fear of unemployment and fear of change among many workers. The current economic evidence challenges the popular beliefs that unemployment reduces inflation, increases the supply of labor, dampens wage pressures, and increases the effectiveness of employed workers. In fact,

Table 15.1

TRENDS IN REAL GROSS DOMESTIC PRODUCT PER EMPLOYEE SINCE 1960

	1960-70	1970-75	1973-75
Annual average compound growth rates			
Australia	2.2	2.3	1.1
Austria	5.7	4.2	1.8
Belgium	4.2	n.a.	n.a.
Canada	2.4	0.5	- 2.1
Denmark	3.4	n.a.	n.a.
Finland	4.9	2.9	- 0.1
France	5.1	3.4	1.4
Germany	4.7	2.7	1.1
Italy	6.4	1.6	- 1.9
Japan	8.9	4.5	0.5
Netherlands	4.2	n.a.	n.a.
Norway	4.2	3.3	2.7
Sweden	3.7	1.0	- 0.3
Switzerland	2.8	n.a.	n.a.
United Kingdom	2.6	1.5	- 1.1
United States	2.3	0.7	- 2.8

SOURCE: OECD National Accounts of OECD Countries and Labor Force Statistics 1960-75.

many countries are living with stagflation, and are suffering their worst combination of high unemployment, high inflation, and reduced productivity since about 1950.

Inflation

Although South American countries have learned to live with extreme levels of inflation, the Western industrial countries were basically immune to double-digit inflation until the early 1970s. Now their high levels of inflation have eroded purchasing power for workers and, at the same time, created continuing demands for higher wages, which in turn create higher prices. (When corrected for inflation, U.S. purchasing power increased less than 1% in the four years from 1972 to 1976.) The impact on many lower and middle class people has been to increase economic stress. In fact, two out of five families in the U.S. reported themselves in some economic distress in 1975--for example, they were unable to keep up with food bills, rent and mortgage costs; or their savings were reduced or wiped out by inflation; or they were fearful of losing their jobs. These economic conditions have also increased the cost of borrowing money, and therefore reduced the ability of the average citizen to purchase a home, which had become a rather general aspiration of the middle class.

ERA OF RISING ENTITLEMENTS

Western industrialized societies have been riding the crest of economic growth. Although this crest peaked in 1974, it has not diminished deep-seated and almost universal expectations of a rising standard of living.

Enjoying a burst of consumer goods production and a progressive rise in purchasing power, Europeans and Americans alike have cultivated the desire for more and more, and for a better life. Consumer attitudes have been sharpened by the production and distribution of massive quantities of attractive goods. These range from quick-frozen convenience foods to labor-saving machines in the home; the private automobile, including the two-car and three-car family; year-round and summer homes; increased leisure and glamorous vacations. A significant advance in the real standard of living has been almost uninterrupted since World War II. The new generation of workers and their children were conditioned by this boom economy; they perceived these advantages as normal.

Now these expectations have become entitlements. Western governments have expanded social services in health, housing and education, and have provided broad income transfer programs to shelter individuals and families against economic hardship, illness or aging. People in these societies have learned to believe that they are entitled to the direct allocation of resources through the political system as a supplement to the economic system. The worldwide recession of 1974-75, which is still persisting in many countries, did not override these expectations. In fact, many political programs expanded as the economic system fell into recession. The economic slowdown, rising unemployment, and problems of inflation are seen as temporary phenomena which introduce, at worst, a pause in the fulfillment of the era of rising entitlements. For example, in 1975, 56% of the American public ex-

pressed the view that, as a matter of right, they are entitled to an ever-increasing standard of living (Lazarus, 1966).

INCREASED EDUCATIONAL OPPORTUNITY

Most industrialized societies have set a national goal to broaden the base of participation in their educational system. The motivations are a greater opportunity for all and an increase in the quality of the labor force. Rapid advances in technology necessitate channeling a larger proportion of youth into more advanced education; the resulting knowledge and skills must be applied not only within the workplace but also to the needs of society as a whole. In the United States, for example, half of all high school graduates enter college or university, and about half of these graduate. More than ten million students are enrolled in undergraduate education.

Education is the key to occupational achievement and upward mobility for the new generation. In the main, industrial societies have recognized educational achievement as a passport permitting the young to cross class barriers and to rise to positions of the highest social, economic, and political influence. There has also been a parallel rise in expectations for career and personal achievements to match higher educational attainment.

CHALLENGE TO AUTHORITY

During the 1960s, the U.S. and other Western societies experienced a so-called youth counter-culture movement. Many of the traditionally radical attitudes of youth were intensified by a concern over the environment and a revulsion against war (Levine & Scotch, 1970). The revolution in social values has continued, so that the ideas originally advanced by a comparatively small number of students are now embraced by millions of young people in mainstream America.

As a by-product of these fundamental changes, American young people have changed their attitude toward authority. Seventy per cent say that they need not take orders from a supervisor at work if they disagree. The permissive society in the West has fostered a change in authority roles. We have seen this change in the schools, where the young openly disagree and challenge their teachers. We have witnessed changes in the family, where the traditional authority figures have adopted more open relationships with their children in order to achieve consent and stability. These more permissive values have carried over into marriage; the husband-wife relationship is undergoing a transformation.

It is to be expected that these changes in authority relationships would spread to the workplace. But even as younger, more educated workers resent authoritarianism, they are not opposed to the proper exercise of authority. This distinction is quite important. They respect authority properly exercised with restraint and with rationality, but reject authority which is abusive or arbitrary. This poses a challenge for large bureaucratic organizations to rationalize their work procedures.

DECLINE OF CONFIDENCE IN INSTITUTIONS

In the United States, the decline in respect for authority is related to a growing mistrust of institutions. Business, government, labor, the church, and the military have all fallen in the general public's esteem. This mistrustful feeling is most pronounced with regard to the Presidency and big business, the two American institutions that are believed to possess the greatest power in the country. Big business has seen a rise from 30% mistrust in 1968 to 70% by 1975. In fact, by 1975, nine out of ten U.S. citizens expressed a general mistrust of "those in power," covering business, government, and most national institutions. Some of this same cynicism is reflected in Western European countries.

As recently as the mid-1960s, American big business enjoyed a reputation for unmatched industrial know-how and technological achievement. This image of relative infallibility was badly shaken by the financial failures of several multi-billion dollar corporations. In addition, the general mistrust toward big business is no longer limited to the public at large, but also applies to employees. In one recent study, for example, it was found that more than two-thirds of management within large organizations do not believe or support the advertising programs of their own company.

In contemporary terms of so-called "corporate social responsibility," the private corporation recognizes that it must be responsive to consumers, to the environment, and to its own employees. Insofar as any of these have been badly neglected or subordinated to economic pressures and profit goals, they weaken public support for business as an institution and especially for companies which have violated the moral code.

Nevertheless the decline of the family, the church, and the small community has increased the importance of the work organization for providing social support and a sense of security--in general, for making life more meaningful.

RESISTANCE TO CHANGE

Industrial workers dislike and fear change. Most of us, in our normal day-to-day activities, are sensitive to change; we are uncomfortable with a disruption of our established routines. For example, people find it difficult to change a commuting pattern. Within the workplace, change introduces the unknown. Since the worker has a limited degree of control over his work and his future, it is difficult to accept change without a sense of insecurity. Usually, workers feel that change imposed from above is intended to meet the goals of management, to increase production, or to reduce costs, rather than to improve working conditions, reduce stress, or increase opportunity, pay and security.

Many students of international labor relations believe that the strong employment security provided by the individual Japanese employer has contributed to that country's high growth in plant productivity. Since Japanese employees feel secure and essentially have lifetime employment, they do not resist change.

By contrast, in other industrial nations, new technology and production processes often displace some of the work force. Thus, in the short-run, the penalties of change may outweigh the rewards--this applies to workers and managers alike. Society has been searching for better ways of managing the human costs of change so that the full burden does not fall on the worker. Where the full employment philosophy is deeply embedded, as in Japan and Sweden, change is less threatening.

CHANGING ATTITUDES TOWARDS WORK

In 1973, eight out of every ten American students believed that "it's very important to do any job well." Daniel Yankelovich's attitude surveys of youth have revealed consistently that the work ethic is strong and alive, despite the revolution in social values. However, youth's appraisal of the traditional rewards of hard work has certainly changed. In 1967, a 69% majority answered "yes" to the question "Does hard work always pay off?" By 1975, 75% of American students answered this question "no." This view of the world of work is a reflection of attitudes at home, and may also be a more realistic insight that many jobs are routine, dull and boring, and do not challenge the talents of the average worker.

Changing attitudes toward work, combined with the revolution in social values, have raised new interest in improving the quality of working life. To satisfy the expectations and aspirations of workers requires a social agenda with heavy economic undertones. It involves a shift away from authoritarian concepts of management, and places a higher value on individual employees and groups as critical factors in work efficiency.

This new agenda stands in sharp contrast to the dominant contemporary practices of work organizations. Many terms have been used to describe the newer concepts, including worker participation, participative management, industrial democracy, autonomous work groups and work teams, humanization of work, quality of working life, job redesign, and job enrichment.

It is increasingly thought that the more useful and lasting changes will be those which embrace the entire environment of work and seek to achieve a systematic restructuring of the organization and of work relationships.

As a comprehensive concept, the quality of working life encompasses such matters as the organization of work (i.e., of the production process itself), hierarchical structures, relations with workmates, the social situation within the firm, the working environment, participation in decision-making at all levels, and opportunities for self-development and advancement (Likert, 1961).

Employment policies and operating practices should also be accommodated to the rising expectations of employees. Employees desire opportunity, participation, and use of their potential. This is a universal human need. Workers want to learn, to receive training, and to develop on the job. They want a more meaningful participation in decisions which affect their work. Such participation should be linked to productive goals; it need not become an undermining of authority or a vast dilution of management control. Under proper conditions, employee participation increases motivation and builds a com-

mitment to the goals of the enterprise. The social interaction is also important. Where competition, rivalry and secrecy prevail, employees are less likely to cooperate and are prevented from engaging in effective group efforts.

Workers wish to compete for recognition, training, promotion and advancement, especially at the lower levels. This aspiration is compatible with the needs of every organization to utilize and upgrade its own human resources.

WORK AND THE FAMILY

The American nuclear family is undergoing severe social and economic stress. These internal and external pressures reflect the interaction between the economy and the family, and work and the family.

Sex

The middle class family has already been stripped of many non-essential duties. It now faces an attack on one of its last bastions--sex. Sex is available pre-maritally, extra-maritally, and non-maritally to more Americans than ever before. This has reduced the incentive for marriage, and weakened the permanency of marriage. One manifestation is the deferral of marriage to later ages. Another manifestation is the fact that 32% of the U.S. labor force is now unmarried or separated, up from 27%, a rather steady trend.

Divorce

The rising divorce rate is growing in visibility. Dr. Kenneth Keniston of MIT estimates that two of five children born in the 1970s will spend some time in a one-parent family. The 1975 statistics reveal that there were one million divorces versus two million new marriages. Many states have responded to the divorce ethic with more and more liberal laws, including the spread of no-fault divorces. The social stigma to divorce is disappearing in many sectors of the country, and some people are talking about the first marriage as a trial run. Yet the data shows that, whereas 35% of first marriages end in divorce, 58% of second marriages end in divorce, so that divorce is not a step toward stability of the family in the second level experience.

One-Parent Families

Nine million children under 18 are now being raised in one-parent families. Most of these families are headed by women, and one-third of these children are under age six. The single-parent family has increased 31%, almost three times the rate of growth in two-parent families. In fact, there are now 2.4 million one-parent families, versus 29 million nuclear families, almost 10% of the total, and it is growing rapidly. Our best estimates show that there are fewer than one million places in child care facilities in the U.S., with more than six million children under age six in families with working mothers. The one-parent family and the high divorce rates, and the growth of single-parent households all point to serious problems in child raising, and reveal the stress between the needs of the family internally, and the needs of the parent to generate income to support the family. In the conventional male-

headed breadwinner nuclear family, there was limited competition between the role of the breadwinner and the role of the homemaker. In the single-parent family, homemaking is weakened by the stress of full time, full year employment.

Multiple Worker Families

During the period 1950-75, families of two or more workers rose from 36% to 47%. Just about half of all the 46 million husband/wife families has a working wife. The economic pressures of inflation, rising taxes, and costs of education have exerted the greatest force in pushing women to work. Of all the working wives, 72% work full time, full year, and six out of ten wives with children aged 6-17 worked in 1974.

Working wives contributed 38% of median family income of \$17,500. Where the husband was the sole breadwinner, the median income was only \$14,000. Husband/wife working has become the most obvious answer of the American family to pressures of inflation and the rising expectations of the American family.

Work Place Implications

The growing involvement of women in the workplace, and the multiple worker family, has a number of implications. First, it clearly points to the growing popularity and need for flexible working hours, including staggered hours, flexitime, and shorter work weeks. Many of these changes can be accommodated by employers without any capital investment, with a minimum effect on present production programs, and with payouts in reduced absenteeism, lower turnover, and higher productivity.

It also points to the growing demand for part-time jobs for women, younger workers, and older workers. We will witness increasing husband/wife career conflicts and maladjustments. Many companies have revised their policies to permit the employment of both husbands and wives without regard to previous restrictions on nepotism, which are hangovers from the depression; and transfers and management development programs must increase in flexibility to recognize the combined needs of both members of the family, whose careers are important to the firm as well as to the family.

There is a very minor degree of experimentation with shared jobs, where husbands and wives with the same profession share one job. Sweden has recognized the impact of husband/wife working by providing seven months' maternity leave, which can be shared by either parent with relatively free choice. This is an experiment worth watching, but it reflects the concern of society with this problem. There is also growing evidence that women are more immune to business recessions. They are more insulated because they are concentrated in retail trade and service industries, which are less subject to cyclical fluctuations. Only 6% of women work in construction and 20% in durable goods manufacturing.

SOCIETY IS CHANGING FASTER THAN THE WORKPLACE

Changes in Western society have been more rapid and penetrating than have been changes within the workplace. After all, changes in mores, folkways and laws have reflected the revolution in social values. Society's changing attitudes toward legal abortions, youth, divorce, the use of drugs, women's rights, civil rights for minorities, and more casual sexual mores--all these present an imposing and almost unbelievable agenda of sweeping social change.

By contrast, conditions have remained relatively static in the workplace. The large bureaucracies of government, industry, the church, universities, and the military all remain relatively resistant to change. Authoritarian rules and bureaucratic practices are deeply embedded and are rather sheltered and secure from the outside environment.

Nevertheless, the concern for human values must be focused on the workplace, first of all because the individual devotes the greater part of his mature lifetime to his occupation. His time, energy, and physical and mental resources are engaged in this endeavor. Second, our freedom, growth, and standard of life depend upon earned income. Third, the role of breadwinner is fundamental to the family and to self-respect in the society. Perhaps most of all, production, industrial growth, and technological advances are not ends in themselves: they are a means to an end--namely, to improve the quality of life for all.

CHAPTER 16

LEGISLATIVE AND REGULATORY PROGRAMS: THE SCANDINAVIAN EXPERIENCE

Bertil Gardell

We are presently witnessing a large-scale breakthrough in the Swedish economy with respect to psycho-social aspects of work and work organization. The basis for this breakthrough is a new legal framework regulating our industrial relations system and working conditions: the Act on Co-determination, put in effect on the first of January, 1977, and a coming Act on Work Environment, expected to be put in effect in July, 1978.

The Act on Co-determination gives the trade unions the right to influence decisions at all levels in the company, and all questions related to work and work environment are open for collective bargaining. Nationwide agreements on Co-determination are expected in other areas such as personnel policy, work organization, use of computers and top management.

The Work Environment Act specifies that working methods, equipment, and material should be adapted to man, both from a physiological and psychological point of view. This system is based on decentralized influence through local trade union representatives.

My task is to say a few words on the meaning of this new legal framework for conditions relevant to the well-being of people and dignity of work in the industrial society. In addition, I will try to give you some understanding of the background of this development, not only with respect to the Scandinavian scene, but also with respect to features common to most industrialized societies.

Let me begin by quoting from a recent policy statement in the agreement between the Metal Workers Union (which is the largest union in Sweden) and the Supervisors Union: an agreement on work organization.

"In an historical perspective jobs have been changing radically, comparing handicraft with today's technically advanced society. During the era of handicrafts, job content was something whole, the master being the one who had all relevant knowledge on planning, design and sales of the product. Pride in work was highly rated, and many years of practical work were required to attain the competence of a master.

In the industrial society of today, work has a completely different character. In the shops, fragmentation has meant that the individual worker has only a few standardized tasks in a long

chain of production. Rationalization has meant that work tasks have been almost completely paced and controlled, with respect to both working methods and time allowed for performance. The result has been an intensive, systems-controlled work pace resulting in monotonous jobs, demanding high superficial attention but with no margin for personal creativity. This mechanization of man has meant that the dignity of work has been lost.

For the individual worker, intrinsic satisfaction from work has diminished. Instead, pay has become his main reward for work. The effects of this have been evident enough: youth often shun industrial work: labor turnover and absenteeism are high.

Our unions regard these problems as caused mainly by the fragmentation of work. We, therefore, want to express a strong and sincere will to organize work in enlarged entities, where tasks are more complex and meaningful, and where the specific talents of man, such as taking initiatives and making complex evaluations, are better utilized. At the same time the greater possibilities to adapt work to individual needs should be used.

Of course, we do not regard it possible or even desirable to go back to the era of handicrafts. However, we feel it is possible, within the framework of advanced technology and complex production-systems, to enlarge the area of creativity and self-determination in work for each individual worker. Work organization should be based on groups of workers, including the supervisor. These groups should be given a greater responsibility for planning, organization and control over the work of the group. Functions now to be found in specialized staff groups should be brought back to the producing work-teams.

The motives for a change in this direction rest on demands for a richer job content and demands for increased quality of life. However, we are convinced that the effectiveness of our production system will also increase if this view of work organization is put into practice."

This statement is interesting from many points of view. First: It makes clear that problems related to mass-production technology are at the focus of the debate. This view is also taken in the forthcoming Act on Work Environment as well as in the Norwegian Work Environment Act. As has been shown in so much research over the years, problems of monotony, strain, impoverished work, valid for large groups of workers, are important. Not only industrial workers, but also office workers, as Nerell has demonstrated, suffer from strain and impoverished work. The same kind of management ideology has also pervaded our hospitals as well as other sectors of the labor market.

The problems may be best known in industry, but the description given in the statement covers a much wider range of blue-collar and white-collar work.

When we in Scandinavia talk about legislation and collective bargaining in the field of work organization, it is the work-situation for those large groups of workers we have in mind. This does not exclude facts on severe strain also for people in management or in the professions, but priorities and attention are given to the larger problems of those in rank-and-file.

Second: I want to draw your attention to the fact that in the quoted statement as well as in other union documents related to industrial democracy and work organization the concept "psycho-social" aspects of work is never used. Union people seem to prefer to talk about technology, work organization, working time and wage-systems. Maybe it is a strategic mistake to use "psycho-social factors in work" as a common denominator for those aspects of work which are related to strain, monotony and mental fatigue. "Psycho-social" also means many other things, and therefore possibly distracts our attention from the hardware of production methods. The concept "psycho-social" leads to analysis on the level of the individual, to looking for an explanation which has to do with the person or his personal relations. Consequently, much of the medical and psychological thinking in this field is leading us astray, distracting our attention from explanations which have to do with structural factors of society, technology and work organization.

I do not say that individual explanations and individual cure are always wrong or are always unimportant. I merely say that it is possible that the medical frame of reference, and borrowing the concept "psycho-social" from that frame of reference, might divert our attention from much larger problems which have to do with objective features of our production system. The focus on larger groups of workers in relation to mass-production technology has to do with value-based priorities, not with academic or scholarly analysis of all possible factors relevant to occupational stress. Laws and regulations as well as collective bargaining based on this legal framework, aim at prevention on a general level related to our methods of production.

Third: I want to underline that the agreement from which I have quoted is an expression of political will. The same determination to abolish monotony and fragmented work is also expressed in a forthcoming report to the 1977 Congress of the Swedish Metal Workers Union. In this report it is also stated that in order to abolish machine-paced, fragmented and monotonous work, unions must be able to exert influence on technical research and development.

A political will of this kind is of course necessary to make effective use of the new legal framework regarding work. The law itself does nothing. The Law of Co-determination is based on the philosophical notion that labor has an equal right to economic power along with capital. Worker influence should not be limited to one segment of the company, but should be made effective at all levels of the organization. Naturally, research and development play a strategic role in the shaping of future working conditions.

EQUAL RIGHTS

Claiming equal right to influence on the basis of labor represents a complete break with our past history, in which industrial relations were based on joint consultation, in an advisory role to management. What has happened that ex-

plains this break? Are there any features in this development which mirror a more general trend in the industrial society?

Without requiring the reader to suffer too much of Swedish history, let me point out that a leading principle in our industrial relations system from 1906 until quite recently, has been that negotiations should be over the results of production, not the methods of production. The same Metal Workers Union previously quoted was, as late as in the mid-1960s, in complete agreement with employers in the use of Tayloristic, scientific management methods, including time-and-motion studies and piece-rates, to make production more effective. It was felt that the constraints of work were well compensated through an increased standard of living and increased leisure. It was believed that an impoverished job could be made up through a rich and meaningful life outside work if only leisure hours were long enough.

Problems of structural change and relocation were thought to be taken care of by the so-called active manpower policy, which helped expanding companies to recruit workers and helped redundant labor to secure good and lasting employment in an expanding part of the economy.

In the mid-1960s the first signs of weakness in prevalent policies began to crop up. Studies showed that there was considerable social and individual stress tied to structural change, and to mechanization and rationalization of production methods. These problems were brought to the attention of the 1966 Congress of the Confederation of Trade Unions. This led to intensified studies of various kinds and, in the Congress of 1971, the political foundation was laid for changes in work environment and industrial relations that are now taking place.

Between 1966 and 1976 a series of studies were made, both by independent scientists and by the unions themselves, showing that there were severe shortcomings, both with respect to the physical work environment, job content and work organization as well as with possibilities for workers to make up for an impoverished job in leisure hours. Quite to the contrary of official ideology, several studies showed that impoverished work seemed to spill over into an impoverished leisure. Participation in democratic decision-making, voluntary associations and education activities were less among those who had monotonous work, or who worked irregular hours. This is a state of affairs which is difficult to tolerate for a political system of the Scandinavian kind, and these studies seem to have resulted in attention now paid to job content and work organization.

OTHER PROBLEMS

During this ten-year period other signs of discontent and unrest also became evident. Companies experienced great difficulties in recruiting and keeping workers. Absenteeism and turnover began to rise rather sharply; quality of production was difficult to maintain. We also experienced a series of wild-cat strikes. A strike of state-employed miners in Northern Sweden made a deep impact on the country in general and especially on the labor movement. The miners' strike was clearly over bad working conditions, powerlessness (even with respect to their own union), the mental health effects of hard rationalization and impoverished work.

Inspired by Norwegian efforts on autonomous groups, the labor market parties set up a joint body for furthering worker influence on the shop floor, based on the conditions prescribed by the prevailing agreement on joint consultation. It soon became evident that there were severe limitations under this frame of reference to what might be achieved from the point of view of industrial democracy. The unions felt that it was necessary to change the legal foundation for our system of industrial relations, as a precondition for more thoroughgoing changes in work organization and working methods.

The Act of Co-determination has been the answer to the workers' need to influence, not only the distribution of the results of production in the population, but also methods of production. You could say that the emphasis has shifted from the worker as a consumer to the worker as a producer.

In the Swedish context, the Act of Co-determination and the Work Environment Act must always be understood as two sides of the same coin. The basic means of coming to grips with bad working conditions is through the workers themselves. Consequently, the basis for action lies at the local level i.e. at the work-places where problems are to be found. But this local influence must be organized, and in principle there will be local union representatives of two kinds at each work site, one dealing with health and safety problems and one dealing with other conditions related to the work organization. Dr. Edström will take up some of these aspects in his paper. Let me just say that these local representatives of the worker have a legal right to all information they think necessary to promote worker interests. They will also have the right to call on outside experts - at company expense - to assist them in technical matters and to perform research. Negotiation with the employer is called by the local union representatives and only if they disagree is the problem carried further to more central bodies.

THE ROLE OF RESEARCH

Finally, a few words on the role of research in present and future development. The role of research in relation to changes in working life should not be overstated; on the other hand I think it is quite clear that both legislation and trade union policies have been influenced by research findings on ill-health, stress and discontent related to present production methods.

The importance of research on working conditions is perhaps best illustrated by the fact that a special Research Foundation on Work Environment has been created. This fund receives annually about 100 million Sw. Cr. directly from production, which is used for both research and training activities. The Fund is controlled by the labor market parties themselves. Research is performed by universities or other research institutes. In connection with the Act of Co-determination a Center for Work Research was created with the explicit aim of supporting implementation of the work reform program. This Center is also controlled by the labor market parties and will have research staff of its own as well as relying on personnel resources at the universities.

This attitude of trade unions toward research also represents a break with

past history. This new attitude creates new demands on experts and research staff since divergence of interests in work environment questions will be more evident. This represents new challenges to all of us who, in one capacity or another, represent scientific knowledge about man and society.

CHAPTER 17

A LEGISLATIVE APPROACH TO JOB REFORM

Bjørn Gustavsen

The characteristics of organizations have for a number of years been an important topic for discussion in many countries. The large bureaucratic hierarchies, with much power for those at the top and very little freedom and content in the organizational life of the average employee, have generated increasing dissatisfaction and a search for alternatives. The number of ideas and suggestions for new approaches to organization seems quite numerous when looked at from a detailed point of view. However, they cluster into a few general approaches. The purpose of this article is to treat two such approaches:

- The shop-floor approach, where the focus of change is the individual organization, and the idea is to achieve changes in all-over organizational patterns through a process that starts with redesign of jobs and work organization on the shop floor. This approach was pioneered in Norway in the 1960s.
- The legislative approach, where initiative is shifted towards political and administrative institutions. This development is now emerging in Norway.

When a distinction is made between these approaches, it is not because they are mutually exclusive or necessarily contradictory. Evidence suggests that both approaches are needed, in interplay with each other.

In the following, I will give a brief description of the so-called shop-floor approach, as this emerged in Norway in the middle sixties. I do that because there are misunderstandings concerning this approach - one of the chief of which is the opinion that it is only a shop-floor approach. This is certainly not the case: the shop floor is only the initial point of a change process, and not the complete framework for such change. After treatment of this approach we will turn to current developments that include the use of legislation.

THE SHOP-FLOOR APPROACH

In Norway this approach was concretised in an action research program launched in the sixties. Researchers played an important role as change agents and the program was supported by the Federation of Trade Unions and the Employers Confederation (a report from this phase can be found in Emery & Thorsrud, 1976).

The strategic aim of this project was to achieve changes in industrial organizations as wholes, that is: on all levels and dimensions. When the shop

floor was brought into an early focus, it was because of a certain line of reasoning where the following are the main points:

How should one set about achieving more democratic forms of organization?

One possible approach would be for researchers to sit down and define industrial democracy in terms of organizational structure, and, this being done, leave the rest to the main organizations, the companies or others. The role of the researchers would be to provide "design for democracy".

This was not the way chosen. The starting point was rather that democracy is not so much any given structure as a way of generating structure. And the structure is that everyone concerned has an opportunity to influence this structure. Industrial democracy, then, is something that must emerge in actual practice, as a result of a process whereby all members of the individual organization have an opportunity for taking part. This does not mean that researchers should be completely devoid of ideas about structure. This is certainly not a field that can be treated from "the process is everything" point-of-view that has been applied by some sensitivity trainers and organization development people. The point is, rather, to determine who are to be the main bearers of the development, and this must be the people in the organizations. The role of researchers is to provide for various types of support.

Given this point of departure, the possibilities for participation emerge as a chief topic. Looking at classical theory of democracy, one finds that among the basic prerequisites there are two that are especially important:

- A minimum of freedom. If the individual member is to exert any influence he must be able to relate to the issues, to establish contact with other people, to exchange views and to form social links. One who does not have a certain freedom of movement, not only physically but also psychologically and socially, cannot take part in a democratic process.
- Skills/competence/insight. Any organization confronts a number of issues that must be discussed and settled. As much structure is dependent upon how issues (such as production methods) are settled, it follows that those who are to take part in the generation of structure must have a reasonable level of competence and insight in relation to such issues.

Looking at the development of conditions in working life, it is easily seen that some of the basic tendencies have gone against these prerequisites for democracy:

- Specialization, particularly on the shop floor, means narrowing the job of the individual, thereby limiting his skills and insights. Of course, many people can still develop and maintain skills and insights, and thereby take part in the settlement of broader organizational issues, but this is much more difficult for those who work at a highly specialized job with little content.
- The substitution of abstract knowledge for concrete knowledge. In the

earlier phases of industrialization, decisions were usually made on the basis of concrete insights into the problem. Now it is customary to make decisions on the basis of abstract models or presentations of the situation. A good example is the change from man-based to computer-based planning in large parts of engineering industry. This also means a shift in competence demands: abstract presentations give preference to academically trained people, while concrete insights of people on the shop floor are set aside as being of little relevance.

The problem, then, is one of breaking the patterns resulting from developments like these, and introducing conditions that bring back possibilities for development of skills and freedom to all members of the organization. This, again, demands a strategy for re-design of jobs and work organizations.

At this point various means suggest themselves, such as job enrichment, job enlargement, job rotation, re-design of technology and production methods, new wage systems, removal of foremen or other first-line managers, new training methods, new recruitment mechanisms, and so on. Means like these have been extensively discussed for the last twenty years, and no elaboration is necessary here.

Sometimes means such as these are discussed to assess their goodness in themselves. This, however, is futile. Change parameters like these mean very little out of context. For example, job rotation can be quite a burden for employees if it is forced upon them from outside and carried through by foremen or other management. Job rotation is something very different if it is done on the basis of an agreement among the operators concerned, and if it is a joint development that has matured to a point where those taking part want to broaden their job experiences.

To link the means and bring them together in a context that also relates to higher levels of issues and problems, the concept of the autonomous group entered the picture. As most service or production systems today make for close interdependencies between tasks, a group solution is necessary for reasons of task relationship structure; one cannot change one work role at a time in a system continuing a number of closely interdependent work roles.

I have outlined the main steps in this strategy for industrial democracy, because, even though Norwegian or other Scandinavian experiments are relatively well known, it seems as if this underlying strategy is not equally well recognized. And this brings us to a core issue in developments of this type.

Efforts at changing organizations starting from the shop floor, as sketched here, have run up against rather heavy constraints. One problem is that autonomous groups, to many people, seem to mean a compete organizational alternative, rather than a step in a strategy or a means to an end. Instead, the focus is on such groups, their characteristics and their functions in terms of productivity, satisfaction and so on, and the main underlying idea is lost from sight. To a large extent this happened in Norway, and (as far as I can see) in other countries where there has been an interest in exploring this approach to generating more democratic organizations.

The problem with such a development is not only concentration at the level of autonomous groups, but also that new patterns on the shop floor will not be stable if the rest of the organization remains unchanged. This lack of stability usually leads to shop-floor changes reverting to old patterns.

One result of this concentration on group perspectives has been to generate an ambivalent attitude to job design or work-organization reform within the trade unions of a number of countries. While most unions recognize the need to do something within this field, they are often in doubt - and in my view quite understandably so - about the advisability of supporting an "autonomous group strategy" as this has generally been interpreted.

Such was the situation in Norway around 1970 when the so-called work environment reform movement emerged as a heavy political force on the national scene.

The Movement For Work Environment Reform

The issue of work environment is as old as industrialization itself and has been heavily discussed at various stages of industrial development. When it re-surfaced in the Scandinavian countries around 1970, it had at least two more specific backgrounds. One was the general environment movement that arose world-wide in the early 1960s; a movement that started with a discussion of the effects of pesticides and other chemicals on animal life, but was successively broadened to cover human beings who work in factories where chemicals are made, and to other issues such as accidents and psycho-social stressors.

The other factor was a recognition that growth in social welfare expenditures in the state budget seemed explosive and not likely to level out. People recognized that a welfare society could never solve all problems through increasing health and social expenditure; it even began to seem doubtful that problems could be kept from growing larger. Problems had to be attacked before and not after they arose.

With this as background, the Norwegian Federation of Trade Unions and the Labor Party created a joint program for work environment reform as a platform for the parliamentary elections of 1973. After the election, work on reform got under way. An important part of the program was to create new legislation. A proposal for a new work environment act was put forth by the Ministry of Labor in mid-1975, went out to hearing in 1975 and 1976, and came up before parliament in December 1976. We will concentrate on one section of the law: Section 12 in which design of jobs and work organization are treated.

SECTION 12 OF THE NORWEGIAN WORK ENVIRONMENT ACT

1. General Requirements

Technology, work organization, work time (e.g. shift plans) and payment systems are to be designed so that negative physiological or psychological effects (for employees) are avoided as well as any negative influence on the alertness necessary to the observance of safety considerations.

Employees are to be given possibilities for personal development and for the maintainance and development of skills.

2. Design of Jobs

In the planning of work and design of jobs, possibilities for employee self-determination and maintainance of skills are to be considered.

Monotonous, repetitive work, and work that is bound by machine or assembly line in such a way that no room for variations in work rhythm is left, should be avoided.

Jobs should be designed in a way that gives possibilities for variation, for contact with others, for interdependence between elements that constitute a job, and for information and feedback to employees concerning production requirements and results.

3. Systems for Planning and Control

Employees or their elected representatives are to be kept informed about systems used for planning and control, changes in such systems included. They are to be given the training necessary to understand the systems and the right to influence their design.

4. Work Under Safety Risks

Piece-rate and related payment systems are not to be used where wage system can influence the safety level.

(Note: This translation is an approximation. As Norwegian "legal language" differs from Anglo-American it is not possible to give an exact translation; I would in particular like to stress that the legal operability of the section can not be judged on the basis of such a translation.)

LEGISLATIVE CONSIDERATIONS

As far as the author knows, this is the first example of job design/work organization issues being treated in law, in terms of specific requirements. How did such a section get into the law?

First, the point was not primarily to generate new support or a new context for the reform of the sixties. Even though there are links and overlaps, ambivalence within the trade union movement made such a direct continuation less than practical. There are reasons in their own right for regulating psycho-social issues within a work environment context, and we will look somewhat closer at these reasons. Roughly, they fall into four categories:

- Issues of physical health
- Issues of mental health and psycho-social life qualities
- Accident prevention

- Employee activity

These considerations cannot be treated in depth here; a few comments will, however, be made on each, to indicate the thinking behind Section 12.

Physical Health

We know from an increasing number of studies that there are links between the objective characteristics of a job, how it is experienced by the employee, and health. The picture is still rather complex and diffuse and the studies, even though they are manifold and increasing, are still somewhat piecemeal and unrelated. Still, however, various links have been documented a number of times. Job dissatisfaction has, for example, been found to correlate with psychosomatic illness symptoms, with work related fatigue, with injury and illness rates (Quinn et al, 1973; Sundbom, 1971); with heart disease risk factors (French & Caplan, 1972); with nervous diseases, depression and problems with sleep (Gardell, 1976); with pains in the back and shoulder and in the stomach (TCO, 1976). The increasing amount of research around the term "stress" has also shown links between job experiences and physiological as well as psychological stress (Bronner & Levi, 1969; Bolinder & Ohlstrøm, 1971; Ager et al, 1975; Gardell, 1976). There is, furthermore, a growing awareness of changes in morbidity and mortality patterns that take place in industrial societies; away from the one-factor illnesses and towards a situation where the dominant illnesses are of a mixed type: generated by physiological as well as psychological and social components that interact with each other in complex (and not very well known) ways. The majority of heart diseases belong to this category; in Norway more than 50% of all deaths are today due to illnesses of this type. Cancer is a good second, another type of major illness where physiological as well as psycho-social factors (e.g. stress control through smoking) are often at work.

We cannot - and probably never will be able to - say to what extent psycho-social conditions account for ill health in industrial society, nor will we be able to say exactly how much work conditions contribute to the more general category of psycho-social stress. (We might in a few years come to consider such questions as what this or that accounts for as rather devoid of meaning). What we can say, however, is that psycho-social issues seem highly important as generators of psycho-social reactions and problems.

To this must be added changes in the conceptualization of health that have taken place; the shift away from defining health as the absence of specific illnesses and, towards including more positive qualities in the definition, like well-being; WHO's health definition is a typical example of this development.

Mental Health

As indicated above, there are links between mental health and physical health. There are, however, ample reasons for changing the work environment, even if issues of physical health are ignored. Problems like job-dissatisfaction, alienation and passivity are problems in their own right. Terms like "the quality of working life" imply going beyond health issues to consider con-

ditions whose primary effects are on the psycho-social level but nonetheless important for that.

Accidents

Until a short time ago the general belief was that most industrial accidents are caused by human mistakes - often mistakes made by the victim of the accident. This view has undergone a marked change lately towards the realization that most accidents are caused by conditions, or the settings within which workers are placed. Today it is generally recognized that factors such as the following influence accident rate (see for example Powell et al., 1971):

- Piece-rate and related payment systems. Such systems often lead to concentration on earning enough every day, hour and minute, and to a corresponding neglect of such things as time-consuming safety procedures.
- Understimulation. People who stand in narrow, monotonous jobs often have problems maintaining the alertness necessary to avoid accidents.
- Overstimulation can also contribute to accidents, by presenting people with so many conflicting impressions that they are not able to organize their behavior.

These are examples only; other points can be mentioned as well. This underlines the need to attack the issue of accidents through redesign of jobs and work organization and not only through technical safety means.

Employee Activity

This fourth reason is in many ways the most important, and is the most direct link to industrial democracy problems and shop-floor strategy. This reason has to do with generating the conditions necessary for people to act.

A study of accident prevention systems of companies, conducted by the Work Research Institute (Karlsen et al., 1975) found that formal means contribute relatively little to the results achieved in accident prevention and work environment in general. Companies which had a well organized accident prevention program did not necessarily have the best work environments, while some companies with no formal program could show good results. The important factors had, consequently, to be looked for elsewhere, and were found in what was called "workers resources." This factor was made up of two components, one relating to skills and the other to social organization. In brief: companies showing the best results within this area were organizations where employees performed work that demanded and maintained skills, insights and competence, and where workers were linked together through effective social ties. Skills and possibilities for joint action were the chief points. The formal organization to come closest to the crucial one will be the local trade union. Sometimes there will be complete overlap, but not always. This supports a general view that can be formulated like this: few work environment problems - irrespective of type - will be solved unless the employees can solve the problems themselves, or at least take an active part in the solution. Even technical work-environment issues cannot easily be settled exclusively through the use of experts.

Section 12 of the new Work Environment Act is intended to function on two levels: as a set of primary work environment standards parallel to those set up for issues like chemical substances, and also as a set of "meta"-rules having to do with the conditions for activity in the enterprises, and through this with the general ability of employees to contribute actively to solutions of all types of work environment problems.

SECTION 12 AS THEORY

Section 12 is not simply a collection of elements. It has a structure in the sense that it is built on certain ideas that can be organized in a certain way. The structure of the section can be presented as in Figure 17.1.

This is in a sense a theory. It will not be treated as such here; only a few points will be underlined:

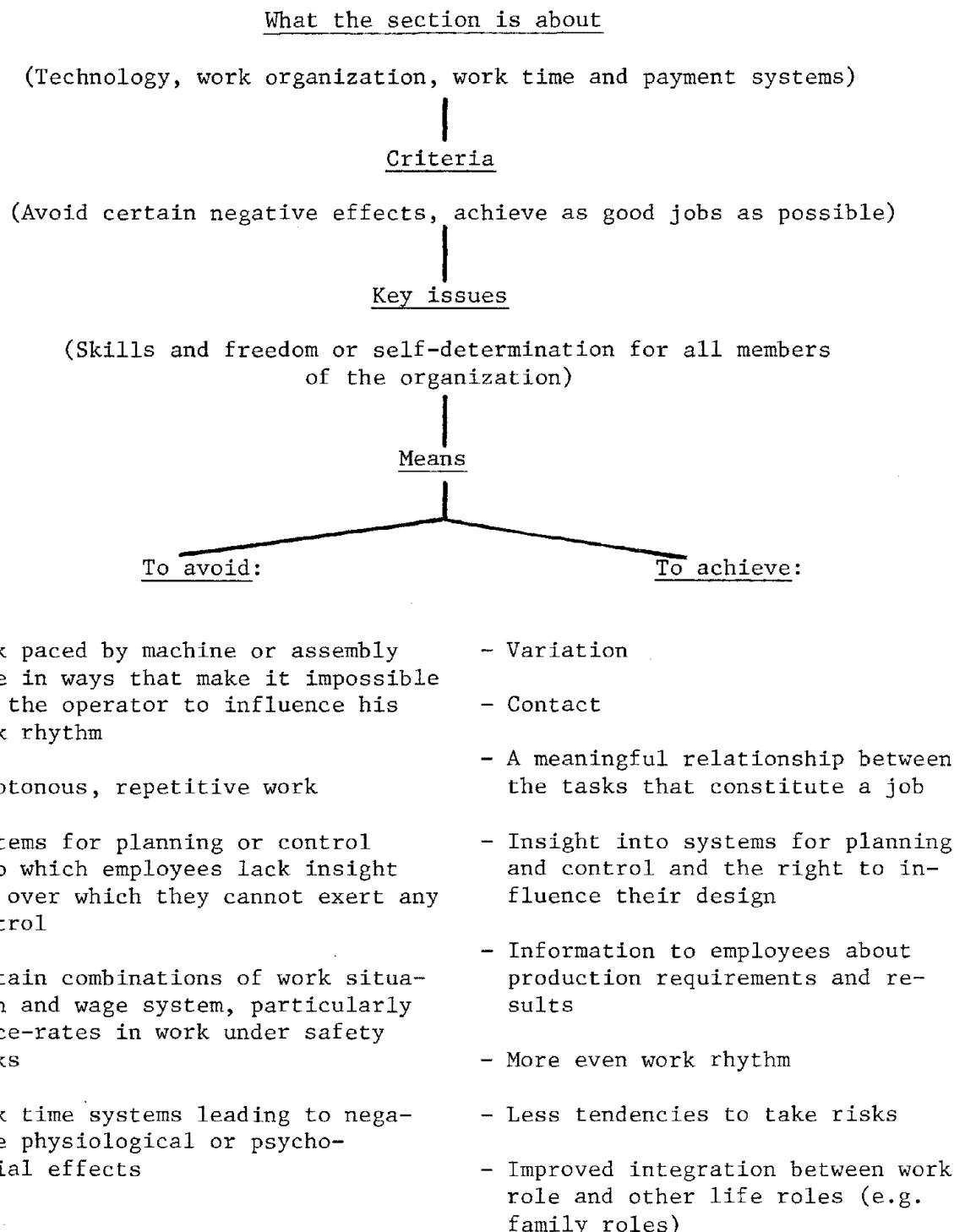
To do something about psycho-social issues first, a broad approach is needed. This is indicated by the scope of the section: technology, work organization and so on. Second, it is necessary to look at the various areas together and not separately.

Third, it is necessary to establish two sets of criteria: one set of minimum specifications below which it is not allowed to pass, and a set of criteria that relate to all jobs or work situations irrespective of how they score on psycho-social criteria from before. There are various reasons for this. If psycho-social job criteria are limiting conditions only, they will not gain a central position in developmental work taking place in companies, and unless they gain such a position, concrete solutions will lag behind. Furthermore, criteria above and beyond the minimum make it possible to put forth demands for job improvements without having to argue from the position that any given situation is below minimum acceptable standards.

Fourth: certain issues are set forth as key issues if the aims are to be achieved: skills and freedom. This is built on the assumption that a condition for activity on the part of employees is the core issue, rather than satisfaction, welfare or anything that might be of positive value in itself, but is of limited value in a strategy for change.

Fifth: a number of means are specified in the law. We believe this to be important, so as to avoid the rather endless debate about the "subjectivism" involved in psycho-social issues. For reform work to gain momentum, we believe that the law must take the issue one or two steps beyond general declarations. This is also the view of the main employee organizations in Sweden (LO and TCO). Both criticize the Swedish proposal for a new law on the ground that it contains nothing beyond general declarations within the psycho-social field.

Figure 17.1: The Structure of Section 12 in the Norwegian Work Environment Act



JOB REFORM AND WORK ENVIRONMENT CONTEXT

What is new, then, when the issue of job reform is brought into a work environment context as compared to the industrial democracy context sketched previously?

First, links between jobs and work organization on the one hand and issues of health on the other are brought much more clearly into focus. I believe this to be important, because health issues are concrete for the individual employee, while the issue of industrial democracy has become more and more abstract and increasingly difficult to link to one's own personal problems.

Second, bringing the issue of design of jobs and work organization into the work environment context means that some necessary clarifications are made in the relationship between job reform and productivity. This relationship has often been unclear, and this lack of clarity has obviously had an impact on the way the trade unions have related to the issue of job reform. For management, productivity has often been the primary consideration while the trade unions obviously must pursue other interests in addition to productivity. Bringing issues of jobs and work organization into a work environment context means to bring them into a context that functions as limiting conditions for productivity or as criteria for development in addition to productivity. This makes it possible to underline the human considerations as reasons for job reform, and improve possibilities for employee and trade union commitment to concrete change programs.

It must also be mentioned that work environment reform was brought forth as a result of demands from the Federation of Trade Unions, and the trade unions have influenced the law. This should also contribute to a more active role for trade unions in the future.

A further point of importance is the use of legislation in itself. This is not primarily because legislation introduces a set of binding rules; of greater importance might be the point that a parliamentary act is a value declaration. It gives sanction to certain points of view and makes other points of view less legitimate. Law generates possibilities for raising new questions and putting forth new arguments, a point of great importance for employees and organizations.

Fifth, the new criteria and new values declared in the law will lead to the introduction of new types of investment criteria at the national as well as the enterprise level. At the level of enterprise we in Norway have experienced great difficulties in getting companies to back a job reform program demanding technological development. At the international level the same seems to hold; we find very few examples of companies that have developed criteria for investments that support new types of jobs and work organization. Volvo in Sweden has quite rightly become famous for having done this, and one of the reasons for Volvo's fame is that there are so very few other examples. We hope that laws such as the Norwegian Work Environment Act can eventually contribute to a change of direction in investments. At the level of society, the Work Environment Law will be backed by special government loans and other economic support to enterprises.

A further point is that new types of support are brought to bear on the problem of job reform, particularly from public resources such as government agencies. The possibilities for diffusion of ideas, for developing a detailed network of knowledge on the practical level, for training people, and for keeping track of what companies are actually doing, is greatly improved. Work environment reform is presently the principal social reform in Norway.

Generally, work environment reform means a shift from enterprise and management control towards control by trade unions and government agencies. A problem then, is what about management?

Management played an important part in industrial democracy in Norway. Generally this seems to be the case also in other countries where a job design/work organization reform movement has emerged on the practical level. The initiative toward establishing enterprise projects has to a large extent been taken by management. It seems that there are links between the involvement of management and the way the job reform campaign has been limited to "autonomous groups." If the original, much broader, aims are kept, management might be reluctant to participate. This general possibility, however, must not overshadow the point that there is a genuine interest in job reform among managers, even though those willing to commit themselves to specific programs inside their own companies are still clearly a minority.

In political debates one sometimes encounters the view that changes in working life are only a question of power changes. This is not necessarily true. Power changes are necessary but not sufficient conditions for work place changes. Modern industrialism is, after all, built on an enormous body of knowledge transformed into a multiplicity of techniques and methods. Management and specialists integrated with management are the primary bearers of this knowledge in the field. One cannot simply shift power without having a strategy for handling the issue of competence. And changes in competence cannot be effected using the same strategies as one would use to effect changes in power. Changes in competence need collaborative efforts between those who have competence and those whose competence is to be built up. And while people can be forced to relinquish power, they cannot be forced to relinquish competence. What, then, will be the basis for management and expert roles in future organization development, based on work environment reform?

As a point of departure it can be mentioned that the law already implies shifts in competence patterns because it makes concretely generated knowledge relatively more important. As shop-floor employees are usually the bearers of concrete insights, their basis for taking part is improved. Accepting that managers and specialists are bearers of competence, it is necessary to remember that this competence is generally somewhat overplayed due to lack of interest in concretely gained insight.

It is also important that the law will be implemented through a step strategy (below) and not in one sweeping political-administrative maneuver. This makes it possible for all concerned to develop their relationship to the reform. The possibilities for using an active, developmental, rather than a passive strategy should make it possible for management to see the reform as

a challenge and not only as new claims and limiting conditions.

Third, pluralism among managers and specialists is already relatively important and still developing. Greater political pluralism will improve the possibilities that reforms such as work environment reform will gain momentum among managers.

A last point worth mentioning is professionalization. Important groups of managers and specialists - particularly at the middle and lower levels of the organization - are more and more prone to reject roles that are nothing but extensions of top management roles or that are instrumental in relation to top management policies. They want to generate more independent positions based on roles that have at least some elements of independence. Laws such as the Work Environment Act can support such a tendency, partly because the law gives priority to work that must be concretized at lower managerial levels, and partly because it provides for elements of role definition, and these elements cannot be manipulated by top management. The reason this tendency (to seek more independent roles) is most pronounced among middle and lower level managers might be that those who typically find themselves higher up (e.g. lawyers, university economists, civil engineers) furnish candidates for top management roles and might see their opportunities more in this direction than in professionalization on independent grounds for managerial roles below the top.

STRATEGY FOR IMPLEMENTATION - CONCRETE STEPS

When a new act is put into force, the authorities often consider their job done; now it is up to the people to "live according to the law." Sometimes a regulatory agency is established in addition, an agency that will function through rules in the law demanding official permits to do this, that or the other, granted by the agency. In this way requests come in to the agency, and the agency performs its job by saying yes or no to the requests. Such an approach would not go far in the work environment field. The strategy to be developed here is more complex, and includes the following steps:

CONCEPTUALIZATION

The problem of conceptualization is to gather knowledge from such fields as sociology or psychology of work into the framework of a work environment act. This is partly done already, but further steps are necessary. One such step is a set of guidelines to Section 12: a number of points telling what to look for and what to focus on when evaluating a workplace on the basis of Section 12. These guidelines will be issued formally by the Work Inspectorate Authority, to be used by their field inspectors. The guidelines will also be distributed to companies, trade unions, and other groups. Other supportive means, such as commentary literature, are being generated.

DIFFUSION

The apparatus generated for diffusion of the act is the largest of this type ever set up in Norway. The Federation of Trade Unions, The Employers Confederation and the Work Inspectorate Authority have developed a joint educa-

tional program centered around a course called "Improved Work Environment." This course is based on study groups in companies, where everyone who has a role to play in the work environment efforts of the company takes part; including representatives of management and work environment ombudsmen (elected representatives of employees, given special rights in the law, such as the right to stop dangerous work). Altogether, 10,000 people are expected to be reached by this course, a high figure in a country where the total number of employees is around 1.2 million. In addition to this are a number of other courses and educational efforts. The Federation of Trade Unions is developing its own training scheme, as is the Civil Service and other institutions of working life. Most established educational and training institutions that offer programs in organization and management already take up work environment issues.

In 1977 the Work Research Institutes will launch a research program to keep track of this development, to see how the various efforts function, what messages get through to where and so on.

GENERATION OF NEW KNOWLEDGE

As concerns generation of knowledge, we proceed from the point of view that we know quite a lot about conditions and problems of working life and what should be done about them. As psycho-social issues are concerned, this is a field where knowledge has been accumulating for quite a number of years without really being brought to bear on practical problems. Still, additional knowledge and information is needed, and various research projects are launched.

At the moment no great weight is placed on generating national surveys of the "social indicator"-type since we are in doubt concerning the fruitfulness of such studies for practical purposes. Still, some developmental work on such studies has been started, particularly in the Central Bureau of Statistics. For practical purposes, more importance is attached to studies of areas of working life. A series of such studies have been launched seeking information about the work environment of special types of employees. This type of study is sufficiently concrete to pick up information which can be turned into practice.

Weight has been placed on covering employee groups that have traditionally not been in the center of research efforts. Most industrial psychology or sociology has centered on male industrial workers; now we aim at covering areas outside industry.

PILOT PROJECTS

The next step is the generation of a series of pilot projects in selected companies. Such projects will aim at creating solutions to work environment problems. Some projects are already in the start-up phase; during 1977 more projects will be added.

SANCTIONS

The use of sanctions has played a prominent role in the public debate about the work environment law. As concerns the psychosocial part of the act, weight in the initial phase will be placed on establishing consciousness and ability to perceive and understand this type of problem. The idea is not to start backing the act through heavy use of fines or jail sentences. The law allows for this, but sanctions cannot play an important role in the psychosocial part of the law. One cannot, however, completely neglect the use of sanctions, as experience tends to show that unless sanctions are used now and then, a number of managers will in all probability choose to neglect these requirements. I believe one will have to wait a couple of years before sanctions are taken into use within this field.

But when psychosocial requirements have been diffused through all possible channels for such a length of time and with such intensity that people can hardly claim lack of knowledge in good faith, companies showing a negative record in a number of areas will be in line for sanctions.

This will probably not go via specific demands from the Work Inspectorate Authority. This authority has the right to issue legally binding demands on the basis of its evaluation of situations in companies. Such demands will state what changes are called for, and a time by which to accomplish them. If required changes are not made, then sanctions can be used. In this way the companies will have a reasonable time for making changes before heavier sanctions are brought to bear.

One must also remember the possibilities for special loans and supports, making it possible for companies to raise money for work environment changes beyond what their economic positions would allow for in the open capital market.

Through these means: conceptualization for practical pursues, diffusion, education, concretization through pilot projects and selective use of sanctions, it is hoped that psychosocial criteria will function in a way that will really mean something.

CONCLUSION

It was mentioned initially that the two approaches sketched here are not contradictory; rather that they supplement each other, provided that one has an adequate understanding of what the shop-floor approach really stands for. In Norway these two approaches follow each other in a natural sequence: the legislative step has been dependent upon ability to concretize job reform issues generated in the earlier phase of intensive and pioneering field experiments, while the legislative phase is a natural consequence of the difficulties arising when results from field experiments were meant to form the basis for more thorough changes in structure in those organizations that entered upon a shop-floor program.

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CHAPTER 18

SWEDISH APPROACHES TO JOB REFORM

Ricardo Edström

This paper will consider three Swedish laws: The Workers Protection Act Section 40B - in force since January 1974 permitting safety delegates to order suspension of the work; The Act on Co-determination at Work - in force since January 1977; and the newly proposed Law on Work Environment - expected to come in force July 1978.

These three are the most important laws and will be the focus of my presentation. It may be briefly mentioned that there are about a dozen other laws in the background that provide for employment security (particularly for safety delegates and other union officials), laws facilitating employment for elderly and handicapped and others. There exists also another set of rules of equal force established through collective bargaining providing, for instance, for workers dominating influence over factory health services - not the handling of individual cases but the general principles for the activity of the health service; priority setting and dealing with ethical questions and so on.

SECTION 40B

Having mentioned this background framework of regulatory systems, let me concentrate upon the three important laws. Section 40B of the Workers Protection Act reads as follows: If a job involves an immediate and serious danger to the life or health of an employee, and if no immediate remedy can be obtained through representations to the employer, the safety delegate may order the suspension of the work pending a decision by the Labor Inspectorate.

The safety delegate cannot be held liable for any damage resulting from a measure referred to in the first paragraph. There are about 100,000 safety delegates in Sweden among 3½ million people in the working force. They are elected by the local unions at each factory or other work unit, as well as in the national administration or community service organs. Wherever five people work together the law requests a safety delegate.

What evidence do we have of the effects of this paragraph 40B? The record is as follows: In 1974 (the first year of the law) about 50 decisions were made; in 1975 about 100 decisions; and in 1976 about 150 decisions. These are the figures that have come to the attention of the Swedish Labor Inspectorate. The reason they are round figures is that actually only a fraction of the decisions run the full course described in the law - with visits by Works Inspectorate and so on. Things usually change for the better before it has gone that far, and many decisions are therefore withdrawn. That is perhaps the best of effects. The safety delegates are now listened to, and

they do not have to evoke Section 40B. It suffices that employers know about its existence.

The tendency for 1977 seems to be that the number of decisions is levelling off - it will probably result in a lower figure for this year than for last. One reason for that may be our difficult economic situation - many premises are closed down because of lack of customers' demands. In that climate safety delegates perhaps tend to accept risks they otherwise not would have tolerated - just to keep the factory going and the colleagues employed. It may also be that working conditions have changed for the better, or at least that the attitude from the employers is more positive. We have had a rather intense debate in our country about the working conditions and funds are available for the financing of improvements.

Section 40B will reappear in the proposed new Law on Work Environment (Chapter 6, Section 7). There will be extended a right for the safety delegate to stop jobs for people working alone. In that case there is not even a claim of immediate and serious danger to life or health. It suffices that worker's protection calls for it.

What happens if a safety delegate uses this paragraph irresponsibly? The final responsibility rests with the unions. They have elected him, and they may even be sued for the damage the safety delegate may cause. No such situation has been taken to court, and it may be doubted that there will be any. The union would probably alter their choice of safety delegate if tendencies in the direction of irresponsibility would appear. An obviously erroneous decision using Section 40B would probably result in telephone calls to the Works Inspectorate and to the chairman of the union local, both having capacity to alter the decision, the Inspector by law, the union official by persuasion.

Some jobs are dangerous by nature; for example, that of a policeman. There Section 40B is not applicable. Policemen are employed to take those risks. But sometimes the Work Inspector may be put in difficult situations, as in one much publicized case where the teachers' safety delegate closed a school for a couple of days because pupils had threatened their teachers and showed a knife.

Apart from such examples, the main impression of the effect of Section 40B is positive - so say the employees and the employers representatives. And so says the Works Inspectorate.

THE ACT ON CO-DETERMINATION AT WORK

This act has been in effect only a few months. It provides a right for employees, represented by their union officials, to be informed about all changes that may affect working conditions - and very few decisions will not. So, in effect they must be informed beforehand of practically all decisions made in an organization. And they have the right to call for negotiations on all these questions. For some questions the law directly prescribes negotiations. These negotiations take place locally - each decision-maker has his union counterparts to inform and to negotiate with in the first instance.

The union man may call for central negotiations if he is not satisfied with the decision. Then, union headquarters sends an "ombudsman" to his assistance. In the end, however, the responsibility for a decision rests with the decision-maker - that is, the employer.

We thus have two systems of negotiations between unions and employers. One is the old collective bargaining system, where both sides on equal terms reach a decision, with or without the threat of strikes or lock-outs. The other type of negotiation precedes decisions that finally are made by the employer. If the employer omits to follow the rules he may be taken to court, but as long as he informs and listens to the unions before his decision, he may decide as he pleases.

Direct effects upon working conditions will arise only when bargaining and negotiations have reached the stage of decision. The law simply provides the framework; the content will be decided by the involved parties, centrally and locally. We have not got that far yet, but some problems have already become apparent and to some extent dealt with.

One big problem concerns this system of work democracy and its infringement upon general political democracy. Since the law also applies to civil servants, there is an intersection between the politically elected administrator's right to execute the will of Parliament and the Government or Community constituents - and the right of employees to influence these decisions. Our solutions to that problem may be of limited interest here, since each country must find solutions that suit its administrative system.

Another major problem is the risk of simply transferring power from the managers to the central unions, giving the worker only a new boss with little improvement of his personal conditions. After all, the idea was that negotiations should take place locally, and most employees should be engaged, having a chance to influence conditions, and also to grow with the responsibility - to become engaged in the work and deal with reality to a greater extent. That effect may be missed entirely if everyone must ask his union officials what to say at negotiations. There is a declared will on the part of Central Union Headquarters to make local workers really decide themselves, let their norms and values be decisive when it comes to criteria for demands one may put upon working conditions. But this freedom must not be misused, so headquarters wants to draw up minimum standards, before local negotiations take on momentum. This is a delicate and perhaps risky situation that we are presently confronting.

Then there is the problem of different demands from different unions. We have three major unions in Sweden: the blue-collar workers, the white-collar workers and the academics. They have other official names but this roughly describes them. Each decision-maker must talk to all three of them if he has subordinates from all three groups. Usually, all three agree upon important questions, but not always.

Another problem is that, within large organizations, the real decision is made long before it reaches the formal decision-makers. The unions, therefore, demand to negotiate also with the specialists or with the people forming the demands for, say, operating costs, or increase in personnel.

The law bars unions from the use of outside consultants, but provides the right to hire consultants of their own, if necessary. We have not yet seen how that will work out - separate consultants performing a gladiator stage-act, with unions and employers as an audience. Modern management includes, as you know, the direct participation of most subordinates in the final decision. Often a system of project groups collaborates. It is rather queer then, when the decision is made together, to have to go to the union representatives and start a new discussion all over again. But that is how it must work.

Obviously there are enormous time losses. But it may be the price that must be paid to improve the psychological work environment; meaningful, stimulating and growth-promoting.

Obviously there is also an enormous need for education; and education takes time and costs money. Most of this money is channeled through our Work Environment Fund. It runs on a budget of about 50 million dollars a year, of which about equal parts are allotted to research, to education and to general information. This money derives from all salaries and wages paid to our 3½ million work force - less than 0.2% of it goes to the fund, the philosophy being that putting people to work is to create a work environment - whether you think of it as such or not. Activities directed towards the work environment should therefore be paid from the revenue of the work. The money is considered shared by employees and employers, and channeled through a board where both parties are represented - as well as authorities of the administration.

The enormous social experiment that we have launched with the Act on Co-determination at Work will be monitored closely by various research groups, financed by the Work Environment Fund. A new institute is created chiefly for this purpose, but independent groups also can get support from the fund. So far I have not seen anybody seeking means for a comparative study of Norwegian law and the Swedish legislative system - they are basically different, as you have heard, but have similar goals and affect similar people in the neighboring countries.

Among the foreseeable problems there is the possibility of unrealistic demands from employees. I think these demands will be rare, particularly in an economic recession as we experience just now. But also during recovery, people will want to keep their jobs and not jeopardize the existence of factories, and the central unions will provide some guarantee of realism in negotiations.

As you have noticed, much of our system rests upon the existence of strong and responsible unions. Repeatedly foreign visitors to Sweden draw the conclusion that they cannot transplant our system to their country because they do not have strong and responsible unions. It is rather like the visitor to England who saw the beautiful green lawns extending from the castles. "How do you get them so green and smooth?" he asked. Answer: "You have to start about the 16th century." About 50 years ago Swedish employers and employees

agreed that the questions of safety, health and what we now call work environment were areas for cooperation. That was the so-called "Saltsjöbads-agreement", because it was signed at Grand Hotel in Saltsjöbaden, just out of Stockholm. The fellow who managed that basic achievement was an uncle of mine - Sigfrid Edström.

The third important law - the proposed new Act on Work Environment, is the product of seven years' work and therefore, even if it is not yet in effect, there may be something to tell about the experiences from the background discussions.

It is a true frame-law, that means that it provides only the frame, to be filled in by ordinances, directions and other regulations from the central authority - The National Board of Occupational Safety and Health. You may call it Management by Objectives - the law points at the goals, but leaves the means to some extent open. This is in itself a strategic choice of alternative ways. The Norwegians, as we have heard, have chosen to spell out in the law demands that may be put upon working conditions. The Swedes have left that open, to be decided by the people in the work situation, or by the Labor Inspectorate and its Board. This choice provides for flexibility. Technology changes, as do social values and norms. The idea is that such changes shall be incorporated in the demands on the work environment, without cumbersome changes of the law.

Therefore, it is stated in general terms that working conditions should be adapted to the workers' physical and mental needs and capacities. Of course there are a number of other paragraphs, but the psychosocial aspects of the law are left to the Act of Co-determination at Work and to the Board of Safety and Health.

That problem is actually on my own desk at the moment, and those of my co-workers. There is a risk that, if we spell out the criteria in too detailed specifications, these may become limiting. No one cares to go beyond the requests of the law and the board. In order to provide a positive attitude, rather than word obedience, the regulatory system may have to be "softer" and more difficult to follow-up by police or inspectors.

The fact that the law proposition was prepared by our former socialist government, and is now brought to Parliament by the present bourgeois government, has not altered any of the law's content, which reflects the broad consensus in political and employers' as well as employee parties. Only one small point has been an object of major discussion; the question whether an employer might be sent to prison for breaking the law. Fines might be calculated into production costs - therefore, a prison penalty was considered necessary by the old government. The odd thing is that for almost all other crimes we are abolishing prison penalties; prisons are getting rather empty in Sweden. Yet the proposal of the present government sticks to the principle that prison penalty must be one of the possible sanctions against breaking the work environment law. The Board of Occupational Safety and Health has also been empowered to give both general and individual directives, and to decide upon the consequences of their violation.

Finally, what is the philosophy behind this system of rules and regulations? Are we not jeopardizing freedom itself? Let me put it this way; the job itself must make life worth living. It must not be that human dignity, feelings and potential development must be sacrificed at the job, in order to buy life satisfaction at a price in leisure time. That latter method does not work. We know that by now. Therefore, we are firm in our decision: work itself must be made a contribution to the quality of life.

OCCUPATIONAL STRESS AND MENTAL ILLNESS: SOME PREVENTIVE AND REMEDIAL APPROACHES

CHAPTER 19

THE POTENTIAL PRODUCTIVITY OF THE CHRONIC SCHIZOPHRENIC

Bertram J. Black

Epidemiologists now estimate that schizophrenia is present in 12 out of every 1,000 people in our population in the age range 25 to 44 years. Since the estimate of the number of schizophrenic patients of this age range in the mental hospital system is closer to 1 per 1,000 general population, there must be a very large number of psychiatrically identifiable schizophrenics living and working in our society. Of course, any thinking mental health worker would recognize this fact; and those of us involved in rehabilitation of the mentally ill have been convinced for many years that correlation is low between presence of illness and ability to perform in an acceptable manner in "normal" society.

Study after study has now demonstrated that length of hospitalization and clinical judgments as to seriousness of pathology have little if any predictive value as to instrumental performance after discharge. The evidence, in fact, is weighted on the deleterious effects of hospitalization in its institutionalizing disabling results. If hospital sojourns be short, even though repeated one or more times, the factors that really do seem to effect reablement socially are the same, regardless of mental pathology.

Before touching on what we now know that is effective in preserving productive participation in society for persons with schizophrenia, it is only fair to say that much of this is surmise. We can study what happens to those persons who are caught in the public mental health network. We know next to nothing about those who do manage to encapsulate their symptoms in a socially acceptable, or at least functioning framework. We must work backwards in an a postericri manner.

We have long known that work is a powerful tool in the rehabilitation of the schizophrenic. The structured setting, the controls often available in social interaction, the absorption of energies, the dignity of a socially acceptable use of one's time are some of the values of the workplace to any handicapped person, including the mentally ill. We have also learned that work is ego supportive - ability to work seems to be one of the last-to-be-damaged areas of the ego (Black, 1970). Dr. Benjamin Rush as long ago as 1812 quoted the poet William Cowper, "Absence of occupation is not rest; a mind quite vacant is a mind distress'd." In his studies of discharged mental patients, Ozzie Simmons (1965) concludes, "It seems apparent that integration into the work role has, for most people, preventive effects with respect to personal disorganization and emotional disturbance, and that helping the patient to acquire the qualifications and assets necessary for such integration should

be a proper object of hospital treatment. Indeed, the finding of a lack of relationship between receipt of conventional therapies and the outcome of posthospital experience must be in part a consequence of the neglect in hospital treatment programs of the work role and its potentialities as a preventive measure." It is this finding, confirmed and reconfirmed many times, that led to a recommendation that some mental hospitals be turned into rehabilitation centers (Black and Chapple, 1973). More recently, Servan and Thomas (1974) discovered that the best predictors of readmission for discharged schizophrenics were unemployment and subsequent welfare status. They concluded that employment represents a "master" variable in the rehabilitation process.

It is only fair to add, however, that these studies and others found two additional strongly correlated factors conducive to successful rehabilitation: motivation on the part of the ex patient, and the attitudes of family members and others about him. A lesson that mental health practitioners have a hard time learning is "that the former mental patient is not to be treated as a sick man if he is to become an effective worker" (Simmons, 1965). Gerald Caplan (1974) has written fully about the personal and group "support systems" that help prevent mental breakdown. Earlier, Gillis and Keet (1965) had found that the presence of a key relative with strong emotional ties to the patient and a tendency to "deny the psychiatric and medical significance of symptoms" was of great help in maintaining stability.

The significance of these findings from rehabilitation experience and research is that more of the patients and ex-patients described will in the future remain in the community and out of the hospital.

Notwithstanding community reaction that we have moved too fast in turning the mentally ill out of hospitals, the treatment base for schizophrenia is inevitably moving to the community. There will be shorter interruptions of regular life patterns, as illness episodes are treated in ambulatory care. Better use of chemotherapy will allow less interference with work tasks and responsibilities, and should even allow for the rehabilitating processes of remedial, career and vocational education for those whose illness has interfered with their socialization into the world of work (Simmons, 1965), or what Neff (1968) calls acquiring a "work personality". Such a trend makes more urgent than ever our being able to understand the factors that keep disabled people as working human beings.

What, then, are the glimmerings we have learned as to the factors that make for work productivity of the schizophrenic? They appear to be 1) motivation for work, 2) a job to do, and 3) a supportive emotional climate. These are really no different than for normal human beings. Simmons (1965) puts it more lucidly when he wrote "To explain the success of former patients...one must turn not to psychiatry but to the world of work itself, where appropriate preparation, expectations, skills, work habits, early and powerful motivation, firm crystallization of choice...may be regarded as stations along a route." Obviously, the great number of persons who suffer from a schizophrenic disorder have acquired preparation for a job skill and the motivation to stay with employment. As to how they have done it we have only scanty information.

Experience with rehabilitating schizophrenic adolescents and young adults (Benney with Black, et al., 1971) reveals that motivation does not come naturally to handicapped people. Active disinterest, anxiety and distrust is more usual for these folk. It takes time and effort to develop the interest and the effects of increasingly successful experience that become the motivation of the working personality.

Along with development of a desire to work has to go the ability to handle the disability. It is only when symptoms do not become disabling that the handicapped worker can continue to function. The National Schizophrenia Fellowship in England (1975) has produced a set of case stories told by the patients themselves. One who never stopped working, through four breakdowns, describes how she achieved a method of dealing with her symptoms. She says, "I started slowly to learn the five basic rules of how not to appear insane. These I called my 'sanity rules'..."

- 1) Never mention any hallucinations you are having to anyone, not even your own friends and relatives.
- 2) Never transmit telepathically on any account.
- 3) Never talk about telepathy or psychic power to anyone.
- 4) Avoid fights and physical violence of any sort...
- 5) Most important rule of all - I had to secretly learn all I possibly could about defense against telepathy and psychic force in whatever form this might take."

She sums up the process: "The most important thing seemed to be to learn how to distinguish between thoughts from my own mind and dangerous thoughts and impulses put into my mind, either to throw me or to test my sanity." In my years at Altro Work Shops we used to say to our patients, "It doesn't matter if the machine talks to you. Just don't answer it back." Could it be that "successful" schizophrenics have somehow learned such "sanity rules"?

A personal or environmental support system seems to be a necessity. We all require such supports - no man is an island unto himself, says the poet - but the schizophrenic needs it desperately. I know of a highly successful scientist, whom I first met as a very schizophrenic youngster with guarded prognosis, who has made it, I believe, because a very queer aunt stood as his advocate over the years. You must have come across many such people who nevertheless are assets to the economy. We really do not know how such advocacy and support works; we know little of how the family constellation operates on behalf of its working members. In discussing a research agenda on Work and the Family for the Russell Sage Foundation, Kanter (1977, pp. 81-89) points out that "What is striking about these formulations is the almost total absence of attention...in the work situation of family members as sources of stress that affect family dynamics and hence well-being...It is critical to bridge the gap between knowledge of the stress-producing aspects of work situations and knowledge of family systems." Since 70% or more of even the most chronic schizophrenic patients of working age return to their

families or remain in contact with their families after hospitalization, the role of family members for good or ill can be crucial.

Two final factors must be stressed as important to the productivity of chronic schizophrenics. One of these is the availability of work. To what avail all the effort in treatment and rehabilitation if there is no job opening? We are just beginning to learn the techniques and resources required to make workers of the mentally disabled. I think that methods are available for cooperation between the job sector and the mental health system, but that is the subject of other papers, as is the social service system needed for the most seriously handicapped that currently fails to provide incentives for not working (Black, 1977).

Curiously, in discussing work capabilities almost no mention is ever made of our most potent therapeutic modality, chemotherapy. Perhaps this is because we know so little about the relationship between drug dosage and timing, and work performance. In my rehabilitation clinical service I receive frequent complaints from the counselors of our affiliated state vocational rehabilitation unit that too many referrals are made to them of patients who behave as "zombies" or are hyperactive or otherwise show secondary effects of apparently inadequate drug management. This requires study. I am sure that medication affects the work performance of many schizophrenics who never come near a public mental hospital.

While mention of chronic schizophrenia envisions older deteriorated people, that is because of our present focus on deinstitutionalization. We must remember that the onset of schizophrenia usually is at a much earlier age. It is then that the combination of chemotherapy and the rehabilitative methods we have available can turn the tide. At that time in the life cycle there is still opportunity to contain the devastating symptoms, teach the skills of daily living, socialize for the work-a-day world, and forge the personal and community supports (the psychological prostheses, if you will) that will shift many more persons with chronic pathology from the ranks of the handicapped on public welfare to the ranks of the employed.

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CHAPTER 20

MENTAL HEALTH PROGRAM MODELS: THEIR ROLE IN REDUCING OCCUPATIONAL STRESS*

Sheila H. Akabas

There is a growing awareness that a worker is more than a worker and comes to the workplace with more than work responsibilities, work emotions, work goals. There is increasing recognition that a society which stresses the value of work must mitigate the stresses incumbent on labor force participation and must help a worker maintain his ability to work. There is rather universal agreement that the work system must pay attention to more than just productivity and profit. And the impact of this rising sensitivity to the interconnection between life and work can be seen all around us - in the issuance of a report by the Russell Sage Foundation on Work and Family in the U.S., in this conference which brings together international interest in reducing occupational stress, and in the burgeoning programs of mental health services at the workplace. The origin and structure of these programs, their service delivery patterns and their impact on the workplace and the general society will be the subject of this paper.

SOME PRIORITY ISSUES

But first, some caveats are in order. As we undertake a look at occupational stress and its meaning for the individual, it would be well to iterate several realities that are often overlooked in such discussions. Occupational stress in work appears to be somewhat less malignant to the individual than the stress which accompanies unemployment. In a study of psychiatric admissions to hospitals in New York State over a period of 127 years, Dr. M. Harvey Brenner of Johns Hopkins University reported that such admissions increased every time the economy declined. Commenting on this study, Ann Crittenden (1976) noted that a National Institute of Mental Health telephone survey throughout the country confirmed Dr. Brenner's observation on the ties between mental illness and the state of the economy.

These findings only reinforce earlier research by doctors and other mental health clinicians in which the correlation between unemployment and mental illness has been delineated. For example, the search for a job has been noted to cause depression according to Merna Weisman (1973), who reports,

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...the search for work by the young, educated housewife can be associated with moderate degree of stress and depressive symptoms. ...Looking for a job in itself is stressful.

In general, women have been found to have a higher level of mental illness than men judged by their use of psychiatric outpatient department facilities and private psychiatrists, their hospital admissions, and suicide rates (Gore and Tudor, 1973). High unemployment in a community, however, reverses the correlation between sex and mental illness, as a study of three pockets of high unemployment found (Leighton, 1963).

As one might expect, the depressed communities had a higher than average rate of mental illness. What is interesting is that in these communities men had somewhat higher rates than women. This makes sense considering that an extremely poor employment situation probably has more impact on men.

Certainly, many men as well as women experience the need for mental health care when working. The point we seek to make here is that normal patterns become unpredictable when unemployment is added to the equation. The sense of this phenomena was clearly identified in the New York Times (Furey, 1975) not long ago, by a recently fired 52 year old executive,

As an infantry veteran of World War II in the South Pacific, I've had some experience with fear, and how men deal with it. I like to feel that I don't scare any easier than the next guy, but to be 52 years old and jobless is to be frightened - frightened to the marrow of your bones. Your days start with it, and end with it. It's all pervasive. It's numbing. It's mind boggling.

A further nuance of this issue cries for consideration. The public has been battered by reports which suggest that dull, boring and dirty work is alienating, and that in the new, freer society of many Western countries, large sections of the population have opted for no work as a way of life. In support, the press constantly quotes the college graduate who has found new meaning in life by becoming a potter, or a carpenter, or by drawing unemployment benefits rather than looking for a job. These statements have been made so many times that we have come to believe them. We neglect to note that being a potter or a carpenter is work, and that no one is eligible for unemployment benefits until he or she has performed some remunerative work in our society. Nor do we revise our myths in the face of 250,000 New York teenagers standing on line for 58,000 summer jobs, or 200,000 men applying for "dirty" sanitation jobs when the employment rolls open for a brief period.

None of this is meant to deny the existence of a changing work ethic or the fact of spreading discontent in the workplace. Surely, people seek to

reduce stress at work. They want greater control over their work environment and they long for richer private lives after working hours are through - but all these drives are a luxury of the employed. Although Adam and Eve's punishment may have been to leave the Garden of Eden and go to work, a job continues to seem like Paradise to those who want one and have none. The context in which we examine the effect of work on mental health, therefore, should be one in which we confirm the importance of the availability of employment for all men and women.

But the importance of job opportunities is only the beginning. A further hypothesis is that work, *per se*, even when it is not an ideal situation, is an important ingredient in human existence. Freud alluded to this when he identified the ability to love and to work as the two hallmarks of adult functioning. Even though he went on to deal almost solely with the ability to love, others have reinforced the significance of work. Rosow (1974), for example, has suggested,

Work is at the core of life. Consider the deeper meaning of work to the individual and to life values: work means being a good provider, it means autonomy, it pays off in success, and it establishes self-respect or self-worth.

In almost similar terms the authors of Work in America (1973) have identified the function of work,

Work offers economic self-sufficiency, status, family stability and an opportunity to interact with others in one of the most basic activities of society.

In sum, the development of worksite mental health programs, to be described below, is based on the dual assumptions that for most persons nothing is more stressful than unemployment, so that job opportunities, *per se*, reduce the anxiety provoked by the interplay between individuals and the world of work; and further, that work is so instrumental in providing meaning to life that maintenance on-the-job is contributory to most persons' mental health. If these provisional suppositions can be accepted, then mental health services which assist workers in maintaining their job affiliation can be viewed as preventive, both of occupational stress, and of the more severe manifestations of mental illness which are sometimes experienced by labor force participants.

PROGRAM BEGINNINGS

This, in fact, has been the finding resulting from research, training and program development carried out at the Industrial Social Welfare Center of the Columbia University School of Social Work over the past decade.* A

*The Industrial Social Welfare Center is an umbrella organization which, since 1969, has carried out research, training and program development with trade unions, corporations and social agencies, the object of which is to improve the delivery of social, mental health and rehabilitation services to working men and women. This work has been supported in part by grants from the

little background might be in order. The work started in 1963 when a mental health team was established and lodged in the work setting of the men's clothing industry in New York City. This was, at the time, a pioneering effort since few mental health professionals had sought to use the work setting as a vehicle through which to find troubled workers and provide care in order to help them stay on-the-job.

After several years of offering service to workers in the industry, a number of conclusions could be drawn,

- at any time, a portion of the labor force is experiencing difficulty maintaining employment because of mental health problems (etiology unspecified),
- mental health professionals stationed in the world of work are uniquely able to
 - locate individuals in need of help,
 - engage such persons in care, using institutional ties to assure trust of the client,
 - maintain mentally ill individuals at work with productivity records equal to the output of those not experiencing emotional problems,
- these accomplishments depend on a clinical technology which
 - stresses active, directive intervention,
 - makes use of an open team structure which, through a division of labor, allows for participation of client, labor, management and the helping professional,
- training can be a vehicle for introducing a mental health program to the world of work and for improving the capacity of the indigenous personnel to participate (Weiner, Akabas & Sommer, 1973).

Although the mental health-rehabilitation program in the men's clothing industry was at the frontier of the development of programs in the world of work, it also represented an idea whose time had come. Generated out of the realities of workers in need of care, community programs which were inacces-

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sible and unsympathetic to these needs and trade union and/or corporate management which viewed maintenance of the member-worker on-the-job as a desirable goal for service delivery, an impressive growth in the number and variety of preventive mental health programs in the world of work has occurred in the last few years (Brooks, 1975; Mills, 1972; Skidmore et al, 1974; Weissman, 1975; Yasser & Sommer, 1974). The Industrial Social Welfare Center has been involved in the inception of some of these efforts, has served as technical assistant to others, and has tried to track the development of an even larger number. It is from these contacts that details of the service delivery pattern can be discerned.

PROGRAM STRUCTURE

There are over 90 million Americans in the workplace. Many experience job performance difficulties as a result of emotional problems. Their ability to carry out the specific requirements of their assigned tasks and/or their capacity to respond to the routine demands of their work and/or their competence to deal with interpersonal relationships with peers or supervisors may be impaired (Neff, 1968). Although job-related issues may be causal, more often, difficulties on-the-job are a result of problems which find their source or cause in another area of an individual's life. Because cause is difficult if not impossible to establish, most workplace services do not deal with this issue, but rather make employee status the basis for eligibility.

Interest on the part of trade unions and employers in the mental health of workers, and their desire to make mental health services available to members of the labor force, have brought a variety of patterns into existence. These programs have been organized under the separate auspice of organized labor, or management or jointly by both. Some models have provided only fiscal benefits - i.e., insurance so that the person in need can purchase service from community providers. Under other circumstances, the auspices individually or in combination have contracted with a community facility which then made service available to the relevant population, either at the workplace or at an agency office. Increasingly, however, direct service programs have been developed by the sponsoring auspices at the worksite.

Although many early programs were directed toward alcoholics, and used a coercive element of threatened job loss to connect the worker with the treatment resource, this paradigm has been abandoned for what has come to be known as a broad brush employee assistance program (E.A.P.) which offers an open door to troubled employees without regard to the manifestation of the trouble.

SERVICE DELIVERY PATTERN

Anybody at the workplace may use the service which is usually free to all. In most circumstances, training is offered as part of the program to front line supervisors and shop stewards (Akabas & Bellinger, 1976). The focus is to improve their performance in tasks they already carry out - i.e., identifying a troubled worker, approaching him, making a referral and protecting his job. In addition to referrals initiated at the suggestion of a supervisor, often as a result of impaired work performance, self referral is encouraged.

Social workers, psychologists, vocational counselors, and psychiatrists are the professionals most frequently involved in staffing these programs. Services are generally offered on a confidential basis except that, at the discretion of the client, the treatment team may include significant others at the workplace. This is especially so when job maintenance is the goal of intervention. Since services are available for the most part during working hours, release time is provided by the employer. A model of short-term, accessible, immediately available care is backed up by a substantial information and referral component which fosters integration of the program with community services.

The significance of the preventive impact of workplace delivery models is best illustrated by a typical case.

Mrs. Clarke, a first-line supervisor in the accounting department of a large manufacturer, was a long-term, competent and valued employee. Her supervisor noted that her performance suddenly deteriorated - she was short with people, errors began to appear in her work and she received an unusual number of personal phone calls. When her supervisor tried to discuss her changed job performance, Mrs. Clarke denied that there was any problem, but committed herself to improvement. When none followed, her supervisor approached her again, indicating concern, and suggested that Mrs. Clarke see the EAP counselor. Although she continued to deny any need, Mrs. Clarke accepted the referral when her supervisor suggested that her continued employment was in question. She entered the counselor's office in a classic manner. No sooner had she reiterated that she didn't need any help, and could solve her own problem, when she burst into tears, admitting that she felt overwhelmed, depressed and unable to cope.

Mrs. Clarke indicated that she was a single parent of a mentally impaired young man. Her son, now 21, had just finished a special education program, and was home all day long. He had been unable to find any employment, and had become increasingly restless and dependent, had begun to bother neighbors and to call her almost hourly. She identified that she felt guilty that she was not at home to help her son find employment, worried that she could not afford, financially, to take time off to assist him in his job search, frightened at what the future might hold for each of them, and weakened by the burden she now faced and the long years of difficult coping that had preceded it. It was immediately clear that Mrs. Clarke and her son had fallen through the cracks in community services and that she was faced with a situational problem which could lead to serious emotional difficulty. But with a service easily accessible in the world of work, Mrs. Clarke did not have to lose her pay or her job. She and the counselor explored options, and the outcome was such a satisfactory one that it is pleasurable to report.

The counselor suggested that her son be seen by the company's personnel director so that, within house, they could have some advice and suggestions on the young man's employment potential. In the benevolent atmosphere of the interview, Roger presented himself so well that the personnel director thought Roger might be able to do some job in the company. A team was convened - Mrs. Clarke, Roger, the EAP counselor, the personnel director, the supervisor of the warehouse and loading section and a union representative. Roger has been working in the warehouse for six months now. The counselor was very supportive of Roger and his supervisor while some initial, potentially discouraging issues were worked out. The union representative talked with the men in the section and headed off scape-goating which had begun to develop as Roger faltered in his early performance. Mrs. Clarke had some short-term opportunity to discuss her fears with the counselor, and her job performance is back to par.

The "happy ending" should not belie the difficulty in resolving this very complex mental health problem. It does suggest, however, that a workplace service brings significant new ingredients to a situation which contribute measurably to the probability of success from preventive intervention. Overburdened community systems are inaccessible to working people because they are open when workers are at work, and closed when workers are available to seek services. Further, they require that a "service seeker" identify herself as sick or at least helpless, otherwise there is no "rationale" for seeking care. Thus, they carry the stigma that has, for too long, been associated with mental health care. Juxtapose the characteristics of the world of work model against this picture. Services are accessible, available, trusted and unstigmatized - since the mores of the workplace do not require a person to be helpless to ask for care. They base correctional activity on group process, making use of the work community's natural helping resources. Positioned as they are at the workplace, such services can offer ongoing support and continuity of care.

This model was first described during World War II by Bertha Reynolds (1975), a pioneer in developing services at the workplace. She and her colleagues provided help to the members of the United Maritime Union so that they could continue to man the merchant ships which carried men and supplies to the war areas. She laid down the fundamental notion that help should be offered with no strings attached, and should permit the person helped to "maintain full adult status." She noted, further, that society is so complex that failure is not a function of the individual and, therefore, help should not be in terms of the individual, but a result of a system's effort. More recently, Carel Germain (1973) has identified the importance of the system in the "life model" of service delivery, noting, "...the environment itself is utilized as a means of helping...(involving) professional action that will engage the healing potential and the growth potential of the individual's adaptive capacities and the social supports of his real world." (emphasis added).

In the United States today, as always, we esteem work. It is incomprehensible, therefore, that we do not provide services at the workplace to help maintain people at work who are faced with the possibility of dropping

out of the employed labor force because of occupational stress or other emotional problems. What we are talking about here is making a workplace receptive to individual differences and weaknesses; learning compassion; conveying a different kind of atmosphere and message - one which reduces the stigma of mental illness, increases access to service by saying, "We know that people have emotional problems; it is o.k. to have such problems; we want to help do something about them."

This approach holds considerable promise of reducing occupational stress. It will not take hold overnight, but it is gathering momentum from an impressive group of supporting voices. For example, Daniel Bell, the noted sociologist, has suggested that in the post-industrial society, economic enterprises will pay more attention to their "socializing" (i.e. human welfare) function than their "economizing" (profit-making) function (Kanter, 1973). In comparable terms, Leo Perlis (1977), after many years as director of Community Services for the AFL-CIO has concluded, "Both corporations and unions would do well to explore new approaches to human needs in the workplace, out of enlightened self interest if not for purely humane reasons." Through Juanita Kreps, Secretary of Commerce, the word has come from the new administration as well. She was quoted recently in the New York Times (Silk, 1977)

...the Commerce department ought to encourage all those business behaviors that contribute to the well-being of mankind. The trick is, of course, to encourage business to view its contribution to the welfare of society in somewhat broader terms than profit maximizing...I can conceive a time when corporations would cite two indices - one with a profit return and the other, the next-to-the-bottom line...environment issues...treatment of employees, (emphasis added), Affirmative Action regulations and corporate integrity issues.

Finally, Mrs. Rosalynn Carter, herself, has enjoined us to reach for a new goal in mental health, a goal in keeping with the potential of mental health services at the workplace.

For every person who needs mental health care to be able to receive it...and to remove the stigma from mental health care so people will be free to talk about it and seek help (New York Times, March 10, 1977, p. 18).

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CHAPTER 21

PATHWAYS TO WORK: NEW FEDERAL PROGRAMS

Bernard Posner

Realities can be deceiving: this we know. They can be particularly deceiving in considering pathways to employment for people with histories of mental illness. One so-called reality is that employers show a stonewall resistance to hiring mentally restored people. Yet, with affirmative action, more employers are accepting them because they are losing the option to discriminate.

Another so-called reality is that vocational rehabilitation usually is the best pathway to the employment of former mental patients; public employment offices, the worst. Neither is true. Vocational rehabilitation doesn't always do well; public employment sometimes does better.

Another so-called reality is that the forthcoming White House Conference on Handicapped Individuals will mark a turning point in America - with handicapped people bringing about change, achieving their independence. Yet where are the voices of those who have been mentally ill? Strangely silent.

To clear the waters - or to keep them from getting muddier - I offer the following list of pathways to employment for people with histories of mental illness.

AFFIRMATIVE ACTION

The Affirmative Action program was created by Section 503 of the Rehabilitation Act, requiring every business with a government contract to take affirmative action to hire qualified handicapped people. Also included are promotions, training, transfers, terminations and other personnel actions. Any person with a physical or mental impairment which substantially limits one or more of major life activities is considered handicapped, as is any person with a record of such an impairment (most mentally restored people fit here), or any person regarded as having such an impairment. Section 503 covers half the businesses in the United States. It is beginning to make a major impact.

Under affirmative action, employers do not have the right to ask questions about a person's medical background unless the questions relate directly to the job. Employers cannot fish to find out whether a person has been mentally ill. If a person doesn't want to reveal his mental illness history, he does not have to. But he gives up his protection under affirmative action. At any time during his working career he can change his mind and come in under affirmative action merely by disclosing his background.

Originally, there was some apprehension that Section 503 would benefit mainly

the physically handicapped and not the mentally restored. There are clues to the contrary. Since the program is administered on a complaint basis; the only weathervanes are numbers of complaints. To date, 1,300 complaints have been filed, 70 by former mental patients. This may sound like a small numbers, yet it is at about the level of complaints by other individual disability categories. For the mentally restored, affirmative action seems to be working as well as for other disabilities, but it is creating a new dilemma: to tell or not to tell. To tell results in coverage; not to tell results, perhaps, in better chances to get the job.

NONDISCRIMINATION

A nondiscrimination program was created by Section 504 of the same Rehabilitation Act. Every organization with a government grant (as opposed to government contract) may not refuse to hire qualified handicapped people. Government grants are everywhere: schools, colleges, hospitals, nursing homes, other institutions. The impact is so broad that for more than three years the Department of Health, Education and Welfare (which administers Section 504) couldn't come up with regulations. Nationwide demonstrations by the handicapped took place. In the closing days of April, regulations finally were signed.

Who is handicapped? The same definitions as in Section 503 apply, except that Section 504 includes those with histories of alcoholism and drug addiction; Section 503 does not.

The employment provisions of Section 504 are quite similar to Section 503. The blockbusters come in the other provisions. For example: all new facilities must be built without barriers...programs in existing buildings must be made accessible to the handicapped within the next two months. Handicapped children are entitled to free public education regardless of their disabilities. Schools must find handicapped youngsters not being served. Colleges must furnish aids for the blind and deaf to assure their full education, and much more.

The big question in employment, is: "What about drug addicts and alcoholics?" The Attorney General of the United States, in deciding they came under the law, displayed reassuring realism: "The statute does not require the impossible. It does not require grantees to ignore behavioral or other problems that may accompany alcoholism or drug addiction." In short, if a person displays outrageous behavior, he need not be hired; if he displays normal behavior and is qualified, he should be hired.

Not much has happened to date in nondiscrimination. Over the past three years, some complaints have been filed with H.E.W. despite the lack of regulations. The full impact of Section 504 is yet to be felt.

EDUCATION FOR ALL HANDICAPPED CHILDREN

The act calls for federal grants to states to assure that every handicapped child will have a free, appropriate public education, including special education and other services (transportation, psychological therapy, recreation,

counseling, others). Funds haven't been appropriated yet, but they will be. The law requires that by September, 1978, free and appropriate public education must be available to all children from three to 18 years of age. By September, 1980, the age limits are extended: three to 21.

At the upper end of the age sequence, "free and appropriate" education for teen-agers undoubtedly would be vocational. Young people should be able to move directly from school to job. In short, this law has the potential for becoming another effective pathway to employment, for young people who have been mentally ill as well as for those with other disabilities.

U.S. GOVERNMENT EMPLOYMENT

It wasn't many years ago that the entire mental health field assailed the U.S. Civil Service Commission to urge it to remove one question from the application form for federal employment. That question inquired into the applicant's history of mental illness. The question was finally removed. At present, the government does not look into a person's medical history until after he or she has been selected for a job.

There are two ways for a person with a history of mental illness to enter federal employment. One is the usual channel, the same one used by other employees. (But no separate records are kept of the handicapped, physically or mentally.) The other is a special 700-hour appointment available to all seriously handicapped people. (But records are kept only of total numbers, and are not broken down by type of disability.)

The government is surveying all its employees to get a nose-count of the handicapped. But the handicapped employee must be willing to be counted; many mentally restored people are not. This census, once complete, may undercount the mentally restored. Numbers or no numbers, mentally restored people do have a fairly good chance for federal employment for two reasons. First, Section 501 of the Rehabilitation Act requires federal agencies to establish affirmative action programs. Second, a coordinator program calls for every government office to designate one person as coordinator, with the task of acting as ombudsman for handicapped job applicants, mentally restored included.

PSYCHOSOCIAL REHABILITATION CENTERS

There are 25 psychosocial rehabilitation centers across the country and the number is growing. These centers give mental patients a foretaste of daily living. Some centers stress employment of patients more than others. Fountain House in New York City, for example, provides trial employment to more than 100 mental patients. The patients work several months at jobs set aside for them by local employers, and then, presumably, go out in the world to get jobs on their own. Not all succeed at first. But even in their job failures they strengthen themselves. After two years of working and not working, falling down and getting up, 80% of Fountain House people finally are employed.

PUBLIC EMPLOYMENT OFFICES

The 1,800 public employment offices from coast to coast are not usually thought of as a pathway to jobs for the mentally restored. The applicant drops in, peruses computerized job listings, jots down a couple of addresses, and goes on his or her way, without much in the way of special help. Yet, these offices do place a great many handicapped people (mentally restored among them) despite the fact that specialists for the handicapped have been given many additional duties and despite the fact that only a handful of job candidates can receive counseling.

Last fiscal year, 1 million handicapped people applied for jobs through public employment offices. Of them, 67,000 (6%) had histories of mental illness. Twenty-four per cent of the handicapped applicants were placed in jobs; 27% of those with histories of mental illness were placed.

But handicapped people need more than placement; they need counseling. Five years ago, 11% of applicants at public employment offices received counseling. Because of budget cuts, the proportion dropped to under 6% last year. This coming fiscal year marks a turnaround; no less than 7% will be counseled. The rate is expected to climb in subsequent years. As it climbs, the number of handicapped placements--mentally restored among them--should climb.

VOCATIONAL REHABILITATION

The program of state-federal vocational rehabilitation furnishes a variety of services for handicapped people, designed to prepare them for the job market, including evaluation, counseling, training, placement and follow up. The Rehabilitation Act requires top priority for those with more severe handicaps. Nearly one-third of a million handicapped people are being rehabilitated each year. The proportion of the severely handicapped being rehabilitated is rising; in 1976 it was up to 40%. Of the third-of-a-million, about 30% are the mentally restored - the large single category of disabilities. Here, too, the concentration is on those with more serious mental disorders:

<u>Fiscal Year</u>	<u>Total, Mentally Ill</u>	<u>Number, Severely Mentally Ill</u>	<u>Percentage, Severely Ill to Total</u>
1975	67,000	26,000	39%
1976	79,000	29,000	37%

A different picture emerges when we look more closely at the numbers. From 1968 on, we see that the bulk of those classified as "mentally ill" aren't mentally ill at all. They are welfare recipients, public offenders, other disadvantaged persons who could not come into the service system without being considered handicapped. They were placed in the "mentally ill" category in a subcategory called "character, personality and behavior disorders." Omit them, and we see that instead of 30% of rehabilitations being mentally ill, the proportion drops to 11%. Two years ago, a turning point occurred. The percentage of character disorders began to drop and the percentage of more severe mental illness began to rise, possibly due to improved classification procedures.

Steps are under way for the Rehabilitation Services Administration to give a higher priority to rehabilitation of the mentally ill. More innovation and expansion grants will go in this direction. The Rehabilitation Services Administration and the National Institute for Mental Health have entered a cooperative agreement to engage in joint demonstration projects.

SHELTERED WORKSHOPS

There are 3,000 sheltered workshops in the United States, serving more than 400,000 handicapped people each year. As one would surmise, the greatest proportion of clients, 53%, are mentally retarded. But, surprisingly, in second place are the mentally ill with 19%.

One criticism of sheltered workshops is that they place only 10% of their clients in outside jobs; 90% remain in the workshop. But at least, the 90% are working, productivity at a variety of manual tasks - no small achievement considering that most have never worked before, had no marketable skills, and have spent their earlier years in institutions. Sheltered workshops are a pathway to employment for some but not for all handicapped persons.

WHITE HOUSE CONFERENCE ON HANDICAPPED INDIVIDUALS

The White House Conference on Handicapped Individuals was created by the Rehabilitation Act. It has great potential to bring change to America. It is not just another White House Conference because it is run by and for handicapped people - the first of its kind. Initially, each state in the Union held a White House conference, coming forth with proposals which were funneled to Washington. The White House Conference itself will be a synthesis of all the state recommendations. Those that are voted for will be given priority in implementation, either by congressional legislation or action by government agencies. The dominant interest, as would be expected, was employment. Six hundred of the 3,000 recommendations to be studied deal directly with jobs; hundreds more deal indirectly with jobs. But, of the 600 handicapped delegates elected by states to attend the conference, only ten are mentally restored. To attempt to improve matters, 35 of the 100 delegates-at-large will be mentally restored individuals.

The White House Conference, then, leans in the direction of the physically handicapped. Yet most of the recommendations dealing with employment happen to be broad-based, and would benefit both the physically and the mentally handicapped.

The very fact of the conference is almost as important as the recommendations coming out of it. The conference is the voice of handicapped people in America--speaking, and being heard. Never again will the handicapped be content to sit in the background as a silent minority. The mentally ill stand to gain as much as the others.

In summing up, these facts stay in mind:

- There are a variety of pathways to employment for people who have been mentally ill. The problem is, they don't know about them all; neither do their advocates.
- There are bright glimmerings on the horizon: more counseling by employment offices; more attention to the severely mentally ill by vocational rehabilitation; greater attention to employment of the handicapped brought by the White House Conference.
- The past is past, along with its stereotypes and prejudices. This is the present - a present of affirmative action, of the voices of the people, of new priorities.

Still there are no miracles for tomorrow, only a chance for better days.

CHAPTER 22

ALCOHOL ABUSE: A MODEL PROGRAM OF PREVENTION

Robert R. J. Hilker

The theme of this whole conference is "Reducing Occupational Stress". My specific role is to discuss the problem of alcohol abuse and a program for prevention. I must say that I feel completely inadequate to offer any definite answers to either of these problems.

First, however, let me consider for a moment the problem of occupational stress. Our medical department became interested in this problem several years ago. It became apparent to us that we were seeing many more people in our medical department -- craft and management employees alike -- either with manifestations of stress or telling us they were feeling stress. The stressors of craft and management employees have been discussed in other papers in this conference. Our industry has some stressors which are unique to us, which simply add to the general problem.

We have been fortunate in being able to study this stress in a somewhat scientific way through a cooperative research project with Dr. Salvatore Maddi, professor and chairman of the Department of Behavioral Sciences at the University of Chicago. You will note I said "somewhat scientific". We found it extremely difficult to measure stress -- the problem of setting normal parameters for reaction is very difficult! Much of our data is soft and subject to subjective evaluation. We did find, however, that stress in our company seems to be high. The data on this study will be published in several later studies. I will briefly summarize what we did. The cohort we studied intensively were the middle and upper management group simply because virtually all of them have voluntary annual examinations in our department and are readily available for a research study. The measurements we used were:

1. Evaluating what patients were telling us.
2. Physicians' opinions about what is happening.
3. Patients own evaluation of the impact of specific job stresses.
4. Incidence of stress-related illness.
5. Managers' perception of job dysfunction in their subordinates.
6. Psychological testing by the University of Chicago.

By all of these measurements it was abundantly clear that stress in our company is significantly higher than it was thought to be five years ago. It is also interesting that the abuse of alcohol seems to be rising both in non-management and management employees.

While it is clear that the level of stress has increased, we must ask ourselves four relevant questions:

- 1) Is the stress productive and not harmful to individuals and the business?
- 2) Is the stress counter-productive and harmful to either the individual or the business?
- 3) How do we measure the difference?
- 4) What can -- or will -- we do about counter-productive harmful stress?

As just one additional thought about stress and alcohol, consider the stress unexposed alcoholic employees must have in trying to hide their addiction to alcohol from their employers.

Now a few words about the prevention of alcoholism. Little is known about this. It seems to me that education is the primary tool of prevention. Early recognition of those people who may be susceptible to abuse of mind altering substances, counseling them and altering their life style would probably be useful, but seems beyond our ability at this time. At best we now seem to have developed only the capability of preventing disability from alcoholism -- and this only to a limited extent.

Alcoholism is a widespread yet highly misunderstood disease. We are all familiar with the symbols associated with other important public health problems: the cross of the National Lung Association, the sword of the American Cancer Society, and the heart and torch of the American Heart Association. Alcoholism, unfortunately, has too often been symbolized by the skid row drunk. If concepts of alcoholism are influenced by this distorted view, our efforts in prevention, treatment and rehabilitation are made more difficult.

Growing concern with alcoholism over the years has resulted in various methods designed to control this disease. The methods were basically aimed at control of the use of alcohol, and could be classified as: 1) prohibiting the manufacture, distribution or consumption of alcoholic beverages, 2) indoctrinating people in the consequences of excessive drinking, 3) controlling the manufacture, distribution and sale of alcoholic beverages, and 4) substituting "counter attractions", such as recreational facilities in isolated communities where drinking seemed to be the only release from boredom. Laudable as the aims of these efforts may have been, they have not been successful.

Failure comes not only by not recognizing alcoholism as an illness but also because there are serious obstacles to treatment. Here are some examples:
1) Most alcoholic employees are hidden and protected. The family or the im-

mediate supervisor most often will try to deal with the problem in their own way. 2) The alcoholic employee denies drinking heavily and has little motivation to seek help. 3) The alcoholic employee cannot be forced to seek help. 4) There has been a lack of consensus about the cause of this disease. So, although the medical profession recognizes there are different types of alcoholism, treatment has developed in a haphazard, empirical fashion. 5) There has been professional apathy toward treating alcoholics. This starts at the medical and nursing school level where, even now, courses in this illness are grossly inadequate. 6) Alcoholism has been recognized as a disease only recently. 7) Hospital facilities have been inadequate to care for and rehabilitate the alcoholic. 8) Law enforcement agencies and businesses alike have generally taken a punitive attitude toward the alcoholic.

Fortunately, we now are better able to understand and treat this disease. There are now many good programs in industry. The medical profession has begun to show much greater interest in this illness. For instance, the American College of Physicians made a special effort to alert its members to its obligations in understanding and treating alcoholism. The American Occupational Medical Association and American Academy of Occupational Medicine have programs to help combat this disease. The American Medical Association has published an excellent manual on alcoholism. Many hospitals are developing specialized facilities and programs specifically for alcoholics. Excellent inpatient treatment centers are available in most areas of the country. These treatment centers are branching out into outpatient long-term followup care as a further method of treatment.

Great concern has been expressed at all levels of government. The National Institute of Alcoholism and Alcohol Abuse has been established in the Department of Health, Education and Welfare. One division is concerned solely with the problem of alcoholics in industry. State and local governments are developing programs of education and facilities for rehabilitation of the alcoholic.

Business management is more aware of the problems of alcoholism, its costs, and the variety of solutions. For instance, the Conference Board has published a monograph, "Company Controls for Drinking Problems", for all its members. Almost every management journal has carried articles about alcoholism. The press, radio and television have brought the consequences of alcoholism and the techniques of rehabilitation to the public. Unions, too, are more interested in this illness and in the fate of employees suffering from it. This interest has led to union-sponsored educational and rehabilitation programs and negotiation of insurance benefits for alcoholic employees.

The work of Alcoholics Anonymous is legendary. This incredibly successful organization was founded in 1935 by two alcoholics--a physician and a stock-broker--and has now grown to an estimated 600,000 members. By their conspicuous success, they have contributed to the recent change in public opinion about this disease. In short, industry, the occupational physician and nurse are now feeling many internal and external pressures to develop new and better programs for alcoholism.

A program for the control of alcoholism in industry need not be expensive or

extensive. The program can easily be tailored to the number of employees, the budget and available facilities. There are some factors, however, which are common to all successful programs in industry:

- 1) Recognition of alcoholism as an illness -- its inclusion in disability and insurance plans;
- 2) The understanding and support of all levels of management of the company's position;
- 3) A written statement of policy;
- 4) Union support and cooperation;
- 5) Education of all employees and their families;
- 6) Education of all levels of management in the techniques of recognition, referral and rehabilitation, and a commitment to rehabilitation;
- 7) Establishment of referral sources either in the company or community;
- 8) Adequate long-term followup;
- 9) Research in various aspects of alcoholism; and
- 10) Education of physicians and nurses in the problems of alcoholism and rehabilitation.

The program design will be determined by the budget and facilities available. Most large firms have a medical department responsibility. The occupational physician or nurse must be trained in the techniques of treating these employees. A counselor, who could be a member of Alcoholics Anonymous, a psychologist, or a trained social worker, may also be a part of the medical department team. This counselor would work directly with the employee and family. Adequate arrangements must be made with community resources for hospital and outpatient care and treatment. Continuous communication with the employee's department is essential. It is only through the constructive coercion of both the medical and employing department that most employees will successfully complete a rehabilitation program.

In other industries without a medical department the responsibility for the alcoholism program has been assigned to departments such as personnel or labor relations. The most simple solution would be to have a volunteer counselor--perhaps an employee already a member of AA. The service of an outside physician or hospital to conduct a rehabilitation program would also be possible. Regardless of the type of program selected, it need not be expensive. Its success will depend on meeting the essentials of a good program and the zeal and enthusiasm of the people directing the program.

It is realistic and advantageous for the industry to conduct a rehabilitation

program. Government, public, and union pressures will eventually force industry to do this. Alcoholism will be found in any employee population. Industry can cope with the actual and hidden costs only by meeting the problem head on.

It is appropriate to discuss for a moment the method by which the alcoholic employee is recognized and referred. It is generally conceded that utilizing the "problem employee" approach is far superior to just looking for alcoholism. To estimate the number of problem employees in any industry is difficult. Experience in companies such as Illinois Bell Telephone Company, Kennicott Copper Company and others indicate that the number is significant. People generally become problem employees when their mental health interferes with effective job performance. Long ago successful techniques were developed for handling heart, vascular, malignant diseases, and various other organic disorders in employee populations.

There remains a group of employees who are not effective. Identification of these employees is usually made by the immediate supervisor. The supervisor does this by evaluating the employee's job performance. He should not, however, attempt to be an amateur diagnostician or to conduct a witch hunt for specific diseases. This job-oriented technique has proven effective in Illinois Bell Telephone Company for over 15 years. No longer are supervisors at Illinois Bell advised to look for specific diseases, such as alcoholism, emotional illness and drug abuse. They are trained to deal in a realistic way with the problem employee who does not respond to customary management techniques.

This approach effectively identifies the employee with health problems. These employees are told, in specific terms, about their job deficiencies and what the consequences will be for not improving their work performance. A visit to the company medical department is then suggested as one additional effort the company will make to help the employee improve. Most employees will accept this offer of help if it is sincere, if it is clearly not a punitive device, if they understand that the medical facts are kept confidential, and if the examination will lead to positive efforts of rehabilitation.

The great majority of employees referred by this technique are found to be emotionally ill. The next most common cause of job dysfunction is alcoholism. Drug abuse is also important. A few referrals will have either previously undiagnosed organic illness or organic illness which cannot be controlled or has been poorly treated by the personal physician. Organic illness can usually be corrected by proper medical attention. Behavioral problems, however, demand a great deal more expertise, patience, time, and cooperation from the employing department.

A brief summary of the Illinois Bell Telephone Company program will illustrate a successful operating plan: First, there is complete cooperation of all levels of management in a commitment to recognize alcoholism as an illness, to treat it as such under disability and insurance programs and to offer a chance for rehabilitation. The following written policy statement has been well publicized in the company. It is presented here as a workable policy that has stood the test of time. It may be adapted to suit the individual needs of any particular industry.

The use of any drug interfering with safe and efficient job function is a matter of company concern and will be dealt with in an appropriate manner.

Alcohol is also a drug about which there is serious concern. Its excessive use will be considered in the same manner.

The company recognizes that drug misuse may be a serious medical problem. A rehabilitation program is offered in the medical department. Employees cooperating in a clinically supervised rehabilitation program may be eligible for benefits.

Possession or use of illegally obtained drugs or alcohol on the job or on company premises may be a cause for dismissal.

It is important to treat alcohol and other mind-altering drugs in the same general policy statement.

Education of the employee population is accomplished in several ways. Members of the medical staff and nurses talk to many employee groups. Articles appear in the company magazine and newspaper. A pamphlet was mailed to the home of all employees, explaining the policy on alcoholism and offering help in rehabilitation. In addition, a condensation of the book "The Drinking Game and How to Beat It" was sent to the home. Films are shown at company locations and health education material is available in easily accessible locations. Employee education is seen as a continuing part of the health education program.

Managers are educated in three ways. First, medical staff members present the program to all new managers and at various operating staff meetings. Second, a videotape is shown at employee group meetings. Finally, a published Supervisors Guide is available for the supervisor.

This program has been in operation since 1950. Over the years it has grown in size and sophistication but still operates under the same basic concept of case finding by the employing department, constructive coercion and a sincere desire of everyone to help the ill employee. We now have over 600 employees as active participants in the program.

The following case report gives one example of how the alcoholic program works.

CASE REPORT

A 51-year-old male executive was referred to the medical department for a health evaluation in 1970. The health evaluation was requested because of increasingly poor job performance, poor morale in his work group and unexplained absences from the job becoming more apparent over the last two years but reaching crisis proportions in the preceding six months. This executive had an examination in the medical department when an annual examination was offered

to all management personnel in 1969. On that examination he admitted to using alcohol only three to four times weekly. He said he had no job or home problems and had none of the physical findings associated with alcoholism. Blood chemistry tests revealed his SGOT was modestly elevated for no apparent reason.

When referred to the medical department in 1970 he, of course, was under considerable pressure to cooperate. But he still denied the excessive use of alcohol. When his SGOT proved to be elevated even more and when the medical department recognized his job pattern as typical of alcoholism, he was confronted with the facts and help was offered. He then revealed that alcohol has been a severe problem for approximately ten years. Evaluation suggested that rehabilitation could only be accomplished by immediate hospitalization in an alcoholic rehabilitation facility. He readily agreed to this, mainly to save his job. He had told us of deterioration in his family situation and problems with his children. In following up with the wife and children (we routinely do this) it was discovered that his wife also was a far-advanced alcoholic. She also was hospitalized but in a different facility. The children were counseled and became members of Al Anon.

Unfortunately, neither the employee nor his wife were rehabilitated after their first hospitalization. Although there was improvement in job performance, deterioration became obvious after about two months. Our counselor maintained contact with the wife and her AA group and reported a similar deterioration in her condition. After consulting with the executive's department, it was decided to hospitalize him again. He agreed to it, reluctantly. During this hospitalization the reality of the situation became obvious to him. "The hardest thing I have ever admitted is that I am an alcoholic. Once I really faced up to this, the road back became clear." He now is a regular member of two AA groups, makes 12 step calls for them, sees our counselor regularly and visits with the physician in charge of our rehabilitation program. He has explained his problem to the people in his department and once again has gained their respect by being a real leader. His job performance is excellent. And, his wife has also achieved a similar successful rehabilitation.

A case of many years of sobriety could easily have been presented--we have several hundred of them. However, this case illustrates several points:

- 1) Alcoholism occurs in all levels of the socioeconomic status and at all levels of education and responsibility. The executive in this case has an M.B.A. degree.
- 2) Executive and non-executive employees are treated in the same way. It is not wise to have two programs and two standards of employment.
- 3) Alcoholism was present for at least 10 years before a job crisis occurred
- 4) The employee eluded detection in the medical department.

- 5) He accepted rehabilitation the first time only to save his job and with no sincere belief that he needed rehabilitation.
- 6) His wife was also an alcoholic. Rehabilitation could have failed without involving her.
- 7) By working with his employing department a second crisis was brought about much earlier than it would have been by job performance.
- 8) Some behavioral regression must be expected in any rehabilitation program.
- 9) It was only after he sincerely admitted alcoholism as the cause of his problems that any success was achieved in rehabilitation.

We have studied the records of 402 employees for whom we had employment records for five years or more prior to entering our program and five or more years after referral. The analysis of this data shows the details of what a successful program can produce in rehabilitation and modification of job performance.

Before we look at the results in rehabilitation, it is interesting to see how these patients were referred to us and to see what kind of population they are.

HOW PATIENTS WERE REFERRED TO PROGRAM

	<u>WOMEN</u>	<u>MEN</u>	<u>TOTAL</u>	<u>%</u>
DEPARTMENT	86	277	363	90
MEDICAL	5	11	16	4
SELF	2	21	23	6
TOTALS	93	309	402	100

It is obvious that we must rely on supervisors in employing departments as the major source of our case finding. Not only must we rely on them, we must educate them in the art of early case finding. This must be a continuing effort. Management changes. Goals change. We must constantly adapt our efforts to these changes. This can only be done by education -- and re-education -- of management.

YEARS OF SERVICE WHEN REFERRED TO PROGRAM

<u>YEARS SERVICE</u>	<u>WOMEN</u>	<u>MEN</u>	<u>TOTAL</u>	<u>%</u>
UNDER 10	19	58	77	19
10 - 19 YEARS	23	99	122	31
20 - 29 YEARS	27	77	104	25
30 - 39 YEARS	23	56	79	20
40 OR OVER	1	19	20	5

AGE WHEN REFERRED TO PROGRAM

<u>AGE</u>	<u>WOMEN</u>	<u>MEN</u>	<u>TOTAL</u>	<u>%</u>
UNDER 25 YEARS	2	7	9	2
25 - 24 YEARS	4	56	60	15
35 - 44 YEARS	30	95	125	31
45 - 54 YEARS	50	106	156	40
55 OR OVER	7	45	52	12

The above two tables show us an interesting aspect of our patient population. Over 50% had between 10 and 29 years of service. These should be their most productive years and the years in which upward movement occurs. Seventy-one percent were between 35 and 54 years of age. Should our study be done now it is our opinion that both length of service and age would be lower. We are seeing -- or recognizing -- alcoholism in much younger employees now. However, we still simply miss alcoholism in its early stages. Knowing the general natural history of the development of this disease, we can safely say that alcoholism had been present for a long time before it resulted in a job crisis of sufficient magnitude to demand correction. The obvious remedy to this is to alert our operating departments to have health evaluations much earlier than was done in the past. Repeat them again and again if necessary. It also made our physicians aware of the subtle nature of early alcoholism and has made them much more alert to the disease and much more efficient diagnosticians.

MARITAL STATUS OF PATIENTS

	<u>WOMEN</u>	<u>MEN</u>	<u>TOTAL</u>	<u>%</u>
SINGLE	19	39	58	14
MARRIED	33	227	260	64
WIDOWED	10	5	15	4
SEPARATED	6	9	15	4
DIVORCED	25	29	54	14

There is a high incidence of marital discord in the life of the alcoholic employee. This is not always shown in their marital status. We have gradually come to the realization that alcoholism is often a family disease affecting both husband and wife. We now thoroughly look into this possibility. The incidence of divorce or separation was much higher in women. This could indicate a difference in the view of society toward alcoholism in women, or it could indicate that the married dependent woman is willing to endure more to save her marriage.

ESTIMATED MAJOR AREA OF LIFE STRESS

	<u>WOMEN</u>	<u>MEN</u>	<u>TOTAL</u>	<u>%</u>
SELF	69	277	346	86
HOME	42	60	102	25
JOB	12	24	36	9
OTHER	1	13	14	3

(Some patients have two or more areas of stress.)

Major life stress did not appear to be job-connected in many patients. In those cases where it has been proven to be significant we have made every effort to change the job situation if the solution seemed reasonable.

DIAGNOSIS OF TYPE OF DRINKING

	<u>WOMEN</u>	<u>MEN</u>	<u>TOTAL</u>	<u>%</u>
HEAVY DRINKER	17	66	83	21
CHRONIC ALCOHOLIC	54	201	255	63
REACTIVE DRINKER	7	16	23	6
SYMPTOMATIC DRINKER	15	26	41	10

Knowing the type of drinking is very important. Heavy drinkers (21%) are not true alcoholics, but drink in a serious, damaging, recreational way. They are able to control their drinking much easier than the other types. Typical chronic alcoholics (63%) are people in whom drinking is compulsive and self destructive. Reactive drinkers (6%) simply react to life situations by drinking. Symptomatic drinkers (10%) are suffering from an underlying emotional illness. Alcoholism may be a manifestation of emotional illness. We now know that different techniques of treatment are required. One cannot simply apply the same type of therapy to every patient and expect success. We believe that this is extremely important and may be a factor in the disappointing results of some industrial programs.

ACCEPTED COMPANY PROGRAM

	<u>WOMEN</u>	<u>MEN</u>	<u>TOTAL</u>	<u>%</u>
YES	77	273	350	87
NO	16	36	52	13

The question is often asked, "Will employees accept and cooperate with a Company sponsored program". At least for our employees the answer seems to be a resounding yes. It is our opinion that who runs the program is not as important as the quality of the program, a complete commitment to rehabilitation, and preserving the dignity of the individual as one would in handling any other illness.

ACCEPTED ALCOHOLICS ANONYMOUS

	<u>WOMEN</u>	<u>MEN</u>	<u>TOTAL</u>	<u>%</u>
YES	39	183	222	55
NO	54	126	180	45

Fifty-five per cent of patients accepted Alcoholics Anonymous. These came almost entirely from the group of chronic alcoholics -- 63% of the patients. The chronic alcoholic benefits from this fellowship and the support it gives. These same chronic alcoholic patients benefit greatly from seeing our counselor at regular intervals. This is actually extending the AA philosophy to a one-to-one basis.

The analysis of our results shows the details of what a successful program can produce in rehabilitation and modification of job performance.

REHABILITATION IN 402 REFERRALS

	<u>WOMEN</u>	<u>MEN</u>	<u>TOTAL</u>	<u>%</u>
REHABILITATED	52	178	230	57
IMPROVED	20	40	60	15
ACCEPTED HELP	17	75	92	23
NOT CONTROLLED	4	16	20	5

The rehabilitation rate is important. "Rehabilitation" means no drinking for one year or more. Fifty-seven per cent were in this category. An additional 15% were improved. These employees were functioning satisfactorily on the job even though they had not totally quit drinking. This makes a total job rehabilitation rate of 72%.

There is more to the story, however, than just rehabilitation. If a program is truly successful it should have measurable parameters of benefit to the business. Among these parameters are: 1) job efficiency, 2) sickness disability absence (absence lasting more than seven days), 3) off-the-job accidents, 4) on-the-job accidents. A successful rehabilitation program should produce positive results in all of these areas.

Job efficiency was estimated by the employing department both before and after referral to our program. It is clear the rehabilitated employee is a better employee.

ESTIMATE OF JOB EFFICIENCY

	5 YEARS BEFORE		5 YEARS AFTER	
	<u>EMPLOYEES</u>	<u>%</u>	<u>EMPLOYEES</u>	<u>%</u>
POOR	112	28	51	12
FAIR	199	50	119	30
GOOD	91	22	232	58

NUMBER OF SICKNESS DISABILITY CASES*

	<u>5 YEARS BEFORE</u>	<u>5 YEARS AFTER</u>
WOMEN	299	75
MEN	<u>433</u>	<u>281</u>
TOTAL	662	356

*(More than seven days of reported illness.)

It is well known that alcoholic employees have a greater absence rate. The statistics presented are for absences of eight days or more. No medical records are kept of absences of seven days or less. The disability rate after rehabilitation is approximately the same as for our whole employee population. These statistics simply mean the company has been paying the cost of alcoholism even though it had been called some other illness. By doing so it was literally helping to perpetuate an illness. By recognizing the problem, a marked reduction in cases was accomplished. A conservative estimate of the direct dollar savings to the company in sickness disability benefits alone is \$459,000 during these five years. In addition there were savings in departmentally-paid absence costs, insurance utilization, and all the other hidden costs of alcoholism.

NUMBER OF ON DUTY ACCIDENTS*

	<u>5 YEARS BEFORE</u>	<u>5 YEARS AFTER</u>
WOMEN	4	1
MEN	<u>53</u>	<u>10</u>
TOTAL	57	11

*(Any accident requiring medical treatment.)

NUMBER OF OFF DUTY ACCIDENTS*

	<u>5 YEARS BEFORE</u>	<u>5 YEARS AFTER</u>
WOMEN	32	6
MEN	<u>43</u>	<u>22</u>
TOTAL	75	28

*(More than seven days absence.)

It is, also, well known that alcoholic employers have more off-the-job and on-the-job accidents. The results obtained by rehabilitation clearly has had a dramatic influence on the accident rate.

When one considers the advantage to the company, as well as to the sick employee, the family and society, the value of a rehabilitation program becomes quite clear. There is little doubt that the means are at hand to prevent a very large amount of the disability caused by alcoholism.

CHAPTER 23

PSYCHOSOCIAL STRESS AT WORK: PROBLEMS AND PREVENTION

Lennart Levi

Willy Lohman never made a lot of money. His name was never in the paper. He's not the finest character that ever lived. But he is a human being, and a terrible thing is happening to him. So attention must be paid.

Arthur Miller, "Death of a Salesman"

Attention must be paid.

This meeting is primarily concerned with the ordinary worker in all types of work environment, all around the world; and it is concerned with prevention, not just cure. Accordingly, our first question concerns his situation at work. Is something terrible really happening to him? Is there a problem?

EFFECTS OF MASS PRODUCTION AND TECHNIQUE

A couple of years ago Alan McLean and I collaborated with others in a WHO consultation focusing on this very question. Our joint report (WHO, 1973) pointed out that during the last century or so, work itself has changed from being the completion of a well defined job activity with a clearly defined and recognized end product, to a breakdown of activities into meaningless subunit bearing little apparent relation to a remote end product. The growing size of factory units now tends to result in an ill-defined chain of command between management and the individual worker, giving rise to a situation of remoteness between the two groups. At the same time, the worker becomes alienated, not only from management but also from the consumer whom he may have known personally before. This happens as the rapid elaboration for marketing, distribution and selling interpose many steps between producer and consumer.

Further, mass production, with its pronounced fragmentation of the work process, favors the introduction of piece wages. Heavy investment in machinery, alone or combined with shorter hours of work, has increased the proportion of people working in shifts. Large industrial concerns have grown at the expense of medium and small enterprises, possibly (though not necessarily) leading to the spread of anonymity and alienation.

Through rapid introduction of automation, active manual tasks have been replaced by sedentary perceptual tasks requiring constant vigilance; instead of handling the process, the operator monitors. He watches the dials and instruments for signals which indicate when he should interfere with the normally self-regulating system. He is required to remain alert in a situation in which stimulation is minimal.

To some people, and in some respects, this development has been highly advantageous, particularly to young, well educated, highly adaptable, high-capacity individuals. But less well equipped members of the labor force find themselves increasingly redundant, and have to make do with lower status jobs, insecure employment and substandard work environments. Briefly, then, the developed countries are facing rather dramatic transitions in which man is expected to adapt to the free wheeling technological developments in the work environment instead of gearing the latter to his abilities, needs and expectations.

Developing Countries

In developing countries, a corresponding problem also concerns a series of dramatic transitions from agriculture to manufacturing, and from the latter to mass production. This is more or less the same sequence through which today's developed countries passed in the 19th and early 20th century. However, the velocity of these transitions differ greatly. Developing countries are undergoing the same process in one-tenth or less of the time taken by the developed countries. In addition, and this is the tragic thing, they tend not to learn from history and thus to repeat all the mistakes, even adding a few new ones.

In both settings, developing and developed, according to a recent OECD report, work and workplaces have been designed almost exclusively with reference to criteria of efficiency and costs. Technological and capital resources have been accepted as the imperative determiners of the optimum nature of jobs and work systems. Changes have been motivated largely by aspirations to unlimited economic growth. The judgment of the optimum designs of jobs and choice of work objectives have rested almost wholly with managers and technologists, with only slight intrusion from collective bargaining and protective legislation. Other societal institutions such as the family have taken on forms that serve to sustain the work system.

Man Is Adaptable - And Deformable

To all this some people reply that man is adaptable, which is of course true. He is adaptable, but you can say equally that he is deformable. He adapts, but he gets deformed. Deformation becomes the price he has to pay.

This price can be expressed in many terms or levels. First - subjective well-being. When we are squeezed into holes in which we don't fit, we experience anxiety, depression, frustration, alienation. Feelings such as these may effectively destroy the only life we will ever have at our disposal.

Another level of description is behavioral. Some people say that stress can't kill. I do not agree. Of course stress can kill. Have you ever heard of suicide? In my country about two thousand people take their lives annually, and about twenty thousand try to. People more often die from suicide than from traffic accidents. Other eventually potentially lethal behavior comprises abuse of alcohol and tobacco, taking unnecessary risks in traffic

or in industry, or destructive behavior such as criminality.

The third level of description concerns physiological reactions. Again, it seems highly likely that stress can be a question of life or death. We all know the studies demonstrating a positive relationship between exposure to life changes and morbidity in myocardial infarction, peptic ulcer, and mental disorders.

Common Phenomena?

Briefly, then, whatever may be the level of description, the price is likely to be pretty high. Our next question is - are these common phenomena? If they are not, it's still a problem, but not a major one. The tragic thing is that there are so few representative nationwide investigations to elucidate their prevalence. Some of the few available come from Sweden. One, carried out for the Swedish Confederation of Labor Unions by Bolinder and Ohlström (1971), showed that 23% of all blue collar workers report "moderate" or "high" stress levels at work. Twelve per cent of these blue collar workers had consulted a doctor for such complaints during the preceding one-year period. Briefly, stress was a common phenomenon.

A few years later the Swedish National Association of Salaried Employees of Sweden (Wahlund and Nerell, 1976) presented a similar study showing that every third employee experienced stress at work "often" or "rather often". A third study was carried out for the Swedish Confederation of Professional Associations effectively and conclusively demonstrating that 42% of all academically trained professionals report such phenomena.

Briefly, then, 42%, almost one out of two, report distress. For some professions, e.g. teachers and social workers, such reports come from two out of three. That, however, is just part of the story. There are other social indicators of a bad person-environment fit such as alcoholism, suicide, mental and psychosomatic disorders. These are very common phenomena in all types of society throughout the world. Although causal connection between them and occupational stress is not clearly proven, it is highly suspected. In a recent report the Swedish Commission on Training in Psychotherapy concludes that ten to thirty-five per cent of all patient consultations with general practitioners concern various types of psychic problems. Twenty-five percent of all drugs were of a type prescribed for mental and psychosomatic complaints. Twenty-five to thirty per cent of the total costs for all public mental service concerns diseases that are mainly psychosocially induced. True, such figures can and should be questioned. Maybe they are too high, perhaps conditions in other parts of the world would justify lower estimates.

AN AREA OF PUBLIC CONCERN

Whatever the estimates, there is absolutely no doubt that they reflect a major problem in the great majority of world societies. Whatever may be one's sensitivity to human unhappiness and suffering, one must admit that such morbidity has an enormous impact on society even in purely economic terms.

Work environment problems can be approached in several ways. One way is in the spirit of the old fashioned regimental cobbler whose repertoire of sizes of shoes was, to say the least, strictly limited. A customer complained that none of the sizes available would fit him, to which the cobbler replied, "Nothing wrong with government boots, it's just your damn'd lousy feet that don't fit." But this approach, which today is the rule, should be the exception. Whatever the approach, we have given an answer to the question of why protection and promotion of occupational health is necessary.

WHAT TO PREVENT AND WHAT TO PROMOTE

Our next question concerns what we wish to prevent, and what to protect and promote. A good formulation is given in a recent resolution from the Parliament of the ILO, the International Labor Conference. It states

- that work should respect the worker's life and health; this is the problem of safety and healthiness in the workplace;
- that it should leave him free time for rest and leisure; this is the question of hours of work and their adaptation to an improved pattern for life outside work;
- it should enable him to serve society and achieve self-fulfillment by developing his personal capacities; this is the problem of the content and the organization of work."

MAN'S REQUIREMENTS AT WORK

To pass from thoughts to things, we need to specify a person's requirements at work, other than those usually mentioned in a contract of employment such as safety, health, wages, hours, and security of tenure. Six such requirements were listed as long ago as 1963 by Emery, pertaining to the content of a job:

1. The need for a job to be reasonably demanding in terms other than sheer endurance, and to provide a minimum of variety.
(I would prefer to say an optimum of variety, but Emery wrote fourteen years ago.)
2. The need to be able to learn on the job, and to continue learning.
3. The need for some area of decision-making that the individual can call his own.
4. The need for some degree of social support and recognition in the work place.
5. The need to be able to relate what he does and what he produces to his social life.
6. The need to feel that the job leads to some sort of desirable future.

The truth is today that many hundreds of millions of workers don't have all, and in many cases any, of these needs satisfied.

For Those Most in Need

True, these requirements apply to all, but in the first place we must concentrate on those most in need - the underprivileged, the mentally, physically or socially handicapped. With the aid of aptitude tests, job analysis and vocational guidance, every man should be made able to find his optimal, personal, ecological niche. When no such niche is available, the alternative is to create it. Only as a last resort, man's expectations must be adapted to the unfortunate reality.

PROMOTION OF OCCUPATIONAL MENTAL HEALTH

Our last question is: How do we promote occupational mental health? The answers can be summarized in a few points.

The first is reformulation of goals. Why do we work? To earn money - yes. To produce goods and services - naturally. But are these goals in their own right or are they means? Isn't the real goal to promote human well-being, human health, human development and human self-realization? Economical and technological development is just a way, just a method to promote well-being, health, development, and self-fulfillment. So we must reformulate goals at all levels of society, for the collective and for the individual.

Next is application of existing knowledge. Occasionally, one gets the feeling that virtually nothing is known. The moment politicians ask researchers, what should we do, researchers are prone to answer, well, we don't really know - more research is needed. This occurs so regularly that it reminds me of the quotation:

"They answered as they took their fees,
there is no cure for this disease."

Is this, indeed, the way that we feel? Isn't the truth that quite a lot of knowledge is indeed already available but needs to be compiled, put together; needs to be translated into a "language" which the consumer understands; needs to be integrated with other knowledge in order to make sociological, psychological, medical, and ecological information complement each other; and, above all, needs to be disseminated to those who need it, not just to be kept on the bookshelves where it is today.

All this needs to be done to increase awareness in the population. Otherwise we can go on having meetings year after year, decade after decade and nothing will happen with our proposals and recommendations - until the man in the street, until the grass roots start asking for specific political actions. So we must make them aware, we must communicate with them. Not until we have done that will this entire area start to move. Briefly, it's not the elitist approach, it's the democratic approach we must try to pursue.

This compilation of existing knowledge also is needed to educate and train supervisors. To be entrusted to deal with expensive machinery, you have to present some certificate of your knowledge and competence. In contrast, to supervise other people you need no specific competence whatsoever, you need not know anything at all about psychology, sociology, or occupational health.

A logical answer to all this should be compulsory education in such matters for people who are entrusted to lead other people, and of course for all types of care-givers.

This information is further needed to sensitize the decision-makers, e.g., through conferences such as the present one. Exactly this type of conference but with a mixed audience of doctors, managers, politicians and top-level government administrators.

Furthermore, we might utilize this information to redesign jobs and to re-design society. Needless to say, this will require decades, or even centuries. But isn't, say, half a century after all a rather short period of time? Imagine where we would have been today if people would have started some 50 years ago as we intend to do now. They didn't. This is precisely why we have to start now, and to work harder. Eventually the results will come.

Finally, and most important, information is needed as a basis for workers' participation in decision-making. This means that we turn back the responsibility to those directly concerned - to the workers themselves. We shouldn't come as experts telling them what is good for them - the big brother approach. We should consider the alternative, or complementary, small brother approach.

Next, we need monitoring. What is known about the environment, the social function and the health of workers all over the world. What is known about the trends in these respects, and about the relationships between the processes? Today it is very little, indeed. But won't there be every reason to collect more information in a systematic way through such monitoring?

Another important area for preventive action is evaluation. Even though we have the best intentions, we may turn out to be wrong. So let us evaluate all social and occupational policies. Instead of asking: is this, that or the other good or bad, we should ask, good for whom; in which respect; under which circumstances; obtainable at what cost? Next, we need to develop methods for problem identification and modification. And eventually, we need acquisition of new knowledge which simply means research.

OUTLOOK FOR THE FUTURE

Whatever the present situation, it is of some consolation to know that, finally, things are beginning to move. The Director General of the International Labor Organization (ILO) presented back in 1975 a report called "Making Work More Human". Whatever feelings you might have about ILO, this is a very important document. It was favorably received by the International Labor Conference and made the basis of a resolution calling for ILO programs in this

field. "Making Work More Human" essentially means protection and promotion of occupational physical and mental health.

In WHO a similar development is taking place. In 1974, the area of Psycho-social Factors and Health was discussed by the 27th World Health Assembly. A resolution was taken requesting WHO action, and now a program for this area is being developed which includes occupational physical and mental health. Similarly, the Nordic Council has recently called for Nordic collaboration in the area of stress in working life. So, things are beginning to move. The area is given increasing priority. Accordingly, what we discuss today might well be the policy of tomorrow.

If we would treat our machinery in the way we now treat human beings operating this machinery, technocrats would protest most strongly. Therefore - there is every reason to protest against - and to do something about today's treatment of human flesh and blood, and - last but not least - of human mind.

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