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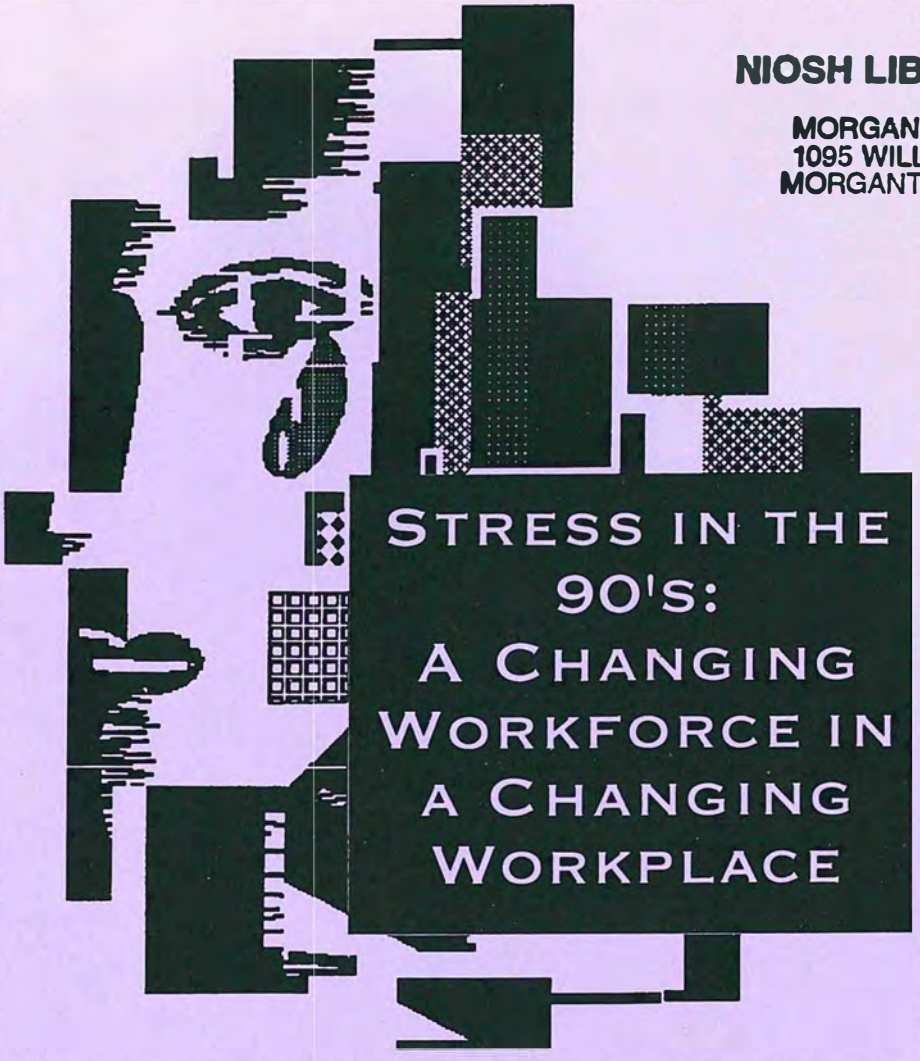

ABSTRACTS PRESENTED TO THE AMERICAN PSYCHOLOGICAL ASSOCIATION AND THE NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH CONFERENCE

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WASHINGTON, DC

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SYMPOSIA ABSTRACTS

Session Title: Standards Development: Process and Pitfalls
Chair: Robert J. Biersner, J.D., Ph.D.

This session will provide detailed information on those scientific, historic, policy, and legal variables that will determine the success or failure of developing occupational stress standards. Included in this session will be descriptions of the terminology and databases used to document occupational stress disorders, difficulties encountered in developing a consensual standard using existing scientific data, and the legal procedures that balance fairness and reasonableness against scientific precision and procedural expediency.

Topic 1: Available Databases
Discussant: Robert W. Mason, Ph.D., Biologist, Division of Standards Development and Technology Transfer, NIOSH, CDC, Department of Health and Human Services

This topic will define the scope and terminology, and discuss the availability of databases, used to identify psychological stressors and stress effects in the workplace. Analyses of these databases are necessary to determine the occupations and industries at high risk for psychological stress disorders, to define salient occupational stressors and, ideally, to demonstrate a dose-response relationship between occupational stressors and psychological consequences. The appropriateness, accessability, and utility of these databases will be discussed; databases include the Social Security Disability Files, the Bureau of Labor Statistics Supplementary Data System, the federal workers' compensation system, NIOSH Health Hazard Evaluations, and records maintained by the Occupational Safety and Health Administration (OSHA Forms 200 and 101, citations, and investigation reports). The importance of OSHA Forms 200 and 101 in documenting repeated trauma disorders will be discussed in terms of the recently-proposed OSHA ergonomics standard, a process that could serve as a model for developing an occupational stress standard.

Topic 2: A Current Standards Development Effort
Discussant: To be determined

In December 1990, the American National Standards Institute (ANSI) accredited standards committee Z-365, entitled "Control of Cumulative Trauma Disorders," to develop a standard to prevent ergonomic hazards in the workplace. As part of this effort, a Work Organization Group has been convened to address stressful work conditions that contribute to the incidence of occupationally-induced ergonomic disorders. These conditions include close employee monitoring (e.g., electronic monitoring systems), wage incentive systems, excessive overtime, machine-paced work, organizational disruptions (e.g., labor-management disputes and frequent management restructuring and transfers), job dissatisfaction, and shiftwork. Sources of stress, types of impact, measurement, and design guidelines will be discussed, as well as development of a standards development strategy, managing the consensus process, and shortcomings of available data.

Topic 3: Current Rulemaking Procedures
Discussant: Robert J. Biersner, J.D., Ph.D., Staff Attorney, Associate Solicitor of Labor for Occupational Safety and Health, Department of Labor

This topic will address current procedures imposed on standards development by the Occupational Safety and Health Act (OSH Act), Congress, the federal Executive Branch, and prior case law. The discussion will include defining performance-based and specification standards, differentiating between health and safety standards in terms of mandatory cost-benefit analyses, and identifying avenues available for proposing standards. Also described will be initial proposal review and decision-making by OSHA, the rulemaking process (e.g., notice, hearings), and the content of typical standards. Additionally, the process will be described by which OSHA standards can be challenged in federal courts, including the burden of proof required of OSHA to meet such challenges. The discussion will argue that a proposed occupational stress standard likely will be defined under the OSH Act as a safety, not health, standard; the proposed standard, therefore, will have to be justified carefully in terms cost-benefit analysis, as well as supported by extensive scientific data. Another expectation is that occupational stress disorders likely will not be suitable candidates for standards development until these disorders are recognized by occupational safety and health (OSH) compliance officers during inspection and review of injury and illness logs (e.g., OSHA Forms 200 and 101). Consequently, a formal program must be established whereby OSH practitioners (e.g., industrial hygienists, safety professionals, occupational health nurses, occupational medicine physicians, and occupational psychologists) are trained to diagnose or recognize these disorders; additionally, the current occupational illness and injury logs must be revised so that these disorders can be documented accurately and completely. Also addressed will be revisions to the OSH Act proposed by Congress in fiscal year 1991 which may expedite the standards development process.

EC-LEGISLATION & THE FUTURE OF OCCUPATIONAL WELFARE IN EUROPE

Erik de Gier

1. For the second time in twenty years time the regulatory framework on health & safety of workers in European countries undergoes important structural changes.

   The first changes date from the seventies and the eighties. At the time a number of European countries were confronted with the most far reaching cultural developments since the end of the Second World War. In the domain of work the quality of working life or the humanization of work became topics as a demonstration of new expressive goals of individual workers. This development caused a restructuring of the traditional very complex and in a technical sense outdated health & safety legislation especially in the Scandinavian countries, the UK and the Netherlands. From that moment the reformed legislation not only concerned technical health and safety matters but also matters on workers participation, work organization and the adaption of work to the worker. In some countries this broadening of scope is circumscribed as occupational welfare.

2. The second wave of changes commenced by the end of the seventies under the influence of the European Community (EC). One of the more important social goals ('social dimension') of the EC is the improvement and harmonization of working conditions in the EC Member states. Therefore a policy of action programs and legal enforcable 'directives' has been developed which has to be implemented in the national regulatory frameworks of the Member States before pre-fixed dates. The introduction of the Single European Act (SEA) in 1987 reinforced this development substantially. First and foremost important in this respect is the introduction by the European Council of Ministers of the so called framework directive (89/391/EEC) on the introduction of measures to encourage improvements in the safety and health of workers at work. This directive, which has to be fully transposed by the Member States before the 1st of January 1993, is conform to its character stated in general terms and contains the general employer and worker obligations on health, safety and well-being at work (i.e. ergonomic requirements and requirements with respect to the content of the tasks of the worker). It also forms the basis for a number of more specific directives on e.g. work equipment, work with visual display units, handling of heavy loads, work places,

personal protective equipment, etc. It is the responsibility of the Member States to implement in a proper way these rules in their national regulatory systems (De Gier, 1991).

3. The question arises what impact this recent cluster of legal changes will have on the quality of working life in Europe and more in particular on occupational welfare or well-being. New international comparative research findings (Ørhede, 1991), apart from several similarities, show substantial actual differences in occupational welfare of the individual workers in EC-countries (e.g. in working hours per week, night work, the use of computer equipment, physical constraints, chemical exposures, workloads, work pace, influence on the work situation, etc.). Important background variables in this respect are: gender (women do more part-time work than men; men are more exposed to physical constraints; etc.), skills (white collar workers are better off than blue collar workers with respect to physically and mentally loaded working conditions) and sector (relatively bad working conditions in the building industry and the transport industry). Will the new EC-legislation more concrete contribute to the improvement of occupational welfare accross the board or will there remain significant

differences? The answer to this question will by and large depend from the next steps the EC will take with respect to the communal administration and sanctioning of the new rules as well as from the experienced legitimacy of EC-policies in Member States.

Erik de Gier, Implementation of EC directives on working conditions and product safety: possibilities and limitations. University of Amsterdam, Amsterdam 1991

Elsa Ørhede, The working environment in the EC 1991, Danish National Institute of Occupational Health, Copenhagen 1991.

Trauma in the Workplace: Organizational responses and strategies for disability management and prevention

Chair: Mark Braverman, Ph.D.

Post-traumatic conditions can effect employees who have sustained work-related injuries or who have witnessed traumatic events in the workplace, and can produce serious and costly consequences for the well-being of the workgroup and company as a whole. These include reduced productivity, increased absence and turnover, and increased stress-related illnesses. Traumatic events include crime, the sudden loss of an employee through suicide, homicide, industrial or motor vehicle accident, or a threat to workgroup or company security because of restructurings, downsizings, takeovers, or scandal.

This symposium will consider three levels of intervention.

Organizational intervention. Effective post-trauma intervention on an organizational level focusses on the nature of the human response to trauma as well as on the centrality of communication and information processing for organizational and group functioning. A model will be presented which combines rapid response to traumatic events, consultation with management, and informational and counseling meetings for employees. The model also emphasizes the coordination of crisis response efforts with personnel from human resources, health services, employee assistance, and other service functions.

Disability after trauma. Organizational response to an accident or trauma as well as improved case management can reduce costs associated with traumatic stress injuries. Frequency and severity of work-related disability is the result of an interaction between the worker and the workplace context. The symposium will discuss implications for Workers Compensation policy and how factors in the culture or the particular workplace or occupation affect rates and severity of disability after accidents or as the result of cumulative workplace stressors.

Prevention of stress-related injury. DSM IV's proposed new diagnostic entity for Disorders of Extreme Stress is certain to result in an even more marked increase in claims for compensation for emotional stress. Prevention continues to be crucial, in the form of industry-wide health promotion and improved management of injuries. With respect to injuries, employers are just beginning to learn how to effectively and humanely take control of the post-injury and claims process. Post-trauma intervention policy illustrates how the culture of the workplace environment, insurance arrangements, and company human resource policies interact to affect the outcome of occupational injury, disease, or stress.

Case studies and data from a range of occupational settings, including manufacturing, mass transportation, government, and health care.

HOW CAN COUPLES COPE WITH JOB LOSS? A MULTISTAGE PREVENTION-ORIENTED RESEARCH PROJECT

Robert D. Caplan, George W. Howe, David A. Foster, Mindy E. Lockshin, and Claire E. McGrath, The George Washington University

This study tests generic hypotheses about patterns of interaction that promote effective coping and prevent emotional illness among couples where one partner is seeking reemployment. In the first stage of this study, interviewers are conducting a series of surveys at 1,4, and 12 months with 250 adult couples in which one partner has recently lost a job. Observational and self-report data are collected: (1) to determine interaction patterns of elicitation, provision, and acceptance of support and undermining that characterize couples who a) retain high levels of problem- and emotion-focused coping even in the face of setbacks, b) resist debilitating depression, c) maintain marital satisfaction, and d) achieve stable reemployment in occupations which fit career plans, and (2) to identify those cognitive and affective antecedents of the most facilitative interaction patterns. Antecedents most open to social influence will be the target of the preventive intervention to be piloted in stage 2. Half the job seekers will be male and half female; half the job seekers will be Euro-American and half will be African American. The symposium details the theory and special methods as well as the link between the Center for Family Research at GWU and the Michigan Prevention Research Center at the University of Michigan.

ENVIRONMENTAL MEDICINE RESEARCH TO SUSTAIN HEALTH AND PERFORMANCE DURING MILITARY DEPLOYMENT: DESERT, JUNGLE, ARCTIC, AND HIGH ALTITUDE

Colonel Gerald P. Krueger, Ph.D., U.S. Army

Rapidly deploying military forces into extreme naturally harsh environments presents many psychological, physiological, and biological stresses on combatants which: 1) affect mood, motivation, and activation, 2) result in decreased job performance, 3) make accidents more likely, 4) lead to various illnesses and non-battle injuries, and 5) jeopardize mission success. This presentation highlights important laboratory and field research on developing modern preventive medicine counter-measures to assist combatants to adjust to hot dry conditions of the desert, hot wet in the jungle, harsh cold of arctic regions, and bitter cold and less oxygen at high terrestrial altitude. Issues include proven preventive medicine techniques as well as novel, advanced concepts for preparing military forces for deployment to harsh environments: pre-acclimatization, anti-jet-lag measures, selection of rations based on military nutrition requirements, pharmacological intervention, field sanitation measures, work-rest-and sleep scheduling, and controlling operational stresses.

U.S. ARMY WAR COLLEGE STRESS MANAGEMENT PROGRAMS: TYPE-A BEHAVIOR REDUCTION

Paul T. Harig, Ph.D., U.S. Army War College, Virginia A. Price, Ph.D., Meyer Friedman Institute, Marvin Oleshansky, M.D., Walter Reed Army Institute of Research, Maurizio Fava, M.D., & Andrew Littman, M.D., Massachusetts General Hospital

Since 1983, the U.S. Army War College has offered stress reduction programs for its students, in conjunction with research on Type-A Behavior conducted by Meyer Friedman and associates. Research at the War College has demonstrated that both health and interpersonal benefits result from the modification of the Type-A pattern. Most recent studies found that participants reduced their daily caloric intake and levels of perceived stress, anxiety, hostility, depression, psychological distress, and Type-A behavior more than officers who did not participate in the program. The findings also revealed changes in steroid levels (DHEA-S) which may be associated with improvement in relative risk for atherosclerosis and cancer. This paper describes the cognitive social learning model used for the intervention and introduces the most recent findings on outcome research.

OPERATION DESERT STORM REUNION SURVEY

Jessica Wolfe and William R. Mark
Veterans Administration and U.S. Army, Fort Devens, MA

Abstract

This survey was administered to 2,951 Active Army Reserve and National Guard soldiers returning from Operation Desert Storm via Ft. Devens, Ma. Phase I of the survey was administered initially upon their return from overseas and Phase II was a follow-up administered in the Spring of 1992 to measure such issues as psychological readjustment, behavioral issues and interpersonal functioning. The survey, as a whole, broadens measurement and understanding of traditional and non-traditional war zone stressors as well as domestic stressors.

ARMY INTERVENTIONS TO PREVENT FAMILY DYSFUNCTION DURING MILITARY COMBAT DEPLOYMENTS

Joel M. Teitelbaum, Department of Military Psychiatry
Walter Reed Army Institute of Research

For Army families the most significant military occupational stressors are deployment separation and soldier exposure to war hazards of combat. The Army routinely provides a variety of services and financial benefits to soldiers with dependents to maintain their quality of life. However, interventions aimed at reducing stressors and preventing emotional distress among waiting spouses and children during the Persian Gulf conflict were new elements in the Army's family support system. They included Family Support Groups in units, Family Assistance Centers on installations, and certain services such as direct telephone communication between deployed soldiers and families, and command information briefings for waiting spouses. Sample surveys with over fourteen hundred spouses, and family interviews during and after Operation Desert Shield and Desert Storm, have indicated the effectiveness of these interventions in minimizing family dysfunction. Effective Army family supports gave deployed soldiers more confidence in the well being of their families on the home front.

ABSTRACT

THE ROLE OF TIME URGENCY IN WORKPLACE STRESS

Time urgency has been a central construct in the articulation of theories of stress. It was a central organizing theme in the development of the TYPE A Behavior syndrome. In addition, it has been prominent in recent treatments of organizational culture and structure. There is general agreement that time urgency is implicated in stress-strain dynamics. It is not yet clear, however, if time urgency is an attribute of individuals that is likely to transcend situations or whether it is a property of situations that is only slightly modified by individual difference mechanisms.

The proposed symposium will deal with the construct of time urgency, measurement, the manifestation of time urgency in different environments and occupational settings, the physiological correlates of time urgency, and the implications of the time urgency construct for workplace surveillance and intervention. The symposium will include the following components:

Background and Theory

Dr. Frank J. Landy will chair the symposium and will introduce the topic with a description of the construct and recent research on the measurement of that construct (Landy, Rastegary, Colvin & Thayer, 1991). Dr. Landy will make the point that time urgency is multidimensional and that many existing measures of time urgency are fatally flawed as a result of the assumption of unidimensionality. Dr. Landy will also present national and cross-cultural data on time urgency in Italy, Germany, Sweden, and Romania. Finally, Dr. Landy will present data that relates time urgency to physical and psychological well being at the workplace.

Dr. Stacey Kohler will present the results of a laboratory study that investigated the psychophysiological correlates of time urgency. The experimental task was a computer integrative problem solving task with variable time limits. In addition, she will present data related to the association of the construct of time urgency to alternative explanatory constructs (e.g., hostility; anxiety) with respect to understanding the dynamic foundation of individual strain.

Measurement Issues

Dr. Haleh Rastegary will present data on the development and validation of two separate methods for measuring time urgency and compare and construct those methods with existing measures of time urgency. She will present field survey data covering different occupational groups (administrative, clerical, and professional).

Field Studies

Kecia Thomas will present data from a field study of lawyers with respect to time urgency. These data will contrast various law specialties with respect to time urgency as well as the relationship between time urgency and the constructs of burnout, job satisfaction, and performance. In addition, there will be a consideration of implications with respect to intentions to leave the firm and/or the occupation as a result of stressors in the work environment.

Kathleen Ringenbach will present data from a field study of travel agents that examines issues of task urgency. She will present analyses that demonstrate the specific aspects of work that are most closely associated with time urgency and the implication of those associations for physical and emotional well being. In addition, she will present data that relate intentions to leave the firm and the occupation as result of work-related stressors.

Discussion

Dr. Frank J. Landy will conclude the symposium with a discussion of the implications of time urgency for surveillance at the workplace as well as contributions of both the individual and environmental variety. In particular, Dr. Landy will tie time urgency to the parameters of stressful environments that emerged from lasted year's APA/NIOSH conference.

Discussant: It would be valuable for an independent discussant to be assigned to the panel by the organizing committee. This individual will add independent observations on the papers as well as coordinate questions and answers from the audience.

Symposium Cover Abstract:
Title of Symposium: TIME AND STRESS

Introduction:
Robert V. Levine (Chair)
California State University, Fresno

Presentations:

The Pace of Life and Coronary Heart Disease
Robert Levine
California State University, Fresno

Trends and Patterns in American's Use of Time
John P. Robinson
University of Maryland

Ambulatory Blood Pressure and Heart Rate in Paramedics: Effects of Activity Pace, Work Load, and Psychological Characteristics
Larry Jamner
University of California, San Francisco-Fresno
David Shapiro
University of California, Los Angeles
Iris Goldstein
University of California, Los Angeles

Discussant:
James Jones
University of Delaware

This symposium will focus on the relationship of temporal factors to stress--both in and out of the workplace. It will attempt to present and integrate findings from three research programs currently studying diverse, but interfacing, aspects of the time/stress relationship.

All human activities exist in a temporal context. As John Robinson points out, however, there has been little attention paid to this variable by behavioral scientists. Other than the controversial notion of the role of time urgency in the Type A behavior pattern, the contribution of temporal factors to well-being has rarely been addressed.

The first paper, by Robert Levine, will attempt to place temporal issues in a cultural context. It will review his cross-cultural and U.S.A. studies on the pace of life, and focus on the consequences of the pace of life for stress and well-being--in particular, its relationship to death from coronary heart disease.

The paper by John Robinson will then look more carefully at Americans' use of time. Whereas Levine's paper will focus on the 'fast-slow' dimension of time use, Robinson will report on the way Americans spend their time in a typical week, and how these trends have changed over time. His time diary has become the standard social indicator for measuring time use. Again, this paper will focus on time as it relates to the workplace.

The paper by Larry Jamner, David Shapiro and Iris Goldstein--as in Robinson's research--also uses a time diary method. While Robinson's and Levine's studies focus on the social psychological processes of time use, the work of Jamner, et al. more directly focus on the psychophysiological/health correlates of time use. Their studies examine the relationship of activities to

heart rate and blood pressure in workers in a high stress occupation--paramedics. Every 15 minutes, over 12 and 24 hour work and non-work cycles, samples of paramedics are asked to respond to a series of questions indicating their moods and activities on a palmtop PC-compatible computer. At the same time, their blood pressure and heart rate are taken by ambulatory monitors.

Finally, James Jones--whose own work has focused on temporal perspective, with particular regard to cultural factors--will conclude the symposium in the role of a dicussant.

A complete description of the papers appears in the following abstracts.

THE PACE OF LIFE AND CORONARY HEART DISEASE

Robert Levine
California State University, Fresno

This presentation reports on a program of research concerning the pace of life and its consequences, both across and within cultures. These studies have focused on two major questions: 1) How do cultures and nations differ in their characteristic pace of life? (2) What are the implications of these differences for psychological and physical well-being?

Our first cross-cultural studies compared conceptions of punctuality, norms of waiting and the importance of social vs. clock time in Brazil vs. United States. More recent studies by my colleagues and I compared Taiwan, Japan, Indonesia, Italy, England and the United States on three more general indicators of the pace of life: walking speed, work speed and clock accuracy. Strong and consistent cross-national differences were found on each of these measures. One particularly interesting finding from these studies has been a high correlation between the three diverse indicators of pace of life across the cities and countries studied. This finding provides support for the validity of the concept of an overall pace of life of cities. Another interesting finding was that

Japan had the fastest pace of life on all of our measures, but the lowest death rate from coronary heart disease (CHD). This relationship holds true even after partialling out for other traditional risk factors (such as diet), and indicates that aspects of Japanese culture may buffer against the deleterious effects of hard work. These findings also have implications for the question of the role of 'time urgency' in the Type A behavior pattern.

Our more recent studies have examined the effects of pace on psychological and physical well-being. Specifically, my colleagues and I compared four diverse indicators of the pace of life in 36 cities across the United States. We found that cities' overall pace was significantly correlated with their rates of death from coronary heart disease. This provides evidence for the existence of 'Type A cities'--metropolitan areas with behavioral norms which create a predisposition to coronary heart disease. We also have preliminary evidence that areas characterized by a fast pace of life have higher rates of smoking, which may be one of the factors responsible for the high CHD death rates.

Finally, the question we are presently exploring

concerns person-environment fit--the idea that Type A (time urgent) individuals may experience optimal well-being in Type A (fast paced) environments, while Type B's may do better in slower environments.

TRENDS AND PATTERNS IN AMERICANS' USE OF TIME

John P. Robinson
University of Maryland, College Park

Although time envelops all human activities, little attention has been paid to this variable by behavioral scientists. Our analysis considers three national studies of how Americans spent their time that were conducted in 1965, 1975, and 1985. The findings of these and other studies suggest several counter-intuitive trends at work in our society.

The notion of time as a passive container of human activity is simple but has non-trivial measurement implications for behavioral research. It means that we can link a measure with ratio-scale properties to human activity in a systematic way. It further means that we can use powerful techniques of statistical sampling to approximate a census of behavior in a community or society, using the technique of the time diary. That is, we can randomly sample the population on a person-day basis and thereby capture a representative picture of a nation's behavior, a snapshot of social reality in terms of a societal "time-and-motion" study.

Thus, the time diary is one of the prime examples of the microbehavioral approach to survey research. This microbehavioral approach attempts to carefully sample small portions of a phenomenon and to produce aggregate estimates from these small samples, rather than forcing survey respondents to provide estimates of complex behavior that are usually beyond their ability to recall or report accurately. Examples of such unanswerable survey questions include asking respondents to estimate the amounts of free time they have, or to identify their "main source" of news or information.

In the time diary, respondents report all their activity for a specific period, say a day or a week. Such diaries have the psychometric advantages of making full use of the ratio-scale and equal availability properties of the time variable. These properties further include a "zero-sum" feature that makes it possible to see what happens to other activities when time on some activity increases or decreases. The diary also has the field advantage that the basic concepts and measures of time are universally familiar, thus requiring minimal explanation to respondents; and the limitation of keeping reporting periods to a day or week minimizes the respondents' reporting burden.

As a measure of historical change in population, time-diary studies over the past three decades provide

several new conclusions about how life in America has been changing, such as:

Declines in paid work time: Respondents in the 1980s report less paid work in their diaries than in previous years. This stands in marked contrast to their estimates of the length of their work week, which have remained virtually unchanged since the late 1940s.

Gender reversals in housework: Despite the pessimistic arguments of some feminists and certain women's magazines, there has been a significant change in the division of household labor. Women are doing less "hard core" housework or cleaning, and men are doing more. What was a 5:1 division of housework in 1965 has been reduced to a 2:1 margin today. These changes are not just a result of later marriages or single-parent households, but are generally found across various family types and age groups.

The bottom line from the above changes, in other words, is that rather than becoming a harried leisure class, Americans may now be enjoying more free time than they had earlier in this century. In contrast to survey estimates that Americans now have less than 20 hours a week of free time (obtained from a single question in which respondents estimate how much free time they have in a week), time-diary figures show we have more than double that amount. They suggest that we have reached a point in society where free time is roughly equal to paid work time among people aged 18 to 65. While millions of Americans do psychologically perceive a "time famine", they are increasingly offset by millions of other Americans who have more free time than they did 20 years ago.

AMBULATORY BLOOD PRESSURE AND HEART RATE IN PARAMEDICS: EFFECTS OF ACTIVITY PACE, WORK LOAD, AND PSYCHOLOGICAL CHARACTERISTICS

Larry D. Jamner, Ph.D.
Department of Psychiatry
University of California, San Francisco-Fresno
David Shapiro, Ph.D.
Department of Psychiatry
University of California, Los Angeles
Iris B. Goldstein, Ph.D.
Department of Psychiatry
University of California, Los Angeles

Occupational stress is considered a major risk factor for the development of hypertension and cardiovascular disease. Factors contributing to occupational stress include physical and emotional demands of the job and high strain and low decision latitude. We have been investigating the impact of various occupational factors on ambulatory cardiovascular measures in a high stress occupation. Paramedics were selected as an occupational group because of the hazardous nature of their work and the pressure to perform in uncertain and highly stressful conditions.

Data were collected from two samples of paramedics (n=100). Paramedics were fitted with an ambulatory blood pressure and heart rate recorder which was programmed to operate every 15 minutes on a random schedule throughout multiple 12-24 hour work and home periods. Subjects were given a diary, and for each cuff inflation, were instructed to indicate the time, their location, activity and mood. As paramedics keep careful time-based logs of their emergency calls, we were able to get precise information on the circumstances and the nature of their ambulance runs. These run-logs were evaluated by a panel of experienced paramedics and rated on indices of emotional strain and technical difficulty.

Ambulatory blood pressure and heart rate levels differed as a function of work-related demands. As compared to base station, blood pressure and heart rate levels progressively increased as one went from ambulance to hospital to the scene of the emergency. Comparisons of comparable activities across work and home contexts revealed higher levels while on the job. How the paramedics reacted physiologically to these differing work and home activities were related to certain individual characteristics, such as gender, defensiveness and anger/hostility. Job role was also found to exert an influence on activity-related blood pressure and heart rate.

The use of real-time cardiovascular monitoring and subjective diaries shows great promise in delineating the sources and nature of occupational stressors.

Given the value of ambulatory blood pressure levels in predicting the course and complications of hypertension, these methods would also seem to have utility in identifying occupational factors associated with adverse health consequences.

WORKPLACE STRESS - THE CORPORATE MEDICAL DIRECTOR'S ROLE

Richard A. Lippin, M.D.
ACOEM Occupational Mental Health Committee

Inhouse corporate medical directors are uniquely poised to assess and control excessive workplace stress and its medical consequences.

Throughout the United States, employees are increasingly bringing the complaint of stress to inhouse medical departments. As a biopsychosocial model of health care emerges, employee assistance program (EAP) professionals and occupational physicians and nurses are collaborating more closely and more effectively.

Significant advances in neuroscience, including stress science, are reinforcing the relationships between the central nervous system and all organ systems. New disciplines in medicine emphasizing these relationships are being defined, including psycho-neuro-immunology, psycho-neuro-cardiology, psycho-neuro-dermatology, and others.

This panel discussion will emphasize the recent experiences of corporate medical directors in assessing and addressing the occupational stress issue with an emphasis on real or potential medical outcomes.

AUG 3 1992

Symposium

Creating Transitional Organizations for the Unemployed: The Michigan Prevention Research Center Program Impacts on Psychological, Behavioral and Economic Outcomes

Richard H. Price
Institute for Social Research &
Department of Psychology
University of Michigan

Robert D. Caplan
Department of Psychology
The George Washington University

Amiram Vinokur
Institute for Social Research
University of Michigan

Michelle van Ryn
State University of New York at Albany

Joan Curran
University of Michigan

The proposed symposium describes a ten year program of randomized field experiments designed to test preventive interventions aimed at the stress of unemployment and preventing negative behavioral, psychological, and economic outcomes for recently unemployed persons. The interventions have been shown to inoculate against depression, increase job seeking motivation and outcomes, and leads to stable higher quality unemployment with clear economic benefits to job seekers in a 2.5 year follow-up. Organizational, policy, and research implications are discussed.

Transitional Organizations for the Unemployed: Psychological, Behavioral, and Economic Outcomes

Richard H. Price
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Department of Psychology
University of Michigan

Robert D. Caplan
Department of Psychology
The George Washington University

Amiram Vinokur
Institute for Social Research
University of Michigan

Michelle van Ryn
State University of New York at Albany

Joan Curran
University of Michigan

Over the past five years we have conducted a systematic series of evaluations of a large randomized field experiment designed to aid involuntarily unemployed workers to make the transition back to the workplace, minimize negative mental health and coping effects, and maximize stability of reemployment and financial gain. This symposium summarizes the programmatic results.

Vinokur and Price describe: (1) the organizational, social-psychological, and clinical theory and research which drove the intervention; (2) initial analyses (Caplan et al., 1989) that showed that participation in the Jobs

Intervention inoculated attitudinally and behaviorally those who experienced setbacks in their job search and led to higher-paying, better skill-utilizing jobs in people's preferred occupations -- effects that held across a wide array of socio-demographic groups and occupations, (3) short (1 month) and long-term (2.5 years) indicators of experimental effects including economic analyses showing strong benefit/cost advantages for the intervention group and society. Subsequent experimentation focuses on high-risk participants, those least likely to participate, and the family.

van Ryn describes statistical strategies that unpack these experimental effects into the unique contributions of key underlying processes. The processes include psychological engagement of the participants and the enhancement of self-efficacy. These analyses demonstrate that the between-treatment variance can be explained by its impact on such underlying processes and also suggest that there may be additional processes which deserve more intensive study in subsequent research such as the personal credibility of being able to discover actively (e.g., McKeachie, 1969) what works.

Caplan and Curran describe the broad implications of the research program for government policy and application. To apply the findings, policy needs to focus its mandates on the organizational processes embedded in such designs, as well as on traditional target outcomes. Addressed are issues of staffing -- recruitment, training, and maintenance -- and characteristics of the integrating organizational superstructure.

Preventive Interventions for Unemployed Persons

Amiram Vinokur
Institute for Social Research
University of Michigan

Richard H. Price
Institute for Social Research &
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Because the fundamental causes of unemployment are rooted in societal economic processes, remedies to the adverse social effects of unemployment must be sought in comprehensive economic and social policies. Although social and economic policies need to address the problems that result from unemployment, various community efforts can be undertaken to reduce the taxing impact of unemployment at the local level. The Jobs Project at the University of Michigan was designed as a research and evaluation project to test a preventive intervention for unemployed persons. The intervention goals were to prevent the deterioration in mental health which often results from unemployment and to promote high quality reemployment. To achieve its goals, the intervention was designed to provide participants with social support and a promotive learning environment to acquire job-search skills and, at the same time, to inoculate the participants from common setbacks that are part of the job seeking process. This intervention was tested in a large scale randomized experimental field study using a large heterogeneous sample of 1087 unemployed persons that were recruited from unemployment offices of the State of Michigan in the greater Detroit area.

Analyses from three follow-ups provide strong evidence that the intervention accomplished its goals. Analyses of the 1 month and 4 month follow-up data showed that the intervention produced higher quality reemployment in terms of earnings and job satisfaction and higher motivation among those who remained unemployed. Furthermore, the long-term follow-up, 2-1/2 years later, demonstrated continued beneficial effects of the intervention on wage rate, monthly earnings and fewer episodes of job changes. More detailed analyses identified the characteristics that placed unemployed individuals at higher risk for remaining unemployed. The disadvantaged individuals at risk for depression were found to have baseline depressive symptoms, financial hardship and having low social assertiveness. The analyses showed that the intervention buffered the effects of these risk factors on depression. In other words, the intervention benefited more those who needed it most. In a similar vein, we found that the intervention also buffered the effects of unemployment risk factors for persons who were less motivated to seek a job, and for females and those who were older and less educated.

Preventive Interventions for Unemployed Persons:
Unpacking Underlying Processes

Michelle van Ryn
University of the State of New York at Albany

This presentation describes causal analyses that explore the underlying processes through which the intervention promoted:

1. effective job-search behavior among all participants, and,
2. better mental health outcomes among participants at high-risk for depression.

Preventive interventions with multiple components, such as this one, may be successful for a variety of reasons. To advance theory and refine practice it is necessary to discover how these effects occurred. Accordingly, this presentation first describes multivariate longitudinal causal analyses that examine the relative utility of self-efficacy theory (Bandura, 1986), and the theories of Reasoned Action (Ajzen and Fishbein, 1980) and Planned Behavior (Ajzen, 1985) in accounting for changes in job-search behavior created by the intervention, independent of demographic and socioeconomic factors. The results of these analyses suggest that job-search self-efficacy was the only cognitive factor directly affected by the intervention, thus supporting Bandura's (1986) assertion that self-efficacy is the sole cognitive mediator of behavior change. However, the explanatory variables of the Theory of Reasoned Action (job-search attitude, subjective norm, and intention) accounted for the greatest part of the variance in job-search behavior overall. These findings provide substantial support for Ajzen's (1985) reformulation, the Theory of Planned Behavior, and are discussed in light of both behavioral theory and change technology.

Second, causal analyses are presented that examine the role of a number of social, psychological, and behavioral coping resources (including self-efficacy, social support, and coping skills) in accounting for the intervention's effects on depression. These analyses control for reemployment and financial hardship as well as demographic factors. Thus, they examine how the intervention had a protective impact on depression independent of promoting reemployment. The implications of the results of these analyses for both theory and intervention on coping with unemployment and other stressful life events are discussed.

Experiments in Interventions with the Unemployed:
Transferring the Social Technology

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The George Washington University

Joan Curran
The University of Michigan

Our research suggests that efficiency in the job selection process is a function of both the job-seeker's and employer's behaviors. Public policy makers may wish to achieve on a widespread basis the uncovered benefits to job-seeker and state and federal government of the Jobs Intervention. In which case, public policy will need to specify the organizational processes for replicating or maintaining the integrity (Cook & Campbell, 1976).

To transfer the social technology developed in our research, we recommend that policy makers and practitioners should replicate these procedures: (1) TRAINER RECRUITMENT AND SELECTION. Research on maximizing the trainer's social influence indicates that such persons should be male and female peers (previously unemployed) of their trainees. They also need to be socially-skilled, yet able to follow a standardized protocol. To maximize selection task fidelity with these requirements, selection should be based partly on behavioral evaluations of how well applicants role-play assigned segments of the protocol. (2) TRAINING OF TRAINERS. Trainer skills should be developed by application of the same generic theory-based and tested procedures as inform the design of the intervention program – the instilling of an overall goal (referent and expert power) and how training links to that goal (e.g., Oyserman & Markus, 1990), social modeling, inoculation against setbacks, consistent positive reinforcement, and other socially empowering methods of learning. (3) MAINTENANCE. To prevent performance decay and promote continued skill acquisition, trainers and staff should engage in (a) observation and immediate positive reinforcement (Janis, 1983); (b) group-oriented skill-building; and (c) job-rotation into allied responsibilities. And (4) ORGANIZATIONAL SUPERSTRUCTURE. For such a program to be effective, the design and preceding three elements must be integrated organizationally. Theory and research from I/O and other branches of psychology is presented as the basis for these and other principles in informing social technology transfer.

IS IT TIME TO RESHAPE OUR WORKPLACES ALONG A HEALTHY ORGANIZATION MODEL?

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Alan F. Westin, Ph.D., J.D., Professor,Columbia University
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Elsa A. Porter, Vice President, The Maccoby Group

This presentation will discuss the problems and possibilities for reshaping the American Workplace along a new healthy organization model.

Far too many of America's workplaces are failing us today. From top management to line and office workers, many people fear that our workplaces are now becoming dysfunctional, marked by escalating human capital costs, adversarial relationships, underskilled and undereducated employees, underserved customers, apathy, lost opportunities, chronic lapses in quality and productivity and unfulfilled talents at all levels. This is a lamentable state, indeed, for a society that has long been the envy of the world.

Our challenge as a nation is to build healthier workplaces and develop healthier individuals. The solution lies in rethinking our models about people and their work institutions. What is needed is a more integrated and comprehensive approach to people and organizations than has been previously available and a new central organizing principle for change -- one that focuses on the concept of combined individual and organizational health. Health will, therefore, provide a central theme for a new paradigm for organizational life.

The Healthy Companies model will require the development and widespread application of a new set of employment understandings, orientations and practices which are embodied in what we call the "pathways". Each of these pathways is an assertion of value goals for organizations and individuals that respond to serious existing needs. Each is taken from an analysis of current thinking and experience and addresses key areas of dysfunction and failure within most organizations. Each pathway also represents a complex array of human struggles, ethical dilemmas, tensions and tradeoffs that require continuing attention in healthy organizational life.

One example of how this new thinking could be reflected in the workplace is through its accounting practices. Our current system of managerial accounting omits from its accounts and accountability the measurement of intangible assets which include knowledge, informaton and relationships. If capital is defined as "any source of profit, advantage, wealth and power", then these intangible resources must be treated as capital. We need to develop broader, deeper ways of measuring these critical human capital assets.

JOB STRAIN, ORGANIZATIONAL ENVIRONMENT AND RISK FACTORS FOR CARDIOVASCULAR DISEASE

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The 'job strain' model proposed by Robert Karasek has served for over a decade as a leading paradigm for conceptualizing and studying job stress, both in the US and overseas. According to this model 'job strain' is defined as the co-occurrence of high psychological workload demands and low control on the job. There are now 29 published studies investigating the relationship of job strain to cardiovascular disease and/or major CV risk factors. At Cornell Medical Center, we are currently conducting the largest US longitudinal study of the relationship of job strain to ambulatory blood pressure (AmBP), hypertension, and other cardiovascular outcomes. This symposium will:

Review the accumulated evidence for and against the role of job strain as a CV risk factor: published reports generally support an association of job strain with CHD, but the associations of job strain with traditional CV risk factors are less consistent.

Summarize the cross-sectional findings of our study on the relationship of job strain and psychological factors to hypertension and AmBP: male study participants exposed to job strain were more likely to be hypertensive (OR = 2.7, p = .015, N = 264); similarly, job strain was associated with a 6.8/2.8 mmHg higher mean systolic/diastolic AmBP at work.

Describe results from the recently completed 3-year follow-up of participants: workers exposed to job strain at both waves of data collection had significantly higher Wave 2 work AmDBP than those not exposed to job strain at both waves (87 vs 82 mmHg), controlling for Wave 1 AmDBP and covariates.

Describe the relationship of demographic factors (age, gender, race and socioeconomic status) to job strain and interaction effects of job strain with specific demographic factors on blood pressure: as one example, those not in high strain jobs show almost no association of age with work AmSBP while those in high strain jobs exhibit an 18 mmHg difference between those aged 50-60 and those aged 30-39.

Describe the relationship of the organizational environment to job strain and CV risk at our nine worksites in order to assess both the opportunities for and constraints on the redesigning of jobs to reduce job strain.

A concluding segment will address important unresolved issues in this field and suggest opportunities for future research that could contribute to 1) refinements in the definition and assessment of job strain, 2) more rigorous tests of whether job strain is a risk factor for CVD and hypertension, 3) an elaboration of mechanisms by which job strain may contribute to CVD and 4) the identification of other factors that may moderate the impact of job strain on the CV system.

PAPER AND POSTER ABSTRACTS

ANGER MANAGEMENT TRAINING FOR LAW ENFORCEMENT PERSONNEL

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The effectiveness of an Anger Management Training Module (AMTM) developed to equip police officers with more effective methods of anger regulation was evaluated. The work environment of law enforcement personnel exposes them to anger-provoking situations as they often experience conflictual police-citizen encounters and aggressive criminal acts. Training in anger management was developed in a municipal police department in three stages: the initial six-hour training module, they expanded 20-hour training, and the revision of the 20-hour training. The six-hour training module used lectures, discussion, videos and a workbook to instruct officers how to manage their angry feelings. Officers were encouraged to reflect on their experience of anger, to explore how they avoid anger, to understand how anger may be used negatively or constructively, and to practice methods of relaxation, imagery and meditation. Dysfunctional styles that may develop as a result of ineffective anger management such as uncontrolled aggression, poor dietary habits, and withdrawal were also discussed. Officers were randomly selected and assigned to the ANTM or the control group. Forty-eight line officers participated in the ANTM and 44 control officers took a mental health course. The Spielberger State-Trait Anger Expression Inventory, the Profile of Mood States, and performance-related scores (e.g., the number of use of force arrests) were used as outcome measures. Officers were assessed at three time intervals (pretraining, posttraining, and four- to six-month follow-up. Regression analyses yielded limited support for the effectiveness of this version of the training; however, there was a trend toward greater reductions in use of force arrests in trained officers as compared to control officers.

Following the evaluation of the initial ANTM, the six-hour module was expanded to 20 hours of instruction that included greater opportunity for officers to discuss anger management techniques and to understand the relationship between anger, diet and alcohol use. Pre-test and post-test measures included Spielberger's State-Trait Anger Expression Inventory (including the Anger Control Scale) and a questionnaire that assessed dietary habits and alcohol use. Findings from this second study will be discussed as well as plans for the second revision of the ANTM. General implications for training workers in effective anger management in an anger-provoking work environment will be discussed.

EMOTIONAL LABOR AND EMPLOYEE WELL-BEING IN TABLESERVERS

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Managing emotion has become a widespread job requirement as the service sector expands rapidly (Albrecht, 1988; Riddle, 1986), and has become an established focus in many job training programs (Albrecht, 1988; Czepiel, Solomon, & Surprenant, 1985; Riddle, 1986). Yet emotional labor may have negative consequences for employee well-being. Hochschild articulated this concern in The Mangled Heart (1983), in which she defined emotional labor as "the management of feeling to create a publicly observable facial and bodily display" (p.7). She argued that persistent dissonance between display and feeling was a source of job stress, and reported that it had detrimental effects on well-being among her sample of flight attendants and bill collectors.

A different perspective argues that positive emotional display may help produce positive feelings through facial feedback (Adelmann & Zajonc, 1989). However, whether this is so may depend on whether smiles are felt, phony (nothing is felt), or masking (a different feeling is concealed) (Ekman & Friesen, 1982). Felt smiles have distinct innervating pathways (Myers, 1976) and differ in timing, laterality, and intensity (Ekman & Friesen, 1982) compared to false smiles, and thus may have different emotional consequences.

The hypotheses that emotional labor is linked to employee well-being and that this relationship depends on consonance of display and feeling were tested in a sample of 90 table servers. To assess emotional labor, respondents answered questions developed from Hochschild on the degree to which they made customers feel important, made customers like and trust them, smiled and behaved in a friendly manner, concealed negative feelings, tried to feel sympathy and understanding for the customer, and felt friendly and warm toward the customer (index alpha=.75). Workers were also asked to rate how often their smile is "a genuine reflection of a positive feeling", "made to appear as though a positive feeling is felt, but in fact nothing much is felt at all", and "made to appear as though a positive feeling is felt, but in fact conceals strong negative feelings." Outcome variables included job commitment, satisfaction, and performance (single items); self-esteem, anxiety, depression, and ill health (established indexes); and happiness (single item).

Emotional labor was regressed on the job and well-being variables; the regression for job commitment was significant (higher emotional labor was correlated with more job commitment) as was the coefficient for ill health (more emotional labor corresponded with worse health). There were no overall differences in job outcomes by predominant type of smile, but a significant contrast showed that workers reporting mostly felt smiles had higher job performance ratings that those using phony smiles. On anxiety, happiness, and ill health, anovas were significant at $p<.10$; on each variable, "felt" smilers had higher well-being than "phony" smilers. Overall, results suggest that although emotional labor per se is not strongly tied to well-being, dissonance between required emotional display and internal feeling may have negative consequences for workers.

COMPUTER-BASED WORK MONITORING:

A RISK FACTOR FOR WORKPLACE STRESS?

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Early automation in the workplace was primarily concentrated in manufacturing. Since 1970's however, we have seen a tremendous growth in office automation that will most certainly continue to grow in importance during the 1990's.

Recent advances in computer technology now enable many employers to monitor worker activities on a constant moment-by-moment basis. A sizeable number of the jobs subjected to this type of electronic monitoring are repetitive and often lead workers to experience a very low level of control over their work and consequently, considerable stress. How will the use of computer-based work monitoring affect employees who are already experiencing this level of stress?

Our research indicates quite clearly and consistently that computer monitoring of work performance results in higher levels of work stress. Further, while the expected increase in performance on very simple tasks under computer monitored conditions is often attained (at least in the short-term), performance on tasks that are the least bit difficult for workers is actually decreased with electronic surveillance.

Our program of research on this topic, which currently includes ten studies, has uncovered a variety of effects of computer-based work monitoring. In the first of these investigations, for example, we found that complex task performance was impaired by the physical and the electronic presence of a supervisor. These social impairment effects were present under computer monitoring conditions as well as under conditions where a supervisor was physically present. Giving workers a sense of control over their working conditions however, (e.g., providing a "button" that could be used to periodically turn off the monitoring), reduced the negative impact of monitoring, as did monitoring employees as a group rather than as individuals. In a second study we similarly found that under group monitored conditions workers reported feeling less pressure to perform and generally had a more positive work experience. A third study revealed that on the other hand, when individually monitored workers received feedback, they experienced the greatest pressure.

The climate under which computer monitoring takes place also plays an important role in moderating the impact of monitoring. Performance in one of the present studies declined twice as much when workers performed a complex task under a negative climate as compared to a positive climate. The negative work climate reduced productivity and led to a considerable increase in stress. However, in the negative climate computer-based work monitoring did increase worker effort on a simple task, showing at least the short-term advantages of monitoring. In this study we also found that goal setting (regardless of how high or low) had a positive effect on both simple and complex task performance, whether performance was computer monitored or not. Setting realistic goals improves task performance.

Implications of these findings as well as those pertaining to the social structure of the work group for the understanding of stress in the workplace of the 90's and for intervention strategies to reduce stress will also be discussed.

A PROSPECTIVE STUDY ON THE TRANSCENDENTAL MEDITATION PROGRAM IN TWO OCCUPATIONAL SETTINGS: EFFECTS ON STRESS REDUCTION, HEALTH, AND EMPLOYEE DEVELOPMENT

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Despite the high cost of occupational stress, few studies have empirically documented effective methods for alleviating stress in the workplace. However, outside of business settings, a large body of research has investigated the effectiveness of meditation and relaxation procedures. Specifically, prior research indicates that the Transcendental Meditation (TM) technique is a highly effective means for providing deep rest to the nervous system, eliminating stress, and promoting employee development so that the individual is able to respond adaptively to external challenges and thereby incur less stress. For example, meta-analyses of all available studies have shown that: 1) compared to relaxing with eyes closed, TM significantly reduces somatic arousal, indicating a deeper state of rest (Dillbeck & Orme-Johnson, 1987); 2) compared to other meditation and relaxation techniques, effect sizes for TM are substantially greater, both on reducing trait anxiety (indicating psychological distress: Eppley, Abrams, & Shear, 1989) and on promoting self-actualization (a measure of optimal psychological health: Alexander, Rainforth, & Gelderloos, 1991). Apart from the substantial volume of existing research conducted on it outside of occupational settings, TM is a suitable technique for stress management in that it is taught in a standardized format, is easily learned, requires only a few minutes practice twice a day, and requires no change in beliefs or lifestyle.

A three-month prospective study was conducted at two settings in the automotive industry: a large manufacturing plant, and a small distribution sales company. Fourty-five employees who learned the TM program were compared to 41 control subjects similar in worksite, job position, demographic, and pretest characteristics. Regular meditators improved significantly more than controls (with irregular meditators scoring in between) on multiple measures of stress and employee development, including: reduced physiological arousal (measured by skin conductance levels) during and outside the TM practice; decreased anxiety, insomnia and fatigue, cigarettes, and hard liquor use; improved health, employee effectiveness, job satisfaction, as well as work and personal relationships. Principal components analysis identified three underlying factors which also improved through TM: "occupational coherence," "physiological settledness," and "job and life satisfaction." Effect sizes (in standard deviation units) for the difference between TM and no treatment were similar to differences found in a large national sample between high stress and medium or low stress work environments on 10 measures of strain and employee development.

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THE ROLE OF MOOD STATE AND SOCIAL INTERACTION IN DETERMINING EFFORT RATINGS BY VDT OPERATORS WHO PERFORM CLAIMS PROCESSING WORK

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There is general agreement among researchers who study "mental workload" that ratings of subjective effort are, to some extent, a function of emotional states within the individual. However, there appears to be little or no empirical research to establish the relationship between an individual's emotional states (i.e. mood) and an individual's rating of effort. The present study investigated the possibility that both mood state and social interaction play a role in determining employee perceptions of the amount of effort expended during the work day.

78 VDT operators who performed claims processing at a large insurance company were instructed to respond to a survey three times per day (start of work day, mid-day before lunch, and end of work day) over a period of six weeks. Operators responded to twelve statements about their mood state (rated on a 5-point scale) and these responses were used to form mood scales for boredom, tension, vigor, and fatigue. On both the mid-day and end-of-workday surveys, employees rated the amount of effort needed to perform their task over the prior 4-hr period. Ratings were made by marking an analog scale which complied with the recommended standard of 100 mm, and was anchored at one end by "low" and at the opposite end by "high". Employees also rated their amount of social interaction with coworkers over the same 4-hr periods on an identical analog scale.

Preliminary analysis on a subset of the complete data set indicates that the operator ratings of effort increased by nearly 10% over the last 4 hours of their work day. The standard deviation of "effort" was 26.1 mm (or 26% of the scale). In addition, significant correlations were found between changes in mood state and changes in operator ratings of effort. These preliminary results suggest that perceptions of "effort" vary widely within operators, as well as across their workday.

The complete data set will be analyzed using a multiple regression model to test if mood state is predictive of "effort", and if changes in an operator's mood state can predict changes in that same operator's "effort." Based on prior research that suggests social interaction can moderate work-induced stress, that "social interaction" will be evaluated as a predictor of operator mood state. In addition, the regression model with "effort" as the response variable will be expanded to test the possibility that "social interaction" is predictive of "effort." Finally, objective measures of productivity (e.g., number of claims processed per day) will be used to determine if worker productivity is correlated with operator ratings of effort. Examination of the above interrelationships (i.e. between mood state, social interaction, and effort to perform computer-mediated work) may suggest a causative model for sources of subjective effort, as well as directions for future research.

THE AXIS 0 TREATMENT MODEL FOR OCCUPATIONAL STRESS

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In California, occupational stress has moved increasingly beyond remedy in the work place into the arena of a hotly contested medical-legal case via the Workers' Compensation system. In such a system, the already stressed employee soon becomes impacted by a dimension of problems additional to the DSM III-R Axis I clinical syndromes developed in reaction to the occupational stress, and the Axis II endogenous personality traits or disorders brought to the situation by themselves. Our group has termed this third dimension as the Axis 0 factor, which distorts a clinical picture into a legal problem.

The implications for treatment of a Workers' Compensation case are that the clinician must assist the applicants' functional return to the work place partly through the vehicle of assisting them to deal with their case which frequently becomes as stressful as the initial occupational injury. The problems of the treatment provider for such claims include, on the one hand, demands by the insurer that treatment be time limited but effective, with effectiveness preferably defined as the rapid return of employees to their former duties. On the other hand, the treatment provider also faces the resistance of the claimant, beyond the usual clinical resistance issues, because of the Axis 0 factor that converts treatment gain into potential legal loss, as a lessening of symptoms may weaken or even destroy their case. Thus, while treatment is expected to be brief and effective, the individual's case may drag through several years.

From experience derived over an eight year period of handling hundreds of such treatment cases, our group has developed a time limited treatment model specifically designed to address not only the Axis I and Axis II clinical and personality issues involved in the original occupational situation, but also our identified Axis 0 issues of the legal problems superimposed on the medical paradigm. Our hypothesis was that the treatment model would result in a statistically significant reduction in the participants' symptoms of depression, anxiety, and somatization as measured by MMPI scores, and their ability to successfully return to work for a follow-up period of two years to supply external validation.

A 12-week course of individual intensive supportive psychotherapy provided the framework for dealing with Axis I and II issues beyond the therapy milieu by utilizing what we believe is an optimal mix of psychodynamic, cognitive, behavioral, and psychopharmacologic modalities. Treatment strategies and techniques include "bridging" the clients' weekly life events, activating their synthetic ego functions, and encouraging higher level defenses than the splitting and projective identification that derive from involvement in an extended adversarial situation. Provision of group psychotherapy for an additional 122 weeks consolidated the clients' more functional attitudes and behaviors by a problem-solving present focus, through dealing with the Axis 0 legal complications looming behind the initial foreground issues of job stress and personality interactions.

MILITARY HUMAN SERVICE PROVIDERS: A NEW AT RISK POPULATION

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While the term "military personnel" often conjures visions of young people who spend a few years in the service and then move on to the civilian sector, the "U.S. Armed Forces" describes a workplace that provides a lifelong career for approximately two million men and women. Major global and geo-political changes have initiated debate over the need for, role of, and funding for the Armed Forces.

Traditionally secure from the threat of unemployment, the military careerist now faces massive layoffs as command structures are reorganized -- entire installations closed, personnel relocated, technical job requirements shifted -- with the phase out of weapon systems. Thus, military members who "joined a family" and prepared to dedicate 20-30 working years to this "family", have found they are part of a less forgiving environment. The incentives that originally motivated them no longer exist and they are faced with more stringent and less forgiving performance standards, fewer second chances, and visible threat of job loss. Not only is the military workforce now a high risk population for job stress, the human resource providers who are charged with helping military members and their families cope with these changing times are now also at risk.

While many civilian employers and professionals debate roles in addressing the work-family relationship, the armed services have recognized these issues and have created agencies, job assignments, and trained specialists to deal with them. Most military installations have a human service delivery system which includes Mental Health Clinics, Substance Abuse Counseling Centers, Family Advocacy Offices, Family or Community Support Centers, Child Development or Youth Activity Centers, and Chaplains.

Today's military stress situation presents a significant aspect of the national occupational stress situation and is a microcosm of the issues facing mental health and human resource service professionals. It

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illustrates translation of larger social change issues into direct impacts on individual jobs and job security. It also offers a close look at human service providers who address these issues in the organizational setting and on behalf of individuals and families.

Due to congressional concern about stress effects on the military workforce and families, the Partners in Practice project began in 1989 under supervision of the Medical and Personnel divisions of a service branch. The project seeks better uses of the resources and personnel allocated to help military members and their families at risk of substance abuse, family maltreatment, and stress related problems. Six military installations spanning the globe were selected to test interventions for enhancing coordination of base agencies and their efforts in needs assessment, prevention program planning and marketing, identification and referral, staff training and stress management. Through this planned change effort the project aims to strengthen the system of human service agencies.

By November 1992 this project will have completed

three sets of interventions at each installation and will have analyzed impact evaluation data. We will report on the project and the issues it raises about planned change efforts to deal with stress related issues for individuals and the organizations in which they work.

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EXHAUSTION AS INDICATOR OF JOB STRESS AND PRECURSOR OF HEART DISEASE

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During last decade both work psychology and cardiovascular epidemiology have shown a renewed interest in fatigue states, either as "burnout" or as "vital exhaustion" . Both states are mainly characterized by a sense of depletion of energy. The emotional exhaustion dimension of burnout correlates best with work-related variables.

The best single expression of the influence of quantitative job demands on coronary morbidity is the parameter "exhaustion after work". A positive answer to the question "When you get home from your job, are you sometimes so tired that you find it hard to be together with your family or friends?" discriminates strongly between young infarction patients and controls. Among blue collar workers a state of exhaustive coping reflecting frustrated but continued efforts and associated negative feelings such as disproportionate irritability has been found to increase the risk for myocardial infarction by more than 300%. Two prospective studies have shown that a state of emotional exhaustion, characterized by unusual fatigue, increased irritability and feelings of demoralization, belongs to the precursors of myocardial infarction and sudden death. Detailed studies of angiography patients have shown that exhaustion does not reflect the severity of coronary artery disease.

Burnout or emotional exhaustion are an evaluative-emotional assessment of one own psychopsysiological state in relation to the demands of the task situation, resulting in a decision to discontinue activities. This decision is a health protecting behaviour, because in this state some adaptive mechanisms are lost and normal healing is impaired. During this state the structure of normal stress responses might be changed, resulting in paradoxical findings during stress testing.

FACTORS THAT INFLUENCE HOW SURVIVORS COPE WITH CO-WORKER LAYOFFS

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We developed and tested a model of the factors that influence how survivors cope with a work-force reduction involving the layoff of co-workers. The participating organization was a facility of a major corporation in the telecommunications industry located in the southwestern United States. The respondents were 200 unionized technicians who had worked for this company for an average of 20 years (range 10 to 42 years). Seventy-six percent (n=151) were male and 24% (n=49) were female. Participants completed survey questionnaires approximately 6 weeks after a work-force reduction involving permanent layoffs had taken place. The response rate was 73%.

There is empirical evidence that perceived injustice and job insecurity are fundamental reactions to a work-force reduction and that these reactions have an adverse effect on organizational outcomes (Davy, Kinicki, Scheck, & Sutton, 1988). We proposed that individual characteristics (tenure, optimistic predisposition, and layoff exposure, i.e., the number of times a person has experienced the layoff of a co-worker) as well as the perceived support available to the person (supervisor, co-worker, and union) would have a direct effect on perceptions of injustice and job insecurity. We also proposed that perceived injustice and job insecurity would directly influence the types of coping strategies that survivors would employ following a work-force reduction. We tested this model with path analysis using the LISREL 7 computer program (Jöreskog & Sörbom, 1989).

Supervisor and union support were significantly negatively associated with perceived injustice. Tenure and optimism were significantly negatively related to perceived job insecurity and layoff exposure was significantly positively related to job insecurity. Thus, the support factors had a greater effect on perceived injustice whereas individual characteristics had a greater impact on perceived job insecurity. Perceived injustice was significantly positively associated with perceived job insecurity and significantly negatively related to the use of direct action coping. Survivors who perceived the way the layoff was handled as unfair were less likely to employ direct action coping. Perceived job insecurity was significantly positively associated with the use of positive thinking and help-seeking.

The modification indices showed that the fit of the model would be improved with the addition of a direct path between optimistic predisposition and positive thinking coping and between layoff exposure and direct action coping. Thus, survivors with a high optimistic predisposition were more likely to engage in positive thinking coping. Survivors who had witnessed the layoff of a co-worker several times in the past were more likely to engage in direct action coping than survivors who had little or no previous layoff exposure.

These findings demonstrated that perceptions of injustice and job insecurity as well as individual characteristics are important determinants of how survivors cope with a work-force reduction. The results suggest that some survivors will be at greater risk than others to experience stress/strain following a work-force reduction. It is these "at risk" survivors who should be targeted for stress management interventions.

PRODUCTION WORKERS' REACTIONS TO A PLANT CLOSING: DOES TRANSFER MAKE A DIFFERENCE?

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In this field study, we investigated the reaction of unionized production workers to an impending plant closure. The company, a Canadian subsidiary of a U.S. manufacturing corporation, had undergone a series of consolidations involving work-force reductions and plant closings. In January, 1990, the company announced that one of its plants in Ontario would be closed at the end of the year and the production lines moved to other plants. When the data were collected in September, 1990, approximately 100 of the 375 hourly production workers had been transferred to another location and 65 production workers had taken early retirement or been terminated. We compared the reactions of those production workers ($n = 24$) who had been transferred to another location with the reactions of the production workers ($n = 50$) who remained.

In the case of downsizing, job insecurity and perceived injustice are potential sources of stress (Brockner, Grover, & Blonder, 1988). Brockner (1988) proposed that perceived job insecurity, perceived injustice, and stress are key psychological states that survivors experience. These psychological states are associated with various attitudinal and behavioral outcomes which may adversely affect both the company and the union. The variables we examined in the present study included perceived job insecurity and injustice, stress/strain (feelings of threat and psychological distress), company-related outcomes (trust, commitment, and job performance), and union-related outcomes (trust and commitment).

We performed a multivariate analysis of covariance (MANCOVA) with age and tenure as the covariates to determine if there were significant differences between those production workers who had been transferred and those production workers who remained. The MANCOVA yielded significant test statistics (Hotelling-Lawley trace $F(9,60) = 3.89, p \leq .001$). Univariate analyses of covariance (ANCOVA) indicated that there were significant differences between the two groups for perceived job insecurity (F (1,68) = 10.39, p = .002), trust in the company ($F(1,68) = 9.78$, $p = .003$), commitment to the company ($F(1,68) = 22.49, p \leq .001$), and job performance ($F(1,68) = 3.84$, p = .05). Trust in the union approached significance ($F(1,68) = 3.18$, $p = .08$).

Those production workers who had been transferred reported significantly higher job security, greater trust in the company, greater commitment to the company, and higher job performance than those production workers who remained. They also reported lower trust in the union than those workers who remained. Although not statistically significant, the transferred workers reported lower union commitment than the remaining production workers.

The lack of significant differences for perceived injustice and stress/strain is interesting as well. The transferred workers were just as likely as the remaining workers to perceive the way the company had handled the transfers and the layoffs as unfair. The transferred workers did not report significantly less threat nor less psychological distress than the remaining workers. The results of this study have important implications for both management and unions.

"HEALTH UNDER STRESS" AT ARGONNE NATIONAL LAB

Michael D. Atella, Argonne National Laboratory

Recent upheavals in world politics and economics as well as heightened environmental, safety, and health (ESH) concerns have led to new stressors at the U.S. energy and defense laboratories. A "Health Under Stress" program has been developed at Argonne National Laboratory (of the University of Chicago) to deal with the fallout from these events.

CNN recently featured Argonne's "Health Under Stress" program and the Cardiovascular Risk Reduction program on March 27 and 28 of this year. It was aired in the U.S. and internationally and was unsolicited. The American Heart Association recommended the Argonne programs to a CNN inquiry. CNN was interested in the following aspects of the programs:

* The programs are inclusive, open to all employees, retirees, and their families; white- and blue-collar.
* They are research-based.
* They are prevention- and intervention- oriented, not merely educational, aiming at lifestyle change.
* They are multidisciplinary.
* The programs are also dual-focused, involving individual as well as organizational interventions.

The Health Under Stress program is based on research at the University of Chicago studying hundreds of Illinois Bell telephone managers during the organizational stress of the AT&T divestiture.

The repeated findings that personality/attitude factors and social support/relationship factors are most important in achieving health under stress have become the cornerstone of the Argonne program. The program structure utilizes a framework developed at the University of Chicago and at the Hardiness Institute in Irvine, California (see S.R. Maddi and S.C. Kobasa, The Hardy Executive: Health Under Stress, Chicago: Dorsey Professional Books, 1984.).

Two recent examples of individual and organizational stress addressed in our group programs have been 1) the demise of the Soviet Union and 2) new government regulations about the environment, safety, and health. Both have led to research being done in different ways. The changes in the Soviet Union have led to shifts in national priorities and changing funding sources for the national labs. "Tiger Team" ESH audits of the national labs have also imposed major organizational change and stress, occasionally leaving a trail of heart attacks in their wake.

Our Health Under Stress groups assist research and support staff alike in achieving more healthy coping in response to these and other major stressors. In-house management consulting is also an integral part of the program, assisting in the management of organizational stress in the divisions.

PSYCHOANALYTIC PERSPECTIVES ON WORK DYSFUNCTION

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"Work dysfunction" has been relatively neglected in the psychoanalytic literature as a subject in its own right. When discussed, it has typically been from the perspective of the neurotic conditions. That is, work inhibition has been viewed as a manifestation of conflicts over achievement and success related to the Oedipus complex. However, as psychoanalytic theory and practice have been applied to borderline and narcissistic conditions, it has become possible to define and understand forms of work dysfunction that are related to disorders of the self or identity.

The person with an impaired work identity has a fundamental difficulty with the process of working. This type of work dysfunction is characterized by an inability to initiate and sustain incremental, step-by-step efforts to reach a goal. The result is often an erratic stop-start pattern of activity as transient enthusiasm for a special project alternates with periods of boredom or apathy.

The identity impaired worker is particularly sensitive to environmental stress. While the inhibited worker appears locked in an internal struggle, the identity impaired worker engages the workplace environment in attempts to shore up experienced deficits in the self. He or she is therefore very reactive to any type of change or danger in the workplace. At the same time the identity impaired worker has a high potential for negligence and carelessness, which themselves become sources of stress for others. For both reasons, then, this type of dysfunctional worker frequently comes to the attention of supervisors and human resource personnel.

This presentation will begin with an overview of psychoanalytic theories of work dysfunction. Special emphasis will be given to more recent theoretical developments which can help us better understand the etiology and dynamics of an impaired work identity. I will use clinical material from my psychotherapy practice to illustrate how these developmental deficits and conflicts are recapitulated in the workplace. Finally, I will describe some of the characteristics of the work environment that are particularly stressful to identity impaired workers, and will define their special vulnerabilities to objectively stressful workplace events.

EFFECTS OF JOB STRESS ON THE ORGANIZATION: MANAGERIAL STYLE, WORKER MOTIVATION...AND PRODUCTIVITY

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Graduate School of Business Administration

"This is starting to feel like work," the participants in an otherwise enjoyable activity say when they begin to feel stress in the endeavor. Work and stress, particularly in this difficult economic time, seem inseparable. Many hold down two jobs, others seek just one. And a great number who are employed devote significant time to worrying about retaining that position as threats of further "downsizing" fill the media and gossip corridors.

Stress in the workplace? There has probably never been more. Some of it has to do with economic and social trends too large for individuals or, it seems, even intellectual disciplines to address effectively. But several aspects of this phenomenon of stress on the job could be corrected, and psychology is well-prepared to show how. Research findings in self-determination and intrinsic motivation reveal specific managerial behaviors found to be stress-inducing and -reducing. The link appears to be supervisors' tendencies toward either over-controlling activities or ones supporting autonomy in their subordinates.

Cognitive Evaluation Theory (Deci and Ryan, 1985) describes an approach to human motivation which has at its core the elements promoting intrinsic motivation... that kind experienced when people find themselves relatively in charge of their activities and feeling their competencies optimally challenged. The affect surrounding such experiences is that of interest, even excitement, as individuals become engaged in a process permitting growth and a sense of acting out of choice, not excessively pressured by outside others or events.

The author's current research examines managerial activities associated with the theory, e.g., support for subordinates' autonomy and competence, and the motivation, experience of stress, and productivity of subordinates. Over a dozen organizations were studied, ranging from not-for-profit institutions to Fortune 500 corporations. Supervisors' managerial styles were assessed with the Problems at Work questionnaire (Deci, Connell, and Ryan, 1989), while subordinates completed surveys not unlike those typically used in employee attitude studies. In addition, workers completed a stress measurement scale.

The productivity of work groups operating under more control-oriented or pressuring managers was contrasted with that of those under more autonomy-supporting supervisors, as measured by objective data and/or subjective evaluations. Review of the preliminary data suggests support for the more autonomy-supporting managerial style as far as workers' experience of stress, intrinsic motivation, and productivity.

While much continues to be written about the values inherent in a more participatory management style, e.g., the "worker empowerment" literature, the pressure imposed upon top leaders in corporate America as a result of the global recession is seeming to undermine such good insights. The profession of psychology would do well to accelerate its efforts in providing empirical support for the bottom-line benefits of a more humane treatment of the American workforce.

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MANAGING WORK AND FAMILY BY "LIFE SPACE" ANALYSIS AND DEVELOPMENT

John W. Baker II, Ph.D., BCV Associates

Our fascination with the changing nature of the work force and work itself has set off a social dynamic where balancing our lives and protecting quality of life have become imperatives. Integrating oneself, family and work space becomes the focus of this poster session and intervention strategy where all employees can take a "time out" to assess, generate alternatives and set some goals for their "life space."

This session highlights applications of Life Space Analysis Programs (LSAP) as a part of corporate wellness, stress management and training activities in several settings. Attendees will learn about LSAP in:

a) executive wellness development
b) extended "whole person" training
c) employee development programs of diverse culture integration such as Far East manufacturers in North America
d) controlling occupational stress

Optimally functioning human systems (i.e., the workplace) facilitate the development of both high levels of interdependence and high levels of individuality and autonomy. Today's corporate leadership and employees at all levels of the organization are increasingly being expected to do more with less. A quality work force creates jobs and cultures palatable for different kinds of people. These changes must occur in the context of one maintaining a balance of one's personal, family and work life regardless of background, culture or skill set.

Change is an imperative for the remainder of the 90's and a cornerstone of Workforce 2000. The family is changing through:

- separation/divorce dynamics
- dual income parents
- child and elder care
- family mobility
- demand for more education/new skill sets
- interracial/intercultural liaisons
- evolving neighborhood/family demographics
- disabling effects of drugs, abuse, AIDS
- one's Life Space in a constant state of flux

At the same time the workplace is changing through:

- shifts from manufacturing to service orientation

- global focus on quality and continuous improvement
- customer orientation and partnering
- streamlining and downsizing
- team vs. individual focus
- escalation of health care costs
- women in workplace/comparable worth
- intercultural diversity in management and the workplace

This session attends to an assessment of one's life space as well as prescriptions for a total quality family/workplace interface. The ingredients to this interface include:

- Enhancement of worker satisfaction through balanced attention to family needs and productivity
- Reduction of worker polarization by integrating flexibility to family and realistic performance standards
- Integration of corporate culture of teamwork and interdependence with recognition of changing family needs of employee

- Promotion of occupational and family wellness as a cornerstone of the worker and workplace mission
- Emergence of inter-cultural, racial, gender and national origin perspectives
- Balancing your Life Space by recognizing the collaborative focus on:
  - -- Self
  - -- Family
  - -- Workplace

This session provides a cornerstone for the building of several wellness, health promotion, stress management and training activities that will emphasize the whole person in a changing, globalized and more sophisticated workplace. No longer does "one size fit all." Linking each individual's unique work-family issues to corporate enterprise may suggest that such attempts really do pay at the bottom line. The Conference Board concluded that reduced turnover, absenteeism and increased productivity are but a few of the benefits that occur to companies that help employees balance self, family and work.

A LONGITUDINAL STUDY OF THE IMMUNOSUPPRESSIVE EFFECTS OF JOB STRESS

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A growing body of immunologic evidence supports a causal relationship between stressful life events and susceptibility to infectious and malignant disease. Moreover, there is clear evidence of a link between even commonplace stressors and direct measures of immunocompetence. These studies suggest that stressful elements of the job environment may also elicit immunosuppressive changes and thereby influence the health status of workers. While many have theorized that such a mechanism may underlie reported associations between major stressful job experiences and subsequent ill-health, until now little research has attempted to link psychological stressors encountered in the workplace to changes in immune functioning. Recent developments in immunological as well as neuroendocrine tests and the collection of data in field settings have made it possible and reasonable to study the immunosuppressive effects of psychological job stress.

A longitudinal pilot of the immunosuppressive effects of psychological job stress was undertaken for the National Institute for Occupational Safety and Health (NIOSH) through a contract with the Centers for Disease Control. The purpose of this initial study was to evaluate psychological and immunological measures as indicators of change related to job stress. A group of 40 nurses were followed over an 8 month period with questionnaires being completed and saliva samples being collected each week, and blood samples being obtained each month. The subjects were randomly selected from a volunteer population of 514 nurses who had completed an earlier questionnaire indicating their perceptions of job stress and who had either objectively-defined high or low stress jobs. Ten subjects were selected from each of four groups characterized by high or low objective stress and high or low perceived stress. The weekly survey forms included the NIOSH job stress questionnaire and other psychological measures. A number of different immunologic assays were performed on the samples of blood and saliva. Relationships between the questionnaire data and the blood and saliva results are presented as they relate to the use of these measures and this approach for a larger and more definitive field study.

SURVIVAL ATTRIBUTES FOR VIOLENT LAW ENFORCEMENT COMBAT: "SURVIVABILITY"

Stephen R. Band, Ph.D.
I. John Vasquez, M.Ed.

This study attempted to isolate and identify behavioral dimensions relevant to law officers' "WILL TO SURVIVE" violent confrontations. Historically, high levels of physical fitness, a familiarity with weapons, and mental preparation have generically been presented as elements important to officer survivability. However, the concept of mental preparation has not been sufficiently elaborated upon, specific to law enforcement combat scenarios. The study investigated cognitive/behavioral elements associated with surviving a life and death struggle. Elements of mental preparation and situational cognitive activity linked to other occupational circumstances (i.e., military combat and operating in failing flight environments) served as a vehicle to develop a survey instrument. Law officers from various geographic locations throughout the United States were tasked to identify and rank order listed survival behaviors in order to determine if any of the behaviors listed were critical to surviving law enforcement combat situations. This process also served to acquire survival elements not listed. Analysis of the responses revealed agreement among raters that five dimensions of behavior appeared important to surviving potentially lethal law enforcement confrontations; thereby enhancing a will to survive a life and death encounter. It is speculated that law officers who have well integrated these dimensions in their behavior or who are trained/inoculated with appropriate information from this study's findings may be more resilient to thoughts of surrender or "giving-up" in combat and may be more resilient to post trauma than officers who do not have these elements well ingrained. At best the results of the study are tentative requiring further research and analysis. However, the findings are of importance to the law enforcement occupation, discussion, and related training issues. The five identified "survivability" attributes are: (1) self-confidence in performance; (2) exposure to and retention of techniques from highly relevant/realistic role play training; (3) ability to visualize effectiveness/victory in combat; (4) ability to be decisive and accurate in a fast paced environment; and (5) ability to persevere under physical pain and emotional stress.

LINKING UNEMPLOYMENT EXPERIENCES AND MARITAL FUNCTIONING

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Ever since the Great Depression, researchers have addressed the question of whether marital dysfunction is associated with unemployment. Despite considerable speculation and anecdotal reports (e.g., Halberstam, 1986), the best conclusion is that the results are inconsistent: There are data showing the marital functioning of unemployed individuals is better and worse than their employed counterparts, and other data showing no differences between these two groups (Barling, 1990). At least two factors account for these findings: [a] the consistent tendency to contrast unemployed and employed individuals in between-group designs, thereby assuming greater variation between these two groups and ignoring the considerable variation in psychological functioning within unemployed groups, and [b] the assumption that unemployment exerts direct effects on marital functioning.

To address the first issue, we proposed that the experience of unemployment can be characterised by financial strain, time structure and purpose, negative life events and attributions for unemployment. We then developed and tested a model in which these four unemployment experiences are linked with marital functioning (i.e., marital satisfaction, negative spousal interactions and physical aggression) via their effects on depressive symptoms, given persistent links between unemployment and depression, and between depression and marital dysfunction.

We studied 86 individuals who had been married for at least one year and unemployed for at least three months, and a peer nominated comparison group (n = 85) who had been married and employed continuously for at least one year prior to the study. Consistent with our hypotheses, a MANOVA showed that unemployed individuals fared worse with respect to financial strain, time use, negative life events, attributions regarding unemployment and depressive symptoms ($p < .05$). However, there were no significant differences between the two groups regarding marital satisfaction, psychological or physical aggression ($p > .05$).

The results of a confirmatory path analysis based only on the unemployed respondents provided strong support for our model: Time use (β = .40), negative life events during unemployment (β = .33) and financial strain (β = .18) significantly predicted depressive symptoms. Negative interactions were predicted by depressive symptoms (β = .26), and physical aggression was predicted by depressive symptoms (β = .25) and negative interactions (β = .11). Lastly, depressive symptoms (β = .25), negative spousal interactions (β = .32) and physical spousal aggression (β = .16) all predicted marital dissatisfaction. Overall, the data provided a good fit to the model (Q = .86).

The results of this study [a] suggest that unemployment is best conceptualized and operationalized as a multivariate and qualitative experience with considerable within-group variation rather than by the presence or absence of employment, and [b] show how the experience of unemployment indirect affects marital functioning.

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SOME EFFECTS OF TEENAGERS' PART-TIME EMPLOYMENT: THE QUALITY AND QUANTITY OF WORK MAKE THE DIFFERENCE

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Consistent with [a] the increasing proportion of the labour force that is made up of teenagers still attending high school, and [b] the fact that part-time employment for teenagers is now the modal pattern (Steinberg & Dornbusch, 1991), researchers are addressing the consequences of this new social pattern. Perhaps because part-time employment detracts from the time teenagers have available for other activities, especially school, researchers have mainly asked about the social costs of teenage employment during the high school years (Greenberger & Steinberg, 1986). The number of hours worked per week has been associated with lower investment in school performance (e.g., Steinberg & Dornbusch, 1991), leading for calls for policy makers to scrutinize teenagers' employment status and employment hours more closely (Steinberg & Dornbusch, 1991).

We argue, however, that focusing only on employment status or the number of hours worked per week ignores an equally important predictor of global well-being, namely the quality of the employment experience (Barling, 1990). Consistent with the data on organizational behavior and mental health (e.g., Warr, 1987), we suggest that teenagers' positive experience of part-time employment would result in positive benefits, and that considerable exposure to a high quality job would exert positive effects. Thus, we investigated the effects of the quantity and quality of teenagers' part-time employment on school performance (amount of class cutting and homework, and grades) and personal functioning (self-esteem and time use).

563 high school students (M age = 16 years; 223 in part-time employment) completed questionnaires on school performance (amount of class cutting and homework, previous semester's grades), personal functioning (self-esteem and time use) and employment quality (role clarity, autonomy, skill use and interrole conflict). Four specific hypotheses were tested: [a] work status alone would have little effect, [b] working long hours, especially more than 20 hours per week, would be associated with detrimental effects, but [c] high quality employment would exert positive effects, and [d] employment quality would moderate any harmful effects of the quantity of work.

All four hypotheses were supported, suggesting that the quantity of employment is as important a predictor of teenagers' global well-being as is the quantity of employment. Thus, calls for policy makers to limit the amount of work per week by teenagers may be premature. Instead, policy makers must now also direct their attention to the quality of teenagers' part-time work.

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EXPOSURE TO PLEASANT FRAGRANCE AS A POTENTIAL TECHNIQUE FOR REDUCING THE ADVERSE EFFECTS OF WORK-RELATED STRESS

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An investigation was conducted to examine the hypothesis that pleasant fragrances would induce positive affect among persons exposed to them, and as a result, would help to reduce the adverse effects of work-related stress on task performance.

To test this hypothesis, participants (male and female students) performed a complex word construction task under conditions of either low or high stress. *High stress* was induced by setting a very high (and virtually unobtainable) standard for performance, and by high time pressure. (A loudly ticking timer was placed on the table in front of participants; they were informed that it would ring when their time was up.) *Low stress* was induced by setting a more modest (and readily attainable) standard for performance and by lower time pressure; no timer was present in this condition. After completing this initial task, participants performed two additional tasks: decoding written messages and proofreading.

All of these tasks were performed either in the presence or absence of one of two fragrances rated as very pleasant by judges in pre-testing. These fragrances were produced by commercially-manufactured air fresheners. In order to counter the effects of rapid sensory adaptation to these fragrances, participants performed the first task (word construction) in one room, and were then taken to a waiting room that contained no fragrance. Following a five minute period (sufficient for recovery from sensory adaptation), they were brought to another room containing the same fragrance as the one they encountered in the first room. They performed the remaining two tasks in this location.

Results indicated that the both pleasant fragrances employed in the study enhanced performance on the initial cognitive task, especially under conditions of low stress. Both fragrances also significantly increased performance on the decoding task, and this was true under high as well as low stress. In contrast, pleasant fragrances reduced performance on the proofreading task, apparently because they induced feelings of relaxation and calmness which were inimical to performance of this speed-related task.

It should be noted that the two fragrances employed were rated as equal in pleasantness by participants, but were highly distinct in olfactory quality. Yet, they produced similar effects on participants' behavior. This pattern of findings suggests that recent claims to the effect that different fragrances exert sharply contrasting effects on human behavior should be viewed with skepticism until direct empirical support for their accuracy is provided.

THE ROLE OF ERGONOMIC AND PSYCHOLOGICAL STRESSORS IN THE DEVELOPMENT OF MUSCULOSKELETAL DISORDERS AMONG CASHIERS

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Several epidemiological studies have documented an elevated rate of musculoskeletal disorders, including tendinitis of the hand and shoulder and carpal tunnel syndrome, among workers in the retail food industry, particularly supermarket cashiers. While psychological factors have not been examined as potential contributors to the development of these disorders in cashiers, there is reason to believe they may exacerbate the deleterious causal effects of poor ergonomic conditions. The National Institute for Occupational Safety and Health (NIOSH) is therefore currently investigating the role of both ergonomic and job stress factors in the development of musculoskeletal disorders among retail food workers.

The NIOSH study design involves examining exposures to ergonomic stressors and measuring job stress factors and then determining the prevalence of musculoskeletal disorders among two groups of cashiers and a control population. The two groups of cashiers include one working on checkstands with a poor ergonomic design and another working on checkstands with an improved ergonomic design. The determination of which checkstands constitutes a poorer versus an improved design was made by a panel of six, including four

ergonomic experts, a supermarket industrial engineer and a labor union safety and health specialist. Both groups of cashiers will be compared to a control group of supermarket workers who are not exposed to ergonomic stressors and primarily provide customer assistance.

Each of the three groups in the study will include approximately 200 workers. The epidemiological assessment will include a questionnaire which assesses musculoskeletal discomfort, documents work history, and appraises potential confounders including hobbies, medical conditions and second jobs. A standardized musculoskeletal examination will be conducted on all participants and a sample of symptomatic and asymptomatic workers will have nerve conduction velocity testing. Job stress factors will be measured utilizing scales from the NIOSH Generic Job Stress Questionnaire as well as other standardized assessment instruments. These factors include excessive repetitive work load, low decision latitude, continuous interpersonal interactions, time pressures and variance in workload.

Ergonomic evaluation will quantify job repetitiveness and awkward postures and estimate force. Since the number of items processed by each cashier does not vary significantly between checkstand designs, this study should help to determine the relative importance of improving workstation design while maintaining a relatively high repetition rate. Interaction between psychological and ergonomic stresses will also be assessed since many of the work stress factors, such as time pressures, may contribute to awkward postures.

STRESS AMONG WORKING WOMEN: SOURCES AND EFFECTS

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A survey of 503 women working full-time outside the home was conducted in mid-1990 to examine the prevalence of job stress & its presumed effects on the individual & the workplace. Half this nationwide random sample is managers, supervising other employees, & half is non-managers. Frequent job stress is reported by 42% overall; work stressors include job change (39%), pay inequity (29%) and work overload (24%). Job stress is associated with frequency of physical (r=.32) & psychological (r=.46) symptoms, as is job change (t=4.954; t=4.782) and workload (r=.23; r=.46), while feeling pay inequity is related only to psychological symptoms (r=.25) (all statistics significant at p<.0001).

Job stress is more prevalent among managers (50%) than non-managers (34%), as is work overload (29% v 17%) and pay inequity (35% v 23%), but not job change. Although symptom reports are similar overall, reactions vary to specific work stressors. Managers with a heavy workload tend to report muscle strain and irritability, while non-managers who have a heavy workload report more difficulty getting started in the morning and trouble sleeping. Job change and pay inequity are related to tiredness among non-managers but not among managers. Although only 11% overall are dissatisfied with their jobs, this proportion increases among those with a heavy workload (21%); job dissatisfaction is related to workload among managers and to pay inequity among non-managers. Variations in coping styles may account for these differences.

While absenteeism due to illness is considerably lower among managers than non-managers (X=4.0 and X=8.0 days per year; t=-2.77, p<.01), it is unrelated to any of the work stressors.

THE USE OF MEDIATION IN BUILDING CULTURES THAT AFFIRM DIVERSITY

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Given the influx of women and minorities into tomorrow's workplace, corporations are faced with the challenge of changing their organizational cultures (i.e., mission statements, philosophies, and values) to reflect this dramatic shift in the workforce. Change leads to conflict and, in fact, conflict currently ranks fifth in importance among 65 management issues (Rahim, 1981). Research suggests that managing the conflict inherent in assimilating diverse groups involves well managed dialogue and that working together to resolve a mutual problem aids in the reduction of prejudicial behaviors.

A viable alternative to unresolved conflict, stalemates, or litigation is mediation. Mediation which involves the use of a neutral third party facilitator can even out the social controls in place in a male dominated environment, allowing women and minorities equal chances for success and, affirming diversity within the existing power structure. It has been found that organizational level has a positive relationship with competing behaviors and a negative relationship with accomodating behaviors, especially for men (Chusmir & Mills, 1989). Therefore, mediation can be utilized to reduce the impact that hierarchical position (or managerial rank) has as a legitimate source of power. This is important especially when managerial responses are driven by individual coping styles, idiosyncratic conflict resolution skills, and personality traits rather than by company mission and goals. It is our belief that the mediator must understand the cultural ideals and practices of the environment and use this knowledge to guide the mediation process.

On a individual level, the use of mediation serves as a learning tool for the employee. Our model involves the use of a psychologist as the mediator in order to assess individual characteristics. Areas assessed include personality, sex role characteristics (i.e, Type A and androgyny), and productive behaviors (job content; work overload; overtime; second job) of the individuals involved in mediation, as well as their physical and mental fitness and styles of coping.

It has been found that job satisfaction and level of control are keys to coping. With regard to job satisfaction, research suggests that cognitive assessment of the work demands (including conflict) are heavily determined by value judgments and attitudes. Therefore, the process of mediation encourages an individual to be involved, to provide input into the process of conflict resolution, and to correct misperceptions and faulty assumptions while under the direction of a guiding force interested in the welfare of both individuals and the corporation. Additionally, the use of an external consultant eliminates loyalty conflicts.

It has also been found that personal control is a moderating variable of the quality of the experience. In other words, perceived control is highly associated with situation resolution (Knight, 1990). Research suggests that there are gender differences in perceived control and in the actual use of control. For women, perceived control counteracts stress and women use control to work in relaxed manner. Contrarily, men with more control have higher stress levels and use control to work harder. As an active member of the process, perceived control increases through the use of mediation.

In summary, the interpersonal benefits of mediation include introspection, insight, increases in job performance, and satisfaction. Organizationally, the regeneration of the organization depends on effective management of conflict within the psychosocial environment of the corporation. Since changes in top management takes years to plan, orchestrate, and implement, the use of mediation allows an organization to affirm diversity within the existing power structure.

STRESS SYMPTOM FACTORS IN FIREFIGHTERS/PARAMEDICS

Randal D. Beaton, Shirley A. Murphy and Kenneth C. Pike
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Firefighters and paramedics are widely recognized as high stress occupation groups for a variety of reasons including the emergency nature of their work, repeated exposure to sudden death, and personal safety risks. Firefighters and paramedics also experience a higher prevalence of some stress-related diseases. The aim of the present investigation was to analyze the self-reported somatic, behavioral and psychological symptom factors in a large sample (n=1724) of firefighter/paramedics. An assumption was that their stress symptomatology reflected the effects of job stress.

The sample was drawn from 2000 replies to a 1989 statewide survey of "firefighter job stress" in which more than 4000 surveys were distributed. The Symptoms of Stress (SOS) inventory was one of a battery of self-report questionnaires included in the survey. Survey respondents were mostly Caucasian (95%), male (97%) firefighters (87%). The paramedic replies on the SOS were not statistically different from those of the firefighters.

The Symptoms of Stress (SOS) is a 94 item paper and pencil checklist of common somatic, behavioral and

psychiatric symptoms. Respondents were asked to rate the frequency of each symptom over the past week anchored never=0 to frequently=4. Prior research established the SOS's internal consistency and test-retest reliability. The social desirability valences of the firefighter-paramedic SOS total score was calculated at r=-.30 using Edwards' SD scale.

Principal components analyses and orthogonal rotations of the responses to the SOS items yielded 20 factors with Eigenvalues greater than 1.0. These 20 factors together accounted for 60.3% of the SOS variance. SOS Factor 1, consisting of nine items regarding symptoms of apprehension and dread, had an Eigenvalue of 26.38 and explained 28.1% of the variance. Other SOS factors that emerged from the analyses included symptoms of anger and cognitive disorganization (Factor 2), gastrointestinal distress (Factor 3), head, neck and facial tension (Factor 4), agitated depression (Factor 5), cardiopulmonary arousal (Factor 6), generalized anxiety (Factor 7), sleep difficulties (Factor 8), cutaneous/peripheral (Factor 9), dizziness/faintness (Factor 10), upper respiratory infections (Factor 11), throat/mouth congestion (Factor 12), extremity tension

(Factor 13), intrusive fears (Factor 14), emotional irritability (Factor 15), itchy rashes (Factor 16) and oral habit changes (Factor 17).

In summary, firefighter/paramedic replies on the SOS yielded a number of distinct symptom factors. A general factor comprised of symptoms of subjective apprehension/dread highlighted the centrality of occupational stress response symptomatology for this sample. It is suggested that the stress symptoms factors uncovered in this investigation are somewhat unique to firefighter/paramedics and may have implications for preventive and remedial interventions.

SYMPTOMS OF STRESS IN MALE AND FEMALE FIREFIGHTERS/PARAMEDICS

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Firefighters and paramedics are subjected to a variety of sources of occupational stress including sleep disruption, work-related tasks that require strength and stamina, threats to personal safety, and exposure to sudden death. A recent phenomenon is the emergence of women as firefighters/paramedics. Reported here are comparisons of self-reported stress symptomatology of male and female firefighter/paramedics and gender matched patient and non-patient samples.

The male and female firefighter/paramedic samples were drawn from over 1700 replies to a 1989 statewide anonymous survey of firefighter/paramedic (FF/PM) occupational stress. More than 97% (1663) were male firefighters. The 56 female firefighters were younger, less likely to be married and averaged fewer years of service than their male counterparts. Preliminary analyses revealed no correlations between biodemographic factors of paramedic vs. firefighter status with the Symptoms of Stress measure(s). An outpatient temporomandibular (TM) disordered sample

consisting of 172 female TM patients and 24 male TM patients as well as a sample of "healthy" men (n=23) and women (n=24) have been described elswewhere (Beaton et al., 1991).

Data were collected from all three groups using the 94 item Symptoms of Stress (SOS) inventory derived from the Cornell Medical Index. The SOS is designed to measure physical, behavioral and psychologic "symptoms of stress." Each item is rated for frequency during the past week, anchored 0=never and 4=frequently. There are ten content derived subscales. The SOS total and SOS subscales correlated -.10 to -.34 with Edwards' Social Desirability scale, has a Cronbach's α=.96, and showed adequate test-retest reliability.

Initially, a series of t-tests were generated to compare the female and male FF/PM's on the SOS scales. Then a series of 2x3 ANOVAs were generated to document gender (male vs. female) and group (firefighter/paramedic vs. TM patient vs. healthy nonpatient) differences and possible gender X group interactions. When statistically justified, follow-up one-way ANOVAs and multiple range tests were used to identify specific differences.

The healthy sample's SOS mean score was 40.1 compared with TM patient x=78.5 and firefighter/ paramedic x=80.8. The SOS total one-way (group) main effect F=16.99 (p<.0001). The firefighter/paramedic (FF/PM) and TM patient samples' mean total SOS's did not differ from one another. Again, in terms of the SOS total, there were no significant gender effects for any of the groups. The only FF/PM gender difference on the SOS revealed by t-testing was a higher average score for the male FF/PMs on the SOS cardiopulmonary scale (P<.001). In terms of the specific SOS scales, there were significant group differences that will be reported on.

Female firefighters did not report more numerous or more frequent stress symptomatology than male co-workers. In contrast, the self-report stress level of female firefighters, as measured by the SOS, was significantly higher than a healthy comparison sample and comparable to that of an outpatient TM sample with an orofacial pain problem.

CONSIDERATIONS IN COUNSELING, PSYCHOTHERAPY
AND EDUCATION OF DUAL CAREER COUPLES

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Corporations, human resource personnel and counselors, need to have an understanding of the dual career couples in order to better manage and counsel these employees. A holistic approach is proposed for managing dual career couples that emphasizes work and leisure as important in improving productivity.

Theory and research are presented on the particular psychosocial issues faced by dual career couples that are relevant to counselors and psychotherapists. Counselors can help clarify issues for couples so that more effective decisions can be made about priorities and compromises between career and family. Some of the special psychosocial issues confronting dual career couples fall within the following interacting areas: (1) role cycling/role overload problems; (2) sex role orientation and identity; (3) congruence of goals of dual career couples; (4) social network; (5) impact of society on couples; and (6) impact of life stage on dual career couples (Rapoport & Rapoport, 1976).

CONSIDERATIONS IN COUNSELING

A Cognitive-Behavioral/Family Systems intervention approach is emphasized with focus on: (1) the examination of cultural rules and whether such rules make sense for dual career couples; (2) rethinking problems and developing a cooperative, problem-solving approach to their solution; and (3) developing strategies for managing stress. Psychosocial group programs are briefly discussed.

Areas for future research are suggested that include: examination of factors affecting role stress, taking into account life stage, sex role orientation, and goals of dual career couples, as well as organizational/societal variables; and outcome research on counseling and education programs.

Counseling programs alone cannot help dual career couples manage their lives and work productively, but must be a component of comprehensive top-down human resources approach. Broader social and organizational policy issues are outlined as they relate to dual career couples.

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Dipl. Psych. Beate Beermann

The link between different aspects of the work-situation and the wish to leave the job

Work in hospital or nursing homes means stress which is not exclusively determante by the job. There is also a demande which raise from working-hours, especially shift-work. For the female workers - which represent the main part of the employees - there is additionally to the stress from the job and working-hours the engagement in household and family.

The question, which part of the situation - job stress, hours of work or family-duty - is determinant for the wish to leave the job was of main interest in our investigation. 183 examined nurses of three hospitals took part in our questionaire study.

Stepwise discriminant analysis showed that employees who raise the wish to leave the job expressed less job satisfaction, had more children living in the household, suffer more from health complains and had in the average less years in the job.

The established function of stepwise discriminant analysis was able to separate the two groups - nurses who wished to leave the job and those who did not want to do so - sufficiently.

Direktorium: Prof. Dr. Dr. H. M. Bolt - Prof. C. R. Cavonius, Ph. D. - Prof. Dr. B. Griefahn - Prof. Dr. W. Laurig - PD Dr. A. Seeber (komm.)
Rechtsträger: Forschungsgesellschaft für Arbeitsphysiologie und Arbeitsschutz e.V. - Geschäftsführer: W. Hamann

WOMEN'S ADJUSTMENT TO NONTRADITIONAL CAREERS: PSYCHOLOGICAL CONSEQUENCES OF OCCUPATIONAL INTEGRATION

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This study attempted to identify those experiences and characteristics that might predict women's levels of adjustment to nontraditional careers. Variables under consideration were past life experiences such as social support, independence, relationship with parents, and role models. Current life experiences were also assessed, as were the subjects' sex role orientations. The dependent variables of interest comprising "adjustment" were mental health, physical health, general job satisfaction, and role conflict.

The sample for this study consisted of 134 women from traditional and nontraditional occupations in an academic setting. These women completed the Career Adjustment and Success Questionnaire (CASQ; developed by the author), a self-report measure assessing the independent and dependent variables of interest. The Bem Sex Role Inventory (Bem, 1981) was also used as a measure of sex role orientation. A wide variety of demographic information was gathered and potential moderators were identified from these data (e.g., marital status, age cohort, and number of children in the home). The survey constructed for this research was found to be both reliable and discriminating.

Specific predictors were discovered to account for 21 percent of the variance in adjustment and 21 percent of the variance in women's perceived occupational success. Social support and sex role orientation were found to be particularly influential in the prediction of adjustment. The findings suggest and support the utility of using life history information, current experiences, and sex role orientation to predict the adjustment and perceived success of women in traditional and nontraditional careers. Not only did this study identify a means of predicting how well certain women may adjust and at what level they may succeed in nontraditional careers, the study identified areas of women's lives that may be enhanced so as to increase levels of well-being in the workplace. The results of this research has specific implications for management, policy makers, as well as vocational counselors.

The movement of women into the labor force has sparked a wide variety of research topics, but the movement of women into traditionally male-dominated careers has not been thoroughly investigated. While most research in this area has tended to focus upon females' occupational interest, there exists a need to address the

adjustment of women to these nontraditional careers after they have obtained the position. This occupational integration can prove to be a source of stress in a woman's life, which may manifest in a variety of ways: mentally, physically, interpersonally. The existence of or lack of stress was considered "adjustment" in this study.

JOB STRESS FACTORS AS PREDICTORS OF UPPER EXTREMITY MUSCULOSKELETAL DISORDERS AMONG NEWSPAPER EMPLOYEES

Bruce Bernard, Steven Sauter, Martin Petersen, Lawrence Fine, Thomas Hales, National Institute for Occupational Safety and Health (NIOSH), Cincinnati, Ohio

The video display terminal (VDT) has had great impact on all aspects of work for newspaper employee staff. New dimensions of work stress have surfaced, and concurrently, a striking increase in reports of upper extremity musculoskeletal disorders (UEMD) from news personnel. This paper reports on the findings from a cross-sectional study of work-related UEMD among VDT users at a large metropolitan newspaper. It addresses risk factors of UEMD, focusing on psychosocial job stressors, and their relationship to more established risk factors, such as biomechanical stressors, physical factors, and specific job tasks.

The study was conducted in response to a health hazard evaluation request received from four departments were randomly selected for study. Two of the departments consisted of mainly clerical and data-entry VDT operators (Circulation and Classified Advertising Departments), and two departments consisted of newspaper professionals using VDTs, (Editorial and Finance Department). 971 study participants (a 92% participation rate) completed a self-administered questionnaire which elicited information on: demographics, work history, job tasks, work station design and equipment used, work practices, work organization, and the psychosocial environment at work; and musculoskeletal discomfort.

The NIOSH general job stress instrument was used to obtain information on the psychosocial aspects of work. These scales have been used in prior occupational health research, were selected for validity and reliability, and are considered to have an absence of stressor-strain confounding. The scales include those addressing workload demands, job control, worker isolation, job security, hostility from clients, and social support.

Multivariate logistic regression was used to examine the effects of these variables in predicting UEMD. With analyses performed within departments, results showed that the psychosocial variables were better predictors of neck disorders than hand/wrist UEMDs. The clerical VDT departments consistently reported higher levels of psychological stress in most of the variable scales tested compared to the professional staff using VDTs. However, the importance of these variables was diminished somewhat in the final logistic regression models where several job task and demographic variables emerged as stronger predictors of UEMDs.

A PROGRAM TO HELP PATIENTS REDUCE THEIR ANGER IN THE WORKPLACE: LIMITING A CARDIOVASCULAR RISK FACTOR

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One of the most toxic risk factors in Type A Behavior is hostility. The stress and frustrations of work are a precipitating factor in the angry feelings of many patients who seek psychotherapy. The increasing number of patients presenting with these problems (overwhelmingly men) made it worthwhile to develop a treatment program to help them reduce their level of hostility and stress in the workplace.

This cognitive-behavioral approach helps patients recognize the thoughts and behaviors that lead to an increase in their feelings of anger. They are encouraged to challenge the unrealistic thinking patterns that often lead them to move almost automatically from feelings such as powerlessness, to feelings of anger or rage. These feelings are costly to their health, their quality of life, and their job performance.

Patients are encouraged to challenge self-destructive beliefs that lead to these negative emotions. They learn to see how they tend to exaggerate the importance of work-related problems; how they limit their attention to situations that will make them feel angry; and how they engage in emotional reasoning that leads them to act in unproductive ways.

The program also teaches them specific skills that enable them to reduce their levels of stress and anger. They learn how to reduce their interpersonal conflicts at work. Communication skills, assertiveness training, relaxation training, and techniques of anger control are explained and rehearsed with the patients. This structured psychotherapy program helps them learn more productive ways to think and to act. This, of course, can often serve to create a positive cycle where their employees, employers, or co-workers are more cooperative and less likely to participate in a cycle of interpersonal conflict.

Clinical interviews with these patients when they terminate therapy indicates that they feel the program has been helpful in reducing their work-related stress. This preliminary and informal data (even with the small number of patients) indicates that this attempt to reduce workers' hostility in the workplace might be a useful area to further explore.

ORGANIZATIONAL STRESS AND COPING IN SEVEN NATIONAL CONTEXTS: A CROSS-CULTURAL INVESTIGATION

Professor Rabi S. Bhagat
Memphis State University

In my earlier work on human stress and cognition in organizations (Beehr, T.A. and Bhagat, R.S. (Eds.) Human Stress and Cognition in Organizations: An Integrated Perspective (John Wiley Interscience, 1985) and Quick, Bhagat et al. Work Stress (Praeger Scientific, 1987), I have provided conceptual models of stress and coping in organizations. In a recent article of mine with two (co-authors) Bhagat et al. (1991), Organizational Stress, Personal life stress and symptoms of life strains: An Inquiry into the Moderating Role of Styles of Coping, Journal of Social Behavior and Personality, Vol. 6, No. 7, 163-184) we have shown that problem-focused coping acts as a better moderator of a number of stress-lifestrain relationships that emotion-focused coping. The data was from a school district in North Central Texas in the U.S. This study demonstrated a point which conforms well with our conceptual models and is easily accepted by the western social scientists: That a rational, problem-solving mode is very helpful in resolving strains that do occur in our work and personal lives. What I would like to present in my paper in this NIOSH conference is some cross-cultural data that show that such a rational mode of coping with stressful work and life events do not necessarily work effectively in other societal contexts which are culturally dissimiliar from the U.S. Working with seven collaborators in seven countries (U.S., India, Germany, Spain, Australia, New Zealand and South Africa) in four continents, I have collected data on organizational stress and coping and have begun to analyze the data. What has emerged as a interesting finding is that contrary to the postulates of Lazarus and Folkman (1980, 1982, 1984, 1987), problem-focused coping does not necessarily appear to aid the individuals in countries like South Africa, Spain and India. It seems as though emotion-focused coping acts a better moderator in these cultures. The data were carefully collected according to the various suggestions I have made earlier in my critiques and reviews of cross-cultural work in organizational behavior and psychology. They are (1) Bhagat, Rabi S., Allie, S.M. and Ford, D.L., Jr., "Organizational Stress, Personal Life Stress and Symptoms of Life Strains: An inquiry into the moderation role of coping: Journal of Social Behavior and Personality 6, 7, 163-184. (2) Bhagat, R.S. and Allie, S.M. (1989). "Organizational Stress, Personal Life Stress and Symptoms of Life Strains: An examination of the moderating role of sense of competence." Journal of Vocational Behavior, 35, 231-253. (3) Bhagat, R.S., and McQuaid, S.J. (1982). "Role of subjective culture in organizations: A review and directions for future research." Journal of Applied Psychology Monograph, 67, 5, 653-685. (4) Bhagat, R.S. and Kedia, B.L. (1990). "Cross-cultural Issues in Organizational Psychology: Emergent Trends and Directors for Research in the 1990's. In C.L. Cooper and Ivan T. Robertson (Eds.) International Review of Industrial and Organizational Psychology, Volume 5, John Wiley and Sons, 59-99. (5) Arvey, R.D., Bhagat, R.S. and Salas, E. (1991). "Cross-cultural and Cross-national Issues in Personnel and Human Resources Management: Where do we go from here?" In K.M. Rowland and G. Ferris (Eds.) Research in Personnel and Human Resources Management Vol. 9, (367-407). (6) Bhagat, R.S. (1985). "The role of stressful life events in organizational behavior and human performance." In T.A. Beehr and R.S. Bhagat (Eds.), Human stress and cognition in organizations: An integrated perspective. New York: Wiley Interscience (205-212). There seems to be an interesting pattern in our findings which conforms more with Karasek's (1979) suggestion that Lazarus and Folkman's (1987) postulates. Decision latitude emerges as an important moderator. Sample sizes are over one hundred to one hundred and eighty in these seven national contexts. Questionnaires were properly back translated and then employed in collection of the data. Outcome variables include organizational commitment, job satisfaction, feelings of strain, etc.

In an overall sense, what I propose to do are as follows:

1) discuss the role of cultural dimensions of Hofstede (198, 1991) as possible contextual dimensions in studies of stress and coping.

2) show that models of stress and coping which we implicitly take for granted in western cultures have limited usefulness in other cultures.

3) discuss the role of a theoretical model which we have developed as a team of cross-cultural researchers which would explain this process more effectively in the future.

THE EFFECTS OF JOB STRAIN ON ABSENTEEISM, TURNOVER AND WORKER COMPENSATION

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Susan Kinne, Fred Hutchinson Cancer Research Center;
Jiii Varnes, University of Florida;
Laura Linnan, The Miriam Hospital, Brown University.

The Working Well Cooperative Agreement, a 5 year experimental study of worksite cancer prevention interventions, provides a unique opportunity to investigate the relationship between job strain and organizational indicators of worker health and morale: absenteeism, turnover and worker compensation. The largest study of its kind, it involves 114 participating worksites across 15 states, which employ a total of well over 35,000 workers. Date were collected from probability samples of individual workers and several key informants at each worksite including the personnel director, CEO, benefits manager, health and safety manager and union representative. Although the measurements focused primarily on individual and organizational factors related to cancer risk, they also included items relevant to stress at the workplace. Surveys of individual workers included items on perceptions of job conditions and of the organizational climate in regard to social support. Organizational measures relevant to stress include indexes of structural turmoil and perceptions of worker satisfaction by key labor and management informants.

In the tradition of Karasek and co-workers, we constructed a measure of job strain from individual workers' ratings of demand and control. Preliminary analyses of the relation between job strain and potential organizational outcomes used a measure of worksite level job strain which expressed the proportion of respondents in each workforce who scored above the population median on demand and below the median on control. The average worksite had 32 percent of workers indicating high strain jobs. The scores ranged from a low of 11 percent to a high of 59 percent. Preliminary bivariate analyses indicate that the proportion reporting high job strain was significantly and negatively related to two measures of social cohesion: key informants reports of high participation in workplace social events and aggregate individual ratings of the extent to which co-workers take a personal interest in each other.

This presentation will present the results of multivariate analyses of the relationship between workforce job strain and indexes of turnover, absenteeism and rates of worker compensation claims. It will present results of analyses of the validity of individual and organization measures of worker stress, and discuss the methodological issues encountered when doing cross-industry analyses of organizational indicators.

The Psychological Injury Claim in Workers' Compensation:

Unraveling One of Industry's Most Vexing Challenges

Steven B. Bisbing, Psy.D., J.D.

Without a doubt one of the greatest challenges facing the workers' compensation system in the United States is dealing with the mental or psychological stress claim. This is particularly true of the mental or neuropsychological injury caused by a purely mental stimulus or cause.

Judges and juries are not the only parties struggling to cope with the tremendous proliferation in cases, bizarre theories for recovery, and questionable claims of disability. Employers, insurers, and defense attorneys are just as affected, if not more, since they must address first hand the often daunting task of determining the truly legitimate claim from the manufactured, exaggerated, or relatively weak one. If there is any question regarding the seriousness of this issue, readers need only trace the tremendous rise in the number of claims filed and increasingly liberal nature of the types of "injuries" being compensated. For example, according to the National Council on Compensation Insurance, 15% of the 100,000 occupational disease claims filed in 1985 were stress-related, representing more than a 30% increase since 1984! (Dentzer, McCormick, Tsurouka: A cure for job stress, Newsweek, 46-47, June 2, 1986) Since the landmark legal decision, *Carter v. General Motors*, 361 Mich 477, 106 N.W.2d 105 (1960), which recognized that an employee could recover damages for a purely psychological injury stemming from work related stress, an increasingly liberal acceptance of emotional stress claims has occurred.

Somehow, it seems, the original purpose of the compensation system got waylaid and turned on its head. The workers' compensation system was created to compensate workers who are unable to perform or obtain work suitable to their qualifications as the result of an injury that has a substantial causal connection to an accident or injury that occurred while the worker was employed or on the job. Unlike the tort or civil law system, which is designed "to make a person whole", worker's compensation was designed to give workers sufficient compensation to enable them, using any remaining wage-earning ability, to exist without burdening others for their livelihood.

Physical injury or trauma causing psychological or neuropsychological injuries is compensable in workers' compensation systems in virtually all jurisdictions (A. Larson, *The Law of Workman's Compensation* §42.22 (1982)). The real controversy arises when mention of psychological injuries are not claimed to be due to some physical trauma or injury, but instead by a psychological stress alone. The majority of courts addressing this issue have interpreted the applicable state statutes not to distinguish between physical and mental injuries if the consequence is to disable the worker (Carter, 1960).

The determination of whether psychological and neuropsychological injury claims, especially if purportedly caused by a mental stimulus, are compensable under general laws of workers' compensation is essentially answered by evaluating three inter-related questions:

1. Is there evidence of a cognizable psychological injury or mental stress?
2. If there is, is this injury or stress work related?

3. If so, can the employee or claimant work, at least at some kind of job, despite some psychological, neuropsychological or mental stress injury?

A indispensable component in answering these three issues is the involvement of a competent mental health examiner, such as a psychologist. This symposia would focus on the role and application of psychologists and the psychological evaluation in assessing mental stress claims in workers' compensation actions. Specific attention will be paid to identifying the type of information that must be obtained in order to properly evaluate a purported occupationally produced psychological injury; psychological assessment procedures; and special considerations that commonly arise in these types of claims (e.g., malingering, claim exaggeration, etc.).

A PROFILE-COMPARISON APPROACH TO ASSESSING PERSON-ENVIRONMENT FIT FOR THE PREDICTION AND EXPLANATION OF STRESS AT WORK

Saletta M. Boni, Columbia University & M.R.A.

This study examined the causes of work-related stress, using a new approach to the ISR person-environment fit model (Harrison, 1978). The model suggests that work stress results when work environments are misfit with persons along two dimensions, job demand and motive supply. This study operationalized person and job demand using the theory of counseling psychologist John Holland, and motive supply using climate from organizational psychology. Climate measures were empirically translated to Holland's theoretical framework, making climate commensurate with person and job, and therefore, interaction effects could be addressed.

The main hypothesis was that the combined effect of person-job fit and person-climate fit is a determinant of work strain. A corollary was tested, that person, job and climate do not influence work strain when tested simultaneously with fit. This study was the first to test this corollary because, unlike previous studies, linearly independent theory-based constructs were used to operationalize fit and the main effects of fit.

Participants in this study were 151 full time employees, working in a variety of jobs, from 12 organizations in New York City, who responded to questionnaires. A regression model using personality, job, climate, person-job fit,

and person-climate fit as independent variables was fitted to the dependent variables strain, satisfaction and perceived stress.

It was found that the two fit scores jointly accounted for a significant amount of the variance in work strain ($p = .028$). Person-climate fit accounted for most of this variance. Vocational personality also accounted for a significant portion of the variance in work strain, but job and climate did not. Significant proportions of the variance in the general strain measures were not explained. While these results agree with earlier studies, the results from this new model are more comprehensible and useful. Person-environment fit became less idiosyncratic, and more generally applicable to types of people and types of work environments when operationalized in terms of well-researched taxonomies for vocational personality and climate. The results of this new line of research can potentially serve both counseling and organizational psychologists in interventions with workers and work organizations.

PROPOSAL

Pre-Employment Screening For Resistance To The Disruptive Effects of Stress:
A Tool For Contributing To The Promotion Of Workplace Safety and Productivity

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The paper begins with a brief overview of the relationship between stress and a number of untoward work place behaviors, such as accidents, absenteeism, turnover, and impaired productivity. This is followed by a discussion of individual variability with respect to the susceptibility and response to stress, and the implications of these differences for the pre-employment screening of job applicants. Some of the general issues relating to the rationale, role and use of pre-employment screening methods are also described.

Results of a study are reported in which the rates of work-related accidents, unauthorized absence, and turnover for calendar year 1989, were examined among two contrasted groups of employees in a mid-sized manufacturing environment. Comparative rates on each variable were obtained for a group hired prior to the inclusion of a pre-employment inventory in the company's selection process and a group hired subsequently.

Some of the specific findings included the following:

Accidents and Hours Lost Due To Accidents

- In the group hired without using the test, the number of employees having work-related accidents during 1989 was 5.6% of the total work force. In the group hired making use of the test results, the number of employees having work-related accidents was only 2.8% of the total work force.
- The number of hours lost from work-related accidents during 1989 was 7.68% of the total annual scheduled hours, for those hired without using the test. For those who were hired making use of the test results, the number of hours lost due to work-related accidents was only 1.75% of the annual scheduled total.

Unauthorized Absence

- For those hired without the test, the number of hours lost from unauthorized absence during 1989 constituted 7.37% of the group's annual scheduled total. For those who were hired making use of test results, the number of hours lost from unauthorized absence was only 4.71% of their annual scheduled total.

Turnover

- There was a progressive decline in overall turnover rate for each of the two years following introduction of the test into the hiring process in August, 1987. During a 12 month "baseline" period, prior to using the test the turnover rate was 25.00%. During the first full calendar year after test use began (1988), the turnover rate dropped to 20.69%, while the following year (1989) it fell to 8.33%.

These findings suggest that the use of pre-employment screening procedures to identify individuals with relatively greater resistance to the disruptive effects of stress, can play a positive contributing role in creating a safe and productive workplace. It is proposed that such effects are likely to be most pronounced when these screening procedures are used in concert with post-selection programmatic interventions, such as job design/ergonomic analysis, employee training/education, stress management, employee assistance programs, hazard identification and elimination, etc.

PSYCHOLOGICAL DISTRESS AND ALCOHOL USE IN FIRE FIGHTERS

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National Institute for Occupational Safety and Health

The Jobs Rated Almanac ranks fire fighters as having the most stressful job in the United States. Potential stressors to which fire fighters are exposed range from threat of bodily harm and even death while fighting fires to boredom while waiting to be summoned to a "run". Few studies have investigated stressors to which fire fighters are subjected and potential mental health consequences.

The purposes of our study were to enumerate potential workplace stressors among fire fighters, to assess "psychological distress" and problems with alcohol use in these workers, and to determine whether a relationship exists between these measures and self-reported stressors. A preliminary questionnaire was completed by 41 fire department employees at a symposium of the International Association of Fire Fighters. One hundred forty-five fire fighters in Cincinnati, Ohio completed a revised questionnaire. In addition to demographic data, the questionnaire included a list of 72 potential workplace stressors, the Symptom Check List (SCL 90-R), the General Health Questionnaire (GHQ), the Center for Epidemiologic Studies Depression Scale (CES-D), and the Michigan Alcoholism Screening Test (MAST).

Based on the self-report instruments used in this study, 33-41% of the respondents were experiencing significant psychological distress at the time of the survey. Twenty-nine per cent of the fire fighters had scores on the MAST suggesting possible or probable current problems with alcohol use. Levels of psychological distress and alcohol use problems were significantly higher than would be expected in typical community or working populations. A logistic regression analysis was performed to determine the relationship between the measures of psychological distress/alcohol use and work stressors. Most striking was the markedly increased odds of depressive symptoms in workers reporting stressful relationships with supervisors. Because of the cross-sectional design of this study, the temporal sequence of this relationship cannot be determined. More comprehensive studies are required to investigate the potential effects of occupational stress on psychological wellbeing and patterns of alcohol use in fire fighters.

THE CHILDREN OF SURPLUS PEOPLE: AN EXPLORATORY STUDY OF THE IMPACT OF UNEMPLOYMENT ON ADOLESCENTS

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The emotional, psychological, social and physiological impact of unemployment on adult workers has been amply documented by social scientists. Inferential evidence concerning the dramatic social transformation of being removed from the mainstream of society into the backwater of surplus people has been accumulating since the Great Depression. Thus, we know that unemployed men are more bitter toward employers and have lower "occupational morale"; have difficulties adjusting to their families, friends, and political and religious institutions; experience higher levels of depression, anxiety and general distress; drink more heavily; have a ten times higher rate of self-destructive behavior; and suffer more somatic and psychosomatic symptoms than their employed counterparts.

Relying on earlier work with surplus populations, Braginsky & Braginsky (1975) pieced together a coherent overview of these diverse findings in an in depth study of 46 jobless men, and a five-year follow-up of these same men (Braginsky, 1991). Briefly, the loss of one's job socially transforms a person and relegates him to surplus status leaving permanent scars long after he returns to the mainstream of social life. Moreover, the higher one's job status, the more traumatic the transformation. Every aspect of the surplus man's life is affected, particularly his relationship to his family. Those with adolescent youngsters reported the most difficulties - they were ashamed, felt inadequate and were unable to exercise parental authority.

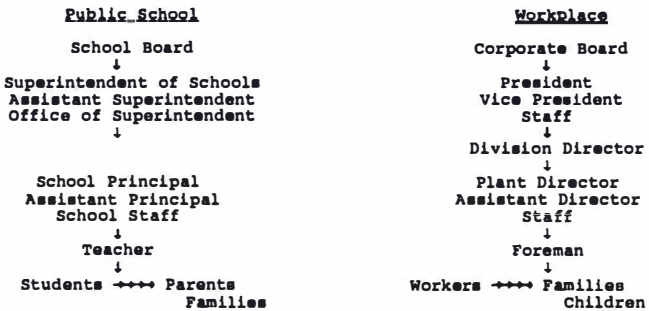
The research that has been done on the effects of unemployment on children and adolescents indicate decreased social support, declining family well-being, increased stress and deterioration of the parent-child relationship. In this study we assess the impact of parental employment status on college students' self-appraisals (Surplus Value Scale), their attitudes toward the world of work, the degree to which they endorse the Protestant work ethic, their attitudes toward society in general and their perceptions of the future.

As a first step in what we see as a larger, ongoing project, 200 college students from a medium sized, private institution completed questionnaires assessing these variables. In addition, we ascertained whether they have first-hand knowledge of an unemployed person, the conditions of the person's job loss, the length of unemployment, and their relationship to that person. Preliminary analyses focus on comparisons between those who know an unemployed person and those who do not. We expect that students who know someone who is unemployed will have profiles similar to unemployed workers. That is, these students will be entering the work force with the negative attitudes, values and self-perceptions of surplus people. Further comparisons are made for this group in terms of the closeness of the unemployed person to the student (eg. father, aunt, family friend, etc.), the expectation being that the closer the relationship, the greater the impact. Based on earlier research (Braginsky & Braginsky, 1975), students from the upper-middle class, are expected to respond to job loss more dramatically than students from lower socioeconomic groups. The results are examined in terms of the possible long-range impact of current economic policies on the work force.

THE PUBLIC SCHOOL: A WORKPLACE MODEL

Bernard Brown, Ph.D., Stuart N. Hart, Ph.D.

Public schools are workplaces in miniature in which many stress and coping problems affecting the workplace are paralleled. For example, there are two similar hierarchical structures:



A central theme of the public school is control that descends from above. Managers exert control on lower entities in the hierarchy extending down to teachers, students and families. In the classroom, the stressors include prescribed teacher and student behaviors regarding learning, performance, social rules and discipline, often "graded on a curve". The mode of system control is to exert stress on the next lower element to achieve specific objectives. Unfortunately, the control process proliferates system stress including fear of punishment, intimidation, test anxiety, denial of opportunities for healthy risk taking, inappropriate human interaction, reaction to teacher tension, limited opportunity to develop competence and self-worth, etc. and is often counterproductive in meeting professed system goals. Reactive stress from below reinforces system stress. Stress levels in many schools exceed children's coping capacity.

Schools may be viewed as workplace models in which teachers, like foremen, transmit stress from higher management to subordinates and to other workers at their level. The students are like workers who take stress home and in turn bring stress and dysfunction from home into the workplace, eventually stressing management. The system stress often contributes to both teacher and child burnout.

The presentation will address ways to ameliorate stress in schools and the workplace. At one level the teaching of stress management skills including relaxation, cognitive restructuring and other coping skills such as time management will help. For health problems, referral to a biofeedback program may be indicated. At the environmental level, schools can reduce environmental stressors such as noise, crowding, uncertainty and unnecessary complexity. Essential goals of organizational stress management include: reduction of middle management, encouragement of autonomy at every level and discouraging control through creating stress.

Within reasonable limits, schools can provide meaningful work for students along with democratic management practices that encourage individual autonomy and responsible choices about the style and direction of work. Students skilled in managing stress who expect meaningful work and democratic management practices within a context of discipline would be a force for improved productivity as they enter the workforce.

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MULTIPLE STRESSOR EFFECTS

Bernard Brown, Ph.D.

The Brown Tracing Stressor Demonstration will be used to show the impact of multiple stressors on psychological state and performance. The demonstration illustrates how performance in the workplace is affected by the cumulative stress brought about by multiple stressors. The effects can be seen at several physiological and psychological levels in terms of the definitions described below.

Stress, while prominent in the public media and in the scientific literature, is not always carefully defined. Defining stress is an essential stage of stress management policy. In developing definitions, it is important to note that:

- "Bad things" such as crime, poverty, social unrest, illness, and dysfunctional behavior have stress-related aspects, but they are not synonymous with stress.
- Stress is more than vulnerability to stress, response to stress, stressful environment or causes of stress.
- Measures of a single aspect of stress such as a scale of stressful life events do not in themselves describe an individual's stress level.
- Responses to stress and stress symptoms and signs do not in themselves describe an individual's stress level.

Operational definitions of physiological stress response will be presented in terms of the human organism's deviation from its usual physiological equilibrium including:

- Changes in the autonomic nervous system.
- Changes in the endocrine system.
- Changes in regional metabolism.
- Changes in respiration.
- Changes in the circulatory system.
- Changes in brain activity.
- Changes in the immune system.
- Startle effects.

Definitions of psychological stress response will be presented in terms of the human organism's deviation from its usual psychological equilibrium including:

- Changes in perceived control.
- Changes in emotional state.
- Changes in cognitive/perceptual function.
- Changes in psychomotor ability.

The observable signs and symptoms of these psychophysiological changes will be described. The signs and symptoms reflect the highly interactive nature of human psychological and physiological systems. Most stressors have some effect on the preponderance of these systems, so that very different kinds of stressors tend to produce the cumulative effects shown by the demonstration. The cumulative stress response involves all the stress induced changes that have been separately defined but do not change separately when the organism is confronted with a given stressor.

The Tracing Stressor Demonstration shows how workplace stress can be defined too narrowly. Analyses based on a single measure of stress, a particular stress symptom or response, a special class of stressors, or a restricted range of psychophysiological changes may not reflect the magnitude of the true system stress response. The demonstration can be given as a paper and pencil exercise and also dramatically makes use of an overhead projector for group presentation.

JOINT SERVICES RELOCATION ASSISTANCE TRAINING - A MODEL PROGRAM TO PREPARE MANAGERS TO ASSIST CLIENTS WITH THE STRESS OF THE MOBILE MILITARY LIFESTYLE

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The mobile military lifestyle has long presented unique challenges for both the military organization and the Service member and family in the areas of personal and professional well-being and productivity. Recognizing the financial and psychosocial stressors that often occur as a result of the frequent permanent change of station (PCS) moves required of Service members and their families, Congress mandated the establishment of comprehensive relocation assistance programs (RAPs) for all Service branches. The purpose of these programs is to reduce or mitigate the stress of relocation by providing destination area information and preparation, counseling, settling-in services, and home finding assistance, with the rationale that if the personal well-being of the Service member and family can be maintained during the move, the Service member's professional productivity can also be maintained, thereby supporting organizational productivity, readiness, and mission accomplishment. The Department of Defense (DoD) has established a set of instructions and guidelines for the Services to follow in developing their RAPs and has

allocated funds for each of the Services to implement their own programs.

One of the key elements of this new approach to reducing relocation stress is the emphasis each Service is giving to the position of RAP Manager to coordinate the installation-level programs. The RAP Manager's mission is threefold: (1) to organize the installation's community of internal and external service providers into an efficient, coordinated and cooperative relocation assistance delivery system; (2) to provide day-to-day program management; and (3) to serve as a client advocate by providing Service members and families with accurate, up-to-date relocation information, assistance, and referral. Each RAP Manager position requires a wide range of technical, managerial, and interpersonal skills, and is vital to the success of the RAP in meeting the needs of clients and reducing the stress of relocation.

Although each of the military Services functions independently, one of the exciting aspects of the development of relocation assistance has been the push to create a Joint Services training program for the RAP Manager position. DoD has sponsored the development of the DoD Relocation Assistance Program Manager's Course, a 2-week training which will be required for all RAP Managers. Initial delivery began in July, 1992 and is ongoing. This effort speaks clearly to the overlap in the requirements for each Service's RAP Manager position.

The training addresses both the general skills required for each position, as well as information and skills that are specific to the individual Services. The program has been designed to be a hands-on, practical course, incorporating both conceptual and experiential learning activities based on adult learning principles. This training program will serve as a model for relocation assistance training, as well as a model for other future Joint Services training.

AN EXAMINATION OF WORK ATTITUDES, SELF-REPORTED HEALTH AND PHYSIOLOGICAL HEALTH INDICATORS

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The connection between work and physical well-being continues to be a topic of great research importance. The interest is spurred from numerous directions. At the macro level, estimates of lost productivity due to work stress is estimated between 75-150 billion a year (Gadsby, 1989). At an organizational level, the cost of health benefits mount to higher and higher levels. While many researchers have examined the relationships between stressors at work and the reported stress on individuals, there is a need to examine the profile of relationships between stressors, reported stress by individuals and physiological indicators of strain. In pursuing this line of research an individual's perception of the work situation is a seen as a critical determinant of felt stress from the individual.

The subjects (Ss) were 160 salaried employees, 130 were volunteers in a stress intervention study and 30 were randomly selected from nonvolunteers in salary positions of a major paper company. Subjects all reported to a location reserved for the physiological assessments. The questionnaires were mailed to the Ss after the physiological data administration period. The Ss returned the questionnaires directly to the author in pre-addressed, postage-paid envelopes. Follow-up efforts resulted in complete data on 141 out of the 160 potential respondents.

Instruments included individual demographic variables (age, sex, and education), self-concept, work-related time stress, Type A behavior pattern, job satisfaction indices, a self-rated performance measure, self reported physical strain symptoms and health-related behavior, and physiological assessments of health (systolic and diastolic blood pressure, urinary catecholamines, resting pulse rate, and total cholesterol/high-density lipoprotein ratio. All scales demonstrated acceptable reliabilities (above .63).

The data was analyzed via regression with the physiological outcomes as dependent variables and the other variables as predictor or independent variables. The results resulted in R^2's between .15 to .43 (resting pulse, .15; diastolic blood pressure, .17; catecholamines, .18; systolic blood pressure, .27 and total cholesterol/HDL ratio, .43). Significant predictors included age (older workers had higher systolic, catecholamines, cholesterol ratios) sex (females had lower systolic and diastolic blood pressure, and lower cholesterol ratios), education (the higher the education the lower the systolic and diastolic blood pressure, the lower the resting pulse and the lower the cholesterol ratios), performance (higher self rated performers indicated lower diastolic blood pressure), time stress (the higher reported time stress the lower the resting pulse), strain (the lower the strain the lower the cholesterol ratio), and satisfaction with supervision (the greater the satisfaction the lower the cholesterol ratio).

These results indicated the most significant relationships were with demographic factors with known relationships with physiological outcomes. However, the relationships between education and some of the physiological outcomes suggest some interesting hypotheses, e.g., job level, perceptual, personal achievement and challenge differences in physiological outcomes. The cholesterol ratio was explained to a high degree with variables measured in this study, with health practices and satisfaction with supervision explaining significant variance in the ratio. The evidence presents further support for individual perceptual linkages and physiological indicators of strain.

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SATISFACTION WITH CHILD CARE:

BRIDGING THE BORDERS OF WORK AND FAMILY

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With increased numbers of single mothers and dual-career couples in the work force, the relationship between work and family, particularly with respect to child care, is receiving greater attention. The conflicts arising from child care have implications not only for the woman's personal well-being but also for the organizations that employ them. In order to advance our understanding of the interrelationships between an employee's child care concerns and other spheres of life, the present study developed a comprehensive measure of child-care satisfaction, evaluated its factor structure, and related it to a variety of standardized measures of work and family attitudes.

A mail survey including these measures was distributed to two samples of employed women and yielded a total of 263 usable returns. Both samples were characterized as generally upper-middle class, well-educated, employed mothers of preschool children.

Analysis of a 31-item measure of child-care satisfaction created for the current study revealed five factors: employer sensitivity to child care, husband support, and caregiver competency, dependability, and attentiveness. Hierarchical multiple regressions, controlling for the effects of age, education, and income, were performed on the first sample and cross-validated on the second sample. The results indicated that: (1) employer sensitivity was positively related to the employee's job satisfaction and organizational commitment and negatively related to conflict experienced between job and self roles, (2) husband support was negatively related to the conflict between spouse and self roles, (3) caregiver competency was associated with lower levels of both job-parent conflict and maternal separation anxiety, and (4) caregiver attentiveness was associated with lower conflict between job and self roles and made secondary contributions to the prediction of organizational commitment and job satisfaction.

The results clearly indicate that employer sensitivity is strongly related to the work attitudes and role conflicts of employed mothers. Organizations may express this concern by: (1) allowing employees greater control over their work day, (2) investing in on-site services and/or (3) supporting local public agencies that are attempting to professionalize family day care workers by providing in-service training and enforcing standards. These approaches are likely to increase the worker's perceptions of employer sensitivity while also increasing the quality of child care (e.g. competency and attentiveness) available.

The precise mechanisms for the connections between satisfaction with caregiver and work attitudes are not yet clear. Our current results suggest that caregiver competence may reduce the woman's maternal separation anxiety, which in combination with a sensitive employer, lessens work and family role conflict. This lower level of role conflict may lead to more favorable attitudes toward their jobs and organizations. Further testing of these links should be the focus of future research.

THE ROLE OF NEGATIVE AFFECTIVITY IN UNDERSTANDING RELATIONSHIPS BETWEEN SELF-REPORTS OF STRESSORS AND STRAIN

Michael J. Burke
Arthur P. Brief
Jennifer M. George

Based on a brief review of the health, organizational, and personality psychology literatures supportive of the expectation that observed relationships between self-reports of stressors and strains are influenced by the mood-dispositional dimension negative affectivity (NA), reanalyses of four data sets (Brief, Burke, George, Robinson, & Webster, 1988; Chen & Spector, 1991; Frese, 1985; Spector, Dwyer, & Jex, 1988) were conducted. The results of these reanalyses, contrary to the assertions of several authors in the applied psychology literature, offered further support for the hypothesized "nuisance" properties of NA in studies involving relations between self-reports of stressors and strain. A discussion of how NA and other mood-dispositional dimensions may be of interest to investigators concerned with relationships between self-reports of any condition of employment and any affective state of workers is presented.

Managerial Women on the Mommy Track:
Glass Ceilings and Dissatisfaction

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Introduction

In Schwartz's provocative Harvard Business Review article (1989) she noted that some managerial and professional women, those who both have children and want to spend time with them, have periods of their work lives when they are unable to be fully committed to their organizations. She proposed that organizations consider assigning these women less demanding jobs or allow them to take a break from work, or even work part-time, until they are ready to re-enter the work force fully committed. These so-called mommy tracks would result in work and career experiences more compatible with some women's needs in the short run, while in the long run availing organizations with a large pool of talented women, some of whom have spent some time on the mommy track.

Very little research has been carried out in this area. Do women choose to be on the mommy track or do organizations place them there? Does this create two types of managerial women? Why do women fall on the career-primary vs. career and family continuum? What antecedents and consequences result from this placement? The present exploratory investigation examined some of the latter questions.

Method

Respondents were 792 female graduates of a single school of business. Although diverse, the sample tended to be in early career, young (about 30), married without children. Data were collected using questionnaires completed anonymously. A response rate of 55% was achieved these types of demographic and situational antecedents were considered: personal, career and organizational. Two kinds of consequences were included: work outcomes and individual psychological well-being. In almost all cases, multiple-item measures with high reliabilities were employed.

Results

The sample, as a whole, placed themselves slightly toward the career and family pole than the career primary pole, though some women fell at each of the seven scale points. Women on the mommy track were less likely to be currently employed, more likely to be married and have children, and greater numbers of children spend more hours per week on household duties, earn less income, and work fewer hours per week. Women on the mommy track were more likely to have worked part-time, less likely to have worked continuously, and had taken more breaks from work. In addition, these women spent a longer time in their current positions, were at lower organizational levels and supervised fewer employees.

Women on the mommy track were less job satisfied, job involved, career satisfied and reported greater intention of quitting. Interestingly these women were more satisfied with their lives and reported fewer psychosomatic symptoms.

Conclusions

The mommy track does exist and as many managerial and professional women may be on it as not on it. Women on the mommy track paid a personal price in terms of lowered job and career satisfaction. There were also organizational costs as well, represented by low work commitment and greater intention to quit. Individual women and their employing organizations face a challenge. How can these talented women - who also are the mothers of the next generation - be assisted with work and family responsibilities in the short term so some (many) of them may contribute over the long-term. A variety of women-friendly initiatives may be a partial answer. Greater spouse support is also a consideration.

SUICIDE AND OCCUPATION: IS THERE A RELATIONSHIP?

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Suicide was the eighth leading cause of death in the United States in 1988. Epidemiologic studies have identified generally accepted demographic risk factors for suicide, including age, race, and sex. While occupation has long been considered a risk factor for suicide, studies of the relationship between specific occupations and suicide risk have yielded conflicting results. We reviewed the literature of the last decade on suicide and occupation, including studies focusing on suicide in specific occupational groups and studies which analyzed mortality from all causes in a defined community or working population. The most recent studies examining the relationship of occupation to suicide on a national level were based on U.S. death certificate data from 1950. One or more studies have found an elevated risk of suicide in actors, automobile mechanics, chemical workers, chemists, dentists, farmers, forestry workers, highway maintenance workers, nurses, physicians, police officers, social workers, tobacco industry workers, and veterinarians. However, because of methodological problems in many of these studies, no firm conclusions can be drawn regarding suicide risk for occupations other than physicians. The weight of current evidence supports the conclusion that both male and female physicians have elevated rates of suicide. Additionally, while most studies of suicide focus on highly educated professional groups, the majority of recent studies suggest an inverse relationship between suicide rates and socioeconomic status.

The purpose of our study was to examine the relationship of occupation to suicide risk in white males using recent data for a wide geographical area of the United States. The study is based on occupation-coded death certificate data from 23 states from 1984-1988. Death certificates collect information on the usual occupation of the decedent. Occupation was coded according to the 1980 Bureau of the Census classification system. A case-control study was designed with cases being all white males 15-64 years of age whose underlying cause of death was reported as suicide. Controls were decedents with any natural cause of death. Age-adjusted odds ratios were computed for both broad and detailed occupational categories.

Odds ratios for eight broad occupational categories ranged from 0.85 (95% CI=0.79-0.92) for executive, administrative, and managerial occupations and 0.96 (95% CI=0.89-1.05) for professional specialty occupations to 1.27 (95% CI=1.15-1.39) for farming, fishing, and forestry occupations and 1.29 (95% CI=1.23-1.35) for precision production, craft, and repair occupations. Detailed occupations with at least a 50% increased odds of death from suicide included physicians (OR=2.44; 95% CI=1.70-3.49), security and financial service sales occupations (OR=2.65; 95% CI=1.40-5.02), automobile body and related repairers (OR=1.54; 95% CI=1.10-2.15), carpet installers (OR=1.74; 95% CI=1.12-2.68), carpenters (OR=1.60; 95% CI=1.41-1.81), insulation workers (OR=1.97; 95% CI=1.02-3.79), punching and stamping press machine operators (OR=1.66; 95% CI=1.02-2.71), and winding and twisting machine operators (OR=2.62; 95% CI=1.20-5.74).

The study suggests that the risk of suicide is not uniform across occupations. Occupations with high risk are found in various socioeconomic groups. The results of this study may be used to target occupations for mental health research and prevention activities.

A CONCEPTUAL AND STATISTICAL RE-EVALUATION OF MOOS' WORK ENVIRONMENT SCALE APPLIED TO ORGANIZATIONAL CLIMATE AND OCCUPATIONAL STRESS FACTORS

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Social interactions and organizational culture at the workplace are seen as important mediators of occupational stress. However, one barrier to elaborating such links is the difficulty in quantifying relevant aspects of "organizational climate." One of the most broadly used tools in related stress factors to organizational and interpersonal variables is the Work environment Scale (WES), one of Rudolf Moos' Social Climate Scales (Insel & Moos, 1974; Moos, 1987). Organizational climate variables measured by the WES, including supervisor or peer support, task orientation, manager control, and worker autonomy have been shown to be significantly related to occupational stress, health status, and job satisfaction, and even cases of mass psychogenic illness (for example, Carayon-Sainfort, 1992; Carayon-Sainfort & Smith, 1991; Colligan, 1985; Klitzman & Stellman, 1989; Schmitt & Fitzgerald, 1982). The success of these findings has been limited due to the low predictive strength of the WES scales in explaining occupational stress factors.

The author's thesis is that the relative weakness of WES-related findings stems from a combination of conceptual and methodological flows in quantifying social climate in the WES (Caldwell, 1991). Conventional scoring of the WES is performed by matching individual item responses to normative assumptions of "appropriate" responses. Items are grouped within hypothesized social climate

domains; normative matches indicate "high" levels of that domain. Counts of item matches are used as domain scores within individuals. Therefore, the procedure emphasizes an individual-based agglomeration strategy to measure social climate.

Conceptually, this approach is at odds with the general construct of organizational climate as a socially constructed entity based on group agreement on specific norms rather than summations of general individual perceptions (Berger & Luckmann, 1966; Fine, 1979; Schein, 1990). The author's analysis of over 875 WES responses in two independent studies indicates that item-domain factor structures do not remain stable, compromising the use of the domain score as the functional unit of analysis. This author's alternative approach to quantifying organizational climate is based on items and work groups as the central focal units for study. Several practical issues regarding use of item-based or group-based analyses (group size, confidence intervals, transformations) are worthy of attention.

The large existing database of studies using the WES provides numerous opportunities to apply this alternative approach to gather new understandings of psychosocial stress factors not uncovered in previous analyses. The importance of ameliorating organizational contributors to occupational stress underlies the need to utilize conceptually and ecologically valid analysis criteria to study stress-related aspects of organizational climate.

ORGANIZATIONAL ACCEPTANCE OF COMMUNICATIONS MEDIA: SITUATIONAL AND TECHNOLOGICAL CONSTRAINTS IN STRESS MEDIATION THROUGH ELECTRONIC SOCIAL INTERACTION

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The proliferation of electronic communications technologies provides workers with a broadening array of workplace communication options. The way in which these new technologies are implemented and utilized play a major role in their effectiveness and acceptance. A successfully implemented computer network can mediate stress through increases in social interaction. The increases in interaction serve as social support and can compensate for other stressful aspects of the job such as high workload or monotony (Grandjean, 1987; Smith, Carayon, & Miezio, 1987; Smith & Sainfort, 1989; Sproull & Kiesler, 1991; Yang, 1992). However, problems in system implementation arise due to lack of training or poor integration with existing organizational culture (Allen & Hauptman, 1987; Keen, 1987; Markus & Robey, 1983; Rice & Shook, 1988). In some cases, new computer networks fail due to limited organizational utility and systems planning (Davis, 1989; Eason, 1988). In these cases, occupational stress can easily increase because of the new communications technology.

Situational and technological constraints strongly influence communications medium acceptance. Failure to recognize these constraints will serve to increase, rather than decrease, occupational stress in users of communications networks. Trevino and her colleagues (Trevino, Daft & Lengel, 1987) demonstrated that electronic mail is well suited for simple, routine messages, but not for complex messages. The authors' research has supported this conclusion. Acceptance of

communications media is strongly related to situational determinants including content, cues, and urgency of the communication act (message and situation). Perceived characteristics of the medium, such as information richness and social "presence" or emotional contact, also influence acceptance.

Acceptance of communications media is also affected by technology-related delay times, such as heavy use of the medium slowing responses or transmission limits of speed and quality over long distances. Every communication medium has a "natural" or expected delay associated with it: the time to send a message and receive a response over the same medium. Beyond this delay, using the medium can be frustrating and may cause the individual to stop using that medium. Time pressure, such as having to meet deadlines, is a source of stress in the work environment (Cooper & Marshall, 1976; Smith, 1987). Studies have shown increases in stress levels as difficult deadlines draw near (see, for example, Friedman, Rosenman, and Carroll, 1958) or with increased computer response time or breakdown (Grandjean, 1987). The acceptability of a specific medium becomes crucial when a deadline is approaching. The frustration associated with technology-based delays in communications adds to the stress of work pressure in the organization. The authors' research has empirically determined that a mathematical feedback decay model based on a second-order differential equation can determine the acceptability of delay for a given medium. The mathematical model further distinguishes between synchronous (where real-time communication is expected) and asynchronous (expectations of "mail" or sequential interactions) communications media.

WORKPLACE ENVIRONMENTAL STRESS BEGINS IN SCHOOL: IMPAIRED ENVIRONMENTAL CONDITIONS IN COLLEGE CLASSROOMS

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Improving environmental quality in the workplace is considered a prime element in improving the quality of working life and the productivity of workers (Grandjean, 1987; Hedge, 1987; Klitzman & Stellman, 1989; Stokols, 1992; Sundstrom, 1987/1991; Vischer, 1989). However, classroom environments, even college classrooms, are not often considered "work environments" for either instructors or students. The preparation of the American workforce for the increased technical and informational demands of the 21st Century has become a major issue. Increased numbers of adult students are returning to college campuses for additional education or training; both returning students and more traditional students are required to incorporate more classroom-based instruction into their readiness for competent work roles. Despite these demands on the student to gain information and skill from the classroom environment, this environment often introduces significant stress barriers to successful accomplishment of classroom tasks.

The author's research in the area of college classroom environmental quality has elaborated environmental deficits and relationships to lost productivity. This research includes both physical environment measures and "post-occupancy evaluation" surveys of users of the classrooms. Compared to existing occupational health and safety guidelines for office-type work, major components of the physical classroom environment were seriously impaired. Classrooms studied recorded

noise levels exceeding 55dB during class periods and 50 dB when empty. These values imply performance decrements in novel intellectual tasks and speech intelligibility (ASHRAE, 1985; Clark & Corlett, 1984; Everest, 1989; Grandjean, 1987; Sanders & McCormick, 1987). Illumination levels in one classroom varied from 520 to 1260 lux: such variations may cause visual problems due to glare and excessive contrast (Grandjean, 1987; Sanders & McCormick, 1987). Air quality measurements suggested marked air stagnation. CO_2 levels exceeded 1500 ppm in one room and 2800 ppm in another under continued room use; NIOSH recommendations specify 800-1000 ppm as maximum CO_2 values to ensure adequate air circulation and user satisfaction (Millar, 1989).

Over 650 user surveys from four classrooms demonstrated pronounced negative room ratings and perceived productivity loss. Ergonomic and environmental factors most related to performance losses included poor seating design, excessive noise, and inadequate thermal and air flow control. Estimated productivity losses due to these environmental factors exceeded 20% of the lecture period in several classrooms. These findings empirically support assertions that college classroom environmental stressors inhibit students' ability to perform the learning tasks required in the classroom environment.

CHRONIC EFFECT OF JOB CONTROL, WORK PRESSURE AND SUPERVISOR SOCIAL SUPPORT ON STRESS AMONG OFFICE WORKERS

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The chronic effect of low job control, high work pressure and low supervisor social support on worker stress was examined in a population of 76 office workers. Most theories of occupational stress emphasize the cumulative effect of poor working conditions on worker stress. Being continuously exposed to poor working conditions for long period of time can lead to stress consequences. A distinction can be made between chronic and acute stressors. Chronic stressors are those stressors to which an individual is exposed for a long period of time, for example role conflict and work pressure. Examples of acute stressors include layoff and death of a family member. In the work environment, it is important to understand the chronic effect of being exposed to poor working conditions and to develop intervention strategies that can reduce this effect. Three chronic work stressors were examined in this study: low job control, high work pressure and low supervisor social support.

Many studies of occupational stress have examined chronic stressors using a cross-sectional research design. Such an approach may be weak because it does not indicate the length of exposure to chronic stressors. Longitudinal studies that repeatedly collect information on stressors and stress over a long period of time can allow us to examine the exposure effect of chronic stressors on stress. The purpose of this study was to examine the chronic effect of select work stressors on worker stress.

Three rounds of data were collected over a period of about 3 years. Seventy-six office workers from one public service organization participated in this study. The same questionnaire was filled out at the three rounds. Reports of low control at times 2 and 3 were correlated with poor health at time 3. A measure of exposure to low control was constructed by taking the sum of the three measures of control at the three rounds. A stepwise regression of the measure of health with the exposure measure and the measures of control at times 2 and 3 as independent variables showed that the exposure measure stepped out as the only significant contributor. Further data analyses are currently being conducted. Results will be reported later. The methodological and theoretical implications of the study findings will be discussed.

CORRELATES OF DEPRESSION IN MENTAL HEALTH EMPLOYEES.

Dominic J. Carbone, PhD

One-hundred and twenty persons (86 women and 34 men), employed in direct care mental health positions, were surveyed to examine the relationship between depression, occupational stress, family stress and work/family conflict. Occupational stress has been found to be correlated with negative personal outcomes, such as depression in white collar jobs (Kessler, 1979; Verbrugge, 1986). In addition, work/family conflict has been found to be correlated with depression in women working in white collar jobs (Burke and Greenglass, 1987; Greenglass, Pantony and Burke, 1989). The results of this study were consistent with results from studies outside the mental health service employment sector in that the following variables were highly correlated with depression: work stress, family stress, and work/family conflict. The strength of these correlations were attributed to the predominance of women in the sample. Previous studies have found that when women adopt the additional role of worker, women experience pressure from both work and family to simultaneously maintain high levels of commitment to each domain (Hall and Hall, 1979; Moore and Sawhill, 1984), thus resulting in the experiences of work/family conflict, occupational stress, family stress and the associated depression. The findings of the present study suggest that family stress and work/family conflict merit special consideration in the model of the stress process in mental health work because of the predominance of women involved in this type of work and the similarity of this type of work to the traditional female role in the family.

DO CAREER STAGE AND FAMILY STAGE MODELS REALLY EXPLAIN ANYTHING?

Dominic J. Carbone, Ph.D.

For many decades family theorists have made use of family stage models to describe and predict family development (Rodgers, 1964; Hall and Hall, 1979; Voydanoff, 1988; Moen, 1989). Likewise, in the field of career development, career stage models have be relied on extensively to describe and predict organizational behavior over time (Hall, 1976; Super and Bohn, 1970). Over the past decade, work-family theorists have combined versions of popular career stage and family stage models to explain the phenomenon of work-family conflict (Hall and Hall, 1979; Piotrokowsky, 1979; Voydanoff, 1989). These theoretical formulations postulate that career development and family development are simultaneous processes, and there exists a relationship between both career stage and family stage and the experience of work-family conflict. More specifically, it is hypothesized that work-family conflict is moderate in the early stages of career, highest in midcareer and lowest in later career (Hall and Hall, 1979; Voydanoff, 1988). Additionally, it is hypothesized that work-family conflict is low during the early stages of family, higher in the middle stages and low during the later stages (Hall and Hall, 1979; Voydanoff, 1988).

To test these hypotheses, a group of 120 persons were surveyed regarding their experience of work-family conflict in relation to both their career stage and family stage. The results of this study revealed that neither family stage nor career stage were associated with significant changes in work-family conflict. It was postulated that this was due to the fact that many persons in the sample did not progress through either career stages or family stages in a linear developmental fashion as predicted. Many persons described themselves as occupying several non-consecutive stages simultaneously; thus raising questions about the "developmental" nature of these stages and their usefulness.

In conclusion, it is suggested that, (1) the current model of family development be revised to account for family forms that are becoming more prevalent (i.e., single parent families, remarriage after divorce, extended families); and (2) the current career stage model that assumes longstanding employment in the same organization with a progressive career track in place, should also be reformulated.

MARRIAGE AND CHILDREN FOR PROFESSIONAL WOMEN: ASSET OR LIABILITY?

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In recent years, much attention has been paid to the role strains experienced by women who *add* the new role of worker to the more traditional ones of wife and mother. In sharp contrast, there is almost no research on the stress affecting women who *substitute* new roles for old ones, embarking on professional careers while remaining childless or single. Nevertheless, this is a sizeable and growing population; not only are more women entering traditionally masculine professions each year (Marshall, 1989), but compared to their male colleagues, professional women are more likely to remain unmarried and childless (Statistics Canada, 1989).

This study attempts to shed light on a hitherto neglected topic, by comparing single, childless women in four traditionally masculine professions (medicine, law, engineering and accountancy) with their married counterparts, both with and without children. Based on membership lists obtained from these four professional corporations, questionnaires were mailed to all females between the ages of 35-45 years. Of the 2019 women thus contacted, 1294 usable replies were received, a response rate of 64%. Among respondents, 60% were married with children, 17% were married without children, and 13% were both unmarried and childless. (The remaining 10% of the sample, not considered in this report, was constituted of separated, divorced and widowed women.)

In a preliminary analysis, the three groups of women (single, married-childless, and married-children) were compared on measures of neuroticism and self-esteem. There were no significant differences between groups, indicating that it is not low self-esteem or high levels of neuroticism that explains differences among women who have made different choices.

The three groups of women were then compared both in terms of work (involvement, satisfaction, revenue), psychological and physical symptomatology (general distress, depression, and physical malaise) and quality of life (life satisfaction, perceived social support and recreational activities). Two clear findings emerge from this comparison:

1) Single women generally fare worse than married women, both those with and without children. Thus, single women score higher on depression and lower on life satisfaction and perceived social support than their married colleagues. Even in the work area, where greater involvement and revenue would be expected because of the absence of competing claims, single women are outclassed by childless married women and do no better than married women with children. The one slight advantage of single women is their increased frequency of and satisfaction in social activities, and even this is counterbalanced by less frequent and less satisfying erotic activities.

2) For married women, children are a liability when each sphere of life is examined individually, but, paradoxically, become an asset in terms of total well-being and satisfaction. Thus, as would be expected, women with children report lower work involvement and lower revenue than their childless colleagues. Equally to be expected, they spend less time on hobbies, social activities or physical exercise. They also report less social support, possibly because child care creates additional demands on the support system. But in spite of these apparent disadvantages of bearing children, it is married women with children who of all three groups score lowest on depression and highest on life satisfaction.

These findings suggest that health professionals may be expending their energy on the wrong target. Married professional women with children have many grounds for complaint, but, on the whole, their numerous role obligations are not affecting their mental health. Single professional women, on the contrary, may constitute a hidden "at risk" group, worthy of more attention than they have received to date.

PSYCHOSOCIAL DETERMINANTS OF CORONARY RISK IN NORTHERN ITALY

Giancarlo Cesana, Marco Ferrario,
Giovanni De Vito, Callisto Bravi

"Area Brianza", a densely populated (about 820,000 inhab, 1,750 inhab/sKm) and industrialized district located between Milan and the Swiss border, is a centre of the MONICA Project, a multiannual monitoring of cardiovascular disease coordinated by the WHO. About 40 centres, all over the world, are concerned with such a project. 21 of these centres agreed on administering a questionnaire which is the basis of the MONICA PSYchosocial substudy (MOPSY). The questionnaire contains the following items or scales: education, occupation, social mobility, social support (Berkman & Syme), occupational stress (Karasek), sleep disturbances (Jenkins), vital exhaustion (Maastricht), type A (Jenkins, form N).

In Area Brianza, the questionnaire was administered to random samples of 25-64 year old residents, during two surveys of major coronary risk factors -cholesterol, blood pressure and smoking-, in 1986-87 and 1990-91. Each sample was composed of 1,600 subjects, age-sex stratified

(200 males and 200 females, for each 10 year group). All data were collected through highly standardized method, controlled for their quality by the WHO reference Centers. In particular, blood pressure was measured twice, ten minutes apart, according with the MONICA Manual. A uniform participation of about 70% was obtained in each sub-sample. Non respondents were interviewed by phone and no significant differences were found for demographic variables, smoking, hypertension, antihypertensive drugs, height and weight.

Mean values of total cholesterol (TC), systolic (SBP) and diastolic (DBP) blood pressure, body mass index (BMI) as well as smoker prevalence (SP) resulted lower in the second survey, with the exception of TC in women (217.55 vs 215.32 mg/dl).

In this presentation possible influences of education and occupational stress (Karasek) on the changes observed are explored. From the second survey sample the employed group was selected: 599 males (75%) and 280 females (35%). They were classified according four levels of each considered variable: age (as above); education (<=5, 8, 13, >13 years of schooling); occupational stress (high strain, passive, active, low strain). The "SAS General Linear Models Procedure" was applied.

Age demonstrated the expected positive association with all the biologic risk factors of cardiovascular disease (TC, BP, BMI). Education evidenced uncertain protective influences, clear only for BMI in males and smoking behavior in both males and females. No statistically significant effects were observed for occupational stress. However, at a further analysis, stressed male workers revealed a lower difference between the first and second SBP measurement. This observation may be an index of increased reactivity as well as of the possibility that the absence of stress influences may be due to selection biases, which cannot be excluded in cross sectional studies.

THE EFFECTS OF PERCEIVED JOB STRESS AND SOCIAL SUPPORT ON THE INTENTION TO QUIT AND JOB PERFORMANCE AMONG KOREAN WHITE-COLLAR EMPLOYEES.

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The purpose of this study was to investigate the effects of perceived job stress and social environment (i.e., social support) on employees' intention to quit and self-rated performance among 218 Korean white-collar workers. Respondents (all males with average age of 29.7 years) working for the firms in a Korean conglomerate completed questionnaires: the first one contained measures of job stressors (i.e., role conflict, role ambiguity, job future uncertainty and workload), emotional and instrumental support, and the second one included measures of Job attitude and behavior which included items of intention to quit and job performance.

The results indicated that, when each job stressor was separately analyzed, perceived job stressor and social support measures accounted for 3 to 6% of the variance of intention to quit after controlling for the influence of demographic variables (e.g., age, education, and tenure). Only two indicators of job stress, role ambiguity and job future uncertainty, had significantly positive association with intention to quit. None of the equations, however, were statistically significant. The same set of perceived job stressor and social support measures explained 7 to 14% of the variance of self-rated job performance, which were all statistically significant.

Entering the indicators of two different aspects of social support (i.e., emotional and instrumental support) explained additional variance of self-rated performance. The explained variances of self-rated performance were statistically significant particularly in the equations including role conflict or workload. Significant contribution of social support in explaining self-rated performance was mainly due to the emotional aspect of support.

In addition to the direct effects of job stressor and support measures, there was one case of statistically significant interaction effect between job stressor and social support: that was an interaction between workload and instrumental support in predicting self-rated performance. Workload leaded to higher job performance for those with high instrumental support while that leaded to lower job performance for those with low instrumental support. Workload, support measures, and their interaction accounted for 12% of the variance in self-rated job performance.

These results indicated that, for Korean white-collar employees, role ambiguity and job future uncertainty were greater predictors of intention to quit. Social support had little impact on intention to quit. However, social support was significantly associated with self-rated performance. Furthermore, it had an effect to enhance job performance among Korean white-collar employees even in the face of higher workload.

THE EFFECTS OF PERSONAL AND SOCIAL RESOURCE IN THE CONTEXT OF JOB STRESS

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The purpose of this study was to investigate the role played by personal (i.e., hardiness) and social (i.e., social support) resources in reducing the negative effects of job stress among 218 Korean white-collar workers. Respondents (all males with average age of 29.7 years) completed questionnaires: the first one contained measures of job stressors (i.e., role conflict, role ambiguity, job future uncertainty and workload), hardiness, social support, and the second one included three measures of psychological symptomatology (i.e., General Health Questionnaire (GHQ), Depression (CES-D) and Somatic Complaints).

Both hardiness and social support were significantly associated with the GHQ and CES-D. For Somatic complaints, only hardiness was reported to be a significant predictor. The effects of hardiness or social support were direct with respect to CES-D and Somatic complaints: however, hardiness was a greater predictor of all the measures of psychological symptomatology than was social support.

Results indicated that job stressor, hardiness and support accounted for 29 to 30% of the variance in GHQ, 18 to 20% of that in CES-D, and 11 to 16% of that in Somatic Complaints. Among those predictors, hardiness made greater contribution in the explanation of the variances in psychological symptomatology measures.

Three-way and two-way interaction effects of hardiness, social support and job stressors were found particularly in the prediction of GHQ. Role ambiguity leaded to higher GHQ only for those with low social support while that leaded to lower GHQ for those with high social support. This patter was observed among hardy persons. Also, among hardy persons, Job Future Uncertainty leaded to higher GHQ only for those with low social support while that leaded to little change in GHQ for those with high social support. However, in one case, negative buffering was observed: workload leaded to higher GHQ for those with higher social support than that did for those with less social support, regardless of the level of hardiness. This result indicated that the role played by social support in reducing the negative effects of job stressors depended on the personal resource (i.e., hardiness) and that that was more likely to occur with respect to a particular symptomatology measure (i.e., GHQ) than that was with respect to other symptomatology measures.

BALANCING THE MULTIPLE ROLES OF WORK AND CAREGIVING FOR CHILDREN, ADULTS, AND ELDERS

Nancy J. Chapman, Berit Ingersoll-Dayton and Margaret B. Neal

Our research explores how employees juggle their work and family responsibilities, and how programs and policies in the workplace might make these responsibilities easier to coordinate. Employees' family obligations include caring for children, but also for adults with disabilities (e.g., developmentally disabled, chronically ill, or physically disabled) and for the elderly. This paper will compare and contrast the experiences of employees caring for these three groups of care recipients, and of employees caring for more than one group. A number of demographic trends suggest that the number of employees juggling difficult work and family roles will increase in the future. These trends include the increasing percentage of the population over the age of 65; the decreased number of children available to care for older adults; medical advances that lengthen the life span of those with disabilities and chronic illness; the increasing percentage of women in the workforce; and the declining size of the workforce.

Our research is based on a survey of 9,573 employees of 33 companies and agencies in the Portland metropolitan area. Companies were chosen to represent small, medium, and large firms in each of the seven major categories of the Standard Industrial Classification. We found that 46% of the employees had children under the age of 18 in the household, 23% were providing some care for an elderly person, and 4% were caring for an adult with a disability. Thirty-nine percent of the employees had no caregiving responsibility, and 12% provided cared for more than one of these dependent groups.

We were interested in understanding the absenteeism and stress experienced by workers with various family responsibilities. Measures of absenteeism included days of work missed, times arrived late or left early, and times interrupted at work. Measures of stress included health stress, dependent care stress, and difficulty combining work and family. We found that employees with caregiving responsibility, especially responsibility for more than one age group, experienced more stress and absenteeism than did those with little or no caregiving responsibility. Those caring for all three age groups had the most elevated stress and absenteeism levels; among those with only one caregiving role, caring for children was the most consistent predictor of absenteeism and stress.

Our research explored the relationships between absenteeism and stress on the one hand and three sets of predictors on the other hand: (1) the personal characteristics of the employees (such as age, gender, and socioeconomic status), (2) the demands generated at work and at home (such as the number of hours worked and the number of children), and (3) the resources available to employees in the workplace or family (such as flextime in the workplace or a non-employed spouse at home) to assist them in coping. A few of the findings include that women employees had a particularly difficult time balancing work and family, and that having schedule flexibility in the workplace served as a major resource that decreased the stress and absenteeism of employed caregivers.

EXPECTATIONS AND SOCIAL SUPPORT AS STRESS MODERATORS AMONG NEW JOB ENTRANTS

Yue Wah, CHAY

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There is evidence to suggest that the first few months of employment constitute a critical period for new job entrants as they seek to understand their new environment, establish a sense of belonging and security, and find opportunities to develop their skills and prove their worth. Apart from immediate job stresses, new employees are also likely to be concerned with their careers, relationships with work colleagues, and whether their jobs will fulfill such needs as achievement, challenge, and social interaction. The present study investigated the role of individual differences and supportive relationships at work in influencing the adjustment of university graduates to new work roles in the first year of employment.

A sample of 137 university graduates (response rate, 54.8 per cent) who had started work for about three to four weeks participated in the first part of the two-part longitudinal study. The second assessment was carried out about six months later and 121 subjects responded to the questionnaire survey (follow-up response rate, 88.3 per cent) which assessed personality characteristics, social support, work-related demands and health outcome. The results showed significant changes between Time 1 and Time 2 assessments in the overall level of perceived job demands, work social support and psychological well-being. Social support, particularly from work sources, moderated the negative effects of work–related stressors on job satisfaction and mental well-being. Personality factors, notably, locus of control and individual preferences for particular types of job/task characteristics moderated the effects of job demands on psychological well-being. Significant two–way "demand-discretion" (Karasek, 1979) and three-way "demand-discretion-support" (Johnson, 1986) interactions were found although some of the three–way interactions were not in the predicted direction.

Overall, the findings suggest that the effect of work social support, as a moderator of the stress-outcome relationship, is contingent upon the timing of social support, that is, *when* assistance is given and *when* it is sought. Part of the experience of what young people face in making the transition from education to work may also be due to discrepancies between personal expectations of what the job entails and what the work is really like.

EFFECTS OF MANIPULATED JOB STRESSORS AND JOB ATTITUDE ON PERCEIVED JOB CONDITIONS: A SIMULATION

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Paul E. Spector, University of South Florida
Steve M. Jex, Central Michigan University

The experiment replicated and expanded on Adler, Skov, and Salvemini (1985) and Caldwell and O'Reilly's (1982) studies in order to evaluate conventional job stress models (e.g., Beehr & Newman, 1978; French & Kahn, 1962; House, 1974; Ivancevich & Matteson, 1980; and McGrath, 1976). Effects of simulated stressful job conditions (high stressful, medium, and low stressful) and job attitude (satisfied, neutral, and dissatisfied) on affective reactions (job satisfaction, feelings of stress and frustration), perceived job stressors (role ambiguity, role conflict, autonomy, and work load), and task perceptions (skill variety, task identity, task significance, and feedback) were studied with the use of a laboratory simulation. Three hundred and twenty three advanced college students, with a median age of 21 years and 25.9% of males, participated in the study. Significant main effects of job conditions and job attitude on all variables were found, with the exception of skill variety. In addition, significant interactive effects on perceived job stressors were shown. Under high stressful conditions, subjects evaluated job conditions similarly as well as unfavorably (i.e., high role ambiguity, role conflict, work load, and low autonomy) regardless of their attitudes. However, people with a positive attitude generally evaluated job conditions more favorably than those with a negative attitude under moderate or low stressful conditions. The study suggested that we should be cautious in employing correlations between perceived job stressors and strains (i.e., reactions toward stressful job conditions) to infer the impact of objective job conditions. The inference about objective features of jobs solely on the basis of incumbents' reports is limited. In the light of this research, the main purpose of measuring individual perceptions should be to understand the person rather than the work. If the work is our interest, reports solely from employees at an individual level may not be sufficient.

TROUBLE IN PARADISE: TEACHER STRESS AND JOB BURNOUT IN HAWAII

Betty Clark Carlson, Ed.D.

Recent research has speculated that employee burnout is a real and important phenomemon, especially in the human service professions. This presentation reports the results of an exploratory study designed to investigate the relationships of demographic, needs satisfaction, and organizational (job-related) variables to perceived burnout and intention to leave one's job. Burnout is defined as a three-part syndrome of emotional exhaustion, depersonalization, and feelings of low personal accomplishment. Burnout was hypothesized to be associated with low needs satisfaction, an obstructive work environment, and intentions to leave one's position.

Participants in the study were elementary, intermediate, and secondary level special education teachers (N = 490) in Hawaii's public school system. Teachers responded to a set of three questionnaires which were distributed via mail to their school settings.

Regression analyses supported the hypothesized relationships of employee burnout, particularly for the component of emotional exhaustion. Discriminant function analysis supported the hypothesized relationship between teacher burnout and intention to leave one's position, correctly classifying 74% of study respondents into the appropriate "Yes--Leaving Teaching" or "No--Leaving Teaching" groups. Emotional exhaustion scores were the most powerful and highly significant ($p = <.0000$) predictor variable in discriminating between the "Yes--Leaving Teaching" and "No--Leaving Teaching" groups.

TELEWORKING: THE ELIXIR OF WORK STRESS?

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Mark T. Conner, University of Leeds, UK
Wayne Fletcher, University of Leeds, UK

Teleworking comprises a wide range of work activities which take place remotely from an employer or centrally located workplace, and may be undertaken on a full-time or part-time basis. The work usually involves the electronic processing of information which is then transmitted between employer and teleworker via a telecommunications link. Research has examined whether teleworking a) enhances or diminishes personal freedom and b) improves or degrades working conditions. However, little published work has examined the relationship between stress, teleworking and health. There are many aspects of jobs which can increase stress among workers; the physical environment, insufficient perceived control and poor interpersonal relationships. Teleworking offers some workers the opportunity to exert more control over and/or improve some of these aspects. For example, a teleworker has more control over the hours worked and the rate at which tasks are performed, and is removed from difficult interpersonal situations. To this extent teleworking has the potential to mitigate the experience of work-related stress. This is partly due to the availability of different coping resources in the changed work environment.

This paper reports an investigation in which the stress and coping experiences of different categories (part-time vs. full-time, home-based vs. telecentre-based, etc.) of teleworkers were compared and contrasted. In stressful encounters a person evaluates whether the situation is damaging or potentially damaging, and whether s/he has the coping resources to neutralise or tolerate that damage. The mobilisation of the appropriate coping strategy is an effective way of reducing the experience of work stress. Subjects in this study completed the COPE, the Daily Hassles and Uplifts Questionnaire, the GHQ 12 and a physical symptoms checklist. The results of the study will be presented and implications for the future of teleworking and work stress in Europe discussed.

STRESS AND PERFORMANCE AT WORK: A META-ANALYSIS

Vivian A. Collins, University of North Texas
Michael M. Beyerlein, University of North Texas
Douglas A. Johnson, University of North Texas
Lawrence J. Schneider, University of North Texas

Studies that have investigated the relationship between stress and performance at work have resulted in inconsistent outcomes. Criticisms leveled at the existing stress studies included using imprecise instruments of measurement, operationalizing conceptually different variables similarly, and identifying most job aspects as both stressors and sources of work satisfaction.

A quantitative review technique, meta-analysis, has been suggested to avoid the criticisms problematic study characteristics may present. Unlike a traditional literature review, meta-analytic techniques examine the relations between experimental attributes and research outcomes. Meta-analytic summarization and integration of key research studies serves as an objective basis by which to postulate conclusions, direct future research, facilitate cost-effective policy decisions and broadly disseminate scientific information.

The purpose of this study was to determine, quantitatively, the present state of knowledge about the relationship between work stress and performance. A negative linear relationship between stress and performance was assumed. This meta-analytic review of 48 empirical studies (71 hypothesis tests) of stress and performance concluded that there was a weak, negative correlation ($\underline{r}$ = -.11) between stress and performance.

In order to identify any sources of outcome difference, an examination of eight coded study characteristics was carried out. Stress, the independent variable in each study, was defined as either a stimulus, response, or interaction (transactional model). Categories of performance, measures of the dependent variable, were coded as quantitative or qualitative and were also classified regarding their source as either a self-report, peer, or supervisor rating. Results indicated that the overall effect-size for stress and performance was not strongly influenced by the moderator variables examined.

In view of these findings, it is suggested that future researchers focus more on the curvilinear relationship between stress and performance. Further, as the majority of hypothesis tests (46 out of 71) in

the meta-analysis used role ambiguity or role conflict (a transactional model) to operationalize stress, it is suggested that subsequent research emphasize broader stress definitions. Finally, empirical studies of the relationship of burnout (which emphasizes emotional exhaustion and extreme levels of stress) and performance resulted in a much stronger negative relationship with performance than this study depicts. Future integration of the literature on the stress and burnout concepts is advocated.

UNNECESSARY WORK STRESS: ON THE LACK OF AWARENESS THAT DRUG TESTING CANNOT DETERMINE PERFORMANCE IMPAIRMENT

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Workplace drug testing is flourishing. Typically, employees and job applicants are required to submit urine specimens, which are examined for traces of controlled substances that could compromise their performance if taken at work. Those who undergo drug testing may experience stress as they face invasion of their privacy, embarrassment, and job loss/rejection. This growing source of workplace stress is unnecessary, however, as there is no definitive empirical evidence to support assertions that drug testing enhances organizational safety and productivity.

Indeed, a major flaw of drug testing is its inability to assess performance impairment. Because a biological test can indicate only whether a person has been exposed to a drug, someone with a positive test result might no longer have been under the influence at the time of the test, whereas someone with a negative result could have been suffering severe drug withdrawal that rendered him or her unfit for work. Morever, by the time test results are interpreted, any behavior that was drug-impaired at test-time would already have taken its toll.

Human resources (HR) managers from 134 randomly-selected Long Island, NY, organizations completed questionnaires. Analysis of responses from these 79 females and 55 males (mean age = 42.8 yrs., s.d. = 10.8) indicated that those with greater awareness of the inability of drug testing to detect performance impairment perceived drug testing as more invasive ($p < .0001$) and less sound as a means to deal with drug abuse ($p < .0001$). There was no difference ($p > .11$) between the level of awareness of respondents from drug-testing organizations ($N = 50$) vs. non-testing organizations ($N = 84$). However, those representatives of drug-testing organizations with greater awareness of the limitations of drug testing were less satisfied with their organization's testing program ($p < .05$).

None of the drug-testing organizations in the sample practiced performance, or skills, testing; and representatives of non-testing organizations generally viewed it more negatively ($M = 2.35$, s.d. = .93) than biological testing ($M = 3.16$, s.d. = .53). Yet performance testing, which measures individuals' reaction time and coordination as they engage in the same psychomotor skills their jobs require, is less costly and intrusive than biological testing and can detect impaired behavior. HR practitioners thus need to learn that skills testing is a more valid managerial tool than biological testing for gauging performance fitness.

The Relationship of Interpersonal and Communication Styles to Symptoms of Strain

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Both within and outside the context of their work organizations, people exhibit particular *styles* or manners of behaving, performing, and acting. Personal style includes the ways an individual approaches his/her work and interacts and communicates with others. The styles exhibited by people within their work organizations are determined, at least in part, by the characteristics of their jobs and roles and the organization as a whole (e.g., occupational and organizational cultures). These styles, in turn, can have an impact on the individual's performance, the quality of their relations with others, and ultimately their psychological and physiological well-being.

It is proposed here that personal styles can constitute a form of stress internal to individuals which can, over time, translate into various symptoms of strain such as depression and anxiety. From a theoretical perspective, this proposition is consistent with models of stress that emphasize the role of personal dispositions in explaining psychopathology (e.g., Dohrenwend and Dohrenwend's (1981) "additive burden" and "chronic burden" hypotheses). At minimum, personal factors can determine the optimism of people's cognitive appraisals of situations, their propensity to take action, and their ability or inability to cope or turn potentially stressful events into less difficult situations (Kobasa, Maddi, and Puccetti, 1982; Lazarus and Folkman, 1984). More generally, in terms of Lazarus' (1984) conceptualization of stress, these factors can lead to relationships between a person and the environment that are appraised as taxing or otherwise negative.

Interpersonal styles are expected to be associated with stress responses such as anxiety and depression to the extent that these styles direcctly lead to physiological effects (e.g., talking being associated with higher heart rates), negative interpersonal relations, and/or the failure to express oneself, influence others, or perform effectively. These effects hypothetically can occur regardless of the objective quality of the individual's work environment and the number of life events recently experienced (Cooke and Rousseau, 1983). This paper focuses on the empirical relationship between personal styles and psychological, cognitive, and physiological symptoms of strain. The research reported herein is based on data collected through the use of two different validated instruments measuring personal styles: the *Life Styles Inventory* (Lafferty, 1973) and the *Communication Style Survey* (Carlson, 1989). Based on self-reports and descriptions-by-others, the former measures behavioral styles along three dimensions (Constructive, Passive/Defensive, and Aggressive/Defensive) and the latter measures communication styles along three different dimensions (Adaptability, Reservedness, and Assertiveness). The self-report forms of both instruments include measures of symptoms of strain such as depression, anxiety, cognitive problems, etc.. The various symptoms measured were expected to be differentially related to the style dimensions tapped by each instrument.

Data collected on 1500 focal individuals support this proposition. For example, the Constructive styles measured by the *Life Styles Inventory* are negatively related to nervousness and digestive problems while the Passive styles are positively related to cognitive symptoms. On the *Communication Styles Survey*, Reservedness (as reported by others) is negatively related to self-reported anxiety and Assertiveness is negatively related to depression. These results are discussed in terms of organizational change and stress reduction programs directed toward developing more positive interpersonal and communication styles on the part of members.

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U.S. EMPLOYEES IN JAPANESE WORKPLACES

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Japanese companies in the United States are finding that expatriates no longer meet their need for office workers. Therefore, these companies are employing more and more "local" workers at all levels, including executive positions. This study seeks to determine compelling issues - especially those involving the physical environment - related to the experiences of American executives who have worked for American firms and now work for a Japanese company.

Because of the different culture and socialization of people in the two nations, Japanese business style is very different from that of most American companies. In the United States, Japanese companies utilize office spaces that frequently are quite different from the physical environments in most American companies. To my knowledge these are the first interviews designed to determine the issues important to American employees regarding the differences in the physical environment of offices.

Interview findings, for example, reveal important issues for Americans concerning privacy and private offices. Americans, who are socialized to value visual, speech, and auditory privacy as well as independence, are experiencing frustration and a need to adapt and cope resulting from the stress created by the lack of "walls" or "wall-like dividers." In some Japanese companies this "wall-less" environment reflects the lack of the notion of privacy as it exists in the American culture and underscores the value of group processes such as consensual decision making and the need to have a broader base of information.

Status is another issue which, for example, is clearly apparent in the physical environment of the American office (e.g. the "corner office") but is reflected by the Japanese in language and behavior and only minimally in the environment. This cultural difference is a problem for some Americans who are frequently disappointed and embarrassed by the lack of a private office they can personalize and "show-off."

Due to the lack of privacy, some Americans say they cannot work "smarter" or more efficiently due, in part, to continual uncontrollable interruptions. They may work after hours or on weekends to accomplish "confidential" tasks and tasks which require a high degree of concentration. When coupled with a feeling of "sameness" with workers of lesser positions because of a disregard for physical status symbols, there is a tendency toward a higher level of stress. Indicating a high level of frustration with these issues, several of these respondents indicated that if and when the economy changes they may be more likely to seek employment that offers, for one thing, a more "workable" environment. The effects of these cultural and design differences on the organization, on the worker, and on the family seem to be important.

THE ROLE OF NEGATIVE SANCTIONS IN WORK-FAMILY CONFLICT

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Work-family conflict can be a major source of stress for employees. The present study is based on the theoretical work of Greenhaus and Beutell (1985) and provides empirical evidence that clarifies the interrelationships between some of the sources of work-family conflict. One of the hypotheses derived from Greenhaus and Beutell's model is that negative sanctions for non-compliance to role demands intensify the experience of work-family conflict. We explored negative sanctions arising from various domains at work, in particular from the supervisor, the organizational culture itself in terms of the climate it fosters regarding family responsibilities, and specific career penalties, such as being denied promotions on the basis of family obligations. We hypothesized that all of these factors would be predictive of increased work-family conflict experienced by employees. Furthermore, we suggest that they do so by increasing the psychological strain experienced by family members at work.

The data come from a Work and Family survey that was administered to over 13,000 employees of a large midwestern utilities firm. Scales of the corporate culture, supervisor support, career penalties, work-family conflict, and work strain were constructed. Multiple regression analyses were used to analyze the data.

The measures of the corporate culture, supervisor support, and career penalties were independent variables in a regression equation with work-family conflict as the dependent variable. The corporate climate was highly predictive of work-family conflict ($t=-10.03$, $p<.0001$). Supervisor support was also predictive of work-family conflict, but only for men ($t=3.16$, $p<.002$). Career penalties were not directly related to work-family conflict ($t=-1.2$, $p>.20$). Somewhat surprisingly, then, the extent to which employees believed their family obligations negatively impacts their career development did not increase work-family conflict.

When a measure of work strain was added to the equation and a stepwise multiple regression analysis was conducted, work strain emerged as the best predictor ($t=-6.7$, $p<.0001$), as we predicted. Following work strain, gender was a significant predictor ($t=7.9$, $p<.0001$) with women experiencing more conflict than men. Finally, the interaction between gender and the corporate culture was significant ($t=12.7$, $p<.0001$). The family-friendliness of the organization remained as a significant predictor of work-family conflict for women, even when controlling for work stress. Supervisor

support did not predict work-fomily conflict among men when strain was controlled.

In a separate analysis all three factors - nonsupportive supervisors ($t=34.8$, $p<.0001$), the corporate climate ($t=-28.1$, $p<.0001$), and career penalties ($t=5.22$, $p<.0001$) - predicted work strain. This pattern of results indicates that various negative sanctions from work adds to the psychological strain employees with families experience at their jobs which then increases the conflict they experience between the work and family domains of their lives.

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OCCUPATIONAL STRESS FACTORS AMONG EUROPEAN WORKERS

Jaume Costa, Pascal Paoli, Henrik Litske. European Foundation for the Improvement of Living and Working Conditions.

Organisational constraints concern a higher proportion of European workers than physical ones. For instance, the lack of influence over one's work is a permanent feature for 35 to 40% of workers and repetitive tasks of short duration involve nearly a quarter of the workforce, on a permanent basis, and 60% on a part-time basis. In relation to time pressure, 20% of workers are permanently affected by this factor.

These are results from the first European survey on the work environment conducted by the European Foundation in 1991. The survey includes the 12 countries of the EC and is based on direct interviews with 12,500 workers, both employees and self-employed. The sample is representative of the workforce distribution according to occupation, age, gender, sectors and company size.

Multi-factorial analysis allows identifycation of a group of 8.5% of the workforce that are affected by most physical and organisational risks. This group includes an over-representation of farmers, skilled employed manual workers, older and male workers. Another group of around 11% of the workforce is characterized by having mainly organisational constraints. Within this group, 82% of the workers have a low degree of autonomy, 51% permanently carry out short repetitive tasks and 40% say they are under constant time pressure.

Women have less autonomy and more frequently than men are involved in short, repetitive tasks. That is, 27% of females work permanently doing short repetitive tasks. On the other hand, long working hours are generally a characteristic of male employment. In addition, the proportion of males working at night and under time pressure is higher as well.

Larger companies, mainly over 50 employees, are putting organisational constraints ahead of physical ones. Working hours are shorter but autonomy is less and time pressure and short repetitive tasks are greater.

Countries have been divided in three groups. The first cluster includes Belgium, Denmark, former West Germany and Luxembourg. In these countries physical constraints are rather limited and workers tend to point to organisational issues. Working conditions are in fact pulled into two different directions: a high degree of autonomy which is influenced by the weight of the service sector and taylorism and time pressure which are industry-linked.

The second cluster includes Greece, Spain and Portugal. In these countries the working conditions are characterized by longer working hours, physical constraints and time pressure.

The third cluster includes France, Italy and Ireland. These countries are, for different reasons, in an in-between situation among the two above groups.

The results of the European Foundation survey have been confirmed by a European Commission survey on health and safety at work. According to this survey stress ranks as the primary one complaint among European workers and affects 48% of the workforce that considers their health very much or to a certain degree affected by their professional activity.

These results may be useful in placing occupational stress higher on the EC political agenda. The EC has been producing legislation to prevent and control physical hazards at the workplace but psychosocial factors haven't been addressed. However, increasing awareness of this issue among policymakers, trade unions and employers and the foreseen entry in the EC of the Nordic countries - most of them with national policies to tackle psychosocial factors at work - may increase the need to develop European stress prevention policies at the workplace.

CHILD CARE PROVIDERS: CRITICAL COMPONENT OF THE WORK-FAMILY INTERFACE

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Nearly two-thirds of the women in the United States with preschool-aged children are in the workforce. An outcome of this trend is that there are approximately eight million preschool-aged children in care either full or part-time. To serve the child care needs of these families, a work force of caregivers has emerged -- families with small children are becoming increasingly involved with, and dependent upon, caregivers who frequently are not relatives or friends. The implications of this forced dependence on persons outside of the family sphere have not been fully explored in the literature.

We describe a "childcare network of mutual influences" that is composed of the children, the children's parents, the caregivers, and the caregivers' families. We discuss how the functioning of any one component of the network is dependent upon, to varying degrees, the functioning and well-being of the other members. We then present data on the occupational stressors of one component of the network -- child care providers.

Indepth interviews were conducted with 100 urban and suburban child care providers. Items on the interviews consisted of two major categories: those that described the working conditions of the child care providers and those that focused on blocks of variables suggested by the NIOSH Model of Job Stress and Health (e.g., job demands, job control, job satisfaction, mood, social support, and self-esteem). After presenting general findings on the categories of stressors experienced by child care providers, we will focus on their perceptions of the parents (particularly the mothers) of the children in their care. We close with a discussion of some of the mechanisms, from the providers' perspectives, by which the child care network breaks down and make suggestions for how this breakdown might be prevented.

LOCUS OF CONTROL OF UNEMPLOYED PEOPLE AND ITS RELATIONSHIP TO PSYCHOLOGICAL AND PHYSICAL WELL-BEING

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This study was designed to examine the relationship between a person's locus of control and their adjustment to unemployment. Based on previous research on locus of control, it was expected that psychological and physical well-being would be greatest among those with an internal orientation.

A sample of 190 unemployed individuals was obtained from the metropolitan Detroit area. Data collection took place at Michigan Employment Security Commission (MESC) offices in Sterling Heights and Madison Heights. Respondents were primarily male (68%), had an average age of 35 years old, and represented a variety of job types. Respondents completed measures of locus of control (general and work), anxiety, depression, self-esteem, life satisfaction and physical symptoms.

Results indicated that unemployed people with an internal locus of control reported being psychologically healthier than externals in terms of anxiety, depression, self-esteem, life satisfaction, and physical symptoms not requiring medical attention. This is consistent with previous research on locus of control, which has shown an internal locus of control to be associated with better psychological adjustment. It also suggests that unemployed people should be encouraged to feel that they have control over events in their lives.

Somewhat surprisingly, internals reported more physical symptoms requiring medical attention than in externals. Given that unemployment is generally beyond a person's control, this implies that it could be physically detrimental to have an internal orientation in situations where people have little control.

INDUSTRIAL ACCIDENT: A DISCUSSION ON SUBSEQUENT CHRONIC INDUSTRIAL PSYCHIC TRAUMA (C.I.P.T.)

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On October 23, 1989, a reactor located on the site of the Phillips 66 Petroleum's Houston Chemical Complex in Pasadena, Texas, exploded, killing 23 employees and injuring hundreds more. In addition to the physical injuries, more than 200 employees experienced the classic symptoms of Post Traumatic Stress Disorder (PTSD) as defined by the DSM-III-R criteria. A majority of the employees returned to work within the first two weeks after the disaster and subsequently were subjected to potentially dangerous safety incidents such as bomb threats, grass fires, vapor leaks, chemical leaks, and the expected stimulus-response reaction to the sound of the evacuation alarm. On June 8, 1990, a major fire occurred within the same complex, injuring eight employees. Site workers were again forced to evacuate, resulting in a majority of those originally treated and restored to pre-morbid functioning (with the help of trauma treatment intervention), to experience an exacerbation of the original PTSD symptoms. At this time, employees reported symptoms that appeared more severe than at the time of the original October 23, 1989, disaster, causing the employees to return to their original trauma counselors.

After the June eighth fire, safety mishaps became a common occurrence, employee moral diminished, and PTSD symptoms exacerbated with each recurrence. Employees were asked to complete the SYMPTOM INVENTORY CHECKLIST (SIC) (Scrignar, 1988) at the time of each occurrence, for a period of one and one half years for the purpose of determining the long-term effects of retraumatization. Utilizing the SIC and 100 case studies of the industrial workers involved findings indicate that the long-term psychological effects of continuous industrial traumatization after a precipitating industrial accident appears to be a heretofore undiagnosed syndrome identified as CHRONIC INDUSTRIAL PSYCHIC TRAUMA (CIPT). This paper focuses on defining CIPT.

Six crucial areas for intervention have been identified by the author (see attached paradigm), however, it appears that the critical areas in terms of development of long-term psychopathology will be the area of continuous retraumatization. The findings are congruent with the original idea that if industrial employees are continuously subjected to retraumatization, long-term psychological debilitation may occur. Several variables have been identified by further study.

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Proposal for Poster Presentation

Second American Psychological Association and National Institute for Occupational Safety and Health Conference on Occupational Stress

The Effects of Job Stress on Health Behaviors

The current study tested Karasek's model of 'job strain' and its association with health related behavior. This model hypothesizes that the interaction of job demands and job control combine into a single effect of job strain. Specifically, high job strain is characterized by high demands and low worker control. The participants in this study were 287 healthy men and women aged 30-60 recruited from nine New York City worksites as part of a large ongoing study at Cornell University Medical Center. Job demands and job control were assessed with a self-report questionnaire, the job content survey (JCS). Results of the JCS were dichotomized into high and low strain and into a 4-level job strain variable categorized by high strain, active, low-strain, and passive jobs. Self-reported health behaviors were assessed with the health habits inventory. Health behaviors assessed on the inventory included smoking, alcohol consumption, caffeine consumption, and physical activity.

The association between job strain and healthy behaviors was assessed by both parametric and non-parametric analyses controlling for important demographic and individual psychological variables. In general, the results found support for the hypothesis that increased job strain was related to increased reporting of at-risk health behaviors. First, there was marginal support for the relation between job strain and reported smoking. Persons in high strain jobs tended to report increased smoking levels. In addition, frequency of self-reported smoking per day was positively associated with increased social support at work. Second, job strain was related to physical activity outside of the work environment. Persons in high strain and low activity jobs reported increased physical activity outside the work environment. Whereas, persons in active jobs reported decrease physical activity outside the work environment. No significant findings were noted between the level of alcohol use reported and job strain. Finally, multiple regression analyses showed that individual work site characteristics were related to unique patterns of reported alcohol consumption and smoking behavior.

Although we found some support for the 'job strain' hypothesis and it's association with reported health behaviors; our findings provide a glimpse that other subtle work environment or 'cultural' characteristics may also impact on individual stress levels and health related outcomes as much or in conjunction with job strain.

CERTIFICATION IN STRESS MANAGEMENT EDUCATION

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What is stress management? Who is qualified to teach it? Is there a consensus definition of the field? How can the public interest be protected?

Interest in stress management education has mushroomed in recent years as relaxation exercises were introduced into the public schools, training courses developed for business and industry and a variety of products and information flooded the media. In response the Biofeedback Certification Institute of America (BCIA) developed Certification in Stress Management Education (CSME). BCIA is a not-for-profit corporation that has been offering a certification program in biofeedback for the past 10 years.

Certification in Stress Management Education is intended for individuals providing educational rather than clinical services. Individuals applying for certification are required to pass a certification examination and to meet education and experience requirements.

A blueprint of knowledge has been developed for the field of stress management with the aid of 450 individuals from education, industry and clinical practice. The data gathered has been subjected to a validation study. The results of the validation stu-

dy have been used to develop a certification examination.

The domains of the knowledge blueprint include: a conceptual understanding of stress; a comprehensive listing of stressors; responses to stress (cognitive, physiological and behavioral); how personality relates to stress; assessment instruments and methods; stress physiology, psychophysiological aspects of excessive stress; psychological/cognitive intervention; other health behaviors related to stress; relaxation methods; effects of medication and other substances; and biofeedback and other psychophysiological approaches. In addition, attention is given to professional ethics, educational methods, understanding group dynamics and research methodology.

A grandfathering period has been completed and over 200 individuals meeting the educational and experience requirements have taken the certification examination to this point and their responses have been used to develop item statistics.

This presentation will outline the development of the certification process, the knowledge blueprint, and the current criteria for certification. A current register of certificants will be available.

THE DIAGNOSIS AND MANAGEMENT OF OCCUPATIONAL STRESS: INNOVATIONS THROUGH COMPUTER ASSISTED TECHNOLOGY

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What is currently badly sought in the field of occupational stress, is a simple and standard diagnostic tool which could be readily utilized by many different health professionals in organizations. Such technology, however, has not been fully developed until recently.

The objective of this presentation is two-fold: (a) to present a model of occupational stress which was developed, validated and tested by a multidisciplinary team of researchers at the University of Montreal; both psychological and medical aspects of work stress parameters are included in this model (b) to describe and demonstrate the usefulness of a recently developed computer-assisted program entitled SDI (Stress Diagnosis Inventory) which facilitates the diagnosis of occupational stress. The latter can aid the occupational health specialist in diagnosing stress and burnout at the individual and group levels. SDI, was developed for a PC use. Albeit its many very powerful features, SDI is very simple to use. It is versatile, multi-lingual, user friendly and could be easily adapted and modified to include other diagnostic instruments. The software and its multiple features and applications will be demonstrated.

SUBJECTIVE WORK STRESS AND FAMILY VIOLENCE

Johanne Dompierre and Francine Lavoie

Work stress may be detrimental to oneself but also to one's surroundings. If the stress response is violent it can be directed towards oneself, family and organization. This study examines the relationship between work stress and family violence.

Barling and Rosenbaum (1986) found that male abusers report more work stress than other comparative groups of spouses, satisfied or not about their marriage. Finn (1985) found that marital relationship was affected by work for 47% abusive husbands and 57% abused wifes. This link between work stress and family violence was also confirmed for abusive women (Brinkenhoff & Lupri, 1988; Mac Ewen & Barling, 1988). Generally only history of violence in family of origin was considered in these studies, thus the role of work variables was unknown. Stress was also studied in regard to child abuse but most studies aggregated work and life stress.

The multidimensional model of this research contributes to identify the role of work variables in taking also into account health, family and economic stressors. This model is tested for both marital violence and child abuse. Perpetrated violence is studied here and also potential violence which is probably less subject to social desirability. Through 4 organizations, 367 workers with children and 529 workers with spouse have responded to a self-administered questionnaire. The characteristics of the group with children are: 28% female & 72% male; 14% executives & managers, 35% professionals & 51% other categories. The characteristics of the group with spouse: 35% female & 65% male; 12% executives & managers, 31% professionals & 57% other categories. Measures are work variables (job demands, constraints & interpersonal stressors), family variables (domestic demands, stressful life events), economic variables (financial difficulties, income), health variables (emotional distress, medicine) and socio-demographic variables.

Discriminant analyses establish that the model distinguishes those who are violent (or potentially) from those who are not for potential violence/children ($F=5.20$, dl num.=16, dl den.=283, $p=.0001$), perpetrated violence/children ($F=2.88$, dl num.=16, dl den.=283, $p=.0002$), potential violence/spouse ($F=7.40$, dl num.=15, dl den.=418, $p=.0001$) and perpetrated violence/spouse ($F=2.02$, dl num.=15, dl den.=418, $p=.0132$). The most important variable is emotional distress and work variables vary according type of violence. The latter are more important for potential violence/children since all work variables are significant. For perpetrated violence/children, only job demands contribute significantly. For potential violence/spouse, constraints and interpersonal stressors are significant. For perpetrated violence/spouse, work variables are not significant. Family and economic variables are significant for potential violence while only family variables are important for perpetrated violence. Finally there are also gender differences. In summary, except for perpetrated violence/spouse work, variables allow to distinguish violent from non-violent. Both child and spouse abusers are emotionally distressed but child abusers also have higher job demands while spouse abusers have higher family demands. Each type of violence is associated to a specific pattern of variables. Volunteered respondents and subjective measures are the limits of this study.

EFFECTS OF LIFESTYLE AND STRESS ON THE EMPLOYEE AND ORGANIZATION

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The number of health promotion programs delivered in the American workplace has risen dramatically during the past decade. Occupational health promotion (OHP) interventions that successfully promote and maintain healthy lifestyles are expected to improve employee health and work performance. However, for the most part, the presumed benefits of OHP and healthy employee lifestyles far surpass the empirical evidence. This is due to the absence of rigorous evaluation data rather than the presence of nonsupporting data.

Not only is there a paucity of informative empirical research on the outcomes of OHP, well-developed program theories specifying the processes involved in delivering a health promotion program in the workplace are scant. The current research was designed to identify concepts and relationships central to the OHP intervention process. Specifically, the direct effects of an employee's physical lifestyle (e.g., exercise pattern, nutrition practices, general health habits), psychosocial lifestyle (e.g., social relations, intellectual activity, occupational conditions, spiritual involvement), and stress due to major life changes on employee health and performance were assessed. Further, the extent to which a healthy lifestyle buffers the stress/illness relationship was examined.

A total of 345 employees from a variety of organizations in southern California participated in the study. The participants completed questionnaires about their lifestyle, major life changes, health, and work performance. Approximately one week later, supervisors evaluated the job performance and attendance records of the participating employees whom they directly supervised. Additionally, two organizations provided company records that indicating how much money they had spent on participating employees' (N=98) health care during the past six months.

Hierarchical multiple regression analyses that controlled for employee age, sex, ethnicity, and occupational status were conducted. The analyses revealed (1) that physical lifestyle was a strong predictor of employee vitality, (2) psychosocial lifestyle uniquely predicted positive well-being, lack of self-control, depression, and anxiety, (3) major life changes uniquely predicted anxiety, somatic complaints, physician visits, absenteeism, and job performance, and (4) there was a significant physical lifestyle X major life changes interaction for depression and health care costs. Contrary to prediction, the lifestyle factors did not directly predict supervisor ratings of job performance. Although these findings confirm the health benefits of an employee's lifestyle, they also suggest that employees that lead a healthy lifestyles are not necessarily better workers.

Integrating the Career and Personal Identity of Employees: A Strategy for Reducing Occupational Stress and Strain

Fred J. Dorn Ph.D.

Historically, the counseling and psychotherapeutic strategies that have been developed in the workplace suggest that the career and personal concerns of employees are separate and distinct entities. There is sufficient clinical and empirical evidence in the psychological literature to warrant that this practice exists (Brown, 1985; Brown & Brooks, 1985) and support for this position can be derived from an examination of how corporate environments organize and deliver various intervention strategies to employees. The intent of this program is to offer participants both clinical and theoretical frameworks that conceptualize occupational stress and strain as a disparity between the individual's career identity and personal identity (Dorn, 1992).

For too long, segments of our culture have encouraged individuals to engage in the practice of restricted expectations, the acceptance of unsatisfying job conditions for outcomes such as security and salary (Savickas, 1991). As a result, poor person-environment fit results and over a period of time dissatisfaction manifests itself in the form of occupational stress and strain. Eventually, this stress and strain develops further into areas such as substance abuse and family disharmony. Unfortunately, when these issues begin to display themselves in the workplace through the employee's behavior the erroneous assumption is made that the source of difficulty is something other than poor person-environment fit and occupational stress and strain.

In an effort towards enhancing the program participants' awareness of the conceptualization of integrating career and personal identity, some of the more recent opinions on the interdependent relationship that exists between career identity and personal identity will be highlighted. As well, an emphasis will be placed upon the assessment of occupational stress and strain as a reflection of poor person-environment fit. This will be accomplished with an overview of the Occupational Stress Inventory (Osipow & Spokane, 1986), a recently developed standard measure.

COMPUTER BASED ASSESSMENT OF DECISION MAKING, SAFETY PRACTICES, LEADERSHIP, AND COPING WITH TRAUMATIC INDUSTRIAL STRESS

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Computer based assessment (CBA) is an area of particular interest to applied and cognitive psychology researchers and administrators of environmental safety programs. This poster session outlines the utilization of CBA as a diagnostic tool in evaluating emergency response skills, emergency leadership, and coping with traumatic industrial stress.

121 experienced emergency response team members participated in a computer based assessment of a flammable and toxic chemical release. The simulation was developed with the Foxbase Professional program. Foxbase is a product developed for data management - the cataloging, tracking, and processing of information. The CBA examined emergency response skills for (1) Initial response/safety skills, (2) Intervention skills, (3) Assessment skills, (4) situational leadership methods, and (5) Ways of Coping with traumatic industrial accidents and death.

The CBA criteria is based upon established content areas of minimum effective emergency response competence, as reflected in the proposed industry standards (as promulgated by the Chemical Manufacturers Association). Individual trainee performance was compared to the CMA standards with an assignment of their level of proficiency/readiness based upon a three level hierarchy (A, B, C).

In addition to the CBA data, emergency response team members participated in a series of emergency

response simulations. Each participant was evaluated on a Behaviorally Anchored Rating Scale (BARS). BARS content areas include: (1) Initial assessment skills, (2) Data and environmental risk interpretation, (3) Initial response actions, (4) use of standard safe operating procedures, (5) Teamwork effectiveness, and (6) Leadership effectiveness. Technical knowledge and problem solving abilities were also assessed on a pre-program emergency response knowledge test, a paper and pencil table top industrial emergency case analysis, and through the administration of the Wonderlic cognitive tests.

Overall CBA effectiveness was related to the core content areas of emergency response. Statistical methods used include Pearson correlation and multiple regression for the individual content areas and analysis of variance for the examination of BARS scores with the available archival data on prior emergency response training.

Relationships between the CBA performance, BARS, and personality measures utilized Pearson correlational data analysis, multiple regression, (25 behavioral and skill-based measures will be included in the regression analysis), and analysis of variance (ANOVA). Personality measures in the correlational analysis included: (1) Locus of control in emergency situations scale, (2) Organizational communication apprehension scale, (3) The Type A scale of the Framingham heart disease study, and (4) Fiedler's LPC scale of leadership.

Results examined how verbal skills, Type A behavior, and general knowledge of chemical emergency response influences CBA as contrasted to performance as measured on the paper and pencil emergency case study and data from the BARS data.

HEALTH PROMOTING BEHAVIORS AND CORPORATE WELLNESS PROGRAM INVOLVEMENT

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Worksite health promotion programs have been growing in both number and scope during the past fifteen years. The organizational goals for corporate health promotion programs may include the reduction in health care costs, enhanced employee productivity, or improvement in employee health (Fielding, 1984; Behrens and Weiss, 1988).

A question of interest to behavioral scientists is the impact of these programs upon the quality of life of the individual employee. In the current study, 174 employees of a Southern California financial serv ices company who had participated in corporate-sponsored wellness activities were surveyed on measures of health promoting behaviors used, physical complaints, and psychological well-being. Thirty of the participants were men; 144 were women.

The seven measures employed included the Wellness Activity Checklist, the Alameda County Study Criteria of Longevity, the Framingham Heart Disease Study Questionnaire, the Bradburn Affect Balance Scale, the Health Locus of Control Scale, the Ways of Coping Questionnaire, and Wahler's Physical Symptoms Inventory.

Greater program participation (i.e. the top 25 percent of attendance in the programs) was significantly related to health promoting behaviors outside of work, lower levels of physical complaint, positively assessing the effectiveness of the program, identification with the company, self-estimates of lower cholesterol levels, and the expression of anger. Program participants reported better dietary behaviors than were found in the Alameda County Study baseline data.

Results of this study suggest that corporate wellness programming is utilized by both the relatively healthy and those who are "at risk," as measured on the reported health promoting practices.

The outward expression of anger (versus the internalization of angry feelings) was found to predict higher levels of program participation and health promoting behaviors off-the-job. This finding suggests that a more aggressive/assertive interpersonal style may be a valid predictor of health enhancing behavior.

In addition, factors of company identification, positive feelings about the effectiveness of wellness programming, and planful problem solving positively predicted program involvement and/or health promoting activities. Attributions about health responsibility (health locus of control) were unrelated to the targeted health practices.

Race/ethnic differences were found for the reported health practices of alcohol consumption and self-estimates of body weight. Equally, psychological coping styles varied by demographic group membership. Non-white participants also more positively evaluated the effectiveness of the wellness program.

THE ROLE OF PSYCHOLOGICAL STRESS AND PRIOR EXPERIENCE IN THE USE OF PERSONAL PROTECTIVE EQUIPMENT

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Personal Protective Equipment (PPE) is used by specialist technicians and emergency response (ER) team members in the mitigation of industrial accidents. PPE encompasses the use of totally encapsulating suits, an array of protective clothing, head protection, self contained breathing apparatus (SCBA) and supplied air respirators.

Studies of work performance when using respirators have demonstrated a decrement in psychomotor performance and oxygen consumption (Zimmerman, Eberts, Salvendy, & McCabe, 1990), impaired visual acuity and vigilance (Kobrick, Johnson, & McMenemy, 1990), increased cardiovascular stress (White, Hodous, & Vercruyssen, 1989), and increased risk perception (McCaig & Gooderson, 1986). Factors which may influence the use of PPE include self-monitoring of physiological and psychological reactivity to the emergency situation (Sullaway, Ehrlich, & Dunbar, 1992).

141 employees, all of whom were active members of their regional ER team, participated in an assessment center program for ER team classification. Participants reported a mean of 4.1 years of response experience (s.d. 5.23 years).

Each responder was randomly assigned to a team of 6 to 7 members. The six ER simulations included: (1) a multiple drum leak, (2) a dye spill near a waterway, (3) a decontamination exercise, (4) a vapor leak incident, (5) a rail car derailment, and (6) an instrument use/assessment exercise. The simulations were approximately two hours in duration each and were conducted in the field, realistically recreating a hazardous chemical emergency situation. Response team members were required to wear the appropriate PPE and SCBA during the simulations, which involved moderate to significant physical exertion.

Measures employed included the Behaviorally Anchored Rating Scale (BARS), the Subjective State Change Measure (SSCM), Emergency Response Knowledge and Experience, the Framingham Heart Disease Scales (i.e. Type A behavior, anxiety, anger expression, and being "not easy going"), archival data on emergency response training, and cohort evaluations of preferred team leader/member.

Multiple regression analysis of the BARS PPE ratings were predicted by self-ratings of PPE experience and the outward expression of anger (negative beta weight). Extreme group differences for the BARS PPE ratings was significant for self-estimates of knowledge about and experience using PPE.

SSCM scores were significantly correlated to the Framingham measure of general anxiety ($r=.17$, $p=.02$), the negative appraisal of preferred co-member status ($r=-.20$, $p=.009$), as well as lower levels of self estimates of leadership experience ($r=-.16$, $p=.02$). The R^2 equation for PPE discomfort (SSCM scores) was predicted by self-ratings of PPE experience and preferred team member ratings (both negatively weighted), and anxiety symptoms.

THE MEANING OF JOB CONTROL

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As currently conceptualized, job control may not reflect the meaning of control as experienced by workers themselves. The concept has been shaped by the methods used to generate it (e.g. secondary analyses of epidemiological survey data), by disciplinary orientations (e.g. social and industrial psychology), by the psychological stress paradigm, and by prevailing ideological values of individual self-determination. It is proposed that the concept of job control be examined from a perspective that 1) is grounded in the self-defined experience of workers (the meaning of control from the point of view of individuals), 2) emphasizes the sociological patterning of these meanings (how meanings cluster by gender, age, occupational and organizational position), 3) addresses how these patterns of meanings are socially constructed (how they emerge and are sustained as shared, culturally communicated perceptions), and 4) incorporates non-psychological types of control (the objective capacity to influence the work environment).

THE EFFECTS OF PREJUDICE AND ETHNOVIOLENCE ON WORKERS' HEALTH

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This paper reports on two studies examining the nature and extent of ethnoviolence, conflict, and prejudice in the workplace, and their effects on the psychological well-being and role performance of workers and supervisors. The first study examines the responses to workplace victimization from 1,372 full-time and part-time workers surveyed by telephone in a national sample of 1,000 White and 1,000 Black adults.

The second study is an in-depth look at a large corporation in the mid-Atlantic region. We have completed extensive personal interviews with nearly 400 workers and 60 supervisors. An additional sample of 300 workers has been administered a questionnaire version of the original interview schedule.

These studies have yielded quantitative and qualitative data enabling us to: (1) determine the prevalence of the intergroup conflict in the workplace; (2) assess the experiences and perceptions of workers who are and are not potential targets of group violence; (3) catalogue channels and effectiveness of organizational responses; (4) ascertain the differential impact of workplace violence on victims, witnesses, co-victims, and others; (5) and identify organizational structures that trigger ethnoviolent behavior.

Both studies employ open-ended and structured questions dealing with workers' responses to being victimized for reasons of prejudice. Both studies employ a post-traumatic stress symptom checklist to capture worker reports of psychological symptomatology which they attribute to the ethnoviolent incident.

This paper will demonstrate the ways in which ethnoviolent victimization (physical or psychological aggression against others which is motivated by group prejudice) is a key stressor at the workplace affecting both an individual's job performance and mental health.

HUMANIZATION: THE CURE FOR GENDER STRESS

Nathaniel J. Ehrlich, Ph.D.

Research data are presented which demonstrate how the SCOPE Program (System for Creating Organizational and Personal Effectiveness) provides a lowering of stress levels both in individual functioning and by encouraging fuller expression of beneficial cognitive styles, including those generally thought to be "feminine" in nature, lowering tensions between men and women in the workplace.

WORKERS' COMPENSATION STRESS CLAIMS: EMPLOYEE ISSUES

by

DONALD ELISBURG, ESQ.

ABSTRACT

The problems of workers' compensation stress claims have largely been discussed with regard to the costs to employers of these new claims and the increasing tension on the system in attempting to handle stress as a compensable illness. The insurance industry and employer organizations are claiming that stress claims are severely undercutting the existing workers' compensation system and prohibitively raising costs.

That the system does not handle stress claims well is also well documented. That the system is not helping workers is not as well understood. Workers with these potential claims also have serious problems in dealing with the system which is generally ill-prepared to cope with newly emerging workplace illnesses such as those determined to be stress related.

Present interpretations of law generally work against the worker attempting to establish a work related stress illness, particularly in those situations where the claim is that mental stress led to the mental illness, both with respect to identifying the condition and establishing that it is work-related.

In order to establish a compensable claim, workers must follow a very strict claims development process if a claim is to be successful. The burden of proof is upon the worker to define the stress related condition and to establish whether the illness is work-related.

The complications of establishing a stress related claim suggest that workers who are suffering from such stress illnesses must consider alternatives to workers' compensation including EAPs, Health Plans and other disability systems.

Rehabilitation programs are very problematical for the worker because of the potential for a worker to be so stigmatized by a stress illness as to preclude effective rehabilitation and return to work.

Finally, it is important to analyze the potential impact on stress claims in the workers' compensation system in the context of the Americans With Disabilities Act. That statute may place requirements upon workers attempting to file a claim, or alternatively, that statute may provide assistance to workers who do develop a stress related illness in pursuing a workers' compensation claim.

THE JOB DEMAND-JOB CONTROL STRESS MODEL REVISITED: A MACRO APPROACH

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It is generally agreed that Karasek's (1979) Demand-Control model significantly advanced stress research by expanding the focus of stress research to structural work characteristics, as well as specifying contingencies regarding probabilities of experienced work stress. However, there is still much conceptual confusion regarding the specific mechanisms involved in the job demand-job control-stress relationship. One of the questions raised by Karasek's model has been its use of micro-level, task-based job characteristics to operationalize the job demands and job control constructs.

The current study addresses the above criticism of the Karasek model. The study integrates knowledge from the field of organizational theory with current stress research in an effort to develop a generic, macro-level approach to studying stress. The design of the study allows researchers to address the complex interaction between organizational and individual issues; as such, it is directly relevant to further research into the relationship between stress and job design.

The sample for the study consisted of health care workers from two Northeastern hospitals. Variables included work unit technology as defined by Perrow (1967) and organizational control variables such as job autonomy, participation in decision making, closeness of supervision and rule usage. The health care workers represented several dimensions of work unit technology and organizational control systems. Data was gathered via self-report questionnaires and supervisor ratings of work unit technology and control systems.

The results of the study support the use of macro-level variables to measure stress-related work characteristics. Both self-reported job demands and job control, operationalized as described above, supported hypotheses linking them with measures of stress. Additional hypotheses regarding the relationship between measures of stress and supervisor ratings of job demands and control were not supported by the study; the findings would suggest, therefore, that supervisor perceptions of work characteristics may not be valid indicators of potential stress-related situations.

WHAT HAPPENED TO FLEXTIME? AN EXAMINATION OF CONTROL ISSUES IN FLEXTIME INTERVENTIONS

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This study addresses the question of managerial acceptance of flextime programs. Introduced to American business and industry over twenty years ago, flextime enjoyed an initial rapid and widespread acceptance. However, despite reports of increased employee satisfaction, decreased levels of employee stress and, in some instances, increased productivity, the growth of flextime in the United States has leveled off to only 12% of full-time wage and salary workers in the United States.

In an effort to understand the lack of continued growth of flextime programs, this study reviews previous flextime research through the use of meta-analysis. The meta-analysis looks at the relationship between flextime and both individual and organizational variables, including employee satisfaction, organizational productivity and managerial control. The meta-analysis cumulates the research results of 24 flextime studies.

The results of the meta-analysis support many positive relationships among organizational and individual variables, particularly the relationship between flextime and increased job satisfaction and positive work attitudes. The results of the study also support hypotheses which link flextime to reduced inter-role conflict and stress, as well as both behavioral and attitudinal measures of improved individual performance.

Interestingly, an examination of results regarding control issues may shed the most light on flextime's current status. The meta-analysis looked at two issues related to managerial control: managerial perceptions of employee satisfaction and managerial perceptions regarding a need to control employee behaviors. The results of the analysis would indicate that, although managers perceive that their employees are more satisfied under a flextime schedule, they also perceive a need for increased control measures under flextime.

HUMAN-COMPUTER INTERACTIONS: STRESS CONSEQUENCES

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Only recently have researchers begun to evaluate parameters of typical human-computer interactions as they may differentially affect the physiological status of computer systems operators. Since exaggerated blood pressure responses (*i.e.*, cardiovascular hyperresponsivity) to brief and repeated behavioral challenges have been implicated as a potential component in the complex etiology of coronary heart disease and essential hypertension, it is important to determine the presence and magnitude of such "stress" responses occasioned by typical human-computer interactions.

The present experiment investigated the cardiovascular and electromyograph (EMG) effects of low and high density computer-based work performed by experienced male and female operators while they solved queries interactively in a hospital information system under time-pressured motivational conditions. The Videotaped Structured Interview and the State-Trait Anger Expression Inventory were administered to subjects to determine the predictability, if any, of personality factors to cardiovascular responsivity observed during a resting baseline and during task performance.

Sixteen males and 16 females, who were advanced students in information systems, solved 80 database queries presented on a video display terminal (VDT). A solution required the correct selection of 3 successive hypertext indices hierarchically structured from the query to the data answer. Under a low density work condition, each selection of a hypertext index was followed by a 10-sec delay before another database level, consisting of both indices and data, was presented. Under a high density work condition, each selection of a hypertext index was followed by a 1-sec delay before another database level, consisting of both indices and data, was presented. To avoid a reduction in earnings, the solution criterion was 50 sec for the low density condition and 20 sec for the high density condition. Forty successive queries were presented under each condition, and the order of conditions was counterbalanced across subjects.

Systolic and diastolic blood pressure, mean arterial blood pressure, heart rate, and masseter EMG responses showed pronounced elevations during task performance, in comparison to a resting baseline. Systolic blood pressure was higher during the high density condition in comparison to the low density condition, but masseter EMG

activity was reliably higher in the high density condition only for females. Systolic blood pressure differences were reliably higher in the high density condition over several successive performance sessions presented to two individual subjects. The Structured Interview and the Anger-In and Anger-Out components of the State-Trait Anger Expression Inventory were found to relate to systolic blood pressure.

The present laboratory model and results indicate that cardiovascular and EMG effects of VDT-based work, programmed under time-pressured and motivated conditions emulating the workplace, are robust, enduring, and dynamically sensitive to fluctuating performance demands. Personality factors may interact with performance to influence the magnitude of cardiovascular responses to work.

PARADIGMS LOST: OCCUPATIONAL STRESS AND BELIEF SYSTEMS IN THE EMERGING WORK PLACE

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Stress in the workplace continues to increase at an alarming rate. The relationship between stress-related phenomena and emerging paradigms of human organization is the subject of this paper. The paper begins with a review of relevant research on the emerging organization. Critical trends include (1) an increasingly complex technical environment and (2) an increasingly complex social-political environment. These, in turn, create two distinct sets of work-related demands, referred to here as technico-analytic and socio-emotional demands repectively. The present study relates to the bodily manifestation of these two demands in the individual.

This issue was examined in a multi-method investigation of a large information systems department in the public sector. The study involved progressively focused methods, ranging from participant observation in stage one to the use of a survey instrument in stage three. Seventy-eight questionaires were returned, for a response rate of 97.5 percent.

Key findings were as follows: (1) respondents as a group displayed a peculiar constellation of stress symptoms involving the upper back, neck, head, face, and eyes - incidence of temporo-mandibular joint disorder (TMJ), in particular, was pervasive in this department, (2) contrary to expectations, upper body and facial tensions in general, as well as eye strain in particular, were both negatively correlated with intensity of computer use, (3) similar subjective stress was manifested in a significantly different set of physical symptoms among different age groups, even after controlling for task environment - older respondents were more likely to report lower body symptoms, whereas younger respondents tended to be more suceptible to upper body strain.

Implications and available interventions at the individual, group, organizational, and societal levels are discussed. It is emphasized that the awareness and interpretation of stress signals may represent a critical part of the learning process and of the evolution towards new systems of assumptions, beliefs and values.

STRESS AND BURNOUT AMONG STAFF MEMBERS AT SHELTERS FOR BATTERED WOMEN

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As many shelters for battered women enter their third decade of operation, administrators and shelter workers face new challenges, including staff burnout. Burnout in shelters has been reported anecdotally, but relationships among working conditions and burnout have not been empirically investigated.

The relationships among working conditions, ideology, length of employment, and burnout among workers at shelters for battered women were investigated in the present study. Feelings of inadequate personal accomplishment, emotional exhaustion, and depersonalization were evaluated using the Maslach Burnout Inventory (1981). Working conditions were measured primarily by the Work Environment Scale (Insel and Moos, 1974), which examines factors considered relevant to job work environment was assessed by using interview questions developed by Epstein, Russell and Silvern(1988). Survey questionnaires (multiple-choice style) were sent to 18 shelters, completed by 47 staff members and administrators. The Pearson Product Moment Correlation Coefficients Method was used to analyze simple relationships between length of employment and working conditions and each of the three aspects of burnout. Multiple regression analyses were used to analyze more complex questions, such as whether working conditions are related to burnout above and beyond the effect of length of employment.

Major findings include the following: shelter workers were found to be significantly less emotionally exhausted when compared with norms for a more general group of service providers, they had fewer feelings of depersonalization, and had a higher sense of personal accomplishment. More emotional exhaustion was associated with longer length of emplyment, while most working conditions were not found to be associated with emotional exhaustion. However, there was a significant relationship between participation in decision-making and emotional exhaustion, with more participation associated with

greater exhaustion for those recently hired, but with more participation associated with less exhaustion for those who had worked longer. In addition, participating in making decisions was associated with higher sense of personal accomplishment. Greater autonomy and peer cohesion were associated with fewer feelings of depersonalization. A non-significant trend suggested that those with children at home felt less emotionally exhausted than other workers. Preliminary ideas about programs for children at shelters are presented. Implications of the findings for shelter workers and administrators include the need to establish priorities for changes to reduce staff burnout.

PSYCHOLOGICAL DEBRIEFING: AN INTERVENTION FOR THE PREVENTION OF WORK-RELATED POST-TRAUMATIC STRESS DISORDER

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By many estimations, post-traumatic stress disorder (PTSD) represents the most severe and disabling variation of occupational stress known (Everly, 1989). Davidson (1991) has noted that its prevalence may reach close to 10% of the young adult population in the U.S. Yet, at this time there exists no generally agreed upon "treatment of choice"for PTSD. The severity, prevalence, and lack of generally agreed upon therapeutic interventions all strongly argue for the development of program to prevent PTSD in high risk populations. Critical Incident Stress Debriefing (Mitchell, 1983) is a form of psychological debriefing developed by one of the authors (JTM) as a method for mitigating the harmful effects of work-related trauma and ultimately preventing PTSD.

Critical Incident Stress Debriefing (CISD) is the most widely used group technique in the world for the prevention of work-related PTSD among high risk emergency response personnel. There exist over 250 quick response CISD team across the globe.

This paper will describe the development of CISD, its basic components, and its 12 year operational history as a preventive intervention for PTSD among high risk occupational groups.

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SYMPTOM REPORTING AMONG VDT USERS: THE CONTRIBUTIONS OF ERGONOMIC, WORK, AND INTERPERSONAL STRESSORS

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This study investigated psychosocial as well as ergonomic factors for their associations with symptoms among newsroom employees of a mid-sized newspaper. The purpose of the study was to evaluate the relative contributions of work and interpersonal stressors, work station ergonomics, and VDT exposure to the musculoskeletal symptoms associated with VDT use.

The sample (n=150) was young to middle-aged (X=41 years, sd=10.06), Caucasian (85%), and well-educated (X=15.8 years, sd=0.70), with most respondents married or living with partners (62%). The most frequently cited job titles were reporter (n=39) and copy editor (n=45). On average, employees worked on a VDT five hours per day (sd=1.72). Most of them faced daily deadlines (n=116), although some worked exclusively on weekly features (n=26).

Employees (n=150) completed a questionnaire that included Karasek's Job Characteristics Inventory, Moos' Work and Family Relationships Inventories, an investigator-designed inventory of supervisor and co-worker support and conflict, and items about the employee's demographics, job, and VDT use. Employees indicated the location, severity, and frequency of their symptoms using a body diagram and a symptom grid. Ergonomic measures similar to those used by Sauter et al. (1991) were used to evaluate the fit between employees and their VDT work stations (n=70).

Principal components analysis of the body diagram data revealed that pain and numbness were localized in four identifiable body sites: (1) the left arm and both hands, (2) the right forearm and upper arm, (3) the upper torso, including the shoulders, neck, and upper back, and (4) the lower torso and legs. These sites differ from those identified by Sauter et al. (1991) for a sample of data entry VDT users. These four sites were used, along with data about symptom severity and frequency, to sort employees into four symptomatic groups (left arm, n=36; right arm, n=20; upper torso, n=35; lower torso, n=14).

The psychosocial, VDT use, and work station variables revealed significant univariate correlations with group membership, pain severity, the number of symptoms reported, and the number of symptomatic body locations reported. Preliminary regression analyses, however, were inconclusive and demonstrated few significant associations with symptom reports for this primarily professional group of employees. Symptoms associated with the use of VDTs pose a complex problem for occupational health research.

WORKPLACE BASED PREVENTION AND MANAGEMENT OF UPPER EXTREMITY CUMULATIVE TRAUMA DISORDERS

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Persistent work related upper extremity pain represents a major challenge. Research suggests that a complex set of medical, ergonomic and psychosocial factors play a role in the development, exacerbation and maintenance of these disorders. Estimates of the financial and human costs related to persistent upper extremity pain have suggested the problem is reaching or has exceeded costs related to back pain. The need for innovative cost-effective approaches to prevention and management that address medical, ergonomic and psychosocial factors has become apparent.

This paper will present the results of an integrated approach to work disability that included an assessment of contributing medical, ergonomic and psychosocial factors followed by an intervention that provided fitness training, pain and stress management, work style modification and training designed to increase awareness of the multiple factors contributing to work-related upper extremity disorders. Emphasis was also directed at training supervisors in recognition of signs and symptoms, work style modification and facilitation of employee and supervisor problem solving skills related to symptom management. The intervention was associated with significant reductions in symptoms, accident rates, and workers' compensation indemnity and medical costs. This study highlights the importance of considering the multiple factors that contribute to work-related upper extremity disorders.

TITLE: STRATEGIC TIME MANAGEMENT: AN INTERVENTION TO PREVENT AND REDUCE JOB STRESS IN THE ORGANIZATION

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Worker burnout contributes to absenteeism, turnover, and reduced productivity. Researchers find that participant decision making (PDM) leads employees to adopt organizational goals as their own. Strategic Time Management (STM) seeks to relieve job stress and begin the PDM process by encouraging workers to "see" themselves as managers of their own task time.

STM was developed as a response to the accountability/ efficiency problem that besets the workplace. Its focus is the individual, the smallest system within the organization. Each worker becomes his/ her own task time manager. Conscious self management of at-work task time is used to increase performance. The goal is to encourage participants to move from their actual time usage toward their self-set optimum, or standard, task time.

Three interventions two weeks apart are recommended. The process includes categorizing and charting tasks according to defined managerial categories, setting a personal standard, or optimum, time for each category, and comparing actual and optimum times. Tools are a face-sheet, a daily time log/diary, and a bar graph. Essential to the success of the intervention is the assurance, as often as needed, that there are no right or wrong answers and no performance expectations from the leader. Again, the goal is for individuals to move from their actual time usage toward their uptimum time usage.

DEFINING AND MEASURING HOSTILE CLIMATE

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In the past decade, numerous court cases have brought attention to the nature of an organization's climate and its relationship to sexual harassment. The term "hostile environment" has been used to describe the climate of an organization that is so permeated with hostility or abusive conduct arising from bias or prejudice that discrimination in violation of Title VII will be found. Courts have defined hostile environment in a workplace as existing when conditions in that setting are so severe and pervasive that they create an abusive working environment and individual's employment situation is altered. Showing hostile climate existed does not require that plaintiffs show a specific discriminatory act had tangible employment-related consequences, but that the debilitating impact on their work environment indirectly affected the conditions of their employment.

Although the full effects of hostile climate on an individual remain to be empirically tested, several notable effects have been demonstrated in earlier literature on sexual harassment and equal opportunity which may be applicable. Those effects include physical symptoms, emotional stress, negative correlations with commitment, satisfaction, effectiveness, turnover, and firing.

One of the challenges in defining and measuring hostile environment is the differing perceptions among individuals regarding what constitutes "hostile" behaviors. The most robust of these differences is between men and women. However, previous research on sexual harassment indicates that women who respond that they have been victims of many of these hostile behaviors may also say that they have <u>not</u> been sexually harassed.

The researchers have developed an instrument which purports to measure hostile environment. Focus groups, using E.E.O.C. and court definitions and guidelines, generated over 60 items which represented behaviors which might occur in hostile environment. An additional group, employing the Q-sort technique, retained 40 items. For initial validation, 100 faculty from several departments in an historically and predominantly black university are completing the instrument. African-Americans, Asians, Caucasians as well as males and females are represented in the sample.

Subjects are asked to "estimate the chances that these behaviors could occur in the area managed by your immediate supervisor (e.g. department chair)" and "estimate the chances that these behaviors could occur in any area of the university." Response dimensions are on a five-point scale (1=almost no chance the action could occur; 5=very high chance the action could occur). A "not applicable" category is also provided. Subjects are also asked to provide a summary estimate of the overall climate of the work area/organization. Response dimension range from 1) very poor to 5) very good.

Internal consistency and inter-rater reliability will be assessed. To begin determination of construct validity, an exploratory factor analysis will be conducted. Also, correlation between the items and the summary measure of climate will be determined. Significant differences of race, gender, and previous experiences with sexual harassment will be calculated.

SEXUAL HARASSMENT AND IT'S OUTCOMES: AN INTEGRATIVE PROCESS MODEL

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Building on the original theoretical work of Fitzgerald and Ormorod (in press) and recent empirical tests (Hesson-McInnis & Fitzgerald, 1992), we develop an articulated theoretical model to account for the type and extent of sexual harassment in organizations and its impact and consequences for individual victims. Briefly, we argue that Sexual Harassment is a function of two exogenous variables (Organizational Characteristics and Job Context) and is hypothesized to affect three sets of outcome variables (Job Outcomes, Psychological Outcomes and Health Outcomes). The effect of harassment on these endogenous outcome variables is hypothesized to be moderated by the victim's Personal Vulernability and Response Strategy.

We propose specific indicators for each of the latent constructs in the model, including a scale to assess a responses to sexual harassment (Fitzgerald, Gold& Brock, under review) and a new measure of Organizational Tolerance for Sexual Harassment based in the conceptual framework of Naylor, Pritchard and Ilgen (1980). We then derive specific predictions from the model; for example, higher levels of sexual harassment are hypothesized to be a function of gender-nontraditional work, an organizational context tolerant of sexual harassment, and poorer psychological, health-related and psychological outcomes. In addition, psychological and health-related consequences are predicted to be exacerbated by internally focused (passive) strategies but weakened by externally focused ones. The reverse effects are predicted for job outcomes. We conclude with a description of a computer-assisted interviewing strategy (CAI) designed to collect data to test the model in a reliable manner.

THE ASSAULTED STAFF ACTION PROGRAM (ASAP): AN INTERVENTION FOR PREVENTION OF PATIENTS' VIOLENCE

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Patients' violence against mental health caregivers is increasing, such that this healthcare delivery is now considered a potentially dangerous occupation. Efforts to increase worksite safety have focused primarily on prevention programs, but patient violence remains high and intervention efforts to treat the unique sequelae from assaults on caregivers have been largely unexamined. This paper presents two-year outcome data on the Assaulted Staff Action Program (ASAP)(Flannery et al., 1990), the first published programmatic effort to treat the aftermath of patient to staff violence in a state mental hospital (400 beds/415 nursing staff). An unanticipated finding was a 63% reduction in worksite violence, an outcome sustained even as the hospital was closed for state fiscal reasons.

ASAP is a voluntary systems intervention that offers support to assaulted staff victims. ASAP offers crisis intervention within 15 minutes of the assault, along with 3- and 10-day follow-up. The ASAP team member assesses the presence of symptoms of Post-Traumatic Stress Disorder (PTSD), and the victim's sense of mastery, social supports, and ability to make sense of the incident. A short-term support group, and ward debriefing are offered.

Findings. From April, 1990 until January, 1992, ASAP responded to 280 calls for assistance (165 males/114 females) and was declined in 49 incidents (40/9 females).

Most assaults were unprovoked (62%) by males (56%), occurred during mealtimes (65%), and involved RNs (16%) or less senior mental health workers (63%). Staff victims reported PTSD symptoms of hypervigilence, sleep disturbance, and intrusive memories. For most, victims' symptoms passed, and victims regained mastery (81%), social supports (91%), and some sense of meaning (75%) within 10 days. For some, the patient assault revived intrusive memories of other past traumatic events. Those who declined assistance were less senior (79%), male (85%), mental health workers on the afternoon shift who reported that assaults "came with the job."

Statistically significant reductions in assaults per patient census and per nursing staff were obtained at months 5, 10, 15, and 20. The assault base rate of 30 per month declined to 19 (37%) by month 5, and to 11 by month 20 (63%), and appears to have resulted in less injuries, less sick leave, and less industrial accident claims. Thus, ASAP paid its operational costs.

Discussion. ASAP appears to be an efficacious systems approach for addressing the aftermath of duly-related assaults by patients. While there is no clear way to account for the reduction in violence, ASAP as a peer-help model may have empowered staff and resulted in better problem solving of work-related tasks, a subsequent reduction in worksite stress, and an increase in worksite safety. ASAP is a flexible approach to occupational trauma, and would appear suitable for other worksite environments such as police/corrections, emergency services, homeless shelters, domestic violence programs, nursing homes, and schools.

PATIENT ASSAULTS ON HEALTHCARE PROVIDERS: AN UNRECOGNIZED OCCUPATIONAL HAZARD

Jane Y. Fong, Ph.D.

Over the last twenty years there has been an increase in the number of reported serious assaults on healthcare providers. Prior to 1970, few articles on the subject appeared in professional and scientific journals. In this paper, a comprehensive survey of the recent literature is made. It discusses the increasing rates of violent and aggressive assaults agains physicians, nurses, psychiatrists, and other healthcare providers. Few articles are available on assaults in outpatient care settings. The bulk of the research focuses attention on assaultive and aggressive behavior in inpatient psychiatric wards.

Patient violence is an increasing problem faced by mental health professionals. This paper addresses factors associated with patient assaults: patient characteristics, behaviors that signal potential aggression, situational variables, and victim characteristics. The paper discusses violent behavior as interactional and psychodynamic.

Factors in prevention and management of assaultive behavior are identified. These include recognition of potential dangerousness, awareness of warning signs, evaluation of transference and counter-transference issues, the use of verbal de-escalation, and other strategies for ensuring personal safety.

The author also discusses existing policies and practices to ensure safety by local, state or federal agencies, or regulatory or licensing bodies. Through a conceptual model of safety practices and procedures, the author also urges the creation of task forces to promote and advocate for safekeeping of healthcare professionals.

COMMUNITY OCCUPATIONAL HEALTH SERVICES PROGRAM: A GRASS ROOTS MODEL TO REDUCE WORKER AND EMPLOYER STRESS

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Over the past eight years, Saint Mary's Medical Center in Racine, WI has developed a model return to work program. The program, in the broadest sense, is an occupational health service program meeting the needs of the community, which includes both the worker and the employer. This model program is indicative of the type of grass roots programming that is necessary to meet the needs of a changing work force that is: aging; involves diverse populations with multifaceted psychosocial problems; and which is overtaxed physically resulting in aspects of cumulative trauma disorders and orthopedic injuries. This community based program serves to coordinate efforts between the individual with a disability and the employer, thus serving to reduce aspects of stress on both sides of service delivery.

Injured workers benefit from this program by learning to cope more adaptively to changes that may be necessary as a result of their injury. Program participants are able to continue seeing themselves as workers and maintain aspects of their work personality while in the program. By maintaining this positive view of themselves, it decreases the possibility that the stress related to being off of work will affect aspects of their personal life and subsequently increase maladaptive behaviors. Services to facilitate this adaptation process include: self monitoring and self-management skill building; stress management training; symptom management programming; and psychotherapeutic support.

The employer benefits from this type of program also. Employers are faced with issues related to absenteeism; escalating health care costs; high workers' compensation claims; and productivity. This program addresses these issues indirectly through the services it provides which include: work hardening; post offering screening; consultation on disability management programming; ergonomic job analysis and redesign recommendations; ADA consultation; injury prevention education classes on site; and needed medical management.

The program has a well developed evaluation system and tracking procedure that allows for ongoing assessment of both the efficiency and effectiveness of the program. Results from the program evaluation system and a recent accreditation from the Commission on Accreditation of Rehabilitation Facilities indicate this program is meeting high standards of service delivery and can serve as an excellent model of a successful community occupational health service program. This kind of grass roots program provides one example of how a community can address the varied issues related to occupational stress.

PATIENT ASSAULTS TOWARD MENTAL HEALTH PROFESSIONALS: AN UNRECOGNIZED OCCUPATIONAL HAZARD

Jane Y. Fong, Ph.D.

Over the last twenty years articles on patient assaults and violence toward mental health professionals have appeared in increasing numbers in the professional literature. Researchers on the topic are investigating this phenomenon as a likely serious occupational stress and hazard, complicated by post-traumatic syndromes found in some victims.

Mental health workers in inpatient facilities experience assaults more frequently than do professionals in outpatient practices. This author surveyed psychologists who attended the 1992 annual American Psychological Association on their experiences with assaultive patients and found that a significant number of psychologists in outpatient work have endured one or more assaults in their careers. This pilot study suggests a strong likelihood that assaultive actions from patients is a realistic occupational stress.

New definitions of occupational stress and hazard are needed for the mental health industry. Systematic research and investigation into this problem is urgently needed. New approaches to the problem must be made by governmental agencies, legal and judicial systems, mental health facilities, and mental health professionals themselves.

Raters' Work Stressors as Correlates of Lenient Ratings of Subordinates

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Raters' Work Stressors as Correlates of Lenient Ratings of Subordinates

Elaborated Abstract

To date, there is very little empirical research on the issue of whether the adverse effects of specific work stressors are more relevant to the performance of some job-related behaviors/responsibilities than others. As initial attempt to address this shortcoming in the literature, the present study examined the extent to which role conflict and role ambiguity--two prominent work stressors in this field of research (cf. Jackson & Schuler, 1985)--are related to a critical behavior/responsibility of managers, namely, periodic formal written evaluation of subordinates' performance.

Research on the effects of stress on raters' cognitive processes (Cohen, 1980; Sinclair, 1988; Srinivas & Motowidlo, 1987) and mood (see, e.g., Isen & Baron, 1991) suggests the expectation that managers under stress are more likely to provided lower performance evaluation scores for their subordinates. However, the growing literature on the politics of performance appraisal (Banks & Murphy, 1985; Fried, Tiegs, & Bellamy, in press; Longenecker, Sims & Gioia, 1987) suggests the opposite prediction: That is, raters under stress may attempt to override their cognitive tendencies towards giving low performance ratings by deliberately providing lenient ratings for subordinates. Such deliberate inflation of ratings is expected to reduce the likelihood of these already stressed-out supervisors having to confront disgruntled employees. Thus, we hypothesize that:

Hypothesis 1: The higher the supervisors' experience of role conflict or role ambiguity, the higher the likelihood that they will deliberately produce lenient ratings of subordinates.

We also examined the extent to which individual differences in the ability to imposed priority-based patterns of attention on environmental information (i.e., screening ability) (cf. Fried, 1990) moderates the relation between role conflict and

leniency of performance ratings. Specifically, because supervisors with high screening abilities are more likely to effectively deal with multiple demands caused by role conflict, they will have more energy and attention capacity to address other demanding purposes at work; in particular, observation, documentation, and evaluation of subordinates' performance. Therefore, when role conflict is high, supervisors high in screening ability are more likely to produce accurate and defensible performance ratings than supervisors low in screening ability. As a result, there will be less need for the former group to deliberately inflate ratings of subordinates.

Hypothesis 2: For supervisors with high screening ability, higher levels of role conflict will be associated with less lenient performance ratings and for supervisors with low screening ability, higher levels of role conflict will be associated with more lenient performance ratings.

The two hypotheses were evaluated on data provide by two samples of managers who conduct periodic formal written performance appraisal of subordinates. Sample 1 (n = 29) were managers from two different organizations. Sample 2 (n = 82) consisted of supervisors from a large mid-western univeristy.

The results supported the expected positive correlations between the raters' role conflict and leniency of ratings of subordinates. This was shown for two different operationalizations of leniency of performance appraisals (i.e., the averaged performance rating given by each supervisor and a self-report measure of one's tendency to provide lenient ratings). Raters' role ambiguity was not related to either index of leniency of performance appraisals. Screening ability also moderated in the predicted direction the relation between the raters' role conflict and the averaged performance evaluation score.

BALANCING WORK RESPONSIBILITIES AND FAMILY NEEDS: THE FEDERAL CIVIL SERVICE RESPONSE

Charles E. Friedman, U.S. Merit Systems Protection Board

At this session, the project manager of a major U.S. Merit Systems Protection Board study on balancing work responsibilities and family needs in the Federal civil service will present highlights of the Board's findings. Topics covered will include: child care, elder care, part-time (including job-sharing), alternative work schedules (flexitime and compressed work schedules), flexiplace (working at home or satellite offices), and cafeteria benefits.

The presentation will primarily be based on the Board's November 1991 report to the President and Congressional leaders. It will, however, also include references to reports on work and family issues subsequently published by other Federal agencies (e.g., the U.S. General Accounting Office and the U.S. Office of Personnel Management (OPM)).

The Board's views on several important public policy questions will be addressed, including its recommendations that:

- Under certain circumstances, Federal agencies should consider subsidizing the cost of onsite day care centers for their civilian employees;

- OPM should liberalize the Government's sick leave regulations, in order to permit employees to use sick leave (rather than vacation leave) when they are caring for a sick or elderly dependent;

- OPM should initiate action to develop and provide short-term disability insurance at group rates for those Federal employees who might want this option and are willing to pay the full cost of the coverage;

- The Government should institute a "cafeteria benefits"-type plan for its employee fringe benefits. Also, as a part of any such cafeteria benefits plan, consideration should be given to allowing Federal employees to set-up "flexible spending accounts," through which part of their child care expenses could be treated as tax-free fringe benefits; and

- As a matter of policy, the Federal Government should strive to be a "model employer" in its work and family benefit programs.

In addition, as time permits, other related management issues will also be addressed in the presentation, such as the importance of management conducting "needs assessments" prior to implementing work and family programs; the potential helpfulness of training for managers, as a tool to change the corporate culture where such culture is not supportive of work and family benefits; and the likelihood that no single work and family program will constitute a "magic bullet," meeting the requirements of all employees.

BLUE COLLAR STRESS & STRAIN: AN ANALYSIS OF COMPETING MODELS

Jeannie Gaines, Ph.D. & David C. Morgan
University of South Florida

This study is an empirical test of Shostak's (1980, 1985) stressors that are hypothesized to impact blue collar workers. Interviews and surveys were used to collect data on 343 skilled and unskilled workers employed by 4 departments in a physical plant division of a major university. The first research question regarding which stressors contribute to types of experienced strain was tested using multiple regression analysis. Lack of supervisor support was the most powerful predictor demonstrating significant correlations with psychological strain (emotional exhaustion & job dissatisfaction), physiological strain (gastrointestinal and neuromuscular symptoms), and behavioral strain (intent to leave the organization). Job insecurity and physical danger related to at least one outcome variable in all three categories of strain. Workload and unenriched work were also significant predictors of strain. Pay inequity, rule enforcement, prestige, coworker and union nonsupport, noise, and heat did not exert independent effects on any of the strains studied. The second research question involved a test of Shostak's (1980, 1985) stressors in a general stress framework (Brief, Schuler & Van Sell, 1981; House, 1981; Quick &

Quick, 1984; Cooper, 1986) using covariance structure modeling. Two nested models were estimated, both with latent independent and dependent constructs. The more complex model, where the latent stressors were allowed to covary, produced a significantly lower Chi Square. However, the simpler model was more interpretable and parsimonious, leading the authors to conclude that it represents the data from this sample better.

EFFECTS OF NEWSPAPER ORGANIZATION SIZE AND DEPARTMENT CLASSIFICATION ON JOB STRESS

Glenn Gamst & Marty Greear
University of Virginia

Problem. The present investigation examines employee health-related perceptions across a variety of departments for both a large and small newspaper operation. Recent media and other research has implicated organizational size as an important contributing variable to employee job satisfaction and decision making (e.g., Carter, 1984; Hodson & Sullivan, 1990). From this, it's reasonable to expect that newspaper organizational size will be related to other aspects of the employee work environment--such as job-related stressors. Outside of a small amount of work examining VDT usage, few empirical studies have examined work-related health problems at newspaper plants (Stone, 1987).

The present study adds to our knowledge about work-related stress in general, and its effects on newspaper workers in particular. Several questions were systematically studied.

1) What are the types of stressors and to what extent are they present in newspaper work environments?

2) Does sex of worker influence perceived job stress?

3) Can organizational size differentiate newspaper work-related stressors?

4) Do workplace stressors differentially affect newspaper personnel working in various departments or broad work classifications?

Method. Ten-page questionnaires were mailed to all (N=915) current Newspaper Guild members of a single union local during May 1989. The Guild represents workers' bargaining rights at two separate newspaper operations, one newspaper will be called Alpha (daily circulation approximately 277,000) and the other newspaper will be called Beta (daily circulations approximately 34,000). A total of 383 respondents completed and returned the questionnaire which yielded a completion rate of 42%.

Results. Table 1 depicts the mean level of stress for men and women workers among the 37 work stressors examined in the present study. About half of the stressors revealed significant sex differences. Interestingly, among these significant stressors, women say they suffer more from them than do men.

Six dependent variables were derived from a factor analysis (of the 37 stressors) using the principal components method of initial factor extraction with a varimax rotation. From these analyses, six composite stress scales were established: physical condition, supervision, job demands, discrimination, electronic monitoring, and temporal conditions. Several analyses of covariance indicated that both organizational size and department classification influenced the various composite stress variables (see Table 2).

Table 1

Mean Level of Stressors for Male and Female Workers

Type of Stressor	Male	N	Female	N
Computer delays	3.11*	(114)	2.69	(191)
Lack of training	3.54*	(128)	3.07	(191)
Too cold	2.90*	(134)	2.50	(209)
Telephone monitoring	3.53*	(62)	2.99	(115)
Inadequate ventilation	2.34*	(135)	1.93	(211)
Sex discrimination	3.58*	(113)	3.24	(177)
Insufficient rest breaks	3.37*	(125)	3.06	(198)
Too hot	2.68*	(136)	2.35	(214)
Inadequate illumination	3.25*	(126)	2.90	(200)
Child care	3.32*	(89)	2.89	(109)
Monotonous work	2.86*	(114)	2.54	(180)
Dealing with customers/ sources	3.01*	(102)	2.75	(158)
High-speed work	2.51*	(116)	2.28	(192)
Hazardous/unhealthy work-place	3.13*	(139)	2.76	(204)
Heavy workload	2.94*	(143)	2.70	(206)
Unnecessary paperwork	3.24*	(127)	3.01	(196)
Conflict with coworkers	3.26	(136)	3.05	(203)

(table continues)

Lack of respect from management	2.66	(139)	2.43	(193)
Computer monitoring	3.25	(80)	2.99	(146)
Operating VDTs	2.89	(120)	2.69	(198)
Treatment by supervisor	3.12	(138)	2.91	(209)
Uncomfortable workplace	2.76	(129)	2.57	(204)
Overcrowded workplace	2.76	(131)	2.55	(205)
Noise level	2.81	(134)	2.64	(203)
Bright illumination/glare	3.21	(125)	3.02	(195)
Exclusion from decision making	2.52	(138)	2.38	(201)
Worry about job future	2.90	(139)	2.79	(202)
Long irregular hours	2.88	(131)	2.78	(196)
Rotating shifts	3.34	(86)	3.28	(127)
Conflicting job demands	2.86	(139)	2.78	(202)
Isolated from coworkers	3.50	(122)	3.48	(179)
Meeting deadlines	2.48	(132)	2.57	(208)
Over-supervised	3.00	(133)	2.98	(197)
Personal discrimination	3.17	(125)	3.18	(180)
Age discrimination	3.30	(117)	3.31	(173)
Race discrimination	3.64	(108)	3.66	(140)
Lack of control over workpace	2.44	(133)	2.42	(202)

NOTE: Asterisk (*) indicates a significant 2-tailed t-test, at the 5% level or less.

Possible values range from: 1-4, very stressful-not at all stressful.

Table 2
ANCOVA Results for Composite Stress Scales by Organizational Size and Department

	Composite Stress Scale					
Organizational Size	Disc	Elec	Temp	Phys	Supr	Jobd
Large	3.32	3.06*	3.01	2.72*	2.79	2.61
Small	3.13	3.28	2.79	2.31	2.74	2.59
Department						
Classified	3.44	2.92*	3.47*	2.55*	3.10*	2.60
Editorial	3.28	3.25	2.77	2.61	2.63	2.50
Advertising	3.31	3.31	3.28	2.82	2.99	2.64
Circulation	3.03	2.32	2.63	2.55	2.64	2.64
Finance-Accounting	3.48	3.12	3.50	2.55	2.84	3.10
Other	3.30	3.27	3.20	3.00	2.98	2.88

Note: Scales run from 1="very stressful," 2="somewhat stressful," 3="not too stressful," and 4="not at all stressful." Each column contains means adjusted for the covariates.

Disc=Discrimination, Elec=Electronic Monitoring, Temp=Temporal Conditions, Phys=Physical Conditions, Supr=Supervision, Jobd=Job Demands.

* asterisk indicates $p<.05$.

COMPUTER-ASSISTED COUNSELING IN THE WORKPLACE

Joe Garms, PhD, Charles Wright, MD
Peter Knight, MD, John Green, MD

This presentation emphasizes a model for using computer software to provide **Brief Cognitive Counseling** in the work environment. This approach can potentially reduce time away from work, decrease counseling costs for employees with minor adjustment problems, and provide individualized assistance in learning and improving coping skills. For motivated participants, skills learned from these programs can be applied to improve functioning in family relationships.

The interactive software programs are based on active learning. **HELP-Stress** is designed to help people learn to control and manage stress. **HELP-Think** aims to help people change distorted thought patterns to clear thinking, irrational beliefs to rational beliefs and negative automatic thoughts to thorough awareness. **HELP-Esteem** assists in improving self-esteem. **HELP-Assert** is designed to teach assertiveness.

When used voluntarily, this model of brief cognitive counseling can help some anxious, depressed, or angry employees learn the relationship between thinking, feelings and behavior. With this foundation, the participants may then receive brief individual counseling through the Employee Assistance Program, participate in a group to apply learned concepts, or be better prepared to benefit from outside referral.

Because of the emphasis on identifying and changing thinking, this model is a useful enhancement for employees who are attending 12-Step Programs.

This approach is not intended to be the sole treatment for serious mood or personality disorders. However, it does have potential as an adjunct for individuals in outside therapy.

EMPLOYEE STRESS AS RELATED TO OFFICE ENVIRONMENT AND CONTROL OF WORK SCHEDULE

Sheila C. Gehlmann

The amount of stress and job satisfaction experienced as a function of office space and control of work schedule were investigated. A field study was conducted, using a research questionnaire to gather the data from employees in all offices of a small, private northeastern college. The questionnaire included items which measured the subjects' level of job stress, type of office space they work in, level of job satisfaction, and amount of control they have over work schedule. A total of 300 questionnaires were distributed. Data were collected from 87 full-time employees, both male and female, at all levels in both academic and non-academic departments.

The results indicated a significant relationship between stress and type of office space; that is, the more open the office, the higher the stress, which provides partial support for previous research on work-space and employee reactions.

There was also a significant relationship between stress and control. Most employees who had high control over their work schedule were located in closed office space, and experienced lower stress than those employees who had little or no control over their work schedule. This finding supports previous research on control and stress, in which low control has been found to be a contributing factor in employee stress.

WORKSTRESS AND OCCUPATIONAL INJURY/ILLNESS IN PRE-HOSPITAL CARE PROVIDERS: A PROSPECTIVE EVALUATION

Robyn R.M. Gershon, DrPH, Johns Hopkins University; Bruce W. Conrad, EMPT, Baltimore County Fire Department; David Vlahov, PhD, Johns Hopkins University; David DeJoy, PhD, University of Georgia; Joanna Sznajder, PhD, Johns Hopkins University and Larry Murphy, PhD, NIOSH

INTRODUCTION

Increasing attention has been focused on the risk factors associated with occupational injury and illness. Parallel interest has been focused on the negative health effects of occupational workstress. Both of these issues are serious public health problems, related to lost work days, compensatory costs, poor productivity and workers' dissatisfaction. Building upon prior studies, we hypothesized that workstress is an important predictor of occupational injury/illness in a population of pre-hospital care providers (PHCPs), workers noted for high levels of workstress.

METHODS AND MATERIALS

A prospective study was conducted to determine whether or not workstress was a predictor of occupational injuries and illnesses. Study subjects were recruited from a population of career PHCPs (N=284), all of whom were field workers employed by the Emergency Medical Service Division (EMSD) of a Maryland Fire Department servicing 700,000 people in 610 square miles. These PHCPs have an injury/illness incident rate of approximately 15%, with an annual, total cost to the Department of over $100,000.

A self-administered, confidential study instrument was developed in order to assess the following determinants: sociodemographics, self-history of recent injuries/illnesses, workstress (constructs included role ambiguity, work conflict, work load, work environment, organizational factors, and cognitive demands), and individual factors such as life events and health status. Also included was a measure of somatic and subjective health complaints, including "burn-out".

Six months after the completion of the questionnaires, study participants will be asked to complete a brief follow-up questionnaire which will include certain baseline items, including workstress items, and items related to their six month history of occupational injuries and illnesses. Respondents will also be asked to self-report any non-work related accidents/injuries and illnesses. These self-reports will be validated by examining the EMSD health record for each respondent for the previous six months.

Statistical analysis will include comparisons between PHCPs with injuries to those without injuries by levels of reported workstress using regression models.

These data will be used to help develop prevention strategies to minimize the injury/illness rate among PHCPs.

INDUSTRIAL STRESS; FROM A CLINICIAN'S VIEWPOINT

Philip J. Gibeau, Ph.D.

Workplace stress continues to be a major problem in all businesses and it is a central contributor to rising health care costs, problems in product quality and in the ability of companies to compete in the marketplace.

The most common themes related to current employee stress are those of: the recession and the lower demand for goods and services; the downsizing of businesses with the reassignment of duties to the remaining employees without any increase in pay; lay-offs and the fear of losing ones job; longer working hours rather than hiring additional staff; the expectations for increased productivity; management demands with threats for non-compliance; an aging work force with declining psychomotor skills; poor communication between management and labor; a reduction in employee benefits; declining morale/motivation at all levels of employment; having no recourse for job related problems; and unhealthy working environments.

Employees under stress exhibit an increasingly severe combination of physical (high blood pressure, chest pain, gastrointestinal problems), cognitive (easy confusion, poor recall, and erratic judgment), emotional (apprehension, panic, anger, despondency) and behavioral problems (physical, substance and sexual abuse, absenteeism and sabotage in the work area).

Our ability to help the stressed-out employees at all levels of business is dependent upon re-examining the processes used by industries to compete in the marketplace. If we are to decrease health care costs in industry, we need to change the conditions that lead to the ever increasing use of health care facilities and expensive diagnostic procedures. We need to better care for our employees.

The future success of American industry is directly proportional to decreasing the multiple stresses generated by the inappropriate actions of management and labor. American business needs: (1) better awareness and control of the events and interactions that cause stress rather than just dealing with those that are stressed; (2) a better feedback system that allows an identified problem to be resolved and for quality to be upgraded; (3) common goals developed by the joint input of both management and labor; (4) cooperative efforts between all levels of the work force rather than coercion, harassment, threats and intimidation; (5) increased flexibility in the utilization of our employees; (6) to encourage and recognize employee participation and leadership at all levels; and (7) to enhance dignity in the work place by showing respect, acceptance and kindness.

Successful solutions to industrial stress must be multifaceted in isolating the stressors and in developing a continuum of solutions at all levels of the organization and for those it seeks to serve. We must carefully design our interventions to fit the needs and expectations of all employees. Our sense of wellness rests in our ability as a nation to adjust to the realities of interdependence.

MEN AND WOMEN WORKING TOGETHER
AN INTERVENTION MODEL FOR REDUCING THE STRESS

Marion Gindes, Ph.D., Marion Gindes & Associates

The 1987 Hudson Institute report projected dramatic changes in the American work force. The predicted increase in diversity, e.g.,more women and minorities entering the work force, is already having a significant impact on the climate of the workplace.

The large influx of women has precipitated problems of adjustment for men and women. The Clarence Thomas hearings of last year highlighted not only the complexities of male-female interactions but also the stress and conflict that these interactions can generate in the workplace. Gender diversity as a source of increasing stress and distress is examined in this presentation. A four-phase intervention model for improving male-female interactions can reduce workplace stress.

A number of stressors grow out of the nature of male-female relationships. For example, differences in the way women and men relate to others, express emotions, communicate or interpret behavior frequently serve as stressors. The breakdown of traditional gender roles in conjunction with the absence of norms for appropriate male-female working relationships further contributes to uncertainty and stress.

Fear of the unknown and the assumption of out-group homogeneity exacerbate that stress. People are more comfortable with those who are familiar. When a person is identified as

belonging to a different group, the assumption is made that all members of that different group are alike. Thus, men are likely to be more comfortable with men and women with women. If women assume that all men are alike and different from women, and vice versa, gender stereotypes are reinforced.

The four-phase intervention model described here can decrease stress through increasing the effectiveness of male-female interactions. The concurrent aims of this approach are to bring about change on three levels: individual, interpersonal, and organizational; thus, integrating attitudinal and behavioral shifts within changing organizational cultures. Attention is simultaneously paid to individual and group dynamics.

Phase One of the model focuses on identification and awareness of gender issues. The goals are to better understand similarities and differences between men and women, explore gender stereotypes and identify gender specific barriers. Women's anger about male dominance and men's concerns about how women perceive them usually emerge here.

Phase Two involves devising strategies for resolving the issues identified in Phase One. The goals are to expand the range of behaviors that commonly restricts men and women and to provide guidelines for working with the opposite sex and for dealing with changing workplace cultures. Male-female differences in

assertiveness, emotional expressiveness and competitiveness are highlighted.

Phase Three focuses on implementation of strategies for effective male-female work relationships. The goal is to devise and practice mutual strategies for successful interaction. The emphasis is on working together to bring about change.

Phase Four focuses on integration of changing gender roles in the workplace culture. The goals are to bring the developed strategies to the larger organizational setting, thus, effecting a more positive climate for male-female interactions and a subsequent reduction in stress.

Although the focus here is on gender issues, the intervention model presented is appropriate wherever diversity exists - whenever people representing different cultures, orientations or viewpoints must communicate and work together effectively.

EMOTIONAL AND BEHAVIORAL DISTURBANCES IN UNDERCOVER WORK

Michel Girodo, Ph. D., University Of Ottawa

The psychological disruption associated with undercover law enforcement investigations involves misreprentation of self, fear in the face of criminals in an alien environment, and separation from an institutional and social support system. We report on three empirical studies of work stress among Federal undercover agents which revealed a significant incidence and severity of mental and behavioral disturbance associated with an involvement with this kind of work. First, a cross-sectional epidemiological survey of 120 agents assessed their current mental health status with the Health Opinion Survey (HOS) and SCL-90. Agents actively working in an undercover investigation were three times more likely to be psychiatrically "at risk" compared with comparable agents with no experience. Agents terminating an assignment 6 weeks earlier were still twice as likely to be seen as in need of psychological assistance compared with agents with no experience. "At risk" agents reported a pattern and level of SCL-90 symptomatology comparable to psychiatric out-patients.

A second study of 271 undercover agents in another Federal agency examined Eysenck Personality Questionnaire data, HOS and SCL-90 scores, number and duration of undercover experiences, and job satisfaction measures in terms of a Person-Environment fit model of undercover work stress. A structural equation analysis linked psychiatric symptoms to amount of undercover work specifically for agents with a poor P-E fit to the demands of undercover work: i. e., Introverted-Neurotic agents.

A third study with the same agency examined misconduct (self-reported drug/alcohol abuse and history of disciplinary infractions) in relation to personality traits and undercover work. Agents above the median on career months spent undercover had greater misconduct scores compared with agents below the median. Partial correlations controlling for age showed a direct relation between career time undercover and misconduct. In contrast with the preferences for emotional symptom reporting by Introverted-Neurotic agents in the study above, acting-out and behavioral disturbances characterized the self-reports of Extraverted-Neurotic agents.

This research extends P-E fit theory formulations of job stress to include mismatches between abilities and job demands in undercover work. While Neuroticism underlies the psychological strain and risk to mental health arising from repeated exposure to the work, the traits of Introversion and Extraversion are associated with the way this strain may seek expression.

DEPRESSION: AN INTEGRATED MANAGEMENT MODEL FOR THE WORKPLACE

Veronica V. Goff, Washington Business Group on Health
Isabel Davidoff, National Institute of Mental Health

Unrecognized and inadequately treated depression is a major public health problem that has contributed to alarming increases in health care costs, significant losses in productivity, and in inappropriate utilization of health services. This is particularly tragic since more than eighty percent of the eleven million people who experience depression each year can be effectively treated.

The NIMH and the WBGH developed the D/ART National Worksite Program to assist employers in applying research-based knowledge regarding depression to corporate practices that encourage early intervention, direct individuals to appropriate and cost-effective care, and provide a supportive work environment during treatment. Advised by corporate leaders in human resource management, health benefits, employee assistance services, medical, management training, and health promotion programs, the Worksite Program introduced an integrated model for managing depression at the workplace. Seven large U.S. companies provided case studies illustrating how employee education, management training, employee assistance services, and benefit design and management can improve the quality and cost-effectiveness of mental health care delivered through employer-sponsored programs.

The Role of Negative Affectivity in Understanding Relationships Between Self-Reports of Exercise and Strain

Nancy Goldstein, Michael Burke, and Jeff Sulzer
Department of Psychology
Tulane University

Previous research findings indicate that observed correlations between self-reports of job stress and self-reports of strain may be reduced after partialling out the variance due to the personality trait, Negative Affectivity (NA) (Brief, Burke, George, Robinson, & Webster, 1988; Burke, Brief & George, 1992; Watson & Pennebaker, 1989). Results from Brief et. al. (1988), Burke et. al. (1992), and Watson and Pennebaker (1989) suggest that all research using self-reports as measures of stressors and strains should carefully consider the possible influence of NA.

Negative relationships between exercise and psychological and somatic strain have been consistently found when self-reports of strain are used (Pauly, Palmer, Wright, & Pfeiffer, 1982; Steffy, Jones, & Noe, 1990). For example, it has been found that exercisers experience less overall strain than non-exercisers when strain is measured by self-report (e.g., Pauly et al., 1982; Steffy et al., 1990). The purpose of the present study is to examine the effect of NA on relationships between self-reports of exercise and strain in a sample of employees from a large public organization. In addition, an objective criterion, sick leave, was used as a supplement to self-report measures of strain.

For the present study, 128 governmental employees completed an exercise questionnaire assessing various aspects of exercise, a psychological strain measure derived from the Strain Questionnaire (SQ) (Lefbvre & Sandford, 1985), Stern and Higgen's (1969) somatic strain questionnaire, and a measure of Negative Affectivity (i.e., The Negative Emotionality Scale of the Multidimensional Personality Questionnaire (Tellegen, 1982)). Sick leave data were obtained from the respondents' personnel files. Factor analyses of the strain questionnaire produced three factors labelled Emotional Strain, Behavioral Strain, and Self-Reported Drug Use. These three strain factors, the somatic strain questionnaire, and average sick leave days, served as dependent variables in the present study.

It was hypothesized that exercisers would report less emotional and behavioral strain, less reported drug use, and less somatic strain than nonexercisers, as well as have lower sick leave than nonexercisers. To test this hypothesis, correlational analyses were conducted between the dichotomous exercise variable (i.e.,exercisers vs. nonexercisers) and the four strain measures and sick leave. Small, nonsignificant, positive correlations were found between exercisers vs. nonexercisers and emotional strain, behavioral stain, self-reported drug use, somatic strain, and sick leave ($r = .12$, $r = .15$, $r = .08$, $r = .13$, $r = .05$, respectively) such that nonexercisers reported more strain and had more sick leave than exercisers. Although not statistically significant, these results were in the hypothesized direction.

It was also hypothesized that NA would be positively related to self-reports of the psychological strain factors and self-reports of somatic strain. Statistically significant positive correlations were found between NA and emotional strain, behavioral strain, self-reported drug use,and somatic strain ($r = .59$, $p < .01$; $r = .55$, $p < .01$; $r = .24$, $p < .01$; $r = .43$, $p < .01$, respectively).

The primary hypothesis of this study was that controlling for NA in self-report measures of strain would considerably reduce the magnitude of exercise-strain correlations. Results of semi-partial correlations between exercise and strain, controlling for the influence of NA from strain measures, support this hypothesis. After controlling for the influence of NA in strain measures, correlations between exercisers vs. nonexercisers and emotional strain, behavioral strain, self-reported drug use,and somatic strain were reduced to .04, 08, .04, and .03, respectively. The magnitudes of these correlations are approximately the same as the correlation between exercise and the more objective sick leave criterion ($r = .05$).

Results of the present study provide some additional evidence that NA should be considered when self-report measures of strain are used. Future researchers investigating exercise-strain relations may consider the use of more objectively-oriented strain measures. While sick leave data were used as an objective indicator of strain in the present study, other more objective measures may be more useful in examining the relationship between exercise and strain.

GROUP PROCESS IN GIVING PSYCHOLOGY AWAY TO HOURLY WORKERS

Gloria C. Gordon, Ph.D, St. Louis, MO

Non-managerial employees possess a high readiness to utilize a model of stress training that (a) presents key information on individual, interpersonal, organizational and societal levels and (b) embeds the content in a group process that contains the therapeutic factors found in group counseling.

The stress training is described in relation to three examples: an on-site workshop for office and warehouse employees in a non-profit regional center for food distribution; a five-session psychology course for union shop stewards and local officers; and a burnout-prevention workshop for local union leaders.

Content is tailored to the specific stress issues drawn from the participants. It is presented in brief modules occupying no more than 25% of the training time.

Topics include the physiology of stress, the Karasek model of demands in relation to control, social support as a moderator, bio-behavioral strains, self-esteem, self-care, learned helplessness, interpersonal communication skills, social stereotypes and their internalization, and managerial assumptions about employee behavior.

The group process creates a here-and-now climate that contains factors known to have therapeutic value: instillation of hope, universality, imparting of information, vicarious learning, group cohesiveness, catharsis and self understanding (Yalom, 1970).

The process is fostered by the use of Energy Circles, sub-groups of four to six people who meet for 20-30 minutes using process guidelines the trainer provides. They share experiences, identify workplace stressors and resources, and consider steps for stress abatement and self-care using individual and collective action.

The trainer provides a process that creates a sense of safety and support, acting both as coach and cheerleader. Participants are encouraged to appreciate themselves and one another. They are invited into a leadership alliance with the trainer to help guide the content and process with spontaneity and humor.

Process skills are taught, especially attentive listening and speaking in a responsible manner. Skills are practiced in dyads or triads as well as in Energy Circles in a climate of confidentiality and fair sharing of air time.

Stress training with hourly workers is one way to "give psychology away," the theme of the 1969 APA Presidential Address by George A. Miller.

TOO MUCH OF A GOOD THING?
THE EFFECTS OF ORGANIZATIONAL COMMITMENT ON INDIVIDUAL STRESS LEVELS

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"...I find it very stressful to work 50+ hours a week, go to school, and have a family."
- Quote from a subject in this study

It seems as though everyone has complaints about the amount of stress in his or her life. When individual tales of stress-related woes are more closely examined, these stories reveal a plethora of roles held by the individual. Not only do they hold many roles, but these individuals are committed in varying amounts to each of these roles.

Although individuals seem to be aware of their own stress and its sources and consequences, organizational leaders may not be as astute. It is certainly less common that an executive expresses concern over the stresses and multiple commitments of his or her staff members.

Commitment has been a much studied phenomenon in the organizational behavior literature (Romzek, 1989; Randall, 1987; Mowday, Steers, & Porter, 1979). Many of these studies have focused only on the benefits of employee commitment to the organization (Romzek, 1989; Randall, 1987). However, individuals may be committed to more than just the organization; people may be psychologically involved in multiple roles simultaneously (Romzek, 1985).

Interrole conflict for the individual may be a consequence of this multiple commitment (Greenhaus, Parasuraman, Granrose, Rabinowitz, & Beutell, 1989). For example, when the demands of the workplace and the demands of the family clash, conflict for the individual may occur. This role conflict may result in increased stress (Cooper & Marshall, 1978; Ivancevich & Matteson, 1980). Increased stress levels have been shown to have consequences for both the individual (e.g., Mayes & Ganster, 1988; Schuler, 1980) and the organization (e.g., Bhagat, McQuaid, Lindholm, & Segois, 1985; Ivancevich & Matteson, 1980).

The current study examines the possible organizational consequences of commitment via the individual consequences of interrole conflict and stress. Specifically, ever-increasing levels of organizational commitment may result in increased interrole conflict, which may in turn create stress for the individual. This increased stress then may have consequences for both the organization and the individual.

A 171-item survey was administered to 274 part-time MBA students who also work full-time. The respondents were evenly divided between the genders. Almost two-thirds of the respondents lived with a spouse or a significant partner, and 25.2% had children.

The survey consisted of a measure of organizational commitment, family involvement, interrole conflict, and stress. Results support the concept that an individual's organizational commitment contributes to his/her sense of interrole conflict, which has an impact on felt stress. Intercorrelations support the existence of the relationships, while the regression analysis specifies them.

REVERSAL OF STRESS PROPAGATION DYNAMICS

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We are all familiar with the negative effects of highly stressful situations. We will examine causal factors and prescriptions for dealing with reversing the stress propagation dynamics.

A sign of an advanced state of stress in a population is indicated by its' peoples refusal to participate in those activities that require personal contribution or self-sacrifice. It is the same mechanism which, by affecting the individual, unbalances the social organization. People shut themselves off and stop participating. This allows for the weakening of the society, leads to somatization and rejection of public issues.

The population feels there has been a breach in the established order. This can be followed by a series of insurrectional phenomena, either latent or unorganized, which are contagious and potentially dangerous. Over the last few years we have witnessed this state of anger which is a precursor to a form of revolt never before encountered. In some countries, we witness this anger in a highly visible forms of violence, ranging from simple delinquency to armed conflict. In other countries, anger is as yet unorganized and remains at the embryonic state. This trend is spreading, quickly and uncontrollably. It is caused by people being "fed-up". It is anchored in tense and depressed people who are rejecting a lifestyle that can no longer satisfy them.

From Individual Discontent to Collective Disorganization

One discovers that within a system that is based essentially on the economy, actions implemented on the social level may still result in disillusion and disinterest, regardless of what is being invested. The human and social values instilled in a society have been momentarily short-circuited by newer economic and social imperatives which no longer allow the people of that society to express their multiple human and social dimensions.

Stress is born in this deep discomfort. Stress lives in a person's everyday life. Stress of this kind robs mankind of its human value orientation and can destroy a society's future.

Individuals have not been prepared to protect themselves against this form of stress. To the contrary unfortunately, people have lost the means which enable them to resist stress, to protect themselves, and to stop the propagation of the phenomena described. When moral strength, psychological stability, and open and true communication are victims of stress propagation, true exchange and human solidarity are the victims.

Religious and political ideologies were at one time sufficient to allow the individual to aspire to and achieve growth. These values encouraged hope in a better and brighter future to be achieved through present efforts. At present, people have tended to lose the impact of these values in channelling energy towards growth. We see the growing sense of loss of credibility in those persons who represent these ideologies. This has left the field open to extremist demands and positions. We witness frequent signs of this erosion in a variety of social, cultural, economic, and ethnic differences. All of these hinder the functioning of our social institutions.

The individual requires that the workplace take his or her needs into account. The literature indicates an almost omnipresent feeling of distress in regard to this need fulfilment. These unfulfilled personal needs take precedent over the desire and spirit of sharing and solidarity. As a result somatization or inappropriate behavior emerges, leading to lack of productivity which can cause severe economic consequences both for the company and the individuals.

Prevention

Instituting preventive measures require the participation of each and every person in the society. The challenge is the creation of the means and methods to be used to mobilize the affected populations. No government can, in and of itself, decrease the speed of the spread of stress. In order for prevention to be effective, the methods utilized must be carried out globally and simultaneously in a given area.

To carry out global stress prevention and stress reduction requires the principal actors to be mobilized in concerted actions. These actions will be carried out when the individual's self-interest complements the needs of the larger organization. Regardless of country or region, the company that trains its employees will become more productive, more efficient, and will enable the human resources to become agents of well-being, creating positive social support and a positive environment.

Priority must be given to industry to integrate these methods in the workplace. Another major starting point is at the school level where teachers, parents, and students can work together in developing this positive orientation.

Applied research

SIPDT has developed a global method of intervention to reduce emotional stress and improve communication. The programme was implemented seven years ago and studied in a multi-cultural, multi-country approach over three continents. The study involved various ethnic group representing a wide variety of cultural and social backgrounds. The individuals in the programme came from various service occupations, manufacturing and production, health services, and education.

The SIPDT approach concentrates on teaching individuals the methods required for adaptation in critical situations so as to produce the least degree of harm to health and well-being. In turn, the training allows the individual to adapt to situations in which stress cannot be prevented. Individuals are made aware that they cannot always act on the sources of stress but can learn to control the negative impact of such stress by using the body's regulating mechanisms. The individual developed the ability to adapt to stressful work-related situations and to protect themselves from psychosomatic illnesses.

The advantage of the approach is the ease in which all individuals can integrate it, regardless of their values or social background. It is a fundamental approach: the human approach. When this approach is applied, personal needs meet the company's interest.

Training is preceded, accompanied, and followed by a consciousness-raising campaign in order to foster the impact created by this approach and to promote social support. The media support mobilization by taking progressive and continuous action.

It has been noted that, for a given project, governments, companies, associations and the media have worked together in taking steps towards stress reduction within the population. In some countries, unions can play an important role in the permeability of large sections of the population by taking direct or indirect action. In other countries, the associative fabric can be used as a driving force and as a mobilizing tool which can bring together populations that are in conflict. The associative fabric can also facilitate the integration of immigrants (Tunisia, France, Quebec).

The same format was used as well at the school level prompting the same positive benefits. School, the center for learning about life and about social responsibility, is a major target group in the drive to reduce the dynamics of stress propagation.

The SIPDT has implemented its training programs in a variety of sociocultural milieu in Canada, Tunisia, France, and the Caribbean. Regardless of venue, the results have been consistent.

PARENTS' SHIFT WORK SCHEDULING AND WORK SITE: IMPLICATIONS FOR CHILD CARE ARRANGEMENTS AND STRESS

Joy C. Greer and Dale C. Farran, PhD

Problem. As a result of managing the dual roles of work and family, shift work families are particularly vulnerable to problems of child care and stress. This paper discusses not only the combinations of shifts parents work, but also the contribution of work site. The results have been determined from a child care survey of shift workers in a medium sized southern city.

Subjects. A group of 122 parents who worked shifts other than days at three work sites (a local hospital, a textile mill, and a large credit monitoring company) completed an anonymous child care questionnaire at the work site. The survey covered such areas as types of child care, the frequency of changes in care and perceived spillover of stress between work and family.

Results. The responses to the survey were examined from two different perspectives. First, the sample was classified into and compared on parenting categories. The division of the categories was as follows: single parents, parents who worked simultaneous shifts, and parents who worked complementary or split shifts. Further, the sample was categorized on the basis of work site. A three group multi-variate analysis of variance was run on the independent variables of parenting categories and work site; the significance level was set at $p.<.05$. A Tukey test of significance was used to test the means.

The effects of parenting categories were most evident in areas that addressed the fragile nature of child care arrangements. Differences were noted in the frequency of child care changes in the last year. Children of single parents were more apt to experience changes in their child care than children of simultaneous shift and split shift parents.

Parents' work site affected not only issues of child care, but also issues of stress related to work. Differences were significant between the hospital and mill settings. Hospital employees indicated significantly higher levels of concern about job satisfaction, absenteeism, and time spent with significant others.

Issues of child care were also affected by work site. Hospital parents and credit office parents were significantly more likely to combine different sources in order to provide child care ("packages of child care"). The use of external sources for child care was also greater for the hospital and office parents.

Both divisions of this sample indicated differences in the combined stress of work and family. The hospital parents and split shift parents rated their level of stress highest.

Conclusion. Transformations in child care over time are linked to family constraints and scheduling. The effects denoted by work site may be an indication of varying employer awareness of the dual roles their employees manage. The economic situation and employer demands have forced many parents into work situations that are difficult to reconcile with available child care alternatives. Many parents are living with high stress as a consequence.

APPENDIX A

COMBINED STRESS OF DUAL ROLES

COMBINED STRESS OF DUAL ROLES

CHILD CARE CHANGES IN THE LAST YEAR

DIFFERENT FORMS OF CHILD CARE USED

OBJECTIVE STRESS FACTORS AND TASK REQUIREMENTS IN BLUE-COLLAR WORK: AN EXAMPLE FROM GERMANY

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Work stress can be measured objectively as the results of a study among 162 German blue-collar workers show.

Based on Action Regulation Theory (Oesterreich & Volpert, 1986), a model will be discussed in which 2 dimensions are differentiated:

- objective task-related stress, defined as working conditions which hinder the achievement of results without allowing the worker to deal effectively with them.
- objective task requirement for planning, thinking and deciding, which are considered to promote mental health.

The project presented tried to deal with several critisims which had been expressed against occupational stress research in the past:

- In order to avoid bias producing spurious associations between self-reported job stress and self-reported health conditions, work stress was assessed objectively.
- Not only "negative" stress factors but also "positive" aspects of work were defined.
- Concrete criteria work job design were derived from the investigation, meeting a need which has been often expressed by work designers in companies: the need for applicable research results rather than abstract scientific recommendations.

Stress and level of task-requirements were measured objectively through trained observers with the work analysis instruments VERA and RHIA. Work conditions were assessed, therefore the approach was focused on conditions rather than the individual appraisal of the worker. The results yielded a good concordance between two independent raters, who analyzed the same work task while observing different workers (e.g. observer A observes worker x in the day shift, observer B worker Y in the afternoon shift). Remarkable correlations between work stress and psychosomatic complaints were obtained.

An analysis of the most common stress factors reveals that they could be remedied through an altered work organization. Concrete criteria for job design as they were developed through other studies done in Germany and Scandinavia with the same job analysis instruments include the two dimensions mentioned earlier: It is not only necessary to reduce stress factors in order to protect health but also to raise the level of planning and decision-making requirements of the work task in order to promote health.

CONSEQUENCES OF SEXUAL HARASSMENT FOR CULTURALLY DIVERSE WOMEN MEDICAL STUDENTS

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Till (1980) identified five types of academic sexual harassment. Gender harassment consists of insulting, degrading, or sexist remarks and behaviors. These activities are directed at the victim because of her/his gender and are not intended to lead to sexual or social activity between the harasser and the victim. Seductive behavior involves the solicitation of unwanted, inappropriate, or insulting social or sexual behavior and often includes touching. Sexual bribery seeks to elicit social or sexual behavior in exchange for institutional or social rewards. Sexual coercion includes threats or intimidation by the harasser as a result of victims' noncompliance with sexual or social requests and/or pressures. Sexual imposition entails gross sexual intrusion, assault, or rape. Fitzgerald et al. (1988) operationalized these five types of harassment in the 28-item Sexual Experiences Questionnaire (SEQ).

Sexual harassment is problematic in mentor-protege relationships where powerful individuals can humiliate, intimidate, or coerce students in gender or sexual areas. Women graduate students have reported a high incidence of sexual harassment during various graduate-level training programs (Bailey & Richards, 1985; Bond, 1988; Fitzgerald et al., 1988). Researchers described the widespread abuse of medical students by peers, house staff, pre-clinical faculty, and clinical faculty (Sheehan et al., 1990; Silver & Glicken, 1990). Although considered as a facet of abuse, sexual harassment was not examined in detail and operational definitions were circumscribed. Recently, women medical students reported a high incidence of the five types of harassment by peers, house officers, and faculty during medical school (Grimm, Grimm, Adler, & Kelly, 1990).

Unfortunately, research on the incidence of academic sexual harassment has essentially ignored participant race and ethnicity as relevant variables. Women belonging to racial and ethnic minorities might be particularly susceptible to academic sexual harassment, especially given their financial vulnerability and the images and perceptions in this culture of women of Color (DeFour, 1990). This research reexamined the incidence data previously reported by 102 women medical students on the SEQ according to the women's ethnic and racial identity. White non-Jewish women (N=31), White Jewish women (N=51), and women of Color (N=20) all reported a high incidence of sexual harassment (100%; 90%; 90%). With respect to type of harassment, White non-Jewish women, White Jewish women, and women of Color were highly likely to report gender harassment (100%; 88%; 90%), seductive behavior (68%; 57%; 45%), and sexual imposition (16%; 20%; 10%). Despite these data, only 23% of White non-Jewish women, 12% of White Jewish women, and 10% of women of Color identified at least one of their experiences as sexual harassment. The consequences of harassment women medical students and women's available and utilized social support networks are also reported.

PREDICTING THE INCIDENCE AND MAINTENANCE OF PSYCHOLOGICAL SYMPTOMS ACCOMPANYING SEVERE WORK RELATED HAND INJURY

Brad K. Grunert, Ph.D., Stephen W. Hargarten, M.D.,
Rebecca C. Anderson, Ph.D., and Louise Thorin

Severe hand injuries are frequently accompanied by significant difficulties in adjustment. The present study was designed to utilize a pre-surgical screening of psychological adjustment and to determine how well long term adjustment problems were predicted on the basis of this. One hundred and twenty patients with severe hand injuries occurring in the work place were administered a pre-surgical questionnaire in the Emergency Room evaluating flashbacks, avoidance and causal factors pertaining to their injuries. These patients were then evaluated by a psychologist shortly after surgery and with longer term follow-up of at least six months. Flashbacks initially occurred in over 70% of the patients. This decreased at follow-up to approximately 50% of the patients. Approximately 52% of the patients indicated no avoidance at the time of initial injury. Avoidance developed in a significant number of these individuals at follow-up. In addition, whereas these patients initially reported personal error or fatigue as the cause of their injury in 48% of the cases at the time of initial screening, 6% of these individuals reported this as the cause of their injury at follow-up. Over 80% reported machine failure or lack of safeguards as the cause of their injury at follow-up. Individuals who reported reasons beyond their control occurring in their work place as the cause of their injury were much more frequently symptomatic than those individuals who felt that their injury was the result of an error which they made. Pre-surgical screening appeared to be a very helpful means of identifying individuals at risk for ongoing adjustment problems following severe, work related hand injury. The screening interview was easily administered and generally took less than 5 minutes of the Emergency Room staff's time.

TREATMENT OF POST-TRAUMATIC STRESS DISORDER AFTER WORK RELATED TRAUMA

Brad K. Grunert, Ph.D., Rebecca C. Anderson

Traumatic work injuries frequently result in psychological stress. Previous studies have documented the presence of a wide variety of psychological symptoms which accompany work related trauma. Post-traumatic Stress Disorder (PTSD) has been identified as the most frequent psychiatric diagnosis occurring among these patients. Symptoms associated in PTSD include: 1) flashbacks or nightmares which are representative of intrusive thoughts; 2) exaggerated startle responses; 3) disturbance of sleep; 4) avoidance of close interpersonal relationships; 5) feelings of guilt; 6) high levels of anxiety and depression; and 7) impairment of concentration and memory. A variety of techniques have been utilized to treat PTSD with the majority of the work in this area being done with Vietnam War Veterans. Interventions have focused on either having patients directly confront aspects of the trauma and/or education and skills to manage the reactions they had to the trauma such as relaxation training and hypnosis. In our experience with work-related hand trauma, we have developed techniques which are effective in the treatment of symptoms of post-traumatic stress disorder. These techniques include confronting and reprocessing of intrusive thoughts combined with coping skills training which was found effective in reducing all symptoms except avoidance reactions. An early return to the work-site was also useful with patients who had experienced mild avoidant reactions although many patients were unable to accomplish this. A graded work exposure was a highly successful technique with those patients with moderate avoidant reactions. For individuals with severe avoidant reactions, on-site job evaluations were used with good success. On-site job evaluations were an expensive intervention due to the fact that the patient was accompanied on-site by a psychologist and hand therapist and in general these patients required an additional 1-3 months of psychotherapy before returning to work. In general in our experience we feel that early recognition of those individuals at risk for development of PTSD is essential and that successful rehabilitation of the severely hand injured patient is possible when recognized and treated early.

OCCUPATIONAL STRESS AND HEALTH AMONG ANGLO AND ETHNIC MINORITY UNIVERSITY EMPLOYEES

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A vast and rapidly expanding literature has documented the link between occupational stress and poor health outcomes among employees across a wide variety of work settings (Beehr & Bhagat, 1985). These detrimental health outcomes have been linked to employee absenteeism, escalating health care costs, and lowered organizational productivity. One framework that has proved useful in this research arena is provided by the Person-Environment Fit (PEF) theory (Van Harrison, 1985). This model posits that stress is a function of incongruence between the person and the environment. The model suggests two types of fit as being of importance, the second of which is most relevant to this research project. When the work setting does not provide the resources (e.g. tools, rewards) or the work environment is not conducive to meeting the individual's needs, stress will result. This stress may then manifest itself in psychological strain (anxiety, lowered self-esteem), behavioral symptoms (substance abuse, absenteeism), or physiological problems (hypertension, elevated cholesterol levels).

Unfortunately the vast majority of the work conducted to test this model has been characterized by basic methodological limitations. For example, many of the investigations have focused on employees in management positions as opposed to the rank and file, and with few exceptions (e.g., Fernandez, 1981; Ford, 1985; Ramos, 1975), the primary targets of investigations have been white males. One implication of this pattern of investigation is that the conclusions drawn from the research, and consequently, any interventions derived from it, may not apply in the same way to employees who are not in management, or to female and ethnic minority members of the workforce.

The present study was designed to test the applicability of the PEF model of stress and illness in a workforce with diverse subgroups.

METHOD

Surveys were sent through campus mail to approximately 1500 employees (375 each white males, white females, minority males, minority females) at the main and the west campuses of Arizona State University. All minority employees were chosen to participate, and were matched with whits employees on gender, job classification and salary. Approximately 62% of the sample returned the survey. The survey instrument included the following measures:

1. Demographic information - age, race, education, job status.
2. Work unit structure questions - race/gender of supervisor, race/gender composition of work unit.
3. Job Related Tension Index (Ramos, 1975).
4. Social Support Measure (House, 1981).
5. Perceived Discrimination Index (Fernandez, 1981).
6. Health Problems Checklist (Denney, 1983).

RESULTS AND CONCLUSIONS

The primary dependent measure in the study was health. Subject responses to the questionnaires listed above were treated as predictors of illness as reported on the Health Problems Checklist.

Some selected results follow. As predicted:

1. Stress was positively correlated with health problems.
2. Perceived discrimination against females was positively correlated with health problems.
3. Social support was negatively correlated with health problems.
4. Women reported significantly more health problems than men.

5. For males, health problems increased under conditions of high stress, but health problems were moderated by social support from the family. Females' health problems increased under conditions of high stress, but unlike males, health problems were not moderated by social support from the family.

6. When minority and white females perceived discrimination against females in their work environment, health problems increased. The same effect occured for minority males, but white males' health problems showed no changes.

These results and others from the study are expected to expand our current base of knowledge regarding the stress-health relationship. Results will be based on data collected in a new domain from populations that have been virtually ignored in previous scientific endeavors.

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SOCIETY, WORK ENVIRONMENT AND FAMILY AS STRESSORS - A COMPARATIVE STUDY OF WOMEN IN THE WORKPLACE IN THREE TYPES OF SOCIETIES

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Conditions in the work environment, which are perceived by the individual as stressful, are according to earlier research associated with physiological changes. Workload, lack of autonomy of work, conflict-ridden workplace climate, and sexual harassment are used as intervening variables in this study on the effect of type of society and workplace and of family relations on stress symptoms of women.

The three types of society studied are 1. Michigan in the USA representing liberal welfare-state regimes, 2. Denmark, Finland, and Sweden in Scandinavia with social-democratic welfare-state regimes, and 3. Estonia and Russia in the former Soviet Union which at the time of the study still had a communist regime. The occupations studied are engineer, dentist, technician, teacher, and factory worker; the study covers five types of workplaces which vary according to social status and gender composition.

Scandinavian welfare state policies have paid special attention to the humanization of working life, linking work and family together, and gender equality. The workplaces in Scandinavia were expected to be relatively

responsive to the needs of female employees. It was assumed that Scandinavian women would have less stress symptoms than women in the two other types of society.

The data was collected in 1985-1990 through personal interviews, mailed questionnaires, and distributing questionnaires in selected workplaces. The sample includes 1 123 women. Stress symptoms were measured by asking how often (4-point scale) the respondent experienced 1. headaches, 2. trouble sleeping, 3. stomach pains or digestive problems, 4. anxiety, tension, 'nerves', or 5. depression, feeling blue. The reliability (Cronbach's alpha) of the sum-scale is .76, ranging from .67 in Scandinavia to .76 in the USA. The data was analyzed by using analysis of variance and path analysis as research techniques.

Scandinavian women had less stress symptoms than had the women in the USA and the former Soviet Union. When the effect of the other variables included in the path model (workload, autonomy, workplace climate, and sexual harassment) were controlled, dentists and technicians reported of more stress symptoms than did the engineers, teahers, and workers.

Heavy workload correlated with high stress level only in the USA. Lack of autonomy of work and sexual harassment explained stress in USA and

Scandinavia, poor workplace climate in Scandinavia.

In the USA and Scandinavia, multiple roles (living with a partner) diminished stress symptoms indirectly through experiencing the workplace to be congenial and having a low amount of sexual harassment. In Scandinavia, a happy marriage and having children were linked with lack of stress symptoms.

Communist policies favoring techonology and manual work had positive effects on the health of some groups in Estonia and Russia. In the former Soviet Union engineers and workers reported relatively few stress symptoms. Most of the work and family conditions, which were studied in this project using a Western sociology of work approach, were not connected with stress symptoms in the former Soviet Union, which at the time of data collection was experiencing profound social changes and economic hardship.

THE DEVELOPMENT OF A HEALTH CONDITION SCALE AND ITS RELATION TO HEALTH AND RETIREMENT SATISFACTION

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The development and item analysis of a health condition scale was completed because of the importance of health to individuals' work and non-work activities. Health is a dependent variable that is sensitive to variation as a result of both organizational and job stress, and is important to both organizations and individuals. A short, easy-to-administer, health scale would be useful in research that focuses on the relations among employees' reactions to their work including both attitudinal and behavioral measures, as well as possible nonrecursive relations among health and attitudes.

Past research overwhelmingly supports a negative relationship between job satisfaction and health conditions (e.g., Cooper & Marshall, 1976; Ivancevich & Matteson, 1980). Job dissatisfaction may occur as a result of stress in one's work or job; job stress is an antecedent of poor health. The relations between one's health condition, health satisfaction, and retirement satisfaction are important because of the longevity of Americans and because of the effects of retirement attitudes on well-being and retirement activities.

This research developed and evaluated a measure of individuals' self-described health condition. The items in the health condition scale were written in a checklist format with yes-no response options. For example, individuals were presented with an item, such as "High Blood Pressure," and responded no or yes as it pertained to them. Nineteen items were evaluated in this study.

There were 821 participants in this research who completed the health condition scale, a measure of health satisfaction, and a scale assessing anticipated satisfaction with retirement, for employees, and retirement satisfaction, for retirees. Individuals were primarily over the age of 50 and the sample was comprised of 572 employees and 249 retirees. The majority of individuals were faculty and staff members at a university; the remainder of the sample consisted of individuals who were attending a conference for older individuals and were employed or had been employed in jobs including, for example, librarian, plumber, accountant, CEO, and teacher.

Item response theory (IRT) analyses were completed on the health condition scale items. IRT allows one to estimate individuals' latent trait with regard to some object based on their responses to items within a

scale. These analyses provide information on which items may require further evaluation or those that need to be deleted from the scale.

An evaluation of the health condition scale revealed that the majority of items met all relevant IRT criteria for scale inclusion. Retirement valence/satisfaction and health satisfaction were related to the health condition scale in meaningful ways. The health condition scale is psychometrically sound and would be useful in research examining the effects of job dissatisfaction on health and its relation to retirement valence/satisfaction.

OCCUPATIONAL STRESS AND JOB ATTITUDES: THEIR RELATIONS TO RETIREMENT AND OTHER ORGANIZATIONAL WITHDRAWAL BEHAVIORS

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Theoretical writings have argued that researchers should examine relations between general attitudinal variables and general behavioral families (e.g., Thurstone, 1931; Fishbein, 1979). Hanisch and Hulin (1990, 1991) have provided empirical data supporting this general attitude/general behavior relation in the area of organizational attitudes and withdrawal. Employees were found to exhibit meaningful patterns of behaviors in response to their general work attitudes. Focusing on general relations provides a mechanism for expected generalizations to other, as yet unstudied, attitudes and behaviors.

Two general organizational withdrawal behavior families, work and job withdrawal, have been identified and empirically supported in three studies (Hanisch & Hulin, 1990, 1991, under review). Work withdrawal (e.g., unfavorable job behaviors, lateness, absenteeism) has been defined and assessed as tendencies to avoid specific work tasks and minimize work-role inclusion. Job withdrawal (e.g., quitting, retiring) has been defined as tendencies to remove oneself from a specific organization and

its implied organizational role. Antecedents of work and job withdrawal are general attitudes (e.g., work satisfaction, job importance). The behaviors within each family have been found to be interrelated (see Hanisch & Hulin, 1990; 1991). Individuals may enact one or more of the behaviors from one of the families based on their general attitude. Which specific behavior they choose to enact is more a function of the work environment than it is of their attitudes.

Job stress, defined as negative reactions to one's job or work role, was included in the current research to examine its relation to job dissatisfaction and withdrawal behaviors. Individuals experiencing job stress would attempt to alleviate it by means of behaviors selected from homogeneous families of withdrawal behaviors. Dissatisfied individuals are assumed to enact behaviors that will reduce their involvement in performing dissatisfying tasks (i.e., work withdrawal) or remove them from situations that generate the stress (i.e., job withdrawal). Recent work in the development of a "stress-in-general" scale (Smith, Balzer, Ironson, Paul, Hayes, Moore-Hirshl, & Parra, 1992) suggests that job stress and job satisfaction are two independent constructs; their joint relations to employee withdrawal behavior families have not been analyzed. In addition, the relations among job stress and general work

attitudes to employees' health condition were examined. Past research indicates that job dissatisfaction and stress are antecedents of poor health. A health satisfaction and objective health condition scale were included in this research to allow a more complete understanding of the effects of stress on employees.

Approximately 325 employees at a midwestern state university completed a computer-based interview at their work location. Relevant sections of the interview included: Work satisfaction, pay satisfaction, co-worker satisfaction, health satisfaction, health condition, job stress, job importance, work withdrawal, and job withdrawal. The relations among these measures, with a focus on job stress as a new component to the research completed by Hanisch and Hulin (1990, 1991, under review), were evaluated using multiple regression and causal modelling.

A recommendation from the research is for continued use of general attitudes, including stress, to understand employees' patterns of behavior in formal work settings.

JOB STRESSORS AND DEPRESSIVE SYMPTOMS AMONG JAPANESE WORKERS

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The purpose of this study is to examine the relationships between job stressors and depressive symptoms in Japan. In 1984-1985, a cross-sectional survey was conducted of employees of two large electric companies in Japan. Each employee was asked to complete a self-administered questionnaire. 6,097 and 2,109 employees of each company responded the survey. The response rate were 92% and 82%, respectively. Occupation, hours of overtime, job overload, lack of control over work pace, unsuitable job, lack of social support at work, and future ambiguity were assessed as job stressors. Depressive symptoms were measured using the Self-rating Depression Scales (SDS) developed by Zung (1965). The SDS has acceptable reliability and validity also in Japan. The subjects whose SDS scores were 48 or more were defined as depressive. 1) Computer engineers had the highest occupation-specific rate of depression, machine operators had the second highest rate, and managers had the lowest rate. 2) Lack of control over work pace, unsuitable job, lack of social support at work, and future ambiguity were strongly associated with depressive symptoms, while hours of overtime or job overload was not or only weakly associated. The causal relationship is not clear because this study was a cross-sectional questionnaire survey, and no standard scales was used to measure job stressors. However, it is suggested that computer engineers and machine operators are high risk populations for depressive symptoms, and lack of control over work pace, unsuitable job, lack of social support at work, and future ambiguity may be risk factors for depressive symptoms in Japan.

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THE MEASUREMENT OF GLOBAL JOB STRESS AND WORK SOCIAL SUPPORT

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The present paper discusses the development and validation of the Stress in General (SIG) scale and the Work Social Support Questionnaire (WSSQ). The initial development of the SIG scale grew from a larger project aimed at developing a measure of global job satisfaction, the Job in General (JIG). Results from this project suggested that some items (e.g., *stressful*, *tense*, *nerve-wracking*, and *pressured*) reflected a psychometrically distinct factor from general job satisfaction (e.g., global job stress). Based on the literature, additional stress items were written by the research team to be included in the SIG.

Eighteen SIG items were administered to four independent samples (N ranged from 264 to 4315). Results showed that the SIG items were internally consistent. Factor analyses of the SIG and JIG items revealed a two-factor solution, each factor generally described by either SIG or JIG items.

The SIG was moderately negatively correlated with the JIG. The SIG, compared to the JIG, showed higher correlations with a measure of time pressure and a single-item measure of overall job stress, while the JIG showed higher correlations with intent to quit, measures of facet job satisfaction, and job involvement.

The Work Social Support Questionnaire (WSSQ) was designed to assess the perceived availability of social support for work-related problems from three sources of support (supervisor, coworkers, and spouse, friends and relatives). Each item reflected one of four functions of support (tangible assistance, emotional, directive guidance, and cognitive information) in the context of a specific job stressor. For each item, respondents indicated how much they can rely on one of the three sources for support.

A factor analysis (N = 217) of the WSSQ items revealed a clear three-factor solution, each factor representing a source of support. Cronbach's alpha estimates for each of the scales were above .94.

The correlations (N = 150) of a MTMM matrix suggested that the three scales of the WSSQ assess three distinct constructs. Also, only the work-related WSSQ scales (e.g., supervisor, and coworker) were negatively related to perceived job stress (SIG) and positively related to global job satisfaction (JIG). Additionally, supervisor support buffered the effect of job stress on job satisfaction. The buffering effect of supervisor support may reflect the fact that SIG assesses, to a large degree, time pressure, a source of stress with which a person's supervisor can provide a great amount of help, at least relative to the other sources of support.

The SIG and WSSQ are psychometrically sound measures of global job stress and work-related social support, respectively. Additionally, the WSSQ, unlike previous measures of work social support, can be used to provide specific feedback to supervisors and coworkers regarding their supportive behaviors.

THE COMBINED EFFECTS OF OCCUPATIONAL STRESS AND HIGH DIETARY SODIUM INTAKE ON BLOOD PRESSURE.

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Occupational, psychosocial, and dietary factors have been implicated in the development of hypertension, although the mechanisms by which these factors affect long-term blood pressure, either independently or synergistically, remain unclear. Specific occupational groups are at increased risk for developing hypertension, and blood pressure at work has been found to be higher than blood pressure at home. Dietary sodium and potassium have also been implicated in the development of hypertension, although the specific role these factors play remains controversial. The combined effects of occupational stress and dietary sodium intake on blood pressure have not been studied extensively in humans, although evidence from the animal laboratory indicates that behavioral stress and sodium intake may have synergistic blood pressure effects and contribute to the development of hypertension.

The results from two studies that investigated the synergistic effects of occupational stress and a high dietary sodium intake on blood pressure will be presented. An occupational group was selected which provided the opportunity to examine the blood pressure response to a high sodium intake during periods varying in the degree of stress. Medical students were randomly assigned to either a high or usual sodium intake during two weeks while they prepared for final examinations. Following 10 min of seated rest, systolic (SBP) and diastolic blood pressure (DBP), mean arterial pressure (MAP), and heart rate (HR) were recorded at baseline and after 14 days on the sodium diets. In the first study, subjects were studied again during the summer months when academic demands were minimal. In the second study, overnight urinary sodium and potassium excretion and plasma levels of renin and aldosterone were examined at baseline and after the 14-day sodium manipulation.

Both studies demonstrated a significant effect of the high sodium intake during the exam preparation period on resting MAP relative to the usual sodium diet during the exam period. The increase in resting MAP was not accompanied by an increase in heart rate or an increase in body weight. When academic demands were minimal, the high sodium intake was not associated with an increase in resting MAP. The magnitude of the increase in SBP was positively correlated with baseline body weight and negatively correlated with the change in overnight urinary potassium excretion. Although a significant decrease in both plasma renin and aldosterone were observed in the high sodium group, changes in the level of these hormones were not correlated with the increase in blood pressure. No significant effect of gender or family history of hypertension was observed on SBP or MAP when baseline values were statistically controlled.

A range of adrenocortical hormones may increase blood pressure under

conditions of stress, through effects on fluid volume and sodium transport. Although a major role for the renin-angiotensin-aldosterone system is unlikely, these findings suggest that behaviorally induced neuroendocrine responses to occupational stress can potentiate the blood pressure response to a high sodium intake and that chronic occupational stress may play an important role in the development of some forms of hypertension.

EVALUATION OF A PARTICIPATORY ACTION RESEARCH APPROACH TO A PREVENTIVE WORKSITE STRESS INTERVENTION

Catherine A. Heaney, Barbara A. Israel,
Susan J. Schurman, James S. House, Elizabeth Baker,
and Margrit Hugentobler

Overview: This paper presents an evaluation of a five year participatory action research project aimed at reducing occupational stress and enhancing employee well-being in a manufacturing plant. The project represents a joint effort of plant management, the local union, and a team of University researchers. The main intervention goals of the project were: (1) to identify and reduce sources of stress in the physical and social work environment that could be modified, and (2) to increase social and organizational resources available to employees in order to buffer against the potential negative impact of worksite stressors. Specifically, the project attempted to increase employee participation in and influence over decision-making at work and to enhance supervisory and coworker relationships.

Program Description: A participatory action research approach allows for the worksite stress intervention to be tailored to the needs and the values of the employees and the organization. The research team assisted in the development of a site-based Stress & Wellness Committee. This committee then assessed (through interviews and a plantwide survey) the stressors, resources, and strains of the plant employees. Based on this needs assessment, the committee formulated and implemented action strategies aimed at reducing the most prevalent stressors and strains and enhancing the social environment at work.

Evaluation Methods: The action research process was embedded in a longitudinal research and evaluation design. Plantwide surveys were conducted during the first year of the project (1986) and again in 1991. Questionnaires assessed employee physical and mental health, as well as stressors, the quality of work relationships, and participation and influence in decision-making. In addition, ongoing qualitative data collection in the form of semi-structured interviews and field observations helped to illuminate the meaning of and provided cross-validation of the survey results.

Knowledge of and involvement in the project were assessed for each employee who participated in the final plantwide survey. These variables were then used in multivariate regression analyses to predict changes in key study variables. In addition, during the course of the study, the manufacturing facility split into two separate plants with quite distinct management styles and

organizational cultures. The effects of participating in the project were assessed separately for each of these plants.

Results: Preliminary results suggest that employees with high levels of knowledge of and involvement in the intervention were more likely to experience increases in participation in worksite decision-making, satisfaction with participation, and employee influence over decisions that affect employees' jobs. In addition, these same employees reported an enhanced organizational climate for participation, as well as more supportive coworker relationships. Plant-specific results indicate that the project did have different effects in the two plants.

A PREVENTIVE INTERVENTION TO INCREASE EMPLOYEE COPING RESOURCES: ENHANCING WORK RELATIONSHIPS AND IMPROVING WORK TEAM FUNCTIONING

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This paper presents the results of a randomized field experiment in which human service workers participated in a theory-driven training program designed to increase individual and group psychosocial coping resources and the ability to cope with job demands. Four domains of outcomes were hypothesized to be affected by the intervention: (1) social support and social network contacts, (2) employees' confidence in their abilities to cope with common work problems, (3) organizational climate for problem-solving and work team functioning, and (4) psychological well-being.

Participants in the Caregiver Support Program (CSP) were direct care staff and home managers who worked in community residential care facilities for the developmentally disabled or the mentally ill. The CSP consisted of six training sessions, each lasting approximately four to five hours. The content of the CSP was guided by psychosocial theories of coping with job demands. For enhancing work relationships, the CSP introduced employees to the concept of a support system and how it could be used effectively. Participants mapped their own networks, described the support and resources that they receive from network members, diagnosed the weaknesses and strengths of their networks, and then refined the social skills needed to make best use of their networks. The goal of facilitating positive work team functioning was addressed by motivating participants to engage in a participatory approach to decision-making and by teaching them a group problem-solving process that could be used in staff meetings.

Data were collected from both control and experimental group members (N=1375), using self-administered surveys, one month prior to the training program and five weeks after training ended. Sources of selection that can bias a field experiment were modelled and incorporated into the overall analysis of the impact of the intervention. These sources of selection included: (1) choosing not to respond to the Time 2 survey, (2) choosing to leave one's job between Time 1 and Time 2, and (3) choosing not to attend the training sessions.

Standard experimental-control comparisons indicated that the program increased the amount of supportive feedback received on the job, strengthened participants' perceptions of their ability to handle disagreements and

overload at work, and enhanced work team climate. The inclusion of selection variables controlled for selection biases and also allowed us to assess the impact of the training on those workers identified as most prone to turnover and on those most likely to participate in such an intervention. These results indicated that the program reduced depressive symptoms and somatization in those most at risk for leaving their jobs. The program was also effective in increasing supervisor support, supportive feedback, and participants' perceptions of their ability to handle work stresses in those workers most likely to participate in the program.

OCCUPATIONAL STRESS AND THE SICK BUILDING SYNDROME: A SURVEY OF 4,479 OFFICE WORKERS

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The results of a self-administered questionnaire survey of 4,479 office workers sampled from 27 airconditioned office buildings will be described. Workers were asked about the frequency of occurrence of 15 sick building syndrome symptoms, their perceptions of environmental conditions in the office, several personal variables, and occupational factors, including hours of computer use, and self-rated job stress and job satisfaction. Responses to perceived environmental conditions were factor analyzed and, based on this, 7 questions were used to construct a scale of perceived indoor air quality (PIAQ). Ratings of job stress and job satisfaction were factor analyzed and two orthogonal factors were extracted: a job stress factor and a job satisfaction factor. All scales had high reliability coefficients. Symptoms that were alleviated on days away from work were categorized as work-related. Almost three-quarters of the sample reported at least one work-related symptom of sick building syndrome. Multiple regression analyses were conducted with the total number of symptoms per worker as the dependent variable. Worker's age, job grade, and smoking status were not associated with symptoms. Worker's gender, PIAQ score, hours of VDT use, job stress and job satisfaction scores together accounted for over 30% of the variance in SBS symptom reports ($R^2 = 0.32$, $p<0.0000$). The results demonstrate that reports of sick building syndrome symptoms are influenced by several individual and occupational factors. We hypothesize that these factors may act to change each worker's susceptibility to environmental conditions, which in turn may precipitate their health problems.

FREQUENT BREAKS DURING COMPUTER-MEDIATED WORK: EFFECTS ON PRODUCTIVITY & WELL-BEING IN A FIELD STUDY

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VDT operators performing repetitive tasks are known to experience fatigue and musculoskeletal discomfort that is not completely offset by conventional rest breaks. Preliminary results from laboratory studies at NIOSH suggest that worker productivity and well-being can improve when workers take frequent, short rest pauses while remaining at their workstations in addition to taking conventional rest breaks (Sauter & Swanson, 1991). In an effort to verify that frequent rest breaks during computer work would benefit workers in an actual work environment, a field study was conducted at a claims processing operation of a large insurance company.

78 VDT operators were divided into three groups based on years of VDT experience and team membership (operators normally worked in small teams of between 6 and 12 people). Following a two-week baseline period, groups were randomly assigned to conditions. In both treatment conditions, operators were instructed to take four short "computer breaks" each hour (three 30-sec breaks and one 3-min break) in addition to their conventional 15-min mid-morning and 15-min mid-afternoon rest breaks. Small indicator lights mounted on the VDT monitor and document holder signalled operators when to take a "computer break." Operators were asked to cease VDT work and to relax in their chair during the 30-sec computer breaks. During the 3-min computer breaks, however, operators were asked to perform alternative forms of work (other than computer work, e.g., leave their workstation to return processed claims). One of the treatment groups also received training on how to perform a set of stretching exercises specially developed to reduce musculoskeletal discomfort associated with prolonged periods of uninterrupted VDT use. Participants in the control group did not receive the additional computer breaks nor the stretching exercises. The test of the computer break system (with or without the stretching exercises) continued for one month.

VDT operators were asked to complete a survey of their mood state and musculoskeletal discomfort three times each day; 1) at the start of the workday, 2) at mid-day before lunch, and 3) at the end of the work day. Operator ratings of mood items (e.g., "I feel tense.") were combined into mood scales for fatigue, tension, calm, and vigor. Operators also chose a comfort descriptor (e.g., slightly comfortable, very uncomfortable) for specified regions of their body; eyes, back, legs and feet, hands and arms, and neck and shoulders. Productivity measures were obtained from company records. Worker acceptance of the microbreak schedule and exercises was assessed in a follow-up survey. Demographic information permitted statistical control of confounding variables (e.g., smoking behavior, since smokers were permitted to take more frequent, but shorter, rest breaks).

MODELING SEXUAL HARASSMENT: A PRELIMINARY ANALYSIS

Matthew Hesson-McInnis, University of Illinois
Louise F. Fitzgerald, University of Illinois

Fitzgerald and Ormerod (in press) have recently proposed a theoretical model that conceptualizes sexual harassment as an occupational stressor whose individual outcomes (job-related, psychological and health-related) are a joint function of stressor severity, individual vulnerability and organizational context, as mediated by individual response (coping) strategies. The present paper describes a first attempt to test this model in the Merit Systems (USMSPB, 1987) data set.

Our sample consisted of a subset of 1526 women drawn from a 1987 survey of the federal workforce; all women had experienced at least one incident of sexual harassment. Theoretical limitations (primarily the measurement properties of the data set and its skewed polychotomous nature) prohibited the analysis of a full covariance structure model, including both measurement and structural submodels. We thus formed an aggregate variable (representing a simple sum or contrast) for each latent construct and performed a path analysis on these aggregates; the model was developed on Sample A (n = 751) and then cross-validated on Sample B (n = 775). In the cross-validation analysis, the model demonstrated excellent fit to the data and was able to account for 27% of the variance in job outcomes and 57% in health-related outcomes.

The results clearly demonstrated that perceived effectiveness of coping, the extent of sexual harassment history and the level of organizational tolerance of harassment are the key determinants of outcomes. The level of organizational tolerance was the main determinant of the individual's coping strategy, thus underscoring the importance of organizational level interventions for responding to this problem.

ON-SITE EMPLOYER SPONSORED CHILDCARE: A "WIN-WIN" SCENARIO

Scott F. Hill
Carol Miller
Cynthia D. Fobert

Childcare has become one of the key human resource issues of the 1990's. On-site employer sponsored childcare is a workplace option that is receiving increasing consideration within corporate America. One means of providing this option entails creating a cooperative consortium between business, government, and parents to provide quality childcare, decrease work stress, increase job satisfaction, and support individual family units.

Lancaster Laboratories, Inc.(LLI) and the Salt Lake City Veterans Affairs Medical Center (SLCVAMC) represent two types of organizations which identified a need for on-site childcare. While each organization approached the issue differently, they found that on-site childcare increased recruitment and retention, reduced parent stress and improved morale. Additionally, both organizations have found that having quality on-site childcare adds a "safety net" for employees' families by providing parent education and training, identifying "at risk" children, and targeting them for intervention through professional consultation.

First Friends is a 501(c)3 not-for-profit corporation created by federal employees in Salt Lake City to provide dependent care. It is funded by fees from parents and support from the SLCVAMC. First Friends is only the third onsite childcare center in Utah and the first located at a medical center. The LLI program, named the Hildebrandt Learning Center, provides on-site childcare for children from six weeks through kindergarten age. In a specially built wing, LLI also offers child care for mildly ill children. In addition to child care, LLI offers adult day care for frail elderly or physically/mentally challenged dependents of employees. Intergenerational activities are also fostered at this facility.

From a recruitment/retention standpoint, both organizations found that providing on-site childcare reduced turnover and improved retention. At LLI, 92% of women who were pregnant returned to work following the birth of their children, while at SLCVAMC, nursing turnover was reduced from 22% to 12% in the year following the opening of their childcare center. These type of results confirmed for management officials that on-site childcare was cost effective and provided a positive effect on productivity and service delivery.

As part of the presentation, survey data will be presented from both sites measuring the impact of on-site childcare on employee stress and morale. These data will attempt to quantify anecdotal reports which suggests the positive and buffering effects of an onsite center. In this way, the study will hopefully demonstrate that on-site child and dependent care create a "win-win" scenario for employers, employees, and their families.

FIT✓CHECK
A HEALTH AND FITNESS PROMOTION PROGRAM FOR PUBLIC SAFETY WORKERS

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Lynn M. Artz, School of Public Health
Kathleen Brown, School of Nursing
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Firefighters and police officers are at high risk for stress-related illnesses and injuries because of the hazardous nature of their work. Personnel from the University of Alabama, Birmingham School of Medicine and School of Nursing deliver Fit✓Check annually to members of the fire and rescue department of Birmingham, Alabama.

Fit✓Check consists of an annual medical screen, a battery of fitness tests, job task performance testing, a nutritional analysis (National Cancer Institute) and a Life Style Inventory based on CDC's Behavioral Risk Factor Survey. In addition to the annual testing the 600+ firefighters participated in an on-the-job Fitness Training Program. The fitness training consisted of flexibility exercises, strength development exercises and aerobic training (walking and running).

The firefighters repeated the annual testing for 2 years following initial baseline measures. The fitness test battery was developed from recognized health fitness tests and were quantified on a point system which allowed each firefighter to receive a numerical fitness rating. The numerical fitness scores were then transposed into categorical ratings of Excellent, Good, Average, Fair, Poor and Very Poor. Fitness scores improved significantly after 2 years of on-the-job training. From 1989 to 1991 injury rates dropped 25%, health care costs dropped over $200,000 and personal sick leave time decreased 30%.

In addition to the fitness program firefighters also received nutrition interventions, smoking cessation programs, and cholesterol and hypertension reduction programs. Firefighters with back injuries attended a back school. Firefighters with below average performances of the job tasks attended a physical rehabilitation program.

The Life Style Inventory contained several questions which required a subjective response about perceived stress. One item asked firefighters to rate their perceived stress during the 2 weeks prior to the testing. The following chart indicates the percentage changes in the perceived stress ratings:

	(% responded) 1989	(% responded) 1991
A lot of stress	20.03	17.67
Moderate stress	45.99	41.80
Little stress	22.13	26.94
Almost no stress	9.06	12.09

The percentage of firefighters who responded that they had thought about seeking help for personal or emotional problems from a helping professional or a self-help group in the past year dropped from 10.01% to 5.83%.

The percentage of firefighters who responds that they actually sought help for personal or emotional problems from a professional or a self-help group

during the past year dropped from 7.14% to 4.83%.

91% of firefighters who reported a perceived reduction in stress also significantly improved their fitness levels. The perceived attitude on the part of firefighters toward the Chief's office has improved significantly since the implementation of the Fit✓Check program. Firefighters were asked if they believed that management was sincerely concerned about the health, fitness and wellness of themselves and their families. 89% responded that they definitely believed that. 7% responded that they somewhat believed that. Only 4% responded that they did not believe that. 76% responded that they believed it more so now than they did before the implementation of Fit✓Check.

Labor Notes

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Workplace Discrimination
Mary Hollens

Topic: Risk Factors for Workplace Stress

The highest risk factor for workplace stress ? Susceptibility to work place discrimination (WPD). Discrimination is viewed correctly as an obstacle to overcome but rarely is work place stress as a result of WPD examined.

Long before any worker of color reaches the glass ceiling of limited upward progression in the workplace they will have already faced the "steel door" that precludes people of color participation in any real sense in progressive employment opportunities.

WPD has an impact on all health and safety concerns. WPD effects both interpersonal and organizational ability and if untreated undermines prevention and intervention programs.

Workplace discrimination assumes and supports workers of color as primarily suited to and preferred for low-wage employment; but is also part of a process that creates stress and dysfunction within workers of color, their homes, communities and workplaces.

The following symptoms of WPD in persons of color: family dysfunction, substance abuse, chemical dependency, untreated depression, absenteeism, productivity loss are indications of post-traumatic stress caused by ongoing progressive workplace discrimination.

This stagnation occurs early in the person of color's contact within the work place and must be examined. It is critical to establish that a recognizable pattern and resulting syndrome caused by workplace discrimination exist. Including identification of infrastructure without which WPD could not exist.

WPD is a process. It is possible to document the WPD process within the workplace and design effective interventions to interrupt this process.

WPD is one of the largest problems within the work place. Repeated exposure to WPD will result in documentable dysfunction. Treatment must be designed to deal with the cumulative trauma of WPD.

Treating WPD as a singular social phenomenon with only economic consequences overlooks the fact WPD is a process. Intervention that corrupts the discriminatory process is worthwhile but at what point and area is intervention most critical and effective in stopping WPD and related symptoms ?

Without supporting research that assesses the relationship of WPD, economic displacement and dysfunction, people of color will be subsumed as little more than high risk social work problems. This do little more than adopt a blame the victim reaction and brings us no closer to real solutions.

The workplace offers the closes view of the modern discriminatory process. A model that intervenes in the work place against WPD is critical to off-setting many of the problems that face people of color.

The workplace, a microcosm of society is also an avenue to stability within communities. Organizing people of color in workplaces via a democratic union model can be used as a stepping stone out of povert and when used by people of color themselves interrupts the WPD process.

Ending workplace discrimination particularly for people of color and women should be on the cutting edge of research and dialogue around health and safety issues for all workers.

MODELING THE EFFECTS OF STRESS ON ANESTHESIOLOGIST PERFORMANCE DURING TRAUMA TREATMENT[1]

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It is difficult to adequately study human performance and decision-making under stress in contrived laboratory settings, because it is hard to emulate the sense of urgency and emotional involvement that can modulate cognitive processing in a true crisis situation. The goal of the present project is to systematically study the stressors and coping strategies that influence skilled performance and cognitive decision-making in a job setting in which meaningful decisions are made under time pressure. The resuscitation and treatment of patients with acute massive trauma is such a setting. The trauma team functions daily with considerable stress, making life sustaining decisions under severe time pressure and often with incomplete information about the extent of the patient's injuries. The present study focuses on the trauma anesthesiologist, the team member responsible for maintaining the airway, providing adequate ventilation, and optimizing cardiorespiratory function

[1]This research project is funded by the Office of Naval Research under Grant #N00014-91-J-1540 to the University of Maryland School of Medicine. Man-Made Systems Corporation is a subcontractor on this project.

in trauma victims during resuscitation and surgery. The intent is to develop process models of the decision-making performance of the trauma anesthesiologist, to generate both quantitative and qualitative predictions from these models of the effects of various stressors on performance, and then to iteratively attempt to validate and improve upon these models based on empirical observations during actual trauma treatment cases.

The stressors of interest include time pressure, severity of the patient's injuries, lack of adequate information about these injuries, fatigue, and team incompatibility. The models are being developed initially from expert judgments, using decision trees, task analysis techniques, and the MicroSAINT[5] modeling and simulation software package. Empirical data are being derived from detailed analyses of video tapes recorded during actual trauma patient resuscitation and surgery. The present paper will focus on the task analysis and modeling process, which is ongoing. The results of the initial modeling effort and preliminary validation results from analyses of empirical data will be presented.

The starting point for the modeling process is a set of decision trees that have been developed by the Level One Trauma Anesthesia Simulation (LOTAS) group at the University of Maryland. Because the efficacy of resuscitation and anesthesia

[5]Micro Analysis and Design Corporation, Boulder, CO

for trauma patients depends heavily on restoration and maintenance of abnormal physiological parameters to normal ranges, these decision trees are based on various physiological abnormalities -- Tachycardia, Bradycardia, Hypotension, Hypertension, Hypoxemia, Hypothermia, Hyperthermia, Increased End Tidal CO_2, Decreased End Tidal CO_2, and a "Difficult" Airway. Originally developed as training tools, these decision trees provide flow charts of decision choice points, alternative strategies, and information requirements.

Based on these decision trees, a more detailed task analysis is being conducted by human factors and experimental psychology specialists working in conjunction with LOTAS subject matter experts. For each physiological abnormality the decision process is being delineated in terms of functions, tasks, and subtasks. Functions are higher level, goal-oriented activities (e.g., "treat cause"). Tasks are the lower level, more action-oriented activities by which functions are accomplished (e.g. "treat with fluids at 20 cc/kg"). Tasks may themselves consist of subtasks (e.g., "inject fluids," "monitor blood pressure"). The contingencies in the present decision trees (e.g., "Patient is or is not hypotensive") are characterized as "entry conditions" for a given task or subtask. Also detailed for each task and subtask are observable actions (i.e., overt actions or utterances by which an observer can infer that a particular task

is being performed) and criteria for task completion (typically in terms of patient vital signs or displays providing feedback that a desired condition has been achieved or that equipment is functioning as expected).

The decision trees and task analytic information are then translated into process models using the MicroSAINT software package. MicroSAINT provides an environment for building task networks, associating performance variables and values with each task, establishing probabilistic contingencies that control the branching of the modeled process, and making quantitative predictions (response times, frequencies of alternative choices) about performance based on presumed manipulations of the task environment. The manipulations (independent variables) that drive the present models are predictions about the effects of the aforementioned stressors on performance. Initial quantitative estimates of these effects are, like the decision trees themselves, being derived from expert judgments. However, empirical data are then brought to bear in enhancing and refining these models, with new quantitative predictions then being validated against subsequently collected empirical data. This poster presentation will detail the analytical process summarized here and will present illustrative results from each phase of the analysis.

OCCUPATIONAL STRESS AND PERSON-ENVIRONMENT FIT

Julie M. Hostetler Kosey, M.S., Ball State University
Donald R. Nicholas, Ph.D., Ball State University

Stress occurring within the workplace has become a significant area of concern. Organizations and individuals have become interested in the degree to which one's compatibility or "fit" with the work environment influences one's experience of occupational stress.

The purpose of this study was to investigate the relationship between person-environment fit and occupational stress in a stratified, random sample of employees at a midwestern university. Person-environment fit was measured by examining the discrepancy between how employees describe their current work environment and how they believe it could be as measured by two versions (Ideal and Real) of the Work Environment Scale.

The sample of this study was a group of 400 full-time employees from a midwestern university. Two hundred and thirty one participants responded for a response rate of 57.8%. Participants were surveyed via campus mail in accordance with APA ethical guidelines. Each packet mailed contained two different instruments: the Work Environment Scales (both Real and Ideal versions designed by Paul M. Insel and Rudolf H. Moos; copyright 1974 by Consulting Psychologists Press, Inc.) and the Occupational Stress Inventory (designed by Samuel Osipow and Arnold Spokane and copyright 1981, 1987 by Psychological Assessment Resources, Inc.).

A canonical correlation was used for data analysis because of its ability to describe the number and nature of mutually independent relationships between two sets of variables. Results indicated no significant canonical correlation ($R = .226$, $p = .237$) for actual discrepancy. However, the results did reveal a significant canonical correlation ($R = .395$, $p < .001$) for perceived discrepancy.

Relationships were found between occupational stress and person-environment fit. Furthermore, results indicated that the "better" the person-environment fit, the lower the level of occupational stress. This relationship existed despite the diverse occupations and environments of university employees.

The results showing a significant canonical correlation for perceived discrepancy but not for actual discrepancy are significant because stress has been proposed to be directly affected by perception. These results support the notion of perception as described in interactional or transactional models of stress.

TELECOMMUNICATIONS TECHNOLOGIES: TRENDS IN ORGANIZATIONAL COMMUNICATIONS, INDIVIDUAL AND FAMILY CONSEQUENCES

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Emerging telecommunications technologies have been rapidly incorporated into organizational settings, transforming the ways in which organizations and their employees conduct day-to-day operations and decision-making. Telecommunications technologies include a wide variety of new communications devices such as: telephone services (e.g., call-forwarding, call-waiting), portable and lap-top computers, modems, fax machines, electronic mail, voice mail, and on-line information retrieval services.

A macroergonomic approach enables exploration of how the nature of work is changed by telecommunications. Work is almost totally "moveable" in place and time. While there is widespread recognition that the physical settings for work are no longer tied to an office (e.g., telecommuting, flexiplace), there has been little acknowledgement of how the tempo of work has changed.

To identify issues in how organizations are incorporating these newest technologies into organizational communications and decision-making processes, graduate students conducted semi-structured interviews with Greater Lowell area engineering, human resource, management information systems, quality assurance, and marketing and sales personnel. Qualitative data illuminates trends in organizational processes, as well as consequences for employees, both individually and in terms of the work-family interface.

Intra-organizational and inter-organizational communications and decision-making have been altered by the speed and portability of telecommunications, speeding up the pace of work. Within organiztions, employees are increasingly expected to be constantly available and to respond very quickly to requests for information and documentation (e.g., bid specifications, price quotations) and for decisions (e.g., project or delivery time estimates). These expectations for immediate availability and response may lead to increased reliance on immediately available data and decreased time for rational decision-making.

The pace of inter-organizational communications is also affected, as organizations that are able to respond most quickly are more likely to increase their productivity and operations. To organizations, "time is money;" however, the emphasis on rapid turn-around time may be counterproductive. Concerns center on the depersonalization of communications (e.g., lack of non-verbal cues), misunderstandings (e.g., terse messages, technical terms and acronyms), and insufficient information.

The trends have both positive and negative consequences for individual employees. Some report that telecommunications enable them to function more effectively and responsibly. Others report negative effects from pressure for constant availability and immediate performance or response. Possible consequences include burn-out, stress-related illnesses, or the techostressed individual described by Brod.

There are also spill-over effects on personal and family life. The boundary between work and home becomes ambiguous as the employee becomes accessible at home and in transit through cellular phones or modems. The pressure to be readily available around the clock impinges on home and family time, creating additional stress within the family system. Often the solution is the introduction of telecommunications devices into the employee's home life as well.

Since instant telecommunications have become vital mainstays within organizations, we need to identify the consequences for organizations and their employees' professional and personal lives. This will enable organizations and their employees to incorporate these technologies to facilitate organizational processes and enhance employees' ability to move between their work and family systems.

DEVELOPMENT OF WORK CONTENT AND PSYCHIC RESOURCES FOR AGING WORKERS: PRESENTATION OF THE FINNAGE PROGRAM

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The increasing average age of workers will be a challenge for social, health and manpower policies in most industrialized countries in the 90s. The changing values and attitudes of the labor force toward work and retirement have been under discussion. The quality of work and of the work environment can have a pushing effect toward early retirement. The Institute of Occupational Health in Finland is carrying out a four-year multi-disciplinary program called "Respect for the Ageing". Also the Gerontological and Work Research Units of the University of Jyväskylä and the Swedish School of Economics and Business Administration are taking part in the program. The program is supported by the Finnish Work Environment Fund.

The program has two primary objectives: 1) the creation of optimal working conditions for aging workers, and 2) the promotion of health, work ability and well-being of aging workers. Emphasis is on workers over 45 years of age.

Research is needed to augment the scientific knowledge on the interaction between aging and work. Both field studies and laboratory experiments will be carried out. The basic methodology is to combine research, job design, interventions and training in different organizations and occupational groups. Both psychological, physiological, economic and medical data will be gathered. Examples of the psychological projects are e.g. surveys on work and retirement attitudes and the motivation of workers and pensioners, development of tasks and cooperation between young and old workers in the same work settings, user-centered design of data systems suitable for the elderly, group work in the clothing industry, and work and health among aging teachers.

An interview study based on a sample of 879 persons over 35 years of age revealed that two thirds of both men and women had at least sometimes thought of retirement before their normal retirement age (normally 63 or 65 years in Finland). Such thoughts were more common among supervisors and manual workers. The most common grounds for thoughts were health and work capacity (34%), content of work and work stress (22%), attraction of the life sphere outside work (21%), and aging as such (18%).

Based on multidisciplinary research data, corrective measures will be directed simultaneously to the work environment, job content, and the capabilities and resources of aging individuals. Gerontological training material will be prepared and tested at workplaces. The program consists of about 20 projects both in industry, the municipal sector, and private service sectors.

OCCUPATIONAL STRESS, STRAIN AND COPING AMONG ACTIVE DUTY MILITARY AND DEPARTMENT OF ARMY CIVILIAN PRACTICAL NURSES

James N. Jackson

This investigation explored the nature of the relationship between occupational stress and occupational-related strain among military and civilian practical nurses in a single hospital setting, and the extent to which this relationship was mediated by coping. Stress was defined as a transactional process that occurs between the person and the environment. The specific objectives of the investigation were (1) to determine whether coping was a significant mediator or buffer of occupational stress effects, (2) to determine the differential predictive powers of the various components of occupational stress and coping with respect to occupational-related strain, and (3) to determine whether objectively defined aspects of occupational stress accounted for significant differences in occupational-related strain. An ex post facto correlational design was employed. The Personal Strain Questionnaire, the Occupational Environment Scales, the Personal Resources Questionnaire and a brief questionnaire to collect demographic and related characteristics of the research subjects generated the necessary data. Returns from 62 of the 134 practical nurses surveyed established a rate of return for the investigation of 46.3%. The results of a hierarchical regression analysis in which occupational stress and coping were employed as predictors of occupational-related strain while controlling for the effects of age, sex, race, marital status, and the number of years employed as a practical nurse, indicated that coping was not an effective buffer or mediator of occupational stress effects. The results of a forward regression analysis of subscale scores with full scale scores performed separately on the Occupational Environment Scales, the Personal Resources Questionnaire and the Personal Strain Questionnaire revealed that (1) the role boundary subscale was the best predictor of occupational stress, (2) the recreation subscale was the best predictor of coping, and (3) the psychological strain subscale was the best predictor of occupational-related strain. Null hypothesis testing via one-way analysis of variance indicated that affiliation, work roles, work settings and work shifts did not account for significant differences in occupational-related strain.

Fight or Flight: The Dilemma of Professional Women and Minorities Caught in a Traditional Bureaucratic Web

Jeannette Jackson-Thompson, Ph.D., M.S.P.H.

Many government agencies have traditionally employed more women than men. Regardless of the composition of the work force, the majority of management positions have been held by white males. As white females, particularly women over 40, and minority workers of both sexes enter the work force in ever increasing numbers, they often find themselves caught in a bureaucratic web. While the agency for which they work claims to be an "equal opportunity employer," opportunities seem to arise sooner and more frequently for white males and for young white females. Qualified older white women and minorities may be passed over for promotions, receive lower salary increases, and/or have less desirable working conditions (smaller offices, inferior equipment, etc.). They may gain reputations as "troublemakers" or "whistle blowers" when they follow procedures that were designed to protect them from discrimination, harassment, and other inequitable or unjust working conditions. This presentation will focus on employment policies, procedures, and practices; work force composition; allegations of improprieties; and employee morale in a state health agency over a five-year period from 1987 to 1992. This agency currently has a staff of more than 600 employees, approximately 70% of whom are female. The agency has twice the number of white male middle managers as female and minority middle managers combined. White male directors/deputy directors outnumber females and minorities five to one. Alleged improprieties related to hiring practices, promotions, salary increases, layoffs, and grievances; efforts by management and employees to improve morale; and changes in agency policies will be discussed. Results of structured interviews with past and present employees will be presented. These interviews focused on employee satisfaction/dissatisfaction; perceptions about working conditions and alleged improprieties; actions taken, such as filing or not filing grievances and remaining with the agency or leaving; and attitudes toward management and other employees.

EFFECTS OF PERCEIVED COMPANY INTENTIONS ON EMPLOYEE COMPLIANCE DURING TESTS OF A NEW WORK SCHEDULE

Pierre Jacques & Robert A. Henning, University of Connecticut

Data from a field study were used to examine the relationship between employee compliance in tests of a new work schedule and employee perceptions of company priorities. It was hypothesized that employees who perceived a greater company emphasis on productivity, rather than on worker well-being, would be less likely to comply to the new work schedule if they believed their productivity decreased. If, however, employees perceived that the company placed a greater emphasis on worker well-being than productivity, employee compliance to the new work schedule would not be affected.

Claims processing employees (N=78) from a large insurance company in the northeast United States participated in a 4-week study on the effects of frequent rest breaks on worker productivity and well-being. Three groups were formed based on their experience with computers and randomly assigned to one of three conditions: 1) breaks only, 2) breaks with exercises, and 3) control. Both treatment groups received a "computer break" every 15 minutes throughout the work day. Employees were instructed to either perform a set of stretching exercises during the "computer breaks" or to perform alternative forms of work (e.g., a writing task). A small indicator light signalled the employee when to take "computer breaks."

Employees completed a follow-up survey at the conclusion of the study.

Employee perceptions of the extent that the company placed emphasis on their well-being and/or productivity was assessed in each case. In addition, employees were asked to agree or disagree with statements concerning the extent to which the new work schedule affected their productivity. Employees also indicated the extent to which they complied with the new work schedule.

Preliminary analyses support only one part of the hypothesized relationship between the perception of company intentions and compliance to the new work schedule. A significant positive correlation was found ($p < .01$) between the percentage of times employees complied with the new work schedule and the extent to which they agreed with the survey item: "The computer breaks actually increase my productivity." Also, a significant negative correlation ($p < .05$) was found between the same compliance index and the item "The computer breaks cut down on my productivity." Although employees in the treatment groups reported that their productivity decreased, analysis of actual work output revealed no significant change in productivity. However, it is possible that productivity did not change because operators never fully adopted the new rest break regime. No evidence was found in these preliminary analyses to support the hypothesis that compliance to the new work schedule was related to employees' perceptions of company emphasis on worker well-being.

The results of this study suggest that organizational climate factors should be addressed for the successful implementation of new work schedules.

Empowerment: Building A Committed Workforce

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The ancient pyramid organization, with clear lines of authority, works fine when the world is stable and consistent, and when tradition dictated the future. But today's world is different, and the pyramid way of doing business is under attack because it simply does not work. Pyramids are rigid structures, that only adapt with difficulty. When the world around them changes, the pyramid keeps its form and structure. But today, the world is changing continually, and only an organization that can change form quickly, like an amoeba, adapt to new situations, grow or shrink, and work with other organizations can survive. In simple terms, the organizational form called the "pyramid" has become obsolete, and a new form, which we call the "circle," or network, is emerging in its place. Network organizations are emerging all over the place--in new startups, and out of the ashes of traditional companies. They seem to do better at all the things that pyramids do poorly. They are adaptive, focussed on teamwork, respond to customers, have minimal hierarchy that limits individual initiative, employees share a vision they are excited about, and people feel that they are adults working together.

It's not just the marketplace, but people who demand a new style workplace. Employees are tired of endless levels, excessive control, and limited authority that stifles them from doing their best. Rather than not wanting to work, as management within the pyramid assumes, most people really want to make a difference, but they feel the organization prevents them. In the circle organization, everyone feels empowered, meaning that they are free to take action, and to do their best to make a difference. The whole organization becomes more productive, and costs less, because an empowered employee is able to give more (without burning out). Everybody agrees that employees need to be empowered, but many current programs and initiatives often seem to have the opposite effect, or to wither before they produce real change. This presentation is a set of blueprints for employees, managers, and for companies, to guide the redesign of their organization from traditional pyramids to adaptive, circle organizations.

Twentieth century mega-organizations have become dinosaurs, outmaneuvered and surpassed by fast moving, small, openly communicating, team-based, cooperative workplaces that innovate quickly, work in partnership with their people, their customers and the community, and attain control not by domination, but by innovation and cooperation. The circle organization has begun to supplant the pyramid. It is not merely a new structure; it demands that people work together differently, taking initiative, sharing ideas, and helping each other. It also demands new mindsets, new ways of seeing what is right and what is possible, skills which have atrophied within the pyramid. Managers talk about networks, but their reflexes, their responses, their relationships come from the old pyramid, where they grew up and attained their greatest success. Yet, some large companies, like Ford, have been able to shift, to break down into flexible, adaptive units, that attain synergy, rather than control from the top. And new small companies operating on network principles, like Federal Express and Nordstrom, have begun to take their places.

This session documents *how* struggling organizations have grown, mobilized commitment, empowered employees, and taken off in new directions. It is about how to mobilize the commitment, creativity, energy and knowledge of its work force, at a time when they seem more inclined to withdraw and fend for themselves.

Our models come from our direct experience. In the past five years, we have consulted and advised over 100 companies struggling to move from old form to the new. Our clients include many of the largest companies--"dinosaurs" we call them--such as Chevron, IBM, AT&T, Ford, GE, National Semiconductor, Pacific Bell and Monsanto. Their task is immense, but the success that we have seen in some of their centers is uplifting. We will also share our work with smaller, more adaptive companies, who have made major strides and provide models of success. These include Estee Lauder, Country Cupboard, Tandem Computers, Sun Microsystems, Aetna, Seton Hospital, as well as public organizations like Edmonds Community College and several cities. The book will demonstrate renewal in their own words.

With our experience as both organizational development consultants, and psychologists, we focus specifically on the issue of how to mobilize the energy of the workforce, not just to complete work, but to act as leaders, as partners, guiding the organization to success. The journey from pyramid to the circle can be understood through focus on eight **Evolutionary MAPS for Organizational Renewal** that together define the human dimension of the new organization:

MAP 1: From The Pyramid to the Circle
MAP 2: From The 'Heroic' Leader to the Empowered Team
MAP 3: From Parent/Child to Adult/Adult Relationships
MAP 4: From Tradition to Vision
MAP 5: From Denial to Commitment
MAP 6: From Limits to Learning
MAP 7: From What You Do to How You Do It
MAP 8: From Individual Results to Partnerships

Organizational renewal is complicated by the current pressures that deplete commitment, and diminish morale: layoffs, declining job security, lack of caring, and confused initiatives by the organization. Should you withdraw and opt out of making your company succeed, should you look for another job and take care of #1, or should you find ways to care for yourself by helping the company to meet its life-threatening challenge? Many employees quit long before they leave, and many organizations try to change in confused, incomplete, or inconsistent pathways, that end up with the opposite results. While the pathway to change is

difficult, and far more complex than many leaders want to believe, we believe that the individual and the organization have the same basic interests: to succeed by attaining ever increasing levels of performance.

Many organizational theories today suggest that the pathway to renewal can be easy, painless and quick. This is the most pervasive form of denial: people wish this were true. Our experience is that moving from the old to the new ways represents the most difficult, emotionally wrenching, trying, and the most creative and challenging task that anyone in the organization has ever experienced. As psychologists we observed many forms of healing, and we find that some of the models of recovery from personal trauma are relevant to charting the organization's future. Yet, many managers have invested their identities in the way the organization was. When an organization tells people that they must change or leave, when it changes the nature of the community, when it asks people to learn and grow, when it asks them to help renew every aspect of the organization, they initially find it difficult to come on board. We present the stages of organizational healing and renewal, and how to help people let go of the past, and commit to the future. Our model of the four phases of transition--denial, resistance, exploration and commitment--will be used to help explain both individual and organizational growth.

SOCIAL STRESSORS IN ORGANIZATIONS: EFFECTS ON THE HEALTH OF MINORITY WORKERS

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Increasing proportions of minority individuals in the U.S. workforce combine with increasing health-related costs for organizations to make it important to examine potential stress effects on minority workers' health. This paper reports two studies of the effects of social stressors at work on minority, mainly MexicanAmerican, workers. Variables assessed for their relationship to health included: the percentage of subjects' own ethnic groups in their organizations; perceived level of value difference from non-minority coworkers and from supervisor; reported levels of prejudice/discrimination in participants' organizations; their self-esteem and ethnic-group pride levels; and subjects' levels of verbal and non-verbal expressiveness. Dependent measures included self-reports of illnesses (study 1) and measurements of systolic and diastolic blood pressure (study 2).

Regression analyses demonstrated that substantial proportions of the variance in both self-reported illness (20%) and in blood pressure scores (18% to 30%) were associated with the predictors. Analyses for the full samples, composed of individuals from four minority groups, and for only the MexicanAmerican subjects who made up the bulk of both samples yielded some minor differences but generally paralleled each other.

There was evidence for mediation by self-esteem and group pride of the effects of both ethnic group proportions and prejudice/discrimination. Both the direct and the mediational effects of these variables indicate the importance of organizations taking steps to counter those circumstances that might damage minority individuals' self- and group esteem. Expectations that expressiveness and value differences are important factors in minority organization members' health outcomes were supported, but the posited mediational processes for these variables derived from previous theoretical works were generally not.

These studies contribute to our knowledge of factors relevant to the health of minority organization members. Such knowledge should help reduce negative outcomes for both minority workers and the organizations to which they belong.

STRESS AND DISTRESS IN ORGANIZATIONAL CHANGE

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Businesses today are facing many changes: a more competitive, rapidly changing environment, financial pressures, downsizing and flattening of organizational structure. On an individual level, this has resulted in job dislocation, reduced opportunities for career advancement and increased expectations of employees, all of which produce stress. However, the mere presence of stressors does not predict the impact on the organization or the employees. Moderator variables can intervene to produce either an unhealthy, detrimental reaction or a healthy, productive reaction to the same stressor.

Unplanned, reactive change produces uncertainty, lack of direction, and confusion which can lead to distress among employees, particularly if they lack the skills to deal with the new expectations. Consequently, the organization may face such symptoms as high turnover, increased conflict over turf and significant decline in productivity. On the other hand, proactive changes can minimize these negative reactions and may even enhance morale and enthusiasm. Therefore, organizational leaders need to consider management of change an equally important task as the actual change. Case study data from large corporations that have undergone major changes in size and/or structure demonstrate a wide variance of effectiveness in managing the change process.

Case studies suggest there are issues to be dealt with at both the organizational and individual levels:

Organizational

- Pre-change preparation: Organizations which did an effective job of anticipating problems, designing systems for communicating change and preparing its managers for the change produced less stress. In a flatter organization, for example, organizations may need to create career development paths which are not linked to frequent hierarchical progression. They may also need to link pay scale to contribution not to position.

- The management of the change process: Careful coordination, consistency, open and ongoing two way communication, training in new methods, and development of a climate of trust were helpful here. For example, in one company, as part of a "communication architecture," the president visited each plant and each shift to discuss the future of the organization and to listen to concerns.

- Dealing with the post change environment: Care of the "survivors", ongoing training in newly required skills, monitoring of emerging issues, help with "grief issues" and well-publicized efforts at building a new organizationl climate have been noted in organizations which have made relatively effective adaptations to change.

Individual

- Dealing with changing skill sets: Managers may need to develop skills in managing larger numbers of people, managing time more efficiently, managing morale issues, etc. They can not just work harder, they need to work smarter and differently. They must help others deal with change. At the same time they must deal with their own change issues.

- Paradigm shifts: In flatter organizations, there are fewer promotional opportunities. Previously, employees have viewed professional growth as advancement in position. In the future, reconceptualizing to focus on contribution will become an important paradigm shift. Some organizations are already exploring ways to support that paradigm shift by rewarding "value-added", rather than position.

Conclusion

Well planned steps to the change process need to be implemented by management. With the cooperation of each individual, the negative impact of change in an organization can be minimized.

THE RELATION OF SKILL VARIETY AND STRESS AMONG WHITE-COLLAR WORKERS: IS TOO MUCH SKILL VARIETY STRESSFUL?

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Traditionally job design theories (e.g. Hackman & Oldham 1980) have assumed that high skill variety is a positive job design factor promoting worker mental well-being and job satisfaction. Accordingly, job design procedures have been directed at increasing skill variety in order to foster worker well-being. On the other hand, high levels of stress have been found in many white-collar professions that are characterized by high skill variety, e.g. among managers (Glowinkowski & Cooper 1987), teachers (Kinnunen 1989, Makinen 1982) and judges (Jarvenpaa 1991).

This paper examines the concept of skill variety as it relates to cognitive demands. The rationale is that high skill variety can be stressful when an individual has to perform many cognitively demanding tasks. This is likely to be the case in white-collar professions and in computerized jobs.

The relation of skill variety and other selected job characteristics with stress was examined among 6 job categories. These were clerical VDT users (n=9), CAD-designers (n=54; 26 draftsmen, 10 parametrical designers, six were doing 3-dimensional design and, 12 were CAD-designers), and judges (n=6). Office workers and judges worked at a district court office in a Southern Finnish city, and the CAD designers worked in a Finnish power company. Employees' perceptions of job characteristics were measured by the JDS (Hackman & Oldham 1980) and the SAA (Martin & al. 1980). Short-term mental strain was measured with two scales: the EZ scale (Nitsch 1976) and the BMS scale (Plath & Richer 1984). Indicators of long-term stress outcomes included job satisfaction (the JDS affective outcomes) and psychosomatic symptoms (Jarvenpaa 1991).

Several scatterplots of skill variety and various indicators of mental well-being were examined. The different job categories had different levels of skill variety: office workers and draftsmen had the lowest level of skill variety, while judges and CAD designers who performed complicated CAD work had high skill variety. We found that very high levels of skill variety were related to low mental well-being, confirming the expected reverse-U relationship between skill variety and mental well-being. This trend was also found for several other job characteristics, e.g. for general demands. On the other hand, we found linear relationship between feedback from other people and various indicators of well-being.

Based on these findings, we conclude that high skill variety can become a stressor when accompanied by an increase in cognitive demands or in complicatedness.

IDENTIFYING DIFFERENTIAL STRESSFUL THINKING ACROSS INDUSTRIES

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This paper investigates whether stressful thinking styles are different across diverse industries. The sample consists of 1,775 men and women employed in 15 industries (Agriculture, Automobile Manufacturing, Chemical Manufacturing, Communications, Consumer Products, Education, Finance, Government, Health Care, Law Enforcement, Management Consulting/Trainers, Manufacturing, Not-for-profit Associations, Telecommunications, and Utilities). Subjects completed the **Stress Processing Report** (SPR; Human Synergistics, Inc., 1984) a broad-band measure of 19 thinking styles that are associated with symptoms of stress. The styles are conceptually organized into four broad clusters: self (personal reactions to stress including Growth, Effectiveness, Self Image, Past View, Locus of Control, and Need for Approval), others (interpersonal stressors including Inclusion, Interpersonal, Intimacy, and Trust), process (problem solving patterns including Receptiveness, Synergy, Cooperation, Time Orientation, and Time Utilization), and goals (goal-directed stressors including Satisfaction, Directedness, Expectations, and Future View).

A discriminant function analysis was used to determine the discriminatory power of the SPR in classifying industry group membership. The results indicate that the SPR dimensions do discriminate among the industry groups (Wilks' Lambda = .58, p = .00001). Six statistically significant discriminant functions, recovering 84.7 percent of the variance within the original 19 stressful thinking styles, were identified. The six discriminant functions are interpreted and group means are plotted to describe the similarities and differences across the 15 industry groups.

STRESSFUL THINKING STYLES AND SYMPTOMS OF STRAIN

Edgar F. Johns, William Neale, & J. Clayton Lafferty
Human Synergistics, Inc.

This paper looks at the relationships of work and life satisfaction, stressful life events, health behaviors, and medical symptomology to self-reported levels of stress in a large, heterogeneous sample of employed men and women (N = 3005).

The **Stress Processing Report** (SPR; Human Synergistics, Inc., 1984) measures 19 thinking styles associated with stress. The styles are conceptually organized into four broad clusters: self (personal reactions to stress including Growth, Effectiveness, Self Image, Past View, Locus of Control, and Need for Approval), others (interpersonal stressors including Inclusion, Interpersonal, Intimacy, and Trust), process (problem solving patterns including Receptiveness, Synergy, Cooperation, Time Orientation, and Time Utilization), and goals (goal-directed stressors including Satisfaction, Directedness, Expectations, and Future View).

Subjects also completed the **Quality of Life Profile** (QLP; Human Synergistics, Inc., 1984) containing 175 items measuring work and life satisfaction, family, work, and personal life events (i.e., in the tradition of Holmes' & Rahe's Social Readjustment Scale), health behaviors, and medical symptomology and history.

A clustering procedure was used on the QLP to reduce the items into homogeneous groupings. The procedure replicates earlier research (Cooke, Rousseau, and Lafferty, 1988) which used a subset of QLP items. Empirical support for several clusters, including job satisfaction, satisfaction with family life, healthy life styles, depression, cognitive symptoms (e.g., unclear thinking), digestive problems, tension, respiratory problems, and medical problems were found.

Canonical correlation analysis was used to derive the structure of common variance between these homogeneous groupings of life events, behaviors, and symptoms of strain and the 19 stressful thinking styles. In addition, the empirically derived symptoms of strain were regressed on the 19 thinking styles to analyze the interdomain relationships among the QLP and SPR.

JOB STRESS OVER THE LIFE COURSE AND ITS EFFECTS ON HEART DISEASE: IMPLICATIONS FOR INTERVENTIONS

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The time dependant characteristics of exposure to the psychosocial work environment are rarely considered in social epidemiological studies of job stress and cardiovascular disease (CVD). This paper presents a conceptual and methodological framework for examining intensity, duration, timing, and patterning of job stress exposure over the life course.

The effects of patterns of exposure on CVD risk were investigated in a nine year follow up study of four consecutive random samples of 25,287 Swedish men and women surveyed from 1977 to 1981 by Statistics Sweden and linked with the National Registry of Deaths. An exposure profile for all years of an individual's working life was constructed by linking individual job histories with a Psychosocial Job Exposure Matrix.

It was found that the structure of the exposure profiles varied by gender and social class. Different types of career trajectories are more characteristic of one class and gender than they are of another. For example, white collar males are more likely to have a career with increasing levels of work control whereas blue collar males tend to have a more horizontal career trajectory. Women's exposure profiles are more intermittent.

The effects of intensity and duration of exposure to the work environment on CVD mortality were also found to vary by gender and social class. The most consistent accumulative dose response effect was found for the work control exposure variable among blue collar males.

The strengths and limitations of this model of job stress exposure are presented with a discussion concerning the implications of a life course approach for an intervention strategy directed at primary prevention.

OCCUPATIONAL INJURY AND STRESS

Janet J. Johnston, Ph.D.

The primary focus of occupational stress research has been on health outcomes and the job-related effects of stress management training. Relatively little work has been directed towards examining the relationship between injury and stress. The causal mechanisms by which stress may impact occupational injury and how stressors affect different occupational groups is not clear. A literature review was conducted to identify studies which measured the relationship between stress and occupational injury. Occupation, injury, and type of stress were identified, and the strength of the injury/stress relationship was assessed.

In the articles identified by this review, specific occupations included factory workers, air traffic controllers, offshore drilling and production workers, municipal employees, naval aviators and aircrew, police officers, bus drivers, miners, and logging, sawmill, and construction workers. Musculoskeletal, lower back, and mental disorders were identified as type of injury in two studies; injury type was not specified in the remaining studies.

In all studies, worker stress levels were evaluated through questionnaire. In most studies, injury was measured using company accident/injury records. Stress factors associated with injury included physical and mental demands, physical environment, social organization at work, work schedule, life events, Type A personality, repetitive tasks, job enrichment and satisfaction, preplanning of work, overall mental health, alcohol intake, automobile accidents, and problems with superiors or peers.

The strength of the association between stress and injury was assessed through tests of significance and related P-values and odds ratios. All of the studies found significant relationships between different stress factors and injury. Odds ratios ranged from 0.70 to 4.55 for the variables measured with 10 separate stress variables having odds ratios >1.0. Stress factors associated with higher than a two-fold injury risk were physical demands and nonrepetitive tasks. Factors with equivocal results (odds ratios >2 and <1) were mental demands, social organization, and work schedule.

Limitations of selected studies primarily relate to measurement of injury and stress. Although the term "accident" was used as an outcome measure in several studies, it was not always clear if illness was excluded from this category. Additionally, the magnitude of the injury/stress relationship could not be determined in studies which only reported significant P-values. Finally, measures of stress were not comparable among studies because of methodological differences in the assessment of stress.

Based on the results of this literature review, there is compelling evidence of a relationship between stress and injury. Further research is needed to identify causal patterns related to the stress/injury relationship and to improve upon shortcomings of previous studies with the goal of determining the safety-related benefits of stress management activities.

Perceived Organisational Support as a Predictor of Work Stress in Three Different Organisations

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We conceptualize work stress in relation to the individual's perception that employer provides a supportive organizational framework. A good deal of the work on organizational outcomes in relation to work stress has focused on the commitment of the individual toward the organization. Eisenberger and his colleagues (Eisenberger et al, 1986; Eisenberger et al., 1990) have shown that the individual's perception of his or her employing organization as supportive is a powerful predictor of productivity in a variety of different organizations. We show in three employment contexts that work stress is strongly related to perceived organizational stress. These contexts are a sample of civil servants, a sample of special education professional, and a sample of shop-floor workers in manufacturing. In all more than 400 workers participated in the three studies.

Role stress was measured by means of questionnaire and included measures of overload, insufficiency, conflict, ambiguity, and responsibility for others. Perceived organizational support (POS) was measured by means of Eisenberger et al.'s questionnaire (1986). Measures of job satisfaction and organizational commitment were also included. POS was correlated with conflict and ambiguity on average at -.54. Two causal models were examined. In the first, POS was taken to be a variable which would mediate the effect of stress on job satisfaction and organizational commitment. This model is based on traditional notions of the effects of social support either in buffering or directly effecting the way in which stressors are perceived. In the second, POS was treated as a variable causally responsible for perceived stress. This model was based on the notion that work stress is caused by organizational factors, principally the feeling of being a valued member of an organization which may be relied upon to meet reciprocal obligations. The analysis supported the second model.

It is argued that these results support the notion that work stress is best conceptualized according to an organizational model rather than a medical model. Implications for minimizing work stress are discussed.

A CONTROLLED STUDY OF OCCUPATIONAL STRESS REDUCTION

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Of three basically different, intensive programs designed to reduce occupational stress and the four additional programs that are the combinations of the three, which is most effective in reducing occupational stress? This three year controlled field study evaluated the impact of seven small-group training programs, each five days in duration taught to a total of 367 employees of the Emergency Medical Service (EMS)of the Houston Fire Department in randomly assigned groups of 8-10 employees. Each group consisted of proportionately stratified job titles, including supervisor, paramedic, dispatcher and emergency medical technician.

Pre-training, immediate post-training and six to eighteen month post-post-training evaluations of the impact of the programs were conducted. Evaluation consisted of measures of occupational stress, occupational burnout, depression, anxiety, affect

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sensitivity, follow up questionnaires, demographic questionnaires and job performance measures.

The three basic programs each represent a different type of stress-intervention strategy. Each approach has its own theoretical base and its own advocates. Progressive Muscle Relaxation (Program M) is designed to help one cope with stress through control of one's own physiological reactions; Interpersonal Process Recall (Program I) purports to reduce stress through self-awareness and increased knowledge of one's cognitive and affective reactions to interpersonal events; and Assertiveness Training, Crisis Intervention, Suicide Prevention and Hostage Negotiation (Program A) is designed to reduce stress through the development of skills and strategies for coping with threatening interpersonal events in the environment.

Each of the programs and combinations of programs (M, I, A, MI, MA, IA, MIA) was taught to six groups, five days for each group by an advocate of that type of program. Forty two, five day courses thus were offered during the three year study.

Pre-test measures were taken on the first day of each week and post-test measures were taken six to eighteen months later. Unobtrusive job performance measures were obtained by study of personnel records of consenting employees.

Major findings include statistically significant pre-to-post and pre-to-post-post improvement across all programs on several of the measures and a significant increase in the number of unsolicited letters of commendation written by private members of the public to individual EMS employees. In each analysis of the differential impact of programs we found that a combined program was more effective than a basic one, alone. The Interpersonal Process Recall, Assertiveness Training, Crisis Intervention, Suicide Prevention, Hostage Negotiation (Program IA) combination was the more effective program in most of the statistical analyses.

ORGANIZATIONAL AND PERSONAL RESOURCES AS BUFFERS OF WORK-RELATED STRAIN

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The positive health impact of challenging work, autonomy, influence and job appreciation was found to be significantly modified by personal resources such as the Sense of Coherence (SOC). The SOC, composed of three dimensions, i.e. comprehensibility, meaningfulness and manageability is a generalized resistance resource introduced by Antonovsky (1979). Women reported more strain and had a lower SOC and less work-related resources than men ($p<0.05$), but the differences in health and the SOC became smaller with equal jobs and occupational status between the two genders.

The interrelationships of work, perceived health, and personal resources were studied in a sample of 9364 employees in management, clerical staff, superwisers, technical planners and workers in industry. A subsample of 2007 employees participated in a follow-up study 2,5 years later. Data were collected with a questionnaire that was filled-out at the worksite. The general linear model was applied for the analysis of the interrelationships under study both cross-sectionally and between the two cross-sections.

The arbitrary follow-up period does not allow causal conclusions, but the results indicate that job opportunities are significant determinants of both health and personal resources and the differences between the genders are largely work-determined. However, personal resources are also a selection factor and may affect the quality of work and social relations at the worksite as indicated in our previous study (Kalimo and Vuori 1991).

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PSYCHOLOGICAL EFFECTS OF CRISIS INTERVENTION ON THE CLINICIAN IN A NATURAL DISASTER

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The paper will present the psychological effects of crisis intervention on the clinician and means of overcoming these reactions. A group of psychologists, psychiatrists and social workers provided treatment to children and adult survivors of the earthquake in Soviet Armenia of December 1988, which reached catastrophic proportions.

Interventions were initially held under tents, in refugee camps and in hospitals. Subsequently, work was conducted in a mobile clinic and in public schools. Finally, two permanent community mental health centers--a new concept in the then Soviet Union--were built to serve two cities most damaged by the earthquake. While crisis intervention was the focus in the first year, training of mental health workers became the focus in the years to follow. The project was funded by the Armenian Relief Society's Psychiatric Outreach Program based on a grant by the United States' Agency for International Development.

The presenter will discuss reactions of U.S. clinicians to treatment of trauma and will draw a parallel to the post-traumatic stress reaction exhibited by survivors. In addition, a comparison will be made between the psychological effects of the work on U.S. volunteers and on a group of counselors trained in the earthquake zone to provide follow-up care to the population.

This is an area infrequently explored and discussed, particularly by clinicians, themselves. There is a paucity of literature on this subject, compared to the information available on post-traumatic stress disorder itself. It is an area worth studying in order to understand treatment and debriefing methods that best help the clinician cope with this particular job stress. Volunteers and clinicians are often mobilized to provide crisis counseling in natural, man-made and community disasters. They are expected to "handle" any stress that may ensue. This group of U.S. clinicians discovered in themselves reactions to the trauma paralleling that of survivors. The paper will fill this gap by presenting clinical information on the diagnosis and treatment of countertransference in the clinician providing intervention to survivors of a disaster.

"THE CONDUCTIVITY PROCESS:" A PSYCHOSOCIAL WORK ENVIRONMENT CHANGE PROCESS USED IN THE SWEDISH NORDNET PROJECT

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New linkages between workers and customers which allow workers skills to be developed and utilized to the maximum extent ("conducive" production) provide expanded leverage for health-oriented work redesign processes in the NordNet project in Sweden. Increasing worker's skill utilization possibilities have been shown to be a relevant factor for reducing psychosocial illness risks at the workplace (Karasek and Theorell, Healthy Work, 1990). The project goal is to develop and test new methodologies for work organization--company network redesign based on "conductivity theory," (Karasek) and dialogue-based action research strategies (LOM, Gustavsen) to link customers and producers for flexible, customer-adaptable products or services. The primary hypothesis is that new work organization structures--based on significantly modified communication structures--can yield a greater possibility of creative work for workers (with significant health benefits) and more innovative products for companies. This combination of worker and company advantages increases the feasibility of job redesign activity.

New work structures which facilitate positive psychosocial job change are developed in the NordNet project by changing the nature of the product, the combination of workers skills, and the communication channels between the producer-company and customer-company personnel. The goal is "conducive production"--production based on skill-related output (the output is "conducive" to the growth and development of the customer's capabilities).

The job redesign process begins by developing comprehensive images of coworker's operations; identifying new skill combinations between workers which could satisfy customer demand in new ways (the "conductivity game" simulation). The process continues by facilitating judgment of the economic, technical, and market feasibility of such new ideas.

A major operational goal of the job change process is to develop flexible coordination structures inside the company that can easily respond to customer demands. These are based upon expanded communication capabilities inside and outside the work organization. New communication tools within companies for workers and managers, and between companies (for workers and managers) must be developed to make customer-adaptable production realistic. These communication tools provide worker's overviews of production process and provide "language elements" for them to describe their own production capabilities.

Small manufacturing firms in Western Sweden are the focus of the first stage of the project: one mass-production firm, one custom manufacturing firm with its own product, and two manufacturing firms which are subcontractors to large international companies. Work has progressed successfully inside two small companies; work has begun within their large customer companies in one case; and some work has started building new linkages between the pairs of companies. Completing new communication structures between the companies and establishing an evaluation procedure for "conducive" change will fulfill the goals of "testing"-in an action research meaning-the "conductivity" hypothesis about skill-based production for this first set of companies. Project will continue with selection of a second set of companies: a larger number of more equal sized companies--moving closer to the standard network concept.

STRESS, CONTROL, WELL-BEING AND MARITAL FUNCTIONING: A CAUSAL CORRELATIONAL ANALYSIS

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The relationships between work stress, control at work, and individual well-being have received increasing attention in the organizational literature (e.g., Frese, 1989; Ganster, 1989; Warr, 1990). At the same time, researchers have recognized, and empirically demonstrated, linkages between work stress and marital functioning (Barling, 1990). With few exceptions, both areas of research have been characterized by reliance on cross-sectional, correlational data, thereby precluding the assessment of causal direction. In contrast, we examine the relationships between work stress, control, well-being, and marital functioning using data from a three wave panel study of dual-career couples in Ontario (N = 247). Campbell, Daft and Hulin (1982) have identified the establishment of proper time lags in longitudinal research as one of the most vexing problems in organizational research. Our use of a three wave panel study, allows us to assess posited relationships across both six and twelve month time lags.

Using cross-lagged regression analysis we first examined models of stress, control, and individual well-being. Our results show that both industrial relations stress (Bluen & Barling, 1988) and organizational stress (Sarason & Johnson, 1979) predicted depressive symptomatology. Perceptions of control at work (Tetrick & LaRocco, 1987) emerged as an outcome of depression.

With regard to marital functioning, organizational (but not industrial relations) stress emerged as a significant predictor of marital dissatisfaction. Both marital dissatisfaction and depressive symptomatology emerged as significant predictors of

divorce propensity.

All effects in the model emerged as unambiguous, unidirectional effects using a 12 month time lag. At six months, the posited effects were not significant.

The results of our study have three major implications for future research. First, our results do not support models that posit either a main effect or a moderating effect of control on stressor-strain relations. Rather our results suggest that individual strain (i.e., depression) is an outcome of occupational stressors and a predictor of perceived control at work. Secondly, our results support earlier suggestions that occupational stress has effects on both individual well-being (e.g., Kelloway & Barling, 1991) and marital functioning (Barling, 1990). Finally, the results of our analyses suggest the need to examine different time lags in future research. We obtained contradictory results in analyses conducted cross-sectionally and at two different time lags (6 and 12 months). Unambiguous effects emerged only at a 12 month time lag. While this finding provides some guidance for future research, other time lags might also be investigated.

BEYOND EAPS: PEER PREVENTION AND INTERVENTION IN THE RAILROAD INDUSTRY

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Recognizing the ineffectiveness of disciplinary approaches to the problem of alcohol and drug abuse in the workplace, railroads and their labor organizations began exploring new approaches in the 1980s. One such approach, Operation RedBlock (ORB) a peer prevention and intervention program, has been adopted by several carriers. This paper explores the advantages of ORB's peer involvement over disciplinary approaches and company EAPs for addressing substance abuse on the railroad. Based on preliminary research findings, six key factors for successful implementation of ORB are discussed.

Many occupations in the rail industry are classified as safety sensitive. The work is physically demanding, disruptive of family and social life, and potentially dangerous. The workforce is geographically mobile and widely dispersed making close supervision and rule enforcement difficult. The use of discipline to eliminate substance abuse or other undesirable behaviors relies heavily on supervisor awareness of such behaviors. Supervisors are also an important referral source for company EAPs. Supervisors must not only be familiar with

the signs of substance abuse but must also have sufficient contact with the workforce to identify troubled employees. Thus, the effectiveness of the discipline model and company EAPs is limited on the railroad.

Encouraging employees to refer troubled co-workers to the EAP has several advantages over reliance on supervisors. But in an industry long noted for its antagonistic union-management relations, few employees would consider contacting a company EAP.

The long history of antagonism between railroads and their labor organizations created an environment many characterize as low in mutual trust. Prior to implementing any peer involvement program it was necessary to establish an area of mutual concern where both sides could agree on a common goal. Eliminating drug and alcohol abuse on the railroad was that mutual concern. This provided the context in which both sides could recognize the value of peer involvement.

The successful implementation of a peer intervention and prevention program, such as ORB, requires six key elements.

1. The program must be employee owned and supported by the unions and management.
2. Cooperation and trust must be developed and maintained.
3. Program goals are clearly defined and widely understood.
4. Confidentiality is guaranteed and maintained.
5. Employees take on leadership roles in the program and responsibility for bottom-up "grass roots" change.
6. Initial activities of peers, especially interventions, should be successful in that there is clear evidence that the program works as it should.

There are two additional factors that have an impact on the effectiveness of the program after implementation. First, the program should provide training to give peer volunteers adequate skills for intervention and prevention activities. Second, the company EAP must be able to provide the professional support for the program in dealing with troubled employees.

Stress Inoculation Training For Staff Working With Persons With Mental Retardation: Model Program

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It has been noted that, as a group, individuals with mental retardation exhibit more behavior problems and emotional disturbances than is observed in the general population (Matson & Frame, 1983). It is obvious, therefore, that staff are faced at various times with highly disturbed/agitated individuals if they work with persons with mental retardation. Browner, Ellis, Ford, Silsby, Tampoya, and Yee (1986) found aggressive behavior to be a significant source of stress for direct contact workers. This was the only aspect of their work with clients that staff reported stressful. Therefore, it is important to train staff to be effective conflict management or crisis management agents.

Training has focused predominantly on the management of conflict external to the staff member. That is, techniques that staff should utilize to diffuse or de-escalate the anger and agitation of the person with mental retardation. A second aspect of training that has not been adequately or systematically addressed, centers on intrapersonal stress or anger; that is, the stress being experienced by the staff person, as a result of the conflict situation.

One approach to training staff in intrapersonal stress management skills that may show some benefit is termed "stress inoculation training" (SIT). SIT (Meichenbaum, 1977; 1985) is a set of specific procedures to reduce and prevent maladaptive stress reactions which fits within the theoretical framework of cognitive behavior modification. It is somewhat analogous to a medical inoculation in that an individual's resistance is enhanced by graduated exposure to stress stimuli.

The treatment paradigm has three phases: The first phase is termed the "conceptualization" phase inasmuch as the primary focus of this stage is on helping staff obtain a better understanding of the nature of stress and anger, its effect on emotion and performance, and to reconceptualize it in transactional terms.

The second phase is called "skills acquisition rehearsal." During this phase, staff develop and rehearse a variety of coping skills, including self-instruction training, problem-solving training, and relaxation training.

The third phase is "application and follow through." This phase involves the practicing of the techniques learned in the first two phases. Role-playing methods are used for this purpose.

A SIT in-service training program designed for staff working with persons with mental retardation is reviewed and data presented on the effectiveness of such training (Keyes, 1989; Keyes and Dean, 1988). A significant decrease in scores on a self-report anger inventory and in the use of emergency (crisis management) procedures was found following training for the SIT group but not for the control group. Data are also reviewed on the effects of SIT on

client abuse and staff turnover. A significant reduction in abuse following SIT was found. Staff turnover was not significantly reduced when separations because of abuse were removed from the data suggesting that the stress inoculation training effects are specific to client/staff interaction based stress. Consideration of SIT as a component of a comprehensive inservice training program for staff working with aggressive individuals is discussed.

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A CONCEPTUAL INTEGRATION OF ROLE STRAIN AND SOCIAL SUPPORT AS RELATED TO NON-PROFESSIONAL WORKERS

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This conceptual paper integrates Goode's construct of role strain with the model of social support developed by House and extends the framework to a relatively understudied population.

Role strain was defined by Goode as the felt difficulty in fulfilling role obligations. The model of social support proposed by House consists of four types of support: emotional, instrumental, appraisal and informational. Social support has been found to mediate the effects of role strain but, unfortunately, very little research involving social support has used any conceptual model, with most studies relying instead on ad hoc operationalization of the term.

Also unfortunately, most of the recent research has been carried out using primarily professional, Caucasian female populations. Insufficient attention has been paid to the intervening variables of gender and ethnicity. In sum, the role experience of mainstream working Americans has not been addressed by current research. Consequently, this paper seeks (1) to examine the relevance of role strain and social support to the lives of this population and (2) to suggest possible extensions of and modifications to the framework, thus providing a richer and more accurate understanding of the experience of work-family stress and the ways in which people adapt to it.

DIFFERENCES BETWEEN SMOKERS AND NON-SMOKERS AND THEIR RESPONSE TO FREQUENT REST BREAKS DURING VDT WORK

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In a field study of VDT operators, smokers reported decreases in nicotine consumption after receiving frequent short rest breaks in addition to their conventional mid-morning and mid-afternoon rest breaks. It was hypothesized that added rest breaks may affect smokers differently than non-smokers. The following investigation tested for differential effects of the frequent breaks on operator mood state, body discomfort, and perceptions of task difficulty for smokers versus non-smokers.

Data were collected on the smoking behaviors of a relatively homogeneous sample of VDT operators processing insurance claims at two work sites (N=161; 50 smokers, 111 non-smokers). Both sites were smoke-free work places. Non-smokers were allowed conventional fifteen minute breaks twice each day while smokers were given the option to take six 5-min breaks each day in place of the conventional breaks so that they could smoke outside the building.

VDT operators were assigned to one of three conditions: 1) additional rest breaks only, 2) additional rest breaks with stretching exercises, and 3) control. Workers receiving additional rest breaks were instructed to take brief pauses from VDT work at 15-min intervals throughout the workday (three 30-s breaks and one 3-min break each hour) unless task constraints (e.g. a phone conversation with a

client) prevented the operator from taking a break at that time. A pair of indicator lights attached to the operator's VDT monitor and/or document holder was used to signal the operator when to take a short break from computer work. The "breaks only" group was instructed to relax during the 30-sec breaks, but to perform alternative tasks (i.e., other than computer work) during the 3-min breaks. The instructions to the "breaks and exercise" group were similar, except that they were also asked to perform a set of simple stretching exercises at their workstation during both types of short breaks. Operators in the control group did not take extra breaks nor were they asked to perform any stretching exercises.

All operators were instructed to complete a written survey about their well-being three times each workday over a two-wk baseline period followed by a 4-wk experimental period. Operators responded to statements about tension, vigor, fatigue, calm, body discomfort, and workload at 1) the start of the workday, 2) mid-day, and 3) at the end of the workday.

Preliminary results indicate that, overall, smokers reported more tension and vigor than non-smokers. While both smokers and non-smokers appeared to benefit from the addition of frequent rest breaks (with or without stretching exercises) via reduced tension and reduced body discomfort, smokers receiving added rest breaks also reported increased vigor. These preliminary findings suggest that the addition of frequent short rest breaks during VDT work may benefit smokers in a way that helps them reduce their dependence on smoking.

LONGITUDINAL EFFECTS OF A WORKSITE COPING SKILLS INTERVENTION ON WOMEN'S PSYCHOLOGICAL ADJUSTMENT AND SUBSTANCE USE

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This paper reports findings from a three-year work and family stress project with female employees. One aim of the research is to examine the effectiveness of a worksite coping skills intervention in reducing employees' substance use and psychological symptomatology. The conceptual framework for the study is a stress, social support, and coping paradigm in which we assume there is a directional relationship between critical risk and protective factors and multiple psychological and behavioral outcome variables. The coping skills intervention was designed to teach participants new strategies for reducing the negative influence of identified risk factors and for enhancing the beneficial effects of protective factors.

The intervention consisted of 15, one and one-half hour sessions conducted at the worksite in which employees were taught adaptive coping strategies for managing work and family stress. Participants were 239 women in clerical positions employed in 1 of 4 corporate jobsites. We hypothesized that women who received the intervention, as compared to no-treatment controls, would report: 1) lower perceived employee, work-family, and work environment stress, 2) higher perceived social support from work and nonwork sources, 3) lower avoidance and higher cognitive-behavioral coping, 4) fewer psychological symptoms, and 5) lower alcohol, illicit drug, and tobacco use.

Analyses of the effects of the intervention at immediate posttest (using ANCOVAs) revealed a number of positive findings. Intervention participants reported significantly lower employee role stress, higher social support from work sources, lower psychological symptomatology, and less illicit drug use. They also tended to report lower work-family stress and less alcohol use. Several significant intervention x worksite interactions indicated differential impact of the intervention across worksite settings. Attrition analyses comparing stayers and dropouts on demographic and study variables were all nonsignificant, lending support to the external and internal validity of the observed results.

The purpose of the present study is to test the longer-term impact of the intervention by comparing program and control participants at 6- and 22-month follow-up periods. Analyses at the 6-month follow-up indicated maintenance of many of the original positive effects. In addition, certain delayed intervention effects emerged: program participants reported significantly lower use of avoidance coping strategies and less alcohol use. They also tended to report less tobacco use.

A complete set of longitudinal analyses will be presented for both the 6- and 22-month follow-ups of the intervention. We will discuss the nature of these findings, and possible reasons why certain effects were observed and not others. We also will discuss the importance of longitudinal research in assessing this type of worksite intervention in order to test for the maintenance or loss of initial program effects and to detect delayed or "sleeper" effects of the intervention. Finally, we will review some of the critical factors that influence the integrity of a longitudinal research design conducted in natural settings such as worksites.

COMMUTE PREDICTABILITY AS A MODERATOR OF THE EFFECTS OF PERCEIVED COMMUTE STRESS ON STRAIN

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Commuting to and from work is a frustrating experience for millions of workers around the world. Therefore, it is surprising that there has been so little research on the consequences of commuting. Despite the paucity of such research, a useful theoretical framework for commuting research has emerged from the work of Stokols and his colleagues (R. W. Novaco, et al., 1979; D. Stokols et al., 1978) and others (M. H. Schaeffer et al., 1988). This framework has two basic tenets borrowed from work stress models (e.g., R. Karasek, 1979): (1) commute *impedance* (e.g., distance, slow speed, congestion etc.) is perceived as a stressor. The perceived stress induced by the commute causes strain; (2) The effects of perceived commute stress on strain are attenuated by perceived control.

Past research on commuting has lent support only for the link between commute-induced stress and strain. The failure to detect the attenuating effect of control on the resultant strain may be related to the operationalization of control which has been based on measures of actual control or on choice. Both actual control and choice may be irrelevant for most commuters. First, most commuters have no control over the stressor, i.e., short of not commuting, people have to endure the stressful situation without being able to terminate it. Second, commuters may have alternatives to choose from, such as different routes to work (Schaeffer et al., 1988), but these alternatives may all be unattractive. J. F. Kehoe (1979) suggested that it is the quality of the alternatives that contributes to the perception of choice, and not the mere quantity of the alternatives. Therefore, it is not surprising that the availability of more (unattractive) alternatives routes to work does not ameliorate the effect of commute stress on strain (Schaeffer et al., 1988).

Yet, commuters facing lack of real control over the commute and poor choices can still maintain a sense of perceived control if they can *predict* the duration of the aversive experience (J. R. Averill, 1973). Accordingly, predictability was used in this study as the operationalized measure of control in re-testing the commute model. Specifically, it was hypothesized that the effect of commute-induced stress on strain is moderated by commute predictability i.e., only a

combination of perceived stressful commute (e.g. due to long commute) *and* poor commute predictability (low control) would yield strong effects on strain.

The revised commute-stress model was tested on questionnaire data collected from 418 commuters who drive a car to work. The results supported the revised model and showed that (1a) commute impedance is positively correlated with perceived commute stress (r = .45); (1b) commute stress is positively correlated with number of strain symptoms checked by the respondent (r = .51); (2) the relationship between commute stress and strain is moderated by commute predictability ($F(1,414) = 17.64$; $p < .01$), but not by mere numbers of commute choices. Specifically, commuters who had a long and unpredictable commute reported more than twice as many strain symptoms as any other commuters. These results suggest that the effects of commute stress can be predicted by Karasek's controversial model of work stress, if the construct of control is operationalized in a manner appropriate for the commute situation.

WORKERS' COMPENSATION AND EMPLOYEE STRESS: GAINING CONTROL

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Employee stress is an extremely complex phenomenon that has far reaching implications. One area in which it has surfaced is the workers' compensation system. Until recently most workers' compensation systems did not recognize employee stress as a compensable injury. The flood gates have now been unleashed and employee stress related workers' compensation injuries have skyrocketed in frequency and costs. Historically employee injury insurance has been viewed as a required business expense over which companies have very little control. However, some companies have taken an aggressive workplace policy approach to managing this business expense very successfully.

We will address the arena of workers' compensation through a new lens -- not the common pre-post injury perspective. An integrated model which focuses on employer driven initiatives to reduce claims and control costs will be presented. We will discuss workers' compensation systems, the legal environment, and current trends. Emphasis will be placed on how a minor injury with accompanying stress can become a permanent disability. The role of front line supervisors is a critical component of a healthy work environment and an effective workers' compensation program. Training of these front line employees in the psychological, sociological, and medical reactions to injury and treatment will be discussed. These proven techniques are part of the integrated model that can reduce claims and control costs.

We will offer examples of company implemented programs and identify key components that differentiate their effectiveness. Our emphasis throughout will be on the increasing salience and importance of psychological factors within workers' compensation and on offering "bottom line" strategies for organizations to gain control over the system.

STRESS, HEALTH, AND COGNITIVE FUNCTION: WHEN RELAXATION IS NOT ENOUGH

Richard M. Kolbell

The effects of occupational stress continue to exact a significant toll on employee health, resulting inconsiderable expense to business in terms of increasedabsenteeism, healthcare utilization, and diminished productivity. A number of worksite-based stress management interventions (SMI) have been employed in an effort to ameliorate these negative consequences, with encouraging results. Review of the literature suggests that while many programs appear to be successful in reducing the effects of stress on workers, there are substantial methodological flaws which render any conclusions tentative, at best. The relative paucity of well-controlled research in this field invites methodologically strong studies which can assist in determining the relative merits of any particular worksite SMI.

The current study evaluated the effectiveness of a worksite-based stress management intervention (SMI) in reducing the effects of chronic stress on health and cognitive performance outcomes in a high-stress occupation. Thirty-eight employees (28 female and 10 male) of a State Childrens' Services Division volunteered to participate in the study. Subjects were randomly assigned to a treatment, social support, or control group. Subjects in the treatment group participated in a daily meditation group for 4 weeks, which was conducted at the worksite. Subjects in the social support condition participated in a daily support group for 4 weeks, also held at the worksite. Pre and post-treatment measures of stress were assessed using the Maslach Burnout Inventory. Health measures included the Somatization scale of the Brief Symptom Inventory, visits to a physician, days absent from work due to illness, and self-reported illness symptoms. Measures of cognitive performance included scores on the Digit Symbols and Arithmetic subtests of the Wechsler Adult Intelligence Scale-Revised, the Verbal Reasoning Test, and the Problem Solving Inventory. MANOVA AND MANCOVA were performed and no significant effects of group were found of any of the stress, health, or cognitive functioning variables. Results are discussed in light of previous studies which suggest that worksite SMIs may be effective in attenuating the negative health and cognitive performance sequelae of chronic stress. It is suggested that the treatments employed lacked sufficient power to impact the

organizational and systemic stressors inherent in this agency. The importance of evaluating organizational factors prior to initiating intervention is discussed. Directions for future research are proposed.

COURSES ON WORK STRESS: A GROWING MARKET BUT WHAT ABOUT THEIR QUALITY?

Michiel A.J. Kompier, Irene L.D. Houtman & Hans Dam

This study aims to inventory, characterize and assess the quality of courses on work stress which are offered on the 'open market' in the Netherlands (1991).

By way of consulting experts, expert institutions and by way of advertizing in relevant journals training institutions were tracked down. A course was selected when (1) written information was available, (2) one or more key words on the work stress topic were in its title or objectives and (3) it was given more than just once.

Research method was a structured telephone interview. A pre-sent questionnaire served as a framework for it. Characterization took place on the basis of general characteristics (e.g. course length, costs), objectives, target groups, course content, assessment of participants and course evaluation. For quality-assessment three questions were posed: whether there were explicit objectives, whether it linked up with the stress problems of the participants and whether and how the course was structurally evaluated.

Fifty training institutions were contacted. After selection on the forementioned criteria, 24 training institutions (28 courses) remained. It can be concluded that the number of courses offered is growing fast. There are large differences with respect to the participation costs of the courses.

Only 5 institutions formulate concrete objectives, the other course objectives are in very global terms. Most courses were directed at management (71%) and executives (61%). Less often at experts in the field of work and health or human resource management (32%) and at representatives of employees (19%). Mostly several target groups were addressed.

As to the course content, aspects concerning the individual coping capacity were mentioned much more frequently to have a high priority as compared to aspects concerning the work situation (e.g. changing the job content, social relations at work, increasing control). There is no trend that the more recent courses pay more attention to the work situation. This might have been expected in consequence of the recent Dutch Working Environment Act.

In most courses it remained unclear how the orientation or intake took place and how these influenced the course objectives and content. In only 6 courses instruments were used to analyse the stress problems.

All training institutions evaluate their course, one way or the other. Fifty-seven percent of the courses evaluate in a structured way. Only half of the courses write an evaluation report, not always available for participants.

Conclusions and recommendations

Courses on work stress seem to be a growing market. However, this market is hard to characterize. In general, neither the written material provided on objectives, course content and the way the courses linked up with the specific working situation of the clients, nor the additional information provided by telephone and questionnaire, is clear and informative. It is concluded that the quality of most courses is doubtful.

It is recommended that:

(1) Training institutions pay more attention to the work situation and less to individual characteristics.

(2) They be either explicit about their choice of objectives, target groups and course content or about the way they identify risk groups and risk factors for work stress and the implications of these risks for the course content.

(3) The identification of the stress problems or risks of the participants should be structured with reliable and valid instruments.

(4) The training institutions should evaluate in a structured way and these reports should be open to the participants or the company that ordered the course.

* The research presented was granted by the Dutch Ministry of Social Affairs and Employment

RISK FACTORS AND OCCUPATIONAL RISK GROUPS FOR WORK STRESS IN THE NETHERLANDS: A REPRESENTATIVE SAMPLE OF THE DUTCH WORKING POPULATION

Michiel A.J. Kompier & Irene L.D. Houtman

In order to identify risk factors and occupational risk groups for work stress secondary analyses were performed on four representative samples of the Dutch working population who participated in a National Work and Living Condition Survey, held in 1977, 1983, 1986 and 1989. The data were originally gathered by the Dutch Central Bureau of Statistics. Information was collected on the employees work (occupation and stressors), health (health complaints) and several personal characteristics (sex, age, education level).

A factor analysis on the stressors resulted in three independent factors: (1) work pace, (2) skill discretion (consisting of four items: monotonous work, poor possibilities for personal development, poor fit between the actual work and education or experience level and poor promotion prospects) and (3) physical stressors (heavy work, noise, dangerous work, dirty work and bad/nasty smell).

On basis of the analyses it is concluded that :

1. The most important risk factors for the total Dutch working population are a high work pace (51 % in 1989), poor promotion prospects (74 % in 1989), poor possibilities for personal development (34 % in 1989) and poor fit between actual work and education or experience (32 % in 1989).
2. The first factor, high work pace, has continuously been increasing from 1977 to 1989, as can be seen in Table 1. The skill discretion items generally increased from 1977 to 1983 but remained on a similar level thereafter. Contrary to what is generally believed, physical ('blue collar') stressors did not decrease in the Netherlands.
3. Despite the increase of high work pace, no increase is found for the health indicators which were measured. This is probably due to a healthy worker selection, causing a division between healthy employees and a large number of medically disabled ex-employees in the Netherlands. Psychological disfunctioning (e.g. depression, nervous exhaustion) is one of the main reasons for absenteeism and medical disablement in the Netherlands.
4. The most important occupational risk groups are waiters (and other catering personnel), cleaning personnel, cargo personnel, professional drivers, shop assistants and secretaries. The risk profile of these risk groups remains almost unchanged when adjusted for sex, age and education level.

Table 1. *Stressors: percentages 'yes' in 1977 (n=1973), 1983 (n=1995), 1986 (n=1897) and 1989 (n=1516)*

	1977	1983	1986	1989
high work pace	38	42	47	51
monotonous work	14	13	12	9
poor possibilities for personel development	33	36	34	34
poor fit actual work and education or experience	21	33	34	32
poor promotion prospects	54	74	70	74
heavy work	20	22	24	23
noise	29	23	22	28
dangerous work	11	9	8	7
dirty work	22	26	25	27
bad smell	12	9	9	12

* The research presented was granted by the Dutch Ministry of Social Affairs and Employment and the Dutch Ministry of Health

TWO MEASUREMENT METHODS OF WORKER'S SUBJECTIVE MENTAL STRAIN DURING WORK SHIFT

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The purpose of this study was to evaluate methods for measuring short-term mental strain and bring them into use at work places. Here short-term mental strain refers to subjective changes in mental state during work shift (Jarvenpaa 1991). Negative changes in mental state during work shift may indicate risk for stress symptoms in the long run. Assessing these smaller signals should be useful for planning worksite intervention, job redesign and organizational change.

The measurement methods to be evaluated were selected on the following criteria: They should be easy to use at work places and applicable for measuring short-term mental strain in various different occupations. They should be usable by practitioners (occupational nurses, planning and supervisory staff) as well as researchers and consultants. Furthermore, they should fit into a set of various other methods to be used as a multi-dimensional tool for job analysis and redesign.

Two questionnaire surveys, both in German, were selected for evaluation after a study by Jarvenpaa (1991): BMS-scale (Plath & Richter 1984) and EZ-scale (Nitsch 1976). BMS measures job-related short-term mental strain in three dimensions: mental fatigue, state of monotony and mental satiation. EZ measures general mental state in two main dimensions, actual motivation and actual ability to act, which are further divided into two levels of sub-dimensions.

Workers are asked to fill out the questionnaires twice (BMS in two different versions): in the beginning and in the end of the work shift. The scales include both positive and negative items. Change in mental state during the work shift is interpreted as an indicator of short-term mental strain.

Finnish translations of BMS and EZ questionnaires were administered by several trained researchers in 31 work-place studies to 2100 respondents. 21 of these studies were made comparably enough so as to be accepted in the final sample which then included 1671 respondents in 30 different occupations. The sample was representative of the Finnish working population. For statistical analyses occupations were grouped into four categories: industrial blue-collar workers, industrial supervisors, clerical workers and white-collar work in leading positions.

Reliability of the scales was estimated by split-halves method for BMS and Cronbach's alpha for EZ, due to the structure of the methods. Criterion validity was assessed by combining the methods to job analysis and redesign. Structural validity was evaluated by factor analyses.

Usability of the methods was assessed by understandability of instructions and items, time needed to complete the questionnaires and rate of missing data. Qualitative evaluations of relevance and usefulness of the methods in job redesign and organizational change projects were gathered from six researchers. Three occupational nurses trial used the methods in work-site health programs.

Reliability coefficients of BMS scale were rather low. Cronbach's alpha of EZ scale was very high. The difference may partly be due to the fact that the coefficients were calculated from a very different amount of items (see table 1). Criterion validity was satisfactory for both methods: changes in mental state were connected to job characteristics. Changes in work resulted to changes in short-term mental strain as measured by BMS and EZ. Structural validity of EZ was rather good, but for BMS it was less clear.

Table 1. Reliability of BMS- and EZ-methods in the beginning and in the end of the work-shift. Finnish translation.

	Reliability	
	beginning	end
BMS (split-halves of 10-11 items, n=1326)		
Mental fatigue	.74	.67
State of monotony	.61	.66
Mental satiation	.58	.68
EZ (Cronbach's alpha of 20 items, n=1020)		
Actual motivation	.93	.94
Actual ability to act	.93	.93

Usability of both methods, BMS and EZ, was very good for all kinds of users and respondents. The users evaluated the methods as relevant and useful for most kinds of occupations and work-places. Recommended use includes job redesign and organizational change. Occupational health professionals found the methods helpful in initiating and following work-site health programs.

Based on statistical analysis and user evaluation of Finnish translations the methods BMS and EZ seem to be promising methods for work-site diagnosis. More investigation should be done regarding the validity of the methods, in particular their predictive value. Item analysis and adjustment will be required for cross-cultural translations. Occupational reference norms could be set as more data has been collected.

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THE EMERGENCE OF LEADERSHIP IN A CRISIS: A STUDY OF GROUP ESCAPES FROM FIRE IN UNDERGROUND COAL MINES

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This research explores the emergence of leadership in a crisis situation. Since 1988, three major fires have occurred in underground, bituminous coal mines. While all of the miners managed to escape, many experienced difficulty. Subjects were 48 coal miners, from the three mines, escaping in a total of eight groups. Some groups experienced an apparent breakdown of leadership during their escape, while others witnessed the emergence of leadership.

The fires in each instance were evaluated as catastrophic and evacuation was navigated under desperate conditions. The subjects fled the mine in small groups, wearing breathing apparatus. The composition of each group was determined by where the subjects were located at the time they became aware of the fire, and realized the necessity of getting to the surface as quickly as possible.

A case study method of descriptive research was utilized in data collection. Each subject was interviewed in an open ended interview, a naturalistic inquiry format, about their escape. Data was coded based upon instances of 1) evidence of leadership behavior 2) evidence of lack of leadership behavior 3) characteristics of the individual in each group who lead the subjects out of the mine.

The data was then analyzed focusing on the dynamics of each group across the three different mines. The three sites were also compared. Attributes of the leaders who facilitated the escapes were noted and compared for consensus characteristics, while instances of lack of leadership were compared for similar patterns. The hierarchical structure of the group leadership before the crisis was compared with the reality of the leadership during the crisis.

Consensus characteristics of the emerging leaders during these crises are discussed and generalizations drawn. The authors suggest questions for further investigation and topics for further inquiry into the area of leadership evolvement during crisis.

TRANSPORTATION MODE AS A MODERATOR OF THE EFFECTS OF COMMUTE STRESS ON EMPLOYEE'S STRAIN AND ON ORGANIZATIONAL COST

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With the recent passing of the 1990 Clean Air Act Amendments, the burden of commuting to work has, for the most part, been shifted to employers; that is, the employer requirement of the Federal bill [Section 182(d)(1)(B)] requires employers to reduce the number of cars driven to their premises, increase vehicle occupancy, increase the use of public transportation, and other measures designed to reduce traffic congestion and air pollution. While studies conducted in the past have indicated that commuting is stressful and has negative consequences for individuals, such as increased blood pressure, tension, and reduced task performance, they have not provided the necessary information for changing the commuting patterns of the work-force. Furthermore, programs designed to reduce traffic congestion and increase public transportation use, such as increasing gasoline taxes and tolls, providing special ride-sharing lanes and parking privileges, and employer-subsidized public transportation, have for the most part failed.

The failure of these programs, perhaps, can best be explained by the lack of understanding of the physiological, and psychological reaction to, commuting and the motivating force(s) behind one's choice of commuting source. In fact, it seems that mode of transportation used (i.e., public vs. private) moderates the susceptibility of the commuter to suffering from the effects of hosts of stressors, e.g., crowds, time pressure, etc.

This paper describes a research program designed to uncover the psychological differences between public and private commuters. This study uses a job stress model adapted from the literature on work and life stress. Using the Beehr-Newman Meta-model of Job Stress (Beehr & Newman, 1978) as its foundation, it is proposed that: (a) elements from the environmental facet contribute to the stress experienced by an individual as a result of their commute; (b) as a result of this stress (that occurs in the process facet), both the individual (human consequences facet) and the organization (organizational consequences facet) will suffer numerous consequences; and (c) both the individual and the organization, as well as third parties (e.g., government), will respond to these influences in several ways (adaptive responses facet). Elements of the theoretical framework developed by Stokols and colleagues (Novaco, Stokols, Campbell, & Stokols, 1979; Stokols, Novaco, Stokols, & Campbell, 1978) is also included in this model. Specifically, the idea that commute as a stressor is a function of the degree of impedance that one encounters during their commute will be contained within the environmental facet, whereas the second tenet of that framework--the argument that commute stress is moderated by perceived control--will be depicted by its impact on the process facet. Finally, the uncertainty framework developed by Jackson, Schuler and Vredenburgh (1987) will be contained within the process facet.

Thus, using the proposed model as a guiding force, it is hypothesized that: (a) the presence of certain environmental factors (e.g., weather, traffic congestion, crowds, number of stages) results in increased perceived commute stress but that the mode of transportation moderates the effects of these factors; (b) perceived commute stress negatively affects the well-being of the commuter; (c) commute uncertainty moderates effects of perceived stress on well-being; and (d) commute uncertainty is moderated by mode of transportation. Questionnaire data from employees at a large university with several locations will be available to test the present model. Employee records will be used to obtain objective measures of strain (sick days, absenteeism).

VALUES AND INTEGRITY: EMERGING ISSUES IN OCCUPATIONAL STRESS

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The psychologist O.H. Mowrer viewed the stresses and strains of daily life as stemming from a lack of integrity to one's own value system. The identification of one's values as individuals and the manner in which they interface with one's values as administrators and employees are increasingly vital concerns for occupational health in the workplace. The ultimate result of a clash of values along any point within the organizational structure is frequently one of increased stress with an escalating potential for burn-out. Board trustees, upper and lower level managers, and workers all face difficult daily stresses. Most feel that they are paid minimum wages for what is expected of them, work in understaffed and environmentally impoverished conditions, and often receive little emotional or supportive back-up from either their employers or employees. In spite of this, they are expected to be primary deliverers of services in an often difficult and chronically slumped marketplace. As part of our Department of Psychiatry's commitment to community mental health, we have put into place a program of workshops aimed at facilitating increased peer support, exploration of work stress dilemmas and creative resolution of professional impasses and burn-out amongst these caregivers, managers and employees of various institutions in the community.

In this paper, we will describe the process of implementation of these workshops. We will begin with a presentation of our model of professional burn-out as stemming from a clash of values between the individual, the client, the management and/or the organizational structure. This will be followed by an exploration of the model's viability in the context of our dialogues with our colleagues. Through the use of anecdotes drawn from our workshop series, we will illustrate the manner in which a process of value clarification can offer a fresh perspective for transcending professional stresses and caregiver burn-out. The implications of this approach for a creative resolution of professional and institutional stresses within an organizational community will be discussed.

THE CAUSES, CONSEQUENCES, AND PREVENTION OF WORKPLACE STRESS

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In 1991, a national, random survey of 600 full-time, non-military workers was conducted to measure the magnitude of workplace stress, determine its causes and consequences, and identify remedies and preventive measures which employers can use to alleviate workplace stress in their organizations.

Nearly half of American workers feel their job is highly stressful and 34% are close to burning out. Job burnout is closely correlated with higher turnover and absenteeism, lower productivity, and greater health problems. One out of four employees report they experience eight or more stress-related conditions often. Factors identified as increasing the likelihood of burnout include reductions in employee benefits, a change in ownership of the company, layoffs, a major reorganization, having little decision-making power, and high overtime requirements.

Workers are half as likely to burn out or suffer stress illnesses if their employers have supportive work and family policies, good communication, medical and mental health benefits, or flexible work hours. The availability of an EAP or Wellness program is also linked to less stress illness.

An inventory of 46 factors that affect stress in an organization (the NWNL Workplace Stress Test) was developed in cooperation with a panel of stress experts. The instrument is designed to help employers assess their organization's risk for workplace stress. In 1992, standardized scoring for the stress test was developed using a random sample of 37 private-sector work sites in the U.S., stratified by number of employees. A systematic sample of 1,299 employees in the participating companies completed the stress test. A job stress questionnaire was used to validate the Stress Test.

The 46 organizational characteristics are grouped into 6 components: Employee Support and Training, Work Conditions, Organizational Change, Employee Benefits, Progressive Programs, and Job Design and Physical Environment. Multiple regression analysis confirmed the relationship between the six subscales and employees' stress-related illness and desire to quit. The overall scale and subscales are calibrated into low, medium and high risk categories.

Workers report lower levels of stress illness when employed by organizations that provide information on stress; encourage work groups; moderate variations in work loads; ensure that environmental conditions are acceptable; provide training in conflict resolution; foster an open, supportive atmosphere; recognize and reward employees; or provide time to relax.

CHINESE QIGONG AS A HEALTH PROMOTION

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From the psychological and physiological point of view, the current research has proposed that Chinese Qigong which is just opposite to stress in work and life is an effective means of preventing and treating diseases and protecting and strengthening health. The relationship between Qigong and psychophysiology has been discussed. Evidence from clinical practice and research in China (which showed that Qigong has an effect on cardiovascular diseases) has also been presented. However, more studies should be done with regard to the effect of Chinese Qigong on occupational stress reduction and health.

HOW TO REDUCE CORPORATE HEALTH CARE COSTS BY CHANGING CORPORATE CULTURES

Morty Lefkoe

Most companies are spending far more money on their health care costs than they need to, not because their employees are so sick, but because the companies themselves are sick. In fact corporate health care costs could be cut by at least 20% if organizations made significant changes in how their employees are treated.

A look at the actual health care costs of companies that are acknowledged to have created "healthier" cultures reveals health care costs anywhere from 52% to 71% of the national average.

What is it about the corporate cultures of these companies that could have such a drastic impact on the companies' health care costs?

A recent story in Newsweek points out that "investigators are demonstrating that emotional states can translate into altered responses in the immune system." These findings have given birth to a new science: psychoneuroimmunology, commonly called PNI.

Hundreds of controlled PNI studies have concluded that a sense of helplessness and hopelessness, not experiencing that what one does makes a difference, pessimism, a feeling of not mattering to others, the inability to express one's feelings, etc. -- lead to harmful stress and impaired immune functioning, which predispose us to most minor and major illnesses.

If we were to create an environment specifically designed to engender those negative feelings and attitudes -- we would create the work environment of most corporations.

A study conducted by Dr. Suzanne Kobasa, a psychologist at City University of New York, discovered that, of business respondents in a study who said they were under tremendous stress, those who felt they had the backing of their boss were ill half as often over the course of a year as those who said they received little support from their boss.

Many controlled studies, such as this one, along with abundant anecdotal evidence, reveal that employees at most corporations today experience:

(1) that they are merely a small cog in a very big wheel, who don't really matter or make a real difference;

(2) a lack of control over their day-to-day work and their long-term career;

(3) incredible stress due to many factors in their companies' cultures, not the least of which is the fear of making mistakes at the same time they are being pressed to be innovative and take risks;

(4) an acute sense of powerlessness due to authoritarian management styles that inhibit their discretion and that encourage dependency and submission.

The inevitable conclusion is that the very nature of most corporate cultures produces feelings and attitudes that predispose employees to illness.

We've known for some time now that creating a new culture that rewarded innovation and risk taking, that supported participation and involvement on the part of all employees, that turned top-down autocratic managers into empowering leaders, etc. would significantly increase a company's competitiveness and profitability.

It is now clear that the same culture also would reduce stress and improve immune function, thereby significantly reducing corporate health care costs too.

THE IMPACT OF STRESS ON SAFE WORKING BEHAVIOR IN HEALTH CARE: IMPLICATIONS FOR TRAINING AND TASK DESIGN

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The prevalence of HIV infection has increased interest in the thoroughness of procedures used by health care workers to control the spread of infection to themselves and among patients. The substantial investment by professional bodies and health care authorities in North America and Europe in disseminating information and designing rigorous safety procedures for infection control is based on assumptions about learning and working practices. These assumptions may have limited applicability to stressful worksettings.

A multi-method longitudinal study of health care workers' management of the risk of infectious disease in the UK and Canada focuses on the impact of occupational stress and burnout on health care workers' management of the risk of contracting infection disease. The project, which considers the hazard of HIV and HEB infection within the context of other workplace hazards, is developing a model of risk assessment which examines the cognitive strategies of health care workers. The model assesses the impact of stress on safe working behavior at several points. For example, the assimilation of new information regarding workplace safety often occurs within a plethora of competing demands for health care workers' time and energy. Further, workers under stress are likely to make errors when assessing a hazard's crucial dimensions of controllability, frequency, and potency, thereby undermining the workers' potential to manage the risk effectively.

The model considers the cognitive assessment of risk within its organizational context. It examines safe working behavior as a social construct, in that it often requires the coordinated effort of a diverse group of health care professionals with overlapping and complementary responsibilities for patient care and worksetting management. Further, it places individual responsibility for safe working behavior within a context of task design. Safe working behavior is more likely to deteriorate under stressful situations when safety procedures have been poorly integrated into the natural flow of work. That is, situations of extraordinary demand or of acute resource depletion tend to elicit reversion to unsafe patterns of working behavior when these patterns are more expedient in terms of task demands. This tendency emphasizes the importance of assessing the impact of new safety procedures, such as universal precautions of infections control, on the natural flow of work from the perspective of direct providers of health care.

These considerations are particularly relevant during a protracted period of crisis in North American and European health care systems. Under budget constraints, health care workers confront a deterioration of the ratio of resources to demand. The devolution of authority in health care organizations contributes to a proliferation of new work roles, for which training is often inadequate or completely absent. The contribution of these factors to the potential for substantial professional crisis argues for the inclusion of occupational stress and burnout in a model of safe working behavior.

KEYWORDS: Stress, safety, burnout, HIV/AIDS, health care, cognitive schemas, risk assessment, multicultural

EFFECT OF CONTROL AND OFFICE ERGONOMICS ON MUSCULOSKELETAL STRESS IN VDT USERS

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Most of the VDT research studies focused on either job design factors (for example, Sainfort 1990) or ergonomic factors (for example, Schleifer et al., 1991), and their effect on mental and physical health of workers. The purpose of this study is to examine the joint effect of job design and ergonomic factors on health complaints of VDT users. Three issues are addressed in this study : (1) the relationship between physical working environment and musculoskeletal stress, (2) the relationship between control over physical working environment and musculoskeletal stress, and (3) the effect of control over physical environment on ergonomic characteristics. Three hypotheses are tested : (1) ergonomic characteristics (such as workstation design) are predictors of musculoskeletal stress, (2) there will be a negative relationship between control over physical environment and musculoskeletal stress, and (3) there will be a positive relationship between control over physical environment and ergonomic characteristics of workstation design.

Two midwestern public service organizations participated in this cross-sectional study. The study sample consisted of office workers who performed a wide range of office tasks and who used VDTs for varying amount of time. A self-administered questionnaire (i.e. subjective data) and ergonomic evaluations (i.e. objective data) were the two types of data collected. A total of 165 subjects completed the questionnaire and had their workstation evaluated. Seventy-two percent of the subjects were female and the average age was 37.8 years. The average VDT use was 3.3 hours per day. The independent variables examined in this study included both objective and subjective measures of workstation characteristics, and subjective measures of control over physical environment. The dependent variables were self-report of musculoskeletal stress (for example, swollen or painful joints, shoulder soreness and stiff or sore wrist).

Results of the study indicated that objective measures of ergonomic conditions did not predict any of the measures of musculoskeletal stress, while subjective measures of ergonomic conditions, such as having enough surface to layout work and having convenient arrangement of furniture and equipment, predicted back pain and neck pain, respectively. In addition, having control over physical environment was consistently related to six of the seven measures of musculoskeletal stress. The role of control over physical environment is an important factor to consider in future research studies of musculoskeletal stress and VDT users.

FINNISH RESEARCH IN ORGANIZATION DEVELOPMENT AND DESIGN

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The approach in work and organizational psychology clearly changed at the beginning of 1970 in Finland. The traditional organization development (OD) activities, such as personnel selection and intragroup and interpersonal relations approaches from the management perspective shifted towards interaction between job demands and workers' health. The job stress survey approach gradually gained in popularity, and was complemented with feedback, intervention and evaluation phases. Many studies dealt with change, job redesign and organizational change related to automation and the new computer technology. In addition to industrial work, also office and service work were the targets of research.

The recent psychological working life research and interventions in Finland include both nationwide and local surveys, as well as survey feedback and other interventions. Most often the measures and criteria applied have been health and well-being, but also measures of competence and learning have been used. The action programmes have depended on the context and the theoretical background of the research. The following major traditions can be currently found in Finland.

- policy-making approach;
  - social policy oriented surveys
- sociotechnical and process consultation approach;
  - well-being and competence oriented redesign and organizational change
- cognitive approaches;
  - learning oriented activity theory approach, usually called developmental work research

From the field of sociotechnical and process consultation six different intervention approaches to promote the quality of working life and health and well-being, using feedback and cognitive methods, will be described. These are all conducted by a work psychologist at the Institute of Occupational Health in co-operation with the management, labour unions and occupational health and safety representatives from the workplaces. These are

- Survey-feedback interventions for reducing occupational stress
- Union-Researcher co-operation to promote health and safety
- Institutional support by occupational health personnel for the job redesign process
- Increasing cognitive competence and optimizing job demands during change
- Joint Management-Union-Researcher approach to promote health and reduce occupational stress
- Process consultation in organizations under change

A common trend is to see an entire organization as an open system entity. The historical and value system analyses have brought organizational culture aspects with them. In future, organizations will be increasingly dependent on advanced computer technology and human knowledge. In the present economic situation it is especially important to create adaptive organizations with a capacity for innovation.

Abstract - Stress Release: Emerging Tools in a Total Stress Management Program

Among the emerging techniques suggested to reduce stress among U.S. workers are those related to the phenomenon of "stress release". Stress release, defined by R. Lippin (10/85), is "the release of human tension which has bensfits to both the individual and to society" and includes weeping, laughing, orgasm, writing, and/or hitting and kicking exercises. The theoretical framework for the validity of these techniques (example: catharsis) will be briefly described and current research will be summarized. The paper will also discuss suggested personal applications and corporate applications of these techniques. Given the magnitude of the occupational stress issue, we must not delay in utilizing any tool which may impact this important problem.

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A PETROCHEMICAL PLANT DISASTER; INITIAL PSYCHOLOGICAL EFFECTS, MENTAL HEALTH INTERVENTIONS, AND THE DEVELOPMENT OF SUBSEQUENT PSYCHOLOGICAL DISORDERS

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This paper describes an acute disaster in a petrochemical plant in Texas, its acute and subsequent impact on psychological functioning, and the mental health interventions which were organized in an attempt to minimize the adverse mental health effects of the event. Based upon what was observed and experienced in the delivery of these mental health interventions, specific detailed recommendations are offered to those organizing the delivery of mental health services following a disaster.

The explosion and fire which occurred in the polyethylene division of a petrochemical plant near Houston, Texas in 1989, resulted in the deaths of 23 workers and physical injuries were sustained by at least an additional 130 employees, 34 of whom were transported to local hospitals. Many additional employees were at risk for serious injury or death in the explosion and fire. Following the event, grief and sadness were omnipresent and symptoms associated with post-traumatic stress disorder were ubiquitous in the surviving plant employees. Crisis intervention and counseling services were immediately made available to plant workers, their families, and affected members of the surrounding communities. Acute mental health assistance continued to be provided at company expense for two months following the disaster.

Follow-up and non-crisis services were then offered by an additional year. These follow-up services were organized to deal with the ongoing mental health effects of the disaster; costs of these services were also provided by the petrochemical company. Heavy usage of these services occurred approximately six to nine months after the disaster. Requests for mental health services also escalated whenever subsequent events occurred within the plant where employees perceived a safety threat. Individuals presenting for these follow-up services suffered mostly from unresolved post-traumatic stress disorder and from depressive disorders. One year after the disaster, most employees were back to work in the plan and absenteeism had finally improved. While mental health problems persisted, most employees were able to cope with their anxious and depressive symptomology.

Subsequent to the initial crisis intervention efforts and the year of follower-up care, lawsuits regarding physical and psychological injuries began to be settled. These legal considerations appeared to exert their own effects on both employee morale and on the emerging picture of psychological impact of the traumatic event, thus complicating efforts to identify the actual adverse impacts of the disaster. Long-term effects of the disaster are yet to be studied.

CLERICAL WORKERS: WORK STRESS, SOCIAL SUPPORT, & COPING STRATEGIES

Bonita C. Long

Over one third of the female work force in the United States are clerical and secretarial workers. Previous research indicates that clerical work is a very stressful occupation (Smith et al., 1977). Research also indicates that poor relationships with bosses may be a particularly important factor contributing to clerical worker stress. Bosses have tremendous power to shape the worklives of their clerical staff. Haynes and Feinleib's (1980) report on the Framingham Health Study data showed that an unsupportive boss was among the most significant predictors of coronary heart disease for women clerical workers. In contrast, interpersonal relationships are an important source of gratification for workers. Yet, relationships are also a major source of distress at work (Crosby, 1982). Evidence suggests that relationships (i.e., social support) are important moderators of the work stress-health outcome relationship (Cohen & Wills, 1985). Although there is mixed evidence regarding the effects of coping on work stress, it is hypothesized that coping strategies may mitigate the lack of support received from one's boss. For example, the satisfaction achieved after successfully dealing with a stressful problem (active coping) may moderate the negative effects of a supervisor who is unsupportive.

The purpose of this study was to examine the relationships between work discretion (lack of control and lack of job clarity), supervisor, coworker, and other sources of social support and psychosomatic health. In addition, the moderating effects of coping strategies on work discretion and supervisor support were also examined as predictors of psychosomatic health over the course of a month. Data were collected from 100 clerical workers who are employed in several public and private organizations. The women ranged in age from 22 to 63 ($\underline{M}$=40) and 52% were married. Hierarchical multiple regression analysis was used to test both main and moderating effects. Marital status, years in the organization, and bosses' sex were controlled for in the analysis. Support was found for the moderating effect of avoidant coping and work discretion. Greater use of avoidant coping exacerbated the relationship between work discretion and psychosomatic symptoms. Although main effects emerged for supervisor support measures (lack of supervisor support was related to higher levels of psychosomatic symptoms), no coping x supervisor support interaction effects were revealed.

Stress in the 90's: A Changing Workforce in a Changing Workplace

Second Conference on Occupational Stress by the American Psychological Association and the National Institute for Occupational Safety and Health

Workshop Abstract

Mirages of Medical Marriages: How Medical Couples Improvise their Lives

Joyce G. Love, Ph.D. and Tom Conran, Ph.D.[1]

The workshop explores an "insiders" dialogue on medical families. Prior published literature on the trials and tribulations of physicians and their families generally describes medical families as a collection of psychopathologically deviant individuals whose dysfunctional personality characteristics are brought forth by the demands and paradoxes of medical careers. To provide additional viewpoints and voices to the published literature, the following research assumes that members of medical families improvise, with greater and lesser comfort and success, a balance between career and family life. The ideological foundations of this study are systems theories, social constructionism, and hermeneutics. These theories suggest that each individual and family can be understood in terms of their own voices about themselves and their contexts.

The workshop reports research which described medical families in terms of each individual's experience of, and contribution to, the contexts of work and home. To accomplish these descriptions, seven medical couples were asked how each understood, interpreted, and lived their subjective experience of medical family life. Each one to two hour interview was transcribed. Interview transcripts were interpreted according to hermeneutic methods which described the co-evolution of interpretations between interviewer and participants. The analysis highlighted patterns of repetition, emotional intensity, historical explanations, explicit and implicit interpretations, and surprising serendipity. The transcripts contained many patterns which were substantially different from the researcher's expectations and the themes of medical family life most often presented in the published literature. In general, the couples confirmed the literature's descriptions of severe stresses in medical family living. And, the couples described how they not only coped with the stresses but also brought satisfaction and serenity into their lives. These themes of inventive improvisation identified from stories told by physicians and spouses provided fresh accounts of medical family lives. The couple's accounts of family improvisations were juxtaposed with the narratives of pathology in the current literature. The juxtaposition illustrated the benefits of multiple explanations of such complex dilemmas as medical family stresses. Practical benefits of the improvisational descriptions were drawn for marital and family therapies, medical school curricula, residency programs, and private practice.

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PSYCHOLOGICAL IMPACT OF UNDERCOVER ASSIGNMENT IN LAW ENFORCEMENT: CLINICAL SYMPTOMOLOGY OF UNDERCOVER V. UNIFORM OFFICERS

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The clinical impact of an undercover assignment in law enforcement was measured through application of the Health Concerns Questionnaire. Uniform officers from municipal, sheriff, campus, and state police agencies, all of which assigned personnel to regional undercover "cooperative force concept units," provided self-reports of the presence of 54 clinical symptoms. Officers from these same departments who were currently serving in an undercover capacity within the units provided self-reports. Three distinct categories were identified for comparison:

(1) current undercover officers (n = 254);

(2) uniform officers without undercover experience (n = 578); and

(3) uniform officers with undercover experience (n = 239).

Chi-square analyses indicated that the frequency of clinical symptoms was significantly higher in uniform officers both with and without undercover experience when compared with current undercover personnel, across all 54 clinical symptoms. In addition, uniform officers with undercover experience reported a significantly higher frequency of 15 clinical symptoms over and above the level indicated by uniform officers without such experience.

The data were interpreted from two perspectives:

(1) that the nature of the work performed by undercover

officers (e.g., high level of fear/anxiety, desire to "fit in" with an elite law enforcement unit, etc.) promoted the use of psychological defense mechanisms whereby the officers repressed, did not recognize, nor would acknowledge the presence of clinical symptoms and

(2) undercover officers expressed these clinical symptoms after completion of their assignment, a frequency profile of symptoms which was significantly greater than uniform officers who had not worked undercover.

The study findings were addressed through a model for remediation of these clinical symptoms which included:

(a) a behavioral scenario-based system for selecting officers with requisite skills for successful completion of the undercover assignment;

(b) expanded training of officers at the start, during, and prior to the end of their undercover assignment, focusing on recognition and coping with potential clinical symptoms which may have developed due to the work demands; and

(c) standards for the selection and training of supervisors of undercover officers, including previous experience in an investigative assignment, supervisory experience, and awareness of the unique job demands of undercover work.

ORGANIZATIONAL CLIMATE, GENDER, AND WORK STRESS AMONG INNER-CITY SCHOOL TEACHERS

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The relation of organizational climate and work stress was examined in a survey of 266 teachers employed in New York's inner-city. Self-reports of symptoms of psychological distress (e.g., anxiety, depression) were used as indicators of work stress outcomes (psychological strain), and answers to a climate survey served as predictors in multiple regression (MR) analyses. Data were also collected concerning satisfaction with one's job as a teacher, with one's school, and with one's life overall.

Three dimensions of school organizational climate, identified in a factor analysis of the climate survey, were achievement, affiliation, and empowerment. Two of these dimensions were associated, in interaction with gender, with an outcome variable. Achievement orientation of school--whether the school was characterized as having high standards and teachers who were proud to be part of the school--was negatively associated with strain, and this association was stronger for male than female teachers (interaction $p < .05$). Affiliation orientation of school--whether teachers and administrators were said to trust each other and to take a personal interest in each other--yielded a near-significant interaction with gender ($p < .066$), identifying a stronger negative association of affiliation climate and satisfaction with life overall for female teachers as compared with male teachers. These results are interpretable in terms of the effect of gender socialization on personal values or preferences for work or non-work climates. There is reason to believe that men are socialized to be more concerned with the achievement aspects of their life environments, and women, with affiliative aspects. If this is so, these results are consistent with a person-environment fit interpretation, in which the men's greater "responsiveness" to achievement climate is a consequence of their greater concern with achievement, and women's greater responsiveness to affiliation climate stems from their greater concern with affiliation. Our interviews with a small sub-sample of these teachers provided some support for this interpretation. Alternatively, women's multiple roles may explain the interaction with gender seen for achievement climate. If work is the principal source of stress for men, a work climate high in achievement opportunities may reduce mental strain. If, however, working women experience stress from additional sources outside the work place, increased achievement opportunities in the work place may not have adequate stress-reducing effects.

The remaining dimension of school organizational climate was empowerment. The indicators of empowerment were answers to questions concerning whether respondents had influence over the goals and actions of the school, and whether teachers were encouraged to try their own approaches in their work at their schools. MR analyses controlled for age and sex revealed that empowerment was associated linearly and negatively with psychological strain ($p < .05$). These results are interpretable in terms of the ubiquitous effect of perceived control on stress.

NON-AUDITORY EFFECTS OF NOISE AS A STRESSOR: A SYNTHESIS OF RESEARCH

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This synthesis of research on the non-auditory effects of noise was undertaken to build a foundation for the study of noise as a cause of stress-related disorders.

The effect of noise on hearing is well-documented. Although OSHA (1980) guidelines advise that exposure to high noise levels causes other physiological responses, few workplace studies exist. Ironically, noise is frequently a standard stimulus of the stress response in laboratory studies (Westman & Walters, 1981), but the non-auditory effects of long-term exposure to occupational noise have not been quantified.

Existing studies fall into three categories: 1) noise and cardiac reactivity (the largest group); 2) psychological disturbance; and 3) other stress-related disorders.

Noise and Cardiac Reactivity

Cardiovascular reactivity to stress may be an early indicator of hypertension or ischemic heart disease (Parati et al., 1991). In laboratory studies of animals (e.g., Peterson et al., 1984) and humans (e.g., Andren et al., 1983; 1982), both brief and sustained noise increased blood pressure. Cardiac reactivity may be particularly sensitive to stimulus change (Germano et al, 1991) and unpredictability (Carter & Beh, 1989).

Studies conducted in occupational settings yielded mixed effects on blood pressure. Relationships between noise-induced hearing loss (NIHL) and hypertension have been demonstrated (Talbott et al, 1985), while the opposite was found by Gold and Associates (1989). Blood pressure increases in community residents have been linked to traffic noise (Ising et al, 1980) and aircraft noise (Ising et al, 1990).

Noise and Psychological Distress

Associations have been found between noise and distress (Linden, 1991); annoyance (Arvvidson, 1978); helplessness, tension, and depression (Breier, 1987). Weiss proposed that uncontrollable noise caused negative moods, but others found control issues irrelevant (Sanders et al., 1990). Topf (1988) found noise-induced stress directly related to emotional exhaustion, although the meaning of the noise may have made the critical difference. Relationships have been reported between traffic noise and psychological tension (Ising et al., 1980); aircraft noise and psychiatric hospital admissions (Kryter, 1990); and psychological distress (Klitzman & Stellman, 1989). Performance of a mentally stressful task during noise exposure is particularly taxing (van Dijk et al., 1987).

Noise and other Stress-Related Disorders

Relationships were demonstrated between smoking, cholesterol levels , NIHL, hypertension and occupational noise exposure (Axelsson & Lindgren, 1985). In laboratory studies of humans exposed to noise, early and persistent changes in gastric mucosa were observed (Bergmann et al., 1990); although immune function (Weisse et al., 1990), and platelet activation (Andren et al. 1983) were unaffected.

Summary

Gaps in the literature persist concerning the links among occupational noise, cardiovascular disease, accidents, communication, and psychological disorders. Existing research has rarely been framed within a comprehensive stress paradigm in which confounding factors are acknowledged. Although generally pointing to a relationship between noise and stress-related endpoints, study results have not been entirely consistent and the long-term non-auditory effects of noise remain unclear. There is sufficient evidence to indicate a problem, but the relationships among multiple factors remain obscure, and deserve further study.

JOB INSECURITY AND EMPLOYEE HEALTH AND ADJUSTMENT: A FOLLOW-UP

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This study is a follow-up to one presented at the First APA/NIOSH Conference in 1990. The research presented at the first conference was a cross-sectional study of auto industry workers, looking at health and adjustment consequences of job insecurity. This study includes a second wave of survey data gathered from the same population, as well as personnel records of absenteeism and sick leave usage. The second survey was administered approximately two years after the first. In the interim, the workforce was reduced by about 500 employees. In addition, the possibility that the entire plant could be closed at any time persists. Thus, the job security of these employees continues to be severely threatened. The purpose of this study is to examine the longer-term effects of this threat on the health and adjustment of workers. Changes in perceptions of job insecurity as well as changes in adjustment will be examined for the approximately 500 employees who identified themselves on both surveys. Data from the second survey have not yet been analyzed, but the general thrust of the research is summarized in the synopsis of the first study presented below.

The research is guided by a model of consequences of insecurity described by Greenhalgh and Rosenblatt (1984). The organization suffered a total workforce reduction of approximately 2500 workers between 1982 and January of 1990, when the first panel of data reported here was gathered. The organization continues to downsize. Qualitative data were gathered during focus group interviews with about 10% of the workforce, followed by two questionnaire surveys in which 100% of the workforce was invited to participate on company time. The first survey was administered in early 1990, the second in late 1991. Approximately 1500 employees completed survey one, for a 74% participation rate, and approximately 1100 employees completed survey two, for a 65% participation rate.

Job security emerged as an important issue during focus groups with employees. Consequently, survey questions represented three general security-related categories: job insecurity, the likelihood of losing one's job; employment security, the likelihood of finding a comparable job elsewhere; and sources of information about job security. In addition, job insecurity as a source of job stress and its relationship to physical health and psychological adjustment were examined.

Results of the first study can be summarized as follows: (1) most employees believed that there was some chance that the plant might close and that there would be little or no advance warning of this; (2) hourly and salaried employees were divided as to whether statements by top management about the future of the company could be trusted; (3) job insecurity was associated with greater reported health and adjustment problems and lower levels of satisfaction, particularly for younger employees; (4) employment insecurity was related to health but not adjustment, younger employees felt they had more employment security, and job security was somewhat less important to those who believed they had employment security; (5) "bad attitude" employees tended to feel job insecure, and were generally resistant to changes in the way work is done.

These findings will be tested longitudinally using the second wave of survey data, as well as additional dependent variables of absenteeism and sick leave usage. Implications for research on job insecurity as a workplace stressor and for functioning of an organization in transition will be discussed.

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Stress Induced Changes In Probabilistic Decision Making

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The emergence of complex automated systems in the workplace is changing the nature of the work that people are asked to perform and their work environment. Many of these changes are, in part, toward (a) more cognitively oriented tasks, such as those associated with complex decision making under uncertainty; and (b) work systems that call for extended and sustained work schedules to support round-the-clock industrial operations.

The uncertainty associated with complex systems can emerge in a number of ways and ultimately render a decision and control task very difficult to perform. For example, the linkage between system information sources and system states can be probabilistic in nature. If particular values of an information source do not uniquely define a given system configuration, then the relationship between system information and system state is uncertain. Uncertainty can also be related to the level of knowledge the operator has acquired regarding various system parameters, and how these parameters change as a function of input operations. Assessing the overall state of the system will require selecting and integrating the best available information concerning the distribution of system states likely to occur.

Task duration has been shown to influence the sensitivity of cognitive tasks to impairment during continuous and sustained work. Cognitive task decrements observed during continuous work sessions have often been attributed to reductions in alertness and corresponding increased levels of fatigue. Further, continuous performance has been found to be moderated by a variety of non-task variables, including motivation and situational factors, as well as personality characteristics.

The present study investigated the effects of the stressors 'task uncertainty' and 'continuous performance' on the ability of a group of twelve subjects to make multi-dimensional judgments concerning manufacturing production. The results indicate that statistically significant decrements in accuracy of manufacturing production judgments were evident over the course of a continuous 4-hr computerized work experiment. Further, the precision in judgments was inversely related to the level of task uncertainty. In distinct contrast, performance accuracy on two analytical (i.e., non probabilistic) tasks remained very high during the experiment. The findings are discussed in the context of (a) the traditional methods used for assessing performance decrements in continuous performance research; and (b) the job-bound characteristics likely to constrain operational decision-making under uncertainty.

Workforce Reductions Affect Employees Who Are Not Displaced: Stressors and Strategies for Stress Reduction

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With unemployment hovering around 7% nationally, it is not surprising that much attention in the lay and professional literature alike has focused on the psychological and familial effects of job loss (Karr, 1991; Lewis, 1992; Warr, 1987). However, an even larger group whose plight has gone relatively unnoticed is the employees who "survive" a work force reduction. They are exposed to some of the same work place stressors as those who are displaced; for example, change in general, the lack of certainty about the nature and timing of pending changes, the breakdown in communication that often occurs and the abundance of rumors that frequently surface (Schweiger, Ivancevich, & Power, 1987). However, they are also subject to a number of other factors with effects that are potentially both pervasive and profound. For example, employees who remain often report "survivor guilt" (Brockner, Grover, Reed, DeWitt, & O'Malley, 1987) in which they experience guilt about having been able to keep their job and even working overtime when their former co-workers may not have a job; they also are often required to put in long hours and take on responsibilities for which they were not trained; and they experience anxiety about the future of their own jobs, the future of the company, and whether or not they have any control over the preservation of their job since commitment and satisfactory job performance did not enable the displaced employees to keep their jobs (Cameron, Freeman, & Mishra, 1991).

This paper will, first, present the major issues that may affect surviving employees and managers, the potential psychological effects experienced by the individuals and the organizational effects that may occur in the work place. Second, strategies for dealing with these issues and, ideally, preventing their occurrence will be presented. The material is based on an extensive literature review, informal interviews with surviving employees, feedback from seminars on job displacement and other work that the present author has done with organizations going through work force reductions. Since the data are preliminary, restrictions on generalization are reported.

With downsizing expected to continue well into the '90s (Myers, 1992), more research is needed on the effects of work force reductions on individuals and organizations and on effective strategies for implementing such reductions. Suggestions for future research are presented.

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DEVELOPING WORKPLACE STRESS MANAGEMENT SUPPORTS: NATO PSYCHOLOGICAL SUPPORT RESEARCH PROGRAMS

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Psychological support for military personnel is an issue of concern to the United States and its North Atlantic Treaty Organization (NATO) allies. As the military establishments of the NATO nations undergo significant downsizing and changes in missions, new policies need to be developed to provide support for personnel. Demonstration programs which combine research and historical findings will be used by policy makers to provide support, particularly in the workplace.

From 1984 to 1988, the NATO Research Study Group on Psychological Fitness developed recommendations for the selection and training of military personnel for highly stressing military functions. It was recommended that a NATO Research Study Group on Psychological Support be formed. Psychological support deals with the improvement of the psychological situation of the soldier and military group with consideration for the improvement of the combat readiness of soldiers. Psychological support concentrates on management of combat stress and the respective preparatory measures including appropriate training.

This paper will discuss ongoing efforts in the NATO nations regarding psychological support. It will include a review of the ongoing training and intervention programs. Military and civilian training and intervention programs for recognizing and managing reactions to psychic trauma will be presented.

In 1989, a NATO Research Study Group on Psychological Support was formed. The goals of the NATO Research Study Group on Psychological Support are to develop modules for promoting self help and buddy aid, develop interventions for military leaders which promote psychological support, develop curricula and course objectives for basic training programs to provide psychological support, develop occupational stress and health promotion components as part of workplace stress management, and develop mechanisms for promoting organizational change for psychological support.

ABSTRACT

FAMILY-FRIENDLY WORKPLACES, WORK-FAMILY INTERFACE AND WORKER HEALTH

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As two-earner couples become the norm, there is greater interest in workplaces that facilitate the fit or interface between work and family. Using data from a study of 300 two-earner couples, both with and without children, the proposed paper examines the role of job flexibility and personnel benefits.

We found that, for women, traditional benefits, such as paid sick leave and vacation time and paid health insurance, are associated with fewer concerns about combining employment and parenting, as well as with a greater sense of reward from combining these two roles.

We also found that, for women, having a job that is flexible enough to allow them to respond to non-work situations, having hours that fit their needs and being able to set their own work schedule are associated with greater rewards, and fewer concerns, from combining work and family roles, as well as with reduced psychological strain.

For men, traditional personnel benefits are not associated with their experiences as working parents. However, men with jobs that are flexible enough to allow them to respond to non-work situations report greater rewards, and fewer concerns, from combining work and family roles, as well as reduced psychological strain.

GENDER DIFFERENCES IN THE RELATIONSHIP BETWEEN
JOB QUALITY AND WORKER HEALTH

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Much of the research on the relationship between job quality and worker health has been conducted on men, using measures of the job that were developed in the 1950s. In the proposed paper we: (1) present a measure of job quality that draws on prior measures, but is expanded to include factors relevant to the service sector and to employed women -- specifically the rewards of serving the community, and the importance of a job flexible enough to facilitate combining employment and parenthood; (2) present LISREL data about gender differences in the factor structure of this job quality measure; (3) present data about gender differences in the relationship between job quality and worker health.

The data in this paper come from an in-depth study of stress and health among a representative sample of 600 women and men in two-earner couples, who are employed in a range of occupations. We found that, while the basic factor structure of the job quality measure is the same for women and men, the actual items that comprise each factor differ -- most notably, on the work-family flexibility factor. We discuss these gender differences in the context of gender differences in workers' experiences.

Most research and writing on jobs and families assumes that jobs are more important to men's health, and families are more important to women's health. However, we have found that there are no gender differences in the relationship between specific aspects of a job and workers' health. The proposed paper will discuss those factors that are most predictive of worker health for women and men, including an examination of Karasek's model, which posits that jobs with heavy demands and limited decision latitude are associated with poorer health.

ABSTRACT

GENDER DIFFERENCES IN THE RELATIONSHIP OF
JOB STRESS, WORK-RELATED SUPPORT AND HEALTH

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In general, research on social support has been concerned with the role of social support in improving or protecting health. Some studies have shown that support has a direct effect on health, while other studies have shown that support buffers, or moderates, the impact of stress on health (Cohen & Wills, 1985). House defines a pure buffering effect as one in which the impact of stress on health is non-existent under conditions of high support, and is more adverse as support decreases (1981). When support has a direct effect on health, the relationship between stress and health is the same at all levels of social support.

While the evidence on the direct effects versus buffering effects of social support is often inconclusive, studies of job stress among men have consistently found that work-related social support buffers the impact of job stress on health (Kobasa & Pucetti, 1983; House & Wells, 1978; Karasek, Triantis & Chaudry, 1982; LaRocco, House & French, 1980). For example, in a study of 1,809 white male hourly workers in a large manufacturing plant, House and Wells (1978) found that support from supervisor and spouse buffered the impact of job stress (workload, role conflict, etc.) on physical health. Support from spouse buffered the impact of job stress on depressive symptomatology. Caplan and colleagues conducted a study of over 2,000 male workers in 23 different occupations, using similar measures of support (1975). In a reanalysis of this data, using the same statistical techniques as House and Wells, LaRocco and colleagues (1980) found that co-worker and supervisor support buffer the impact of job stress on psychological strain (anxiety, depression, irritation and somatic complaints).

In our prior work, we examined the role of work-related support as a buffer of job stress among women employed as social workers and licensed practical nurses, using the same measure of support and the same statistical techniques as LaRocco and colleagues. We found no buffering effect, only a strong direct effect of work-related support. We suggested that these findings indicated a possible gender difference in the role of work-related support.

In the current proposed paper, we will report on a study that tests directly for the existence of gender differences in the role of work-related social support. The data come from a study of stress and health among 600 employed women and men in two-earner couples. We used the same measure of work-related social support used by LaRocco and colleagues, and the same statistical techniques. We found only direct effects of social support for both men and women, with one exception -- for women only, work-related support from relatives and friends buffered the impact of job stress on worker psychological strain. The proposed paper will discuss possible reasons for these findings, and implications for practice.

TRAINING IN EXPERIENTIAL LEARNING AND CHANGE MANAGEMENT AS A BASIS FOR STRESS INTERVENTION AND PREVENTION STRATEGIES

Eugene V. Martin

Most stress workshops offered to employees focus solely or largely on coping remedies despite the growing body of research that questions their appropriateness and relative effectiveness. This paper reports on action research to develop an alternate model for workplace stress workshops that 1) is consistent with the view that an individual's occupational stress experience is a product of objective events and conditions in the workplace as well as personality and subjective reactions and 2) will support system change efforts to abate workplace stressors as well as enhance individual coping capabilities.

Martin's approach is to focus training on the competencies that enable adults to improve their own occupational stress situations, either acting alone or in collaborative efforts. He notes that all strategies for dealing with stress require planning and managing change in self, relationships, and/or conditions in organizations or one's environment, and proposes that essential learning objectives include helping participants:

- Understand the dynamics of occupational stress in terms of both the individual's involuntary stress response and stressors in the external situation–especially the role of self-blaming and excessive powerlessness;
- Review the relationships between strategies for dealing with stress and change management;
- Appreciate their previous experience with and current skills for intentional change–including experiential learning; and,
- Enhance their change management competencies using an action-learning approach and D. Kolb's (1984) experiential learning model.

This presentation will discuss a one day workshop on stress and stress training that was presented to six groups of health and human resource professionals, reflect on the critical design and delivery issues, summarize participant reactions to and evaluations of both content and process, and identify Martin's conclusions about changes needed to further evolve this approach.

ABSTRACT

William F. Martin, Psy. D., M.P.H.

It has been well-established by demographers, academicians, and business leaders that the work force is undergoing dramatic changes in terms of the demographic composition of both the labor force and the consumer base. These changing demographics present a challenge to business and industry leaders who are determined to maintain competitiveness in this growing global marketplace. Furthermore, recent legislation, such as The Drug Free Workplace Act as well as The American Disabilities Act, has essentially mandated that health promotion and some fashion of Employee Assistance Programs (EAPs) be established in many organizations, both public and private. In addition, the escalating health care crisis and the advent of managed care as a cost containment strategy has served as a major impetus in the institutionalization of health promotion and EAP programs in the workplace.

All of these converging forces lead to a growing concern among health promotion and EAP professionals in terms of the most effective, efficient, and ethical ways to deliver, implement, and evaluate these services for populations that are ethnically, racially, physically, mentally, socially, culturally, geographically, and religiously different. In this regard, a model will be discussed with the participants that conceptually describes one way to deliver health promotion and EAP services to an increasingly diverse work force. Specifically, this model is an integrative system consisting of health promotion at the center of the system with human resources, equal opportunity, managing diversity, community affairs, EAP, occupational health & safety, and medical services emanating from the core. An illustrative real-world case study will be used as an example of how this model works on a day-to-day basis with a diverse population.

It is my hope that at the end of the workshop, most participants will have met the following objectives: (1) an understanding of the relationship between the changing demographics and the need for innovation in health promotion and EAP programs, (2) an understanding of the conceptual model outlining the approach to deliver such services to diverse populations, and (3) an understanding of how to begin to design, deliver, and evaluate culturally-sensitive worksite health promotion and EAP programs.

COPING WITH JOB LOSS AND CAREER STRESS: THE EFFECTS OF STRESS MANAGEMENT TRAINING ON AN OUTPLACED POPULATION

Miya Maysent, University of North Texas and
Drake Beam Morin, Inc., Dallas, Texas

The function of the outplacement industry has been to provide support to displaced employees, in the form of counseling, training, and clerical services to those employees experiencing job loss. As the pool of outplaced workers has grown, the individuals within this population have experienced an increase in stress reactions.

The stress which accompanies job loss has been documented by several researchers including DeFrank and Ivancevish (1986), Iversen and Sabroe (1988), and Gordus (1986). Some of the responses to job loss have included reduced psychological well-being, depression, anxiety, as well as an increase in physical symptomatology. Those individuals who lose their jobs today are additionally suffering from extreme economic circumstances and an increasingly difficult reemployment forecast (U.S. Labor Dept., 1992).

An intervention was integrated into the outplacement services provided by Drake Beam Morin, Inc. in their Dallas, Texas office. The purpose of the intervention was to aid outplacement clients in the management and resolution of stress associated with job loss and career transition.

The stress management program was developed for this population, which has generally consisted of well-education mid and upper level managers and executives. Stress management training and techniques were selected based on their effectiveness with typically "Type A" personalities (Friedman, 1969). A fundamental tenant of this program emphasizes the adequacy of the participants' ability to deal with "normal" stressors. However, at this juncture these individuals are faced with a novel situation which can be perceived as uncontrollable, challenging their self-concept, and highly threatening to their way of life. The Cognitive Behavior Model (Lazarus, 1966; Burns, 1980), the Transition Model (Bridges, 1980), and Hardiness (Kobasa, 1979) were used as the foundations for teaching workshop participants how to increase recognition, controllability, and minimization of stress enhancing thoughts and behaviors. The workshop utilized both a didactic and experimental format in enhancing the participants' knowledge of stress and its accompanying symptomatology (McKay, Davis, and Fanning, 1981).

The workshop was divided into two 3 hour sessions offered over a one-week period. The Occupational Stress Inventory (Osipow & Spokane, 1987) was used to establish the participants' baseline functioning and readministered following the workshop to measure the change affected by the intervention. The OSI measured the participants' experience and perception of environmental stressors as well as their psychological strain and coping resources.

Theoretically, as participants acquired a cognitive understanding of their emotional process, they experienced increased control and predictive abilities. With their enhanced sense of control, their coping resources (cognitive, emotional, and behavioral) should increase while decreasing their experience of stress.

The preliminary results of this study support further research into effective stress management with Type A and outplaced populations. As the population of outplaced individuals grows and changes, so should the interventions and services adapt to better meet their needs.

THE ROLE OF JOB STRESS IN ON-THE-JOB LEARNING

Cynthia D. McCauley, Center for Creative Leadership

The present study links research on management development with research on stress in the workplace by examining two questions: Do managerial jobs need to be stressful in order for job incumbents to learn and grow from them? Do managers who experience their jobs as stressful but positive (i.e., challenging) tend to learn more from the demands of their jobs than do those who experience them as stressful but negative (i.e., threatening or harmful)?

These questions were investigated in a sample of 70 upper-level managers in a large chemical company. The managers completed both the Job Challenge Profile (JCP) (McCauley, Ohlott, & Ruderman, 1990) and a stress appraisal measure (Folkman & Lazarus, 1985). On the JCP, a manager rates the degree to which each of 96 developmental job elements (e.g., "a great deal of lateral coordination is required," "you lack experience important to carrying out some aspect of your job") is experienced in his or her current job, using a five-point rating scale. These items are grouped into fifteen factor-analytically-derived scales (e.g., Unfamiliar Responsibilities, High Stakes, Developing New Directions). A second section of the JCP asks the degree to which the manager is learning more about 33 managerial competencies (e.g., "seeing the big picture; being aware of the long term," "ways to reduce, resolve, or avoid conflict") from his or her current job, also using a five-point rating scale. An overall index of on-the-job learning is derived by averaging responses across the 33 items.

On the stress appraisal measure, the manager indicates the extent to which his or her job has potential for growth, mastery, or gain (the "challenge" appraisal), has potential for personal harm or loss (the "threat" appraisal), and has already lead to injury (the "harm" appraisal). Challenge appraisals are the most positive and harm appraisal are the most negative; however, the appraisals are not mutually exclusive--a manager can have both positive and negative appraisals of his or her job.

Analysis of the data indicated that (a) more learning was reported from jobs experienced as more stressful; (b) the elements of jobs found in previous studies to be most highly related to on-the-job learning had significant positive relationships with challenge or threat appraisals while harm appraisals were most strongly related to those scales with less strong relationships to on-the-job learning; (c) in general, on-the-job learning was more strongly related to job elements when managers were experiencing high challenge, low threat, and low harm.

Adding the notion of negative and positive stress appraisals extends our understanding of the circumstances that are most conducive to on-the-job learning by managers. It suggests that putting managers in jobs that expose them to new situations which stretch their capacities is not sufficient for maximizing learning; employing strategies that shape the manager's appraisal of the situation in terms of challenge, threat, and harm are also important.

PRE-EMPLOYMENT PSYCHOLOGICAL SCREENING: THE FIRST LINE OF DEFENSE AGAINST WORKPLACE STRESS

Robert J. McGahey, Psy.D.
Gordon D. Wolf, Ph.D.

In the first joint APA-NIOSH Occupational Stress Conference (1990), Corey and Wolf (in press) presented a model which combines clinical and organizational approaches to reducing workplace stress and concomitant stress injuries. Four levels of intervention were described which, in combination, constitute an integrated approach to this issue. These four levels include: (a) development of a shared system of management which holds management accountable for being a resource to their subordinates; (b) implementation of a proactive employee assistance program chartered to solve problems rather than merely provide services, and with open access throughout the organization; (c) a focus on person-environment fit in all hiring and promotions; and, (d) early, aggressive responses to worker claims of job-related injuries.

A model process of pre-employment psychological evaluation describing how a focus on person-environment fit in all hiring and promotions is a critical first step in the training and development of an employee is presented. This presentation illustrates how patterns of behavior in an individual's life tend to remain constant and therefore provide a basis for predicting future job performance. Included in the presentation are explanations of the following topics:

- The underlying assumptions of a behaviorally-based interview and how it is useful in predicting future job-relevant behavior.
- How the interview process is constructed in order to gain knowledge of the candidate's behavioral patterns and how these patterns affect the organization's needs.
- How the evaluator can avoid a line of questioning which may be in violation of privacy issues as well as in violation of anti-discrimination (e.g., ADA) regulations.

The goal of the presentation is to expose readers/attendees to a model of assessment which is effective in predicting person-environment fit without being vulnerable to challenges which question the validity of traditional theoretical models of psychological development and human behavior. In addition, conference participants will have an opportunity to share their experience with the process and, as a group of professionals dealing with similar issues, will potentially create a forum for more dialogue on how this service can be further refined.

Stress Management For The Workplace Through Progressive Relaxation

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Numerous treatises on stress management specify various behaviors in order to control stress. For example, one authority said to control stress: "Set realistic goals and priorities... Organize your time... Learn to say 'NO'... Recognize that some stress is unavoidable... Use your time and talents effectively... Don't waste your energies..." etc.

Similarly, another stress management authority holds that "...three variables present in every coping attempt are rationality, flexibility and farsightedness."

These are certainly worthwhile principles but how does one instigate them? Just stating them does not constitute stress management. Simply telling a person to be rational doesn't specify how rationality is to be accomplished. That prescription merely holds that to be rational, one should be rational. Thus the first shortcoming of these strategies is that they are viciously circular. Another shortcoming is that mentalistic concepts like "will power" are invoked to control physicalistic phenomena. For instance the authors of the book Controlling Work Stress state that "The mind-body link is real and powerful..." the autonomic nervous system... transmits messages from the mind to the body directly..." (page 55). Further following a psychosomatic model they hold that "...the state of [a non-materialistic] mind may weaken the body's defenses to pathogen, and actually cause a disease to begin" (page 61).

Stress management treatises also frequently suffer the shortcoming that models of physiological reactions to stressors are excessively simplistic. For example, "Stress operates through the nervous and endocrine systems... the two regulatory systems by which the body controls internal activity" (page 55). Such presentations ignore the tremendous complexity of the internal systems of the body and how they interact through neuro-muscular cybernetic circuits. To manage the body in the face of workplace stressors, one must specifically control the system that controls the other systems.

A rich history, concluding with the development of Progressive Relaxation (PR) by Edmund Jacobson, has well established that it is the striated musculature that contains the controls for others systems of the body, including cognitive ones.

The applications of PR are both preventive and therapeutic. Therapeutic applications have been for psychiatric disorders such as anxiety, depression and phobias and for somatoform disorders--headaches, backaches, high blood pressure, ulcers, spastic colon, hemorrhoids and bruxism, etc.

In Stress Management there are two things that can be done: 1) change the stressor or 2) better adapt to it. For #1, there are numerous ways to change the work environment such as focusing on job specific stressors like work schedules, decision making and job design. For #2, there is no better way than to apply PR. By so doing, goals of achieving an effective and productive work organization naturally result. I will present the precise, authentic methods of PR which when applied in the workplace can lead to better decision making, job enrichment, time management, work scheduling, goal and priority setting, reduction of ambiguity, etc.

EXHILARATING WORK: AN ANTIDOTE FOR DANGEROUS WORK?

Nancy J. McIntosh, Ph.D., University of South Florida
Lou Ann Atkins, R.N., M.S.N., Bay Pines Veterans' Hospital

Earlier research (Jermier, Gaines and McIntosh, 1989; McIntosh, Gaines and Jermier, 1989; McIntosh and Atkins, 1991) has shown that physically dangerous work that is perceived to be dangerous increases experiences of strain among workers. However, objectively measured dangerous work often is associated with positive affective outcomes. It has been proposed that this anomalous finding can be explained by the job's being perceived to be exciting and exhilarating as well as dangerous. That is, in some way the fact that a job is considered dangerous may add status and value to the work.

Hypotheses about the relationship of exciting work to experiences of strain among workers were explored using data from fifty-page surveys responded to by 200 of the 300 nurses in a stratified random sample of the nursing staff of a regional veterans' hospital. A seven-item scale was developed to measure the extent to which a job is considered exciting/exhilarating. Cronbach's alpha reliability for the scale is .83. Factor analysis revealed, as expected, that exhilarating work is a task characteristic that is statistically as well as conceptually distinct from physical danger and emotional danger (Jermier et al., 1989), and the more-frequently explored characteristics - task variety, task identity, task significance, autonomy and job feedback - suggested by Hackman and Oldham (1976). However, the task variety items loaded on the exhilarating work factor, suggesting that variety contributes to the excitement of work. Multiple regression analyses revealed that, also as hypothesized, exhilarating work is directly and negatively related to burnout ($F=18.09$, $p<.001$) and to anxiety ($F=11.01$, $p<.01$), and positively related to job satisfaction ($F=16.84$, $p<.001$). In each case, exhilarating work explains variance beyond that explained by previously-investigated stressors, including motivating potential of the job, emotional danger and physical danger.

The possible direct and moderating role of exhilarating work is explored and compared to the direct and moderating effects of social support, which is frequently postulated as an antidote to stressful work. Exhilarating work explained 15% of variance in burnout, 20% of variance in job satisfaction and 6% of variance in anxiety. Social support explained approximately 4% of variance in burnout, 9% of variance in job satisfaction and had no statistically significant impact on anxiety. In addition, exhilarating work appears to buffer the impact of emotional danger on burnout and to increase ability to cope with heavier workload. Social support was not a significant moderator of the stressor/burnout relationship.

This exploratory study introduces an important and previously unmeasured characteristic of work which is useful for understanding and predicting the impact of stressful work. The results are consistent with recent work that indicates that the dimensionality of work is more complex than traditional research has recognized, and that attention to the design of work provides useful approaches to reducing stress among workers.

The Stress Management Program for the Progressive Corporation: Occupational Health in the 1990's

Michael G. McKee, Ph.D., Mental Health Consultant
Anna Grossman-McKee, Ph.D., EAP Manager
Douglas Grossman-McKee, Ph.D., EAP Manager

Progressive Casualty, with major involvement in auto insurance, represents a national organization of approximately 7,000 employees. Mental health costs have consistently been the second highest category of health care claims. To assist and reduce in these costs, a Stress Management Program was developed through the Health Service Department, of which the Employee Assistance Program (EAP) is a part.

The Stress Management Program is available for all employees. However, programs are tailored to specific work groups and individual needs based on assessment of stressors and stress reactions. High risk individuals are selected for individual intervention and one-to-one treatment. The Stress Management Program is provided on-site and is evolving to a phase where procedures can be provided on-line as well with computerized self-assessment.

The Stress Management Program is also geared for different levels of intervention. The different levels include: self-assessment, clinical assessment, psychophysiological assessment through biofeedback instrumentation.

The Stress Management Program at Progressive is also unique in the familiar relationships among the directors. The fact that a father, daughter, and son-in-law all work in the same department encourages not only family involvement but allows a new area of family/work balance. Family/work interface is also accomplished through the EAP managers job sharing one full-time position that enables one of the parents to be home with the three young children while maintaining a viable role in the work force. The new role of Occupational Health in the 1990's is discussed.

A WITNESS TO SUICIDE? COPS, INQUESTS AND PTSD

Ian K. McKenzie
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Sometimes, a police officer, actively trying to prevent a suicide, is traumatized following the death: PTSD results. Brief contact with the suicider may lead to a distorted understanding of the background to, and reasons for, the act. In some states, in clear cases of suicide, formal inquests are not held. The failure of the Criminal Justice system, to provide a 'big-picture' of non-critical, fatal incidents is of singular importance. In the absence of real evidence of the circumstances, therapists should not rely on the perceptions of the client. There is a clear responsibility on the therapist, actively to investigate the incident, to interview relevant people and to incorporate findings into any treatment program.

The literature of 'post-shooting trauma' (the police sub-set of PTSD) deals, in the main, with responses by officers to the legitimate, and sometimes fatal, use of firearms by them and the illegal use of firearms against them. Such events are usually referred to as 'critical incidents'. One standard therapeutic approach to officers seeking support after such an episode, is to encourage them to talk about their perceptions of the event and to match those perceptions with a 'reality' established by a critical incident investigation team.

Following threats of suicide, a man killed himself in front of an officer with a long barrel, .45 revolver, held at his chest. This is not a critical incident within many policy department definitions and no investigation, beyond that required to establish death, took place. No formal inquest was held.

The officer's perception of the incident was coloured by a particular mind-set -- the deceased was an 'ex-cop' and on the basis of some minutes conversation, a 'nice guy' -- and blamed himself for the death. He said that he had not done enough, that an ex-cop deserved more, and that he believed that a 'witness' suspected the officer of being involved in the cover-up of a police shooting.

An adequate picture of the background to the death made more difficult dealing with cognitive elements of the disorder. The investigation/inquest process differed markedly from that experienced by the author whilst serving as a policy officer in Britain. Critical information about the state of mind and circumstances of the deceased person were unavailable. The author conducted a background investigation: interviews with friends, family and significant others. The picture revealed was almost totally irreconcilable with the perception of the officer. These differences served as the key to addressing the cognitive element of the malady.

The author is British and a former senior police officer at Scotland Yard. He recently completed a tour as staff psychologist to a major police department in the Southwest U.S.A.

DISASTER WORK: A MODEL OF STRESS AND MENTAL HEALTH INTERVENTIONS

Marianne L. McManus, Ph.D. USC Department of Psychiatry

The impact of a major plane crash, earthquake, high-rise fire, terrorist bombing, hurricane or other mass casualty event extends beyond the primary victims to a wide range of emergency responders, specialists and service personnel who are mobilized to rescue and care for victims and to manage the disaster.

When a disaster strikes, local emergency management teams rush to the scene -- fire fighters and medical personnel to rescue and to provide life saving aid to victims; police and law enforcement personnel to secure the area, to protect persons and property and to maintain order; coroner and mortuary techs. to retrieve and identify remains and special investigators to determine the cause of the event and the likelihood of another occurrence. Just behind the front line responders are those who keep the public informed and who initiate recovery efforts - the media, managers from the affected organization, equipment operators and technical specialists. These occupational groups are rapidly joined by the Red Cross, Mental Health professionals Federal and State representatives, Clergy and other groups who provide victim support services. These disaster workers are at risk to become secondary victims.

Disaster work has unique features in the types and timing of the stresses -- the expectations of personal efficacy, triage decisions, mission failure, extensive primary victim contact, personal danger, sensory overload, celebrity status, criticisms in the media and others. In addition, disaster workers tend to isolate off feelings while doing their jobs and may defer the processing of their reactions indefinitely.

A new model of stress is proposed to understand, anticipate and treat disaster work stress more effectively. The efficacy of mental health interventions -- pre-disaster, at the staging area, on-site, at the service centers and upon reentry to the community, including defusings and debriefings, is explained in terms of the model. The psychosocial aspects of stress mastery receives particular emphasis.

JOB DEMANDS AND JOB CONTROL, BETA-SYMPATHETIC ACTIVATION AND BASAL IMMUNE STATUS

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Evidence has been presented that chronic life stress may influence beta-sympathetic activation and the basal immune status, in relation to interindividual differences in personal control. In the Karasek model, jobdemands (JD) combined with decision latitude (DL) are conceived as the major risk factors of jobstress. Both aspects of jobstress are conceptually related to chronic stress and personal control. Thus, relations of these job characteristics with beta-sympathetic activation and immune parameters may be expected. The aim of this study was to test these expectations.

34 Workers, male cargo handlers, mean age 34 (SD 6.2), participated in the study. They responded to a Dutch version of the Karasek questionnaire. Urinary excretion levels of adrenaline and noradrenaline were determined and (peripheral) blood samples were analyzed with respect to the lymphocytes percentages and subsets (T-cells, Th- and Ts-cells, B-cells) and NK-cells.

JD and DL were differentially related to the catecholamines: JD to adrenaline and DL to noradrenaline. No interaction (JD*DL) effects on the catecholamines were found. However, the ratio 'adrenaline/noradrenaline' was related to the interaction JD*DL in the direction predicted by the Karasek model. This ratio may be conceived as an indicator of the relative weight of mental/emotional activation (adrenaline) compared to physical activation (noradrenaline).

JD and DL were also differentially related to various variables of the basal immune status (TH-, TS-, and NK-cells, and the TH/TS-ratio). Moreover, an effect of the interaction JD*DL was found on the lymphocytes percentage and on the TH/TS-ratio, in the direction predicted by the Karasek model.

It is concluded that high experienced jobdemands in interaction with low experienced jobcontrol may be related to elevated beta-sympathetic activation and to aspects of the immune regulation.

THE EFFECTS OF MONOTONY AT WORK ON PSYCHOLOGICAL DISTRESS AND CARDIOVASCULAR RISK FACTORS AMONG MALE AND FEMALES IN THE CORDIS STUDY

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As part of the CORDIS project (Cardiovascular Occupational Risk Factors Detection in Israel), we compared the efficacy of objective versus subjective measures of monotonous work as predictors of psychological distress symptoms and cardiovascular (CV) risk factors. The sample consisted of 2147 male and 867 female blue collar workers. Objective monotony was defined as repetitive work and work underload as evaluated through job analysis. Subjective monotony was assessed by questionnaire.

Seventy six percent of the males and 85% of the females were engaged in monotonous work. After adjusting for possible confounding factors, both forms of monotonous work were related to psychological distress symptoms (job dissatisfaction, somatic complaints, anxiety, depression and post work irritability) and to increased CV risk factors. Females engaged in repetitive work and underload displayed higher rates of psychological distress symptoms than males. Psychological distress was associated with repetitive work more than with underload and was related to the extent of

repetitiveness. It was the highest among workers in short cycles (less than one minute). Repetitiveness was associated with higher systolic blood pressure (BP) in males. BP was higher among short-cycle workers, with older workers also having lower HDL levels, and younger workers having high glucose levels. Younger females working in short cycles displayed high diastolic BP, as well as higher cholesterol, LDL, and glucose levels. Repetitive work and underload were defined subjectively as being monotonous by all workers. Perceiving the job as monotonous was related to the extent of its repetitiveness, and was higher in short-cycle tasks. In both sexes, subjective monotony was associated with distress symptoms, but not linked with increased CV risk factors.

It was concluded that:

*Objective monotony was associated mainly with CV risk factors levels (predominantly among females and younger workers), while subjective monotony was related mainly to psychological stress responses.

*The adverse impact on physical and psychological well-being was highest among workers in short-cycle repetitive-hectic jobs.

*Females in work underload displayed greater vulnerability to psychological distress than males. Females in work underload also had a higher prevalence of CV risk factors when compared to females in more varied jobs.

*In contrast to prevailing opinion our findings indicated that adverse effects on health cannot be predicted by subjective reports of monotonous work.

DISRESPECTFUL SUPERVISORY BEHAVIOR AS A SOCIAL-ENVIRONMENTAL STRESSOR AT WORK

John L. Michela
Douglas H. Flint
Angela M. Lynch
University of Waterloo

One's social environment at work is powerfully influenced by the behavior of one's supervisor, boss, or other immediate superior. Consequently, theories of human stress allow one to predict associations between supervisory behavior and stress, and, accordingly, several previous studies have found significant associations between a low level of supervisor "support" and high levels of presumed consequences of stress processes such as psychological distress (e.g., anxiety and depression), job burnout, and even "hard" outcomes such as heart disease (as with the Framingham data from women). As Kasl and Wells (1985) commented, many findings of this kind are relatively "opaque" in the sense that the interpersonal and intrapsychic processes behind them are impossible to specify from the obtained data. This study was designed to demonstrate the operation of a particular set of relevant processes, connected with interpersonal respect and disrespect.

According to Hornstein, Van Eron, Michela, et al. (1992), disrespect is experienced by employees when their supervisors treat them in ways that say "you are not entitled to treatment normally given to members of this society." For example, being called unflattering names, being yelled at, being treated in ways obviously inequitable relative to one's peers, and having one's personal affairs criticized at work, all lie outside North American cultural bounds. An employee subjected to this behavior from his or her supervisor is likely, at a minimum, to feel threatened about his or her welfare. In addition, given social psychological perspectives on self-perception, such as the "looking glass self" perspective (Cooley; Mead) and writings of the symbolic interactionists (Goffman), employees of disrespectful bosses may come to question their standing as members of the society and, hence, experience a challenge to self-esteem and emotional well-being.

Study participants were 165 white-collar employees of a medium-sized organization that designs and builds industrial equipment. Job titles of participants were managerial, professional (e.g., engineering), and secretarial. To assess supervisory disrespect, a measure developed by Hornstein et al. was used. Extensive procedures were used in the development of the measure to ensure that high scores on the measure would indicate disrespect as opposed to merely demanding or otherwise unpleasant behavior. For example, merely demanding behaviors (e.g., requiring high quality work before giving compliments) were listed along with the disrespectful behaviors, and factor analysis distinguished clearly between the demanding and disrespectful items. In addition, all of the disrespectful behaviors retained for the measure had been rated in pretest data as being "disrespectful" and as "violating the dignity" of employees. To assess strain as an outcome of stress processes engendered by disrespect, participants rated their experiences of psychological symptoms considered to be indicators of anxiety and depression.

Whereas the association between merely demanding behavior and strain was not significant, disrespectful behavior was a significant predictor of strain (i.e., of a factor score corresponding to depression). This association was examined more closely by taking into account the group memberships of employees--that is, considering whether employees with the same bosses tended to have similar levels of depression. This analysis was designed with attention to the "levels of analysis" problem in organizational psychology. Significant evidence of group effects of this kind was obtained.

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TELECOMMUTING, AN IMPACT ASSESSMENT IN AUSTRALIA

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Alan Meara, Strategist, Telecom Australia

This paper presents a quantitative and qualitative methodology of assessing the impact of the introduction of Telecommuting as a formal process in Telecom Australia. Previously Telecommuting had been happening on an informal basis with no assessment of efficacy or risks. The techniques used to carry out the impact assessment will be referred to here, and preliminary results delivered at the presentation.

Job satisfaction and related issues will be measured using the Job Diagnostic Survey (JDS), (Hackman & OIdham, 1975). The Telecommuter will complete a daily log covering attitudes to work, affect and positive or negative perceptions, these logswill be reviewed and analysed and pertinent factors elicited.

The Work Profiling System (WPS), an expert job analysis system developed by Saville & Holdsworth U.K. will be used to assess any changes in tasks and job context. The Occupational Personality Questionnaire (OPQ) also developed by Saville & Holdsworth (U.K.). The OPQ is being used to assess any shift in the personality dimensions, as measured by the OPQ, following the introduction of Telecommuting. A person job match where the OPQ will be combined with the WPS results will be utilised.

Focus groups have been held halfway through and at the completion of the Telecommuting trial. The focus groups are held with Telecommuters and their supervisors. The focus groups are used to identify any positive or negative aspects of Telecommuting. The results of the JDS, OPQ and WPS, are fed back during the focus group. It is intended to conduct reviews of peer groups who are not Telecommuting to assess any impact on them.

A guide on how to introduce and set up a Telecommuting programme will be produced, based on the results of this trial using the methodology outlined above.

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PERCEPTIONS OF KEY ORGANIZATIONAL VALUES/PRACTICES BY SUPERVISORY VS. NON-SUPERVISORY EMPLOYEES AS A FUNCTION OF DEGREE OF ORGANIZATIONAL CHANGE EXPECTED OR IN PROGRESS

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Summary of Results: Non-supervisory employees perceive their organizations' values/practices less positively than their immediate supervisors/managers, particularly during current or anticipated periods of heavier-than-normal organizational change.

1,047 employees (blue-collar workers, white-collar workers, nurses, engineers, faculty members, prison guards, loan officers, etc. and their immediate supervisors) from 22 different organizations completed a 64-item questionnaire developed by the author (Miller, Louis, 1990), on the basis of a normative model of the values/practices characteristic of healthy, competitive organizations proposed by Lawrence Miller (Miller, Lawrence M., 1984).

Respondents were asked to indicate extent of agreement with each positively-formulated item by means of a typical 5-point Likert scale running from "Strongly Disagree" to "Strongly Agree". Since a Likert scale is only an ordinal scale at best, the data were converted to frequency data by considering responses of "Agree" or "Strongly Agree" as positive affirmations of the item statement, scoring these plus, and considering all other responses as a failure to positively affirm that statement, and scoring these zero. Next, Percent Affirmative Response (PAR) was calculated for each item, across respondents, and for each respondent, across items. Finally, the mean PARs for supervisory vs. nonsupervisory employees were compared both within each of the 22 organizations and for the total sample. Exact levels of statistical significance for various comparisons were ascertainable using a new computer software program for nonparametric data (Mehta, C. and Patel, N., 1991).

The mean PAR of supervisors was higher than that of non-supervisors in 20 of the 22 organizations surveyed, and also for the combined sample of supervisors vs. non-supervisors. The differences are highly significant statistically. These results are consistent with the findings of other researchers using other instruments in other organizations with other populations of respondents, including even Ph.D. level research scientists vs. their managers (see Beauvais, Laura L., 1992).

Although the differences in mean PARs between supervisors and non-supervisors were highly consistent as to direction, the author noted considerable variability in the magnitudes of these differences. Exploration of the data revealed that where smaller differences obtained, the survey had been conducted either during a period of relative tranquility or after a significant change had been completed and the organization had returned to its normal state of controlled chaos. Where larger differences in PARs obtained, the organization either had been in the midst of major change, e.g., a significant downsizing, restructuring or shift in mission, perhaps best described as a state of turbulence, or the organization was anticipating such major change in the immediate future.

Analyses of individual questionnaire items indicated that perceptions by non-supervisory employees of individual powerlessness, organizational neglect, and unfair treatment were significantly higher during current or anticipated periods of change.

Research Strategy: Each administration of the survey instrument is regarded as a single-sample field study, difficult to interpret by itself; however, when placed in the context of the other single-sample field studies, clear patterns often become discernable. Such an approach, which might be labeled "the study of comparative corporate culture," has the potential of rendering visible and interpretable trends and patterns which might otherwise escape detection or be impossible to interpret.

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ASSESSMENT BASED STRESS ACTION PLANNING FOR THE WORKPLACE

Lyle H. Miller, Ph.D. and Alma Dell Smith, Ph.D.

Stress assessment is pointless from a practical viewpoint unless it provides a rational basis for appropriate intervention and stress reduction. This paper will present data from the *Stress Audit* and outline the specific criteria for an adequate action plan based upon those data.

The paper will discuss the phases of an effective stress management program:

Awareness and identification of the issues involved.

This phase is addressed by administration of a psychometric stress assessment instrument, the *Stress Audit*, and the analysis of group data.

Action to deal effectively with the defined issues.

Resistance to change due to behavioral or cognitive inertia, issues of secondary gain.

Supports and procedures for overcoming resistance.

The characteristics of an effective stress action plan for individuals and groups will be presented and discussed. An effective stress action plan has the following characteristics:

- It will reduce stress.
- It can be completed in 8 to 12 weeks.
- It can be stated in behavioral terms.
- It has a measurable outcome.
- It is "leveraged" to give you "the most bang for your buck."
- It doesn't have to solve every problem.

The use of *Stress Audit* data in selecting issues to be addressed and the process of developing effective stress action plans will be discussed in detail. Individual and group stress action plans will be presented as examples of the proces.

A BIOBEHAVIORAL MODEL OF STRESS

Lyle H. Miller, Ph.D.

Although stress has been of increasing concern in medicine, psychology, and public health for many decades, it is still a poorly understood concept. A major impediment to the research necessary to furthering our understanding of stress has been the lack of adequate definitions and models of stress itself from which meaningful methods of measurement could be derived. The Biobehavioral Model of Stress (BMS) presented in this paper is an effort to provide a framework for furthering our understanding of stress, its nature, its causes, and the systematic treatment of its physical and psychological effects.

Other models of stress are concerned with limited aspects of stress. Models presented to date include stimulus models, response models, coping models, interactional models, wellness,and hardiness models. Since stress involves all of these considerations, these earlier models are, by definition, limited in scope and application. As a consequence the measures that derive from them are similarly limited and the conclusions generated through research with such measures have limited real-world validity or utility.

The BMS attempts to integrate features of earlier models presenting a more comprehensive picture of what stress is, how it can be measured, and its influence on general health and well-being. It defines stress as a dynamic state of tension created when an organism, or structure, responds to the demands and pressures of its environment (internal and/or external) in order to maintain its integrity. It assumes that stress is a relatively enduring, subjective, state phenomenon that it is both additive and cumulative in nature.

It further assumes that demands and pressures from without and within are perceived and defined as such by the individual. In order to respond to perceived demands and pressures of the environment, one mobilizes one's physiological resources via the sympathetic nervous system (SNS) and the endocrine glands. Too frequent, extreme, or prolonged mobilization leads to strain.

Depending upon one's vulnerability to stress, strain may lead to system failures and the production of symptoms which become additional sources of demand and pressure. The symptoms of strain are reflected within discrete neurophysiological systems: The Neuromuscular System (MS), the Sympathetic Nervous System (SNS), the Parasympathetic Nervous System (PNS), the Limbic System (LS), the Neocortical System (NCS), the Neurohormonal System (NHS), and the Neuroimmune System (NIS).

It is assumed that one's vulnerability to stress is determined by complex interactions among one's health behaviors; life style, financial, spiritual, and social resources and physiological predisposition. It is further assumed that there are individual differences in vulnerability to stress and that vulnerability varies from time-to-time within an individual.

Meaningful stress reduction requires that one's sources of stress be identified and dealt with effectively and proactively. Meaningful symptom relief requires treatment determined by the systems in which symptoms appear. Life-style and health behaviors are modified to reduce one's vulnerability to stress. Client education is central to an effective stress management program: vulnerability to stress and sources of stress must be related to symptoms to motivate the client to accept responsibility for their own health care.

DEMOGRAPHICS OF STRESS IN THE WORKPLACE

Lyle H. Miller, Ph.D., Alma Dell Smith Ph.D., and Bruce L. Mehler, M.A.

It may be assumed that patterns of susceptibility to stress, sources of stress, and stress symptomatology vary as a function of age, sex, marital status, number of children, education, and income. Patterns of stress in the workplace, therefore, would be expected to vary in accordance with demographic shifts in the workforce.

The assumption of demographic variability in stress pattern was examined via administration of a psychometric stress assessment device, the *Stress Audit*, to a cross section of workers in various worksites.

Based upon the Biobehavioral Model of Stress, the *Stress Audit* is a 238 item instrument which samples the magnitude and types of stress experienced or anticipated by the respondent and assesses relative susceptibility to stress. It is subdivided into 14 scales, and yields a profile which reflects three facets of stress: sources and symptoms of, and susceptibility to stress.

Sources of stress are divided into six scales: Family (FA) , Individual Roles (IN), Social Being (SB), Environment (EN), Financial (FI), and Work/School (W/S). Stress symptom items are organized into seven physiological system scales. Systems are: Muscular (MS) Parasympathetic (PNS), Sympathetic (SNS), Emotional (EM), Cognitive System (COG), Endocrine (END), and Immune (IM). Susceptibility items sample health behaviors, lifestyle, and coping resources.

Relationships among patterns of stress and demographic variables were examined in a data set of 5,000 respondents drawn from a variety of worksites. Patterns of stress varied as a function of demographics. The simple and interactional effects of demographic variables on stress patterns are highly complex. These relationships will be presented and discussed in detail.

PSYCHOPHYSIOLOGICAL STRESS ASSESSMENT

Lyle H. Miller, Ph.D. and Bruce L. Mehler, M.A.

From a theoretical perspective, psychophysiological assessment has held much promise over the years as a diagnostic procedure first in psychosomatic and now in stress medicine. In the 1960's, for instance, Lacey and his coworkers developed the twin concepts of psychophysiological response specificity and response stereotypy which hold that individuals tend to respond to situations with highly idiosyncratic patterns of response that are situation specific. Their findings indicated that a given individual's pattern of psychophysiological response to a given situation was essentially a psychophysiological signature. It has been argued by Sime and by Eliot that these psychophysiological signatures of reactivity contribute to the development of specific stress-related maladies and disorders.

Early research on and clinical application of these formulations was hampered by the complexity of the instrumentation required and problems of data reduction. Miniaturization and the availability of powerful microcomputer technology for data reduction stimulus presentation have simplified psychophysiological stress assessment (PSA) to the point where it is now feasible as diagnostic and stress teaching device in the workplace.

In this paper we present a 3 minute PSA procedure found useful as a stress diagnostic and teaching device. Electrodermal (EDA), photoelectric plethysmographic (PPG), and electromyographic (EMG) sensors are attached to subjects (Ss) seated comfortably in front of a microcomputer screen.

Ss respond to standardized programmed instructions appearing on the computer screen while their psychophysiological reactions are monitored. Instructions appear in 3 one minute segments. Segment one contains relaxation instructions, segment two involves the stress of a "brief IQ" test, section three repeats the relaxation suggestions of segment one.

Ss' pattern of EDA, PPG, and EMG reactions to the instructions of the three segments is calculated by computer and displayed on the computer screen. The pattern of response and its implications is discussed with S and related to S's pattern of "stress-related" symptomatology. It is thus possible to rule stress in or out as an etiologic factor in a wide range of putative stress symptoms such as hypertension, tachycardia, cardiac arrhythmias, muscle contraction headache, migraine headache, Raynaud's disease, etc. The question of whether a symptom is indeed stress-related is of paramount importance in determining an appropriate treatment strategy.

The PSA is also a powerful tool in teaching the physiological effects of stress to lay audiences. It has been found particularly useful in communicating to corporate decision makers the relations among stress, psychophysiological reactions, and various stress symptoms.

This paper will include a demonstration of the PSA and numerous case examples which explicate the mechanics, utility, and relevance of our techniques in a clinical research setting. Use of the PSA as an effective teaching tool will be discussed.

Stress in the Workplace: Issues of Assessment

Lyle H. Miller, Ph.D., Ron Finch, Ed.D., Richard Turcotte, Ph.D.

A quantified needs assessment is a prerequisite for the establishment of an effective stress management program in the workplace. It is necessary to identify those individuals at risk, stress "hot spots," general levels of stress, and the specific stress issues involved at all levels. Given reliable and valid information addressing these issues, it is possible to design effective interventions tailored to the need of the specific individual, group or company involved. Further, such assessment procedures provide a baseline for evaluating the outcome and cost effectiveness of any stress interventions.

This paper discusses the psychometric properties of a stress assessment instrument, the *Stress Audit*, and describes its application as a needs assessment device in the BELLSOUTH corporate stress management programs. Discussion will focus on issues of confidentiality and anonymity of personal stress data and the ethical issues of providing information to those at high risk for developing stress-related symptoms.

INTERNAL AND EXTERNAL RESOURCES FOR EMPLOYEE STRESS MANAGEMENT

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Internal stress management resources represent employer-sponsored services and benefits afforded to employees whereas external resources are products and services available from public sector agencies and commercial interests. A model is available for understanding employees' stress management and responding to needs through appropriate programs, products and other resources. The model has a health risk appraisal and empirical research basis in which the employee population is placed in three stress risk categories (Glaszewski, Kaelin, Miller & Douma, 1992; Miller, Golaszewski, Pfeiffer & Edington, 1990; Miller and Perkins, 1987). Low risk employees display a general interest and concern about stress in the form of day-to-day hassles. They incorporate new techniques into their lifestyles through educational literature and audiovisuals (e.g., relaxation tapes, etc.). Moderate risk employees experience distress regularly resulting in emotional and physiological signs and symptoms. They need to undertake efforts in self-examination, self-confrontation and self-referral to professional assistance to reformulate their lives. The high risk group is over-whelmed by stress either to the point of stress burn-out or behavioral dysfunction (sometimes known as the type A personality addicted to stress). They can only be helped through professionally designed intervention and care programs for workaholism, inordinate risk-taking, and extreme type A behaviors.

Company representatives, especially managers of employee health service programs, can marshal internal and external resources for employees in all three risk categories. Regarding internal resources, the author, a former health services manager at the Xerox Corporation, will describe how employee health services can be systemized to provide comprehensive stress management programming. Regarding external resources, an extensive list of public sector agencies that offer free materials; and private sector firms that sell products (e.g., newsletters, stress control cards, audio/video tapes), services (e.g., self-assessment, training) and behavioral health care interventions (e.g., workaholism treatment centers). The audience will be advised on accessing these resources that will be organized according to three stress categories.

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THE STRESS OF MANPOWER REDUCTION, REORGANIZATION AND DOWNSIZING: SOME AIR FORCE EXPERIENCES

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The authors used the results of a cross-sectional survey of Air Force mental health professionals to identify the most pressing "mental health" issues facing personnel assigned to bases that were closing, changing significantly in the size of the base population, or experiencing significant reorganization. The results identified problem areas including: family matters, concerns of personnel in helping professions, work environment, emotional issues, communication and information needs, concerns with the local civilian community, and logistical issues. The paper summarizes the specific concerns identified and their rankings. These results can be helpful in anticipating potential problem areas and for prioritizing issues and directing prevention efforts.

A variety of Air Force helping professions have been involved in meeting the needs of personnel at bases that are experiencing significant change. Two working groups have been organized. They reviewed proposed and implemented interventions, and identified recommendations which addressed the significant issues. These recommendations cover a broad range of interventions. The results suggested that the most important intervention within the community was good communication A variety of methods have been used to adequately disseminate information including: "Town Meetings," base newspapers, rumor control hotlines, and active involvement of senior leaders. A second common recommendation was the establishment of a working group composed of representatives of the local helping agencies. This working group should meet regularly, advise senior leadership as needed, and be proactive through wide-ranging contact with all formal and informal local organizations. Other recommendations include novel adjustment of work schedules and duty responsibilities, significant use of volunteers, well-managed going away parties, and seminars on relevant subjects, such as: moving tips, saying good-by, helping children with moves, finding employment at the new location, and tax records. The paper summarizes the interventions that seem to best meet the issues most often identified as needing attention. This paper will discuss the problems that recur across bases and organizations and some of the interventions which have been implemented. These observations are predominantly anecdotal but include a considerable amount of clinical experience. From this discussion we will present:

a) a taxonomy of typical problems
b) models of intervention addressing:
   (1) level of the intervention (individual, family, work unit, organization, community)
   (2) when in the change process to optimally intervene
   (3) professional level of the intervening agent
   (4) method of intervention (informational, experiential, clinical)

(5) content of intervention

c) models and ethical considerations of evaluation

Finally, the paper will address the similarities and potential generalization of the Air Force experience to that of the general US population who are also undergoing similar stress, e.g., employees of companies undergoing major reductions.

DISCLAIMER: The opinions represented here are those of the authors who are solely responsible for the contents. These opinions do not represent the official policy of the Department of Defense, the Department of the Air Force, National Defense University, or the US Medical Center-Wright Patterson.

STRESS AT CORNING: A REGRESSION ANALYSIS OF CRITICAL FACTORS

Jeffery D. Monroy - Human Resources Manager - Coming Incorporated

This paper details the findings of an empirical analysis of the factors related to self-reports of stress among employees in three (3) of Coming's divisions: (1) Human Resources; (2) Information Services; (3) Advanced Materials and Products Technologies. The aim of the study was to understand which of the organization's practices are significantly related to stress levels for different groups within these divisions.

Data for the analysis was drawn from the 1991 administration of the Corning Climate Survey. During this administration of the survey, two stress questions were piloted in the Human Resources and Advanced Materials and Products Technologies Divisions, with one of these two stress questions also piloted in Information Services. The entire size of the sample for the stress question taken by all three divisions is 493; the sample size for the question taken by only two divisions is 262. Of the 493 total, usable responses were obtained from: 246 women and 238 men comprising 431 whites and 48 minorities representing 3 distinct payrolls.

The findings demonstrate that the presence of certain factors appears to increase the level of stress among employees, while the presence of other factors tends to minimize employees' feelings of stress. Additionally, it was discovered that the mix of positive and negative factors varies across demographic groups; the factors associated with stress for men differ from those associated with stress among women, and so on. The discussion of the research proceeds in three parts. First, the data source and accompanying conceptual and empirical models are discussed. Second, the major factors related to stress are outlined for each demographic cut of the data. Comments and interpretations of the findings for each group are offered. Finally, some of the major themes derived from the findings are considered within the light of follow-up studies and intervention strategies.

AFFECTIVITY AND OCCUPATIONAL STRESS: A CONCEPTUAL MODEL FOR THE IMPACT OF AFFECTIVITY IN THE STUDY OF OCCUPATIONAL STRESS

Kim T. Morris

It has been argued that affectivity and more specifically negative affectivity (NA) is a confounding variable in studies of stress in the workplace (Watson, Pennebaker, & Folger, 1985); and, as a result, the amount of on the job stress is often over estimated. Affectivity refers to a trait or predisposition to experience a specific type of mood. On the other hand, affect refers to a state that is usually temporary and results from exposure to a particular event or situation.

Although it has been suggested that researchers begin to carefully examine the role of affectivity in occupational stress (Burke, George, Robinson, & Webster, 1988), little attention has been given to the development of theoretical models. Many of the existing models do indicate a role for person specific variables in the development of job stress (Kahn & Byosiere, 1990); Greenhaus & Parasuraman, 1987). It is the present author's belief, however, that these models are inadequate for exploring the role of affectivity in the perception of job stressors. Little is known about the development of affectivity; and even less is known about its direct, indirect, and interactive effects on experienced occupational stress.

Many of the existing models fail to make a theoretical distinction between the perception of a job stressor and the experience of job stress. A job stressor, for purposes of the proposed model, is defined as any job related event which is perceived by the employee as stressful. The perception of an event as stressful, is not the same as experiencing job stress. The experience of job stress is identified by observable and measurable adverse, consistent changes in an employee's psychological and/or physiological responses over a specific time period.

The proposed model can be viewed as an ecological model which considers: 1.) the environment and socialization in the development of affectivity; 2.) organizational and individual factors impacting the perception of job stressors, and experienced job stress for both NA and PA employees and; 3.) outcomes of experienced job stress. According to this model, one's environment and socialization will directly impact the development of affectivity, and this personality trait will have a direct influence on the cognitive appraisal process. The appraisal process, driven by the personality trait affectivity, will lead to differences in coping styles and perceived social support which will have a direct impact on the perception of stressors and experienced job stress.

THE MODERATING INFLUENCE OF NEGATIVE AFFECT AND JOB CHARACTERISTICS OF STRAIN OUTCOMES: EVIDENCE FROM TWO SURVEYS OF PRISON OFFICERS

David L. Morrison, Ph.D.

Over the past fifteen years much has been made of the moderating influence, on mental and physical health, of job discretion and support in occupations that are perceived to be high in demands. Unfortunately, such effects seem to be most prevalent and consistent when subject populations are large and heterogenous. The outcome of research that has focused on single occupational groups has been less predictable. As a consequence, the practical benefits of proactive management strategies and job redesign that might have been expected to follow, have not been forthcoming.

The lack of consistent results within single occupational groups may have arisen for a number of reasons including: (i) that studies of homogenous groups tend to use small samples and, as a result weak but significant, effects of job design are not easily detected; (ii) that groups of workers with the same occupation may not vary sufficiently on the key job characteristics of interest for their influence on outcome variables to be measured; (iii) that large individual differences in strain reactions exist between workers, making it difficult to detect the influence of adverse job conditions.

In addition to the above, few longitudinal studies have been conducted in single organizations concerning how changes in job characteristics subsequently affect employee health. Finally, there are few widely accepted and standardized measures of job characteristics that have been found to be related to occupational stress. Currently employers have no way of estimating how the jobs in their organization fare along key dimensions and are unable to predict the magnitude of improvements in health if these were to change.

In this paper we report the results of a project that attempts to overcome some of the limitations described above. The subjects were prison officers from a State in Australia. These workers are an ideal sample since they are relatively homogenous and numerous, have a common core of generic duties across different prison types, and the characteristics of their jobs should vary according to the category of prisoner that must be contained. Where possible, standardized measures of independent and dependent variables were employed. A further aim was to collect data for the purposes of developing standardized measures of job characteristics which, in the future, would be used to compare employee job perceptions and levels of strain across occupations.

The relationship between perceptions of job design and mental and physical well-being was examined for two volunteer samples of prison officers (study 1, n=274; study 2, n=293). The data from each study were collected approximately three years apart during which some significant organizational changes had occurred. Both studies examined the influence of job demands, constraints and support on mental and physical health and work attitudes. The moderating effect of negative affect on strain outcomes was also examined.

The relationship between job demands, discretion and support were found to be weak and, at times, inconsistent. Officers high in negative effect were generally found to suffer lower mental and physical well-being. More importantly however, the interactive effect of negative affect and job demands was found to significantly predict mental health indices from study 1 and physical health symptoms collected in study 2.

Inconsistencies between the studies highlight the need to examine the relative importance of each job characteristic at different levels of experienced strain. In the second study the officers were significantly more strained than those in study 1. The functional form of the stress-strain relationship and other commonly held assumptions such as that of temporal contiguity must also receive closer scrutiny in future research.

Although many measurement issues remain to be resolved, the practical implications of the data from the two studies suggest changes in selection criteria and organizational design as proactive management strategies which will have benefits for current as well as future employees.

PHYSICAL DEMANDS, CONTROL OVER WORK AND DRUG ABUSE/DEPENDENCE SYNDROMES AMONG ADULTS.

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A longitudinal study was conducted to evaluate whether adults working under stressful psychosocial work characteristics might be at risk of drug abuse/dependence syndromes. Karasek's Demand/Control model of the psychosocial work environment was used as theoretical framework (Karasek & Theorell, 1990). Prospective analyses were executed with interview data from probability samples of five US metropolitan areas (N=11,789). Cases were defined using case definitions for abuse/dependence syndromes involving controlled substances as assessed by the Diagnostic Interview Schedule (DIS), which was administered at baseline interview and at follow-up one year later. Incident cases were identified by contrasting the diagnostic findings at follow-up with those obtained at baseline.

After adjustment for baseline sociodemographic risk factors and a history of DIS/DSM-III alcohol abuse/dependence, *physical demands* on the job was associated with increased risk (RO=1.85, 95% CI 1.08-3.17), and *job insecurity* was associated with decreased risk (RO=0.67, 95% CI 0.47-0.95) of drug abuse/dependence syndromes. Subjects characterized by both high levels of *physical demands* and *decision authority* on the job were at increased risk of drug abuse/dependence (RO=4.85, 95% CI 1.42-16.54). Consistent with Karasek's Demand/Control model, subjects characterized by high levels of *physical demands* and low levels of *skill discretion* were at increased risk of drug abuse/dependence syndromes (RO=4.41, 95% CI 1.41-13.80).

Overall, findings from the present study emphasize the public health significance of previously observed associations linking psychosocial dimensions of work to mental health (Muntaner et al., 1991), and extend the range of findings to the drug/abuse dependence syndromes.

Stress Management at the Worksite: Theory, Application and Outcomes

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Abstract

In 1979, Saint Louis University Medical Center established a Department of Health Promotion to offer local organizations a full complement of health promotion and disease prevention services at the worksite. As part of their programming, a comprehensive, worksite stress management program was developed. One of the first organizations to use the program (1981) was the Veterans Administration. The program was disseminated throughout the V.A. system using a trainer of trainers model and is now used by 65 hospitals in the V.A. system. In addition to the V.A., the program has been used for over 12 years in numerous cites by local hospitals as part of their health promotion/wellness activities. In St. Louis, Saint Louis University Medical Center has continued to offer the program to local organizations as part of its expanded Corporate Health Services initiative (in addition to such programs as health promotion and disease prevention, E.A.P., occupational medicine, and industrial hygiene). The stress management program went through an extensive revision in 1991.

The purpose of this paper is to present 1) the revised stress program with its theoretical underpinnings and intervention methodologies; 2) the successful application of the program in a national system of organizations with a focus on what was learned over those 12 years; and 3) the inital research results from a three year research program started in 1991 to document the effects of the program on organizational outcomes.

FISHERMEN'S BLUES - FACTORS RELATED TO ACCIDENTS AND SAFETY AMONG NEWFOUNDLAND FISHERMEN

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The fisheries is one of the most dangerous industries in Canada. However, relatively little is known about the causes of the high morbidity and mortality among commercial fishermen. One major explanation would seem to lie in their high rate of accidents at sea. This has been reported in a number of studies both in Canada and elsewhere. Possible contributory causes of these accidents could be a fatalistic attitude to accidents and safety and a high level of anxiety and worry among fishermen. These characteristics would be expected to lead to less attention to safety procedures and a consequent greater risk of accidents. The purpose of this study was, first, to explore fishermen's explanations of and solutions to accidents at sea and the extent and nature of anxiety among them, and, second, to consider the relationship of these factors to the frequency of accidents and extent of safety precautions.

The study was conducted among a sample of inshore fishermen who fished in the waters around Newfoundland. It was conducted shortly before the Canadian government announced a moratorium on fishing in these waters. Fifty-five fishermen answered a questionnaire which requested basic demographic details, information on accidents experienced, explanations for major accidents, possible solutions to reduce accidents, safety precautions taken, perceived locus of control over accidents, anxiety and worries. Analysis of their replies revealed that the cause of accidents was attributed to external uncontrollable factors and the fishermen reported a high level of anxiety. Those who reported most anxiety reported more accidents and fewer safety precautions.

THE ASSESMENT OF HEALTH DAMAGE UNDER THE EFFECT OF STRESS OCCUPATIONAL FACTORS COMPLEX WITH THE HELP OF AN AUTOMATIZED INFORMATION SYSTEM

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At many enterprises workers undergo the effect of diverse complexes of stress factors. It results in the worsening of health, feeling, mood, in the development of prepathological states, in the rate and duration increase of nonspecific diseases and, rarely, in the development of specific occupational diseases. In order to find out reasons and mechanisms of the above mentioned shifts a great amount of information on the dynamics of working conditions, functional state, workers health is needed. Such information cannot be stored and analyzed without using update computerized systems. We have developed such a system to assess workers' health damage enabling to conduct a dynamic account and analysis of the relationship between working conditions and the disease and a temporary ability loss to work. Alongside with the data of these developments this system operates information gained through the enterprise's automatized menagement systems. The system enables to carry out monitoring of working conditions, psychological and physiological functions, a disease, as well as to obtain suitable data on their changes and health damage (at the enterprise as a whole and in its individual parts).

The comparison of the dynamics of generalized health indices (dependently on length of service and age) enables to reveal a complex of the most harmful factors and make necessary decisions to improve working environment and workers' health.

COMPARISON OF 8H AND 12H SHIFT STRESS EXPOSURE IN ENERGETICS

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We have examined 66 operators of two electric power stations (males, aged 22-42 years) when they worked 8h rosters rotating every 2-3 days at phase-delay direction, in 6 months and in a year after having started working 12h rosters with 1-2 day shift rotation. During day and night shifts the parameters of mental performance (MP) /short-term memory, characteristics of vigilance, choice-reaction time, efficiency of information processing, slow potentials of brain/ and cardio-vascular system (CVS) /blood pressure, heart rate, type of blood regulation/ have been measured.

In 8h and 12h rosters there were no visible manifestations of fatigue in operators at the end of day and night shifts.

In 6 months after the roster change the physiological functions varied in different ways: while most mean shift indices of MP improved, there were unfavourable changes of blood circulation resulted in percentage increase in persons with a vascular type of regulation and simultaneous decrease in those with a normal (mixed) type. The increase of background levels of slow potentials was also observed in operators. Different directions in alternations of studied parameters relating to informational and energetic subsystems within the functional system for working activity maintenance may be considered as a symptom of occupational stress.

In a year of working with 12h shifts the most parameters of MP and CVS reached the values similar to 8h rosters and some of them (short-term memory, reaction time) demonstrated better values than during 8h shifts. Sociological investigation showed that more than 90% of workers prefered to work 12h systems as less tiresome. The majority of the operators had better subjective well-being, quality of sleep and more rest time. The obtained results can be explained by a certain increase of rest time for workers and its redistribution under conditions of 12h shifts compensating shift duration increase.

ATTACHMENTS AT WORK: INTERDEPENDENCE, COUNTERDEPENDENCE AND OVERDEPENDENCE

Debra L. Nelson, Janice R. Joplin and James Campbell Quick

Social support is a key element in work environments. Based on attachment theory tenets (Bowlby, 1982, 1988; Ainsworth, 1978), we posit that individuals display one of three orientations (interdependence, counterdependence, and overdependence) to forming and maintaining supportive personal and professional attachments (Quick, Nelson & Quick, 1991; Quick, Joplin, Nelson & Quick, 1992). These orientations are guided by underlying strategies manifested in behavioral responses to anxiety provoking situations; consistent situational responses develop into longer term patterns in relationships (Kobak & Shaver, 1987; Joplin & Quick, 1992).

Social isolation has empirically demonstrated adverse health impacts (House, Landies & Umberson, 1988). We propose that attachment behavior is the mechanism for developing supportive relationships and ameliorating the morbidity and mortality associated with social isolation (Nelson, Quick & Joplin, 1991). The Self-Reliance Inventory is used to measure interdependence, counterdependence, and over-dependence. Three studies assess the reliability and validity of the instrument.

Study One used data from a sample of 310 students and managers and focused on four issues. The first issue was that of construct validity and factor analysis provided a three factor solution based upon varimax rotation. The second issue of internal consistency was addressed and the Cronbach's alphas met and exceeded the levels acceptable for scale development work (Nunnally, 1979). Test-retest reliabilities were a third issue and were assessed on a subsample of 44 students/managers with Pearson product-moment correlations. The fourth issue was the relationship between the subscales of the inventory and five health scales extracted from standard health measures (Goldberg & Hillier, 1979; Derogatis, 1977). Results showed significant positive correlations between each of the health symptoms and counterdependence, which is the tendency toward social isolation.

Study Two was performed with 158 basic military trainees as subjects. They were selected because they are newcomers in an organization; are encountering an intensive training period; have limited access to their normal support networks; and developing new support networks may be essential to their successful completion of the training. The sample consisted of two groups. The first group was making 'normal progression through the program and near completion (n=96). The second group was experiencing 'problems' which were clinically diagnosed and would prevent or delay completion of training. The 'problem' group reported significantly higher levels of over-dependence, health symptoms, burnout, and significantly lower self esteem. As the groups perceived themselves (rather than how the system had classified them), the 'problem' group reported significantly higher counterdependence.

Study Three was a longitudinal assessment of 63 military officer candidates. The Self-Reliance Inventory and health symptoms questionnaires were administered on the first, fourth, and fourteenth weeks of training. Over the training period the cohort became significantly more counterdependent and significantly healthier. Cross-lagged panel correlation and analyses provide circumstantial evidence from this sample that counterdependence drives health symptoms, particularly over the long term. Overdependence appears to be a short term coping mechanism in relation to current symptoms.

Directions for the future research on patterns of attachment are explored and implications of supportive attachments for teambuilding, mentoring and newcomer adjustment in organizations are discussed.

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HISPANIC INJURED WORKERS

Ana L. Nogales, Ph.D.

Hispanic workers in the U.S. are being stigmatized for their lack of education and the low social-economical role that they play in this society. Yet because many of these workers are undocumented, they are forced to take the most hazardous and lowest paying jobs in order to support their families. Due to the language barrier, they rarely are trained properly to operate complex machinery or handle toxic chemicals, increasing the incidences of illness or injury. Rates of injury are two to three times higher for these workers than for non-Hispanic, white workers.

When viewing unemployment due to any injury, we must look at the significance of the injury to a Hispanic worker. An industrial accident can be a major blow to a Hispanic worker, both economically and emotionally. He or she will have difficulty finding new employment, as they usually lack the education or sophistication to compete in a labor market that requires other skills besides manual labor.

As well, they will suffer emotionally, since employment in the Hispanic culture, especially for men, is often a determining factor in defining an individual's self-worth. Consequently, an injury to the male of a Hispanic family, particularly if he is the primary bread-winner, can cause tremendous disruption of the family.

Due to the lack of knowledge regarding their rights to workers' compensation and medical care, injured Hispanic workers seldom receive proper treatment for their injuries, especially those that are psychologically related. They are generally evaluated and treated by physicians who are not familiar with their cultural and linguistic diversities. This being the case, many initial conclusions made by these physicians are inaccurate.

To correctly evaluate the immigrant Hispanic injured worker many factors must be taken into consideration. It is important to determine whether or not the testing instruments are appropriate when translated into other languages. As well, socio-cultural aspects of Hispanic clients must also be looked at, as they may affect the way in which they perceive their doctor or their therapy.

The role of the clinician when dealing with a Hispanic injured worker must be more sensitive. These clients must be evaluated with a full awareness of their cultural and linguistic backgrounds and differences so that they can benefit as much as possible from treatment.

MITIGATING THE STRESS OF COMMUTING TO WORK: RIDESHARING AND THE INTERACTIONAL EFFECTS OF GENDER

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Automobile commuting on congested roadways has costs not only in terms of time and work but also with regard to health and well-being. Many of these costs to individuals and to work organizations are both "hidden" and delayed, as commuters continually accommodate to progressively more congested roadways. Remaining attached to the private automobile travel mode and constrained by the availability of affordable housing, workers endure congested commutes and absorb the stressful consequences.

This study investigated the relative merit of ridesharing (carpooling and vanpooling) in comparison with solo driving regarding the stress effects of long distance commuting. A series of previous studies by our research team has demonstrated the stressful effects of chronic exposure to traffic congestion and other demands of long-distance driving in commuting between home and work (most recently, Novaco, Stokols, & Milanesi, 1990; Novaco, Kliewer, & Broquet, 1991). In these studies, traffic congestion has been understood to be stressful by virtue of its *impedance* properties. That is, it operates as a behavioral constraint on movement and goal attainment, thus constituting an aversive, frustrating condition. Our previous research has found that high impedance commuting has adverse effects on blood pressure, mood, frustration tolerance, illness occasions, work absences, job stability, and overall life satisfaction. Commuting stress spillover effects on work and home domain measures have been found for both objective and subjective dimensions of impedance, controlling for many covariates.

Participants in the present study were 85 employees recruited from two private companies and from university staff, all of whom lived more than 15 miles from work and had been in their travel mode on the same route for more than 6 months. The study procedure followed the quasi-experimental methodology used in the previous research. Analyses involved aggregate comparisons of ridesharers with solo drivers, and then, for measures pertaining to a particular day, ridesharers were disaggregated into drivers and passengers.

In the analyses of solo driving versus aggregated ridesharing, the significant commuting mode effects were primarily interactions, whereby female solo drivers and male ridesharers are highest in stress responses, including frustration at work, blood pressure, and desire to relocate their residences. There were also a number of significant gender main effects, as the women had more illness occasions, lower ratings of their general spirits, more negative moods at home, and ratings of their general spirits, and higher ratings of being rushed getting to work.

On measures associated with particular days of testing, we disaggregated the ridesharing condition (having directly observed their driver/passenger status) and found significant main effects for commuting condition (solo drivers, rideshare drivers, rideshare passengers). Passengers consistently had the lowest blood pressure. Significant interactions between commuting condition and gender also occurred. Across measures, lowest stress was found for male passengers and female rideshare drivers, significantly for blood pressure and a digit copying task and in the same pattern on digits recalled and proof-reading.

Ridesharing was found to have some stress mitigating effects, but questions on person-environment fit remain to be disentangled. Gender, personality factors, personal relationships, and job involvement may be other dimensions for investigations of congruence issues.

SELF-REPORTED SUBSTANCE ABUSE AND JOB BURNOUT IN A SMALL SAMPLE OF PROFESSIONAL WORKING WOMEN

Kenneth M. Nowack, Ph.D., Organizational Performance Dimensions

Background and Purpose. This study explored differences in self-reported lifestyle habits, substance use (alcohol, drugs, smoking), and psychosocial predictors of job burnout in a sample of 879 professional women employed in dental health offices.

Methodology. An inquiry letter and questionnaire were distributed through the mail to 3,178 employees explaining the purpose of the study and assuring confidentiality. A total of 1,063 questionnaires were returned for a response rate of 33.4%. The mean age was 33.82 (SD=8.87) with a range from 20 to 65 years.

Job burnout was measured using the Maslach Burnout Inventory (MBI; Maslach and Jackson, 1981). Self-reported substance abuse, coping style, and lifestyle habits were assessed using the 123-item Stress Assessment Profile which has demonstrated reliability and validity with diverse health and organizational outcomes (Nowack, 1989, 1990, 1991).

Results. One-way ANOVA was used to determine differences in stress, lifestyle habits, coping style, and job burnout between "user" and "non-user" substance groups. Women with higher levels of drinking (15.7% consumed one to three drinks per day, several times a week) reported significantly poorer overall lifestyle practices, eating/ nutrition habits, and more frequent use of avoidant coping strategies compared to non-drinkers. Women who smoked (13.0%) also reported significantly lower overall lifestyle practices and eating/nutrition habits. Women who reported using drugs (3.8% said often or always) reported significantly higher work/life stress, poorer lifestyle habits, a more pessimistic outlook on life, and more frequent use of dysfunctional coping strategies. Although women who reported using drugs experienced significantly higher depersonalization compared to non-drug users, in general, self-reported substance use was not significantly related to the other burnout outcomes.

Separate stepwise multiple regressions were used to explore the contributions of the psychosocial factors to the prediction of job burnout. In each, psychological well-being, along with age, were entered into the first step. This permitted examination of incremental variance attributed to the psychosocial variables to job burnout while minimizing the possible confound of negative affectivity. Perceived stress, Type A behavior, cognitive hardiness, and lifestyle habits significantly contributed to predictions of emotional exhaustion after controlling for age and psychological distress accounting for .32 of the variance of this dependent variable. Hardiness, Type A behavior, social support, and stress significantly contributed to depersonalization accounting for .19 of the variance in this variable. Finally, hardiness, positive self-talk coping, social support, and problem-focused coping significantly contributed to predictions of personal accomplishment accounting for .30 of the variance in this dependent variable.

Discussion. Despite methodological limitations of this study (e.g., cross-sectional design, reliance on self-report measures, the prevalence of substance use found in this sample supports previous research findings. Professional working women who smoke, drink moderately, or use drugs for recreational purposes appear to possess more negligent overall health habits (e.g. physical activity, eating/nutrition, preventive hygiene practices). The findings also support the multi-dimensional nature of job burnout in a sample of employed professional women.

ARE STRESS PROGRAMS FOCUSING ON THE RIGHT SKILLS?

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Essi Systems Research, San Francisco, CA

Most stress programs focus heavily on improving self-care habits; especially those that teach people relation skills and better eating and exercise habits. But are these enough? Are these skills the most important ones for enhancing stress hardiness and improving long-term individual health.

In a survey of employees of over forty American and Canadian firms (n=1500), we examined the association between proximal stressors of the environment (e.g., work and family pressures), distal signs of distress (e.g., physical and emotional symptoms) and how different skills, beliefs, and values might mediate between stressors and symptoms.

The role of self-care/relaxation versus other coping skills was examined as mediators between work pressures and stress symptoms. It was found that factors such as adaptability and time management make a much greater difference in symptomology than scores on self-care and relaxation. For example, individuals who were high on work pressures but had a better than average score on time management, had fewer absences (44% reported no absences versus 24% those high on work pressures and below average on time management) and fewer doctor visits (33% saw a doctor three or more times a year versus 47% of the other group). These coping skills were significantly related to less back pain and fewer other injuries.

STRESS IN THE 90'S: A Changing Workforce in a Changing Workplace

November 19-22, 1992 Washington, DC

WORKSHOP PROPOSAL

TITLE: Recent Advances In Understanding And Reducing Human Stress

SUBMITTED BY: Morton C. Orman, M.D.

This 90-minute interactive workshop will focus on recent advances in understanding human stress. Topics covered will include: 1) what stress really is and why there is so much confusion about it; 2) what's wrong with stress management and how "managing" stress can actually be harmful to one's health; 3) common misconceptions about the causes of human stress; 4) how to rapidly eliminate anger, frustration, worry, guilt, and other negative emotions; and 5) how to rapidly eliminate other types of stress without needing to depend upon drugs, relaxation exercises, or other time-consuming stress management techniques.

The workshop will be conducted by Morton C. Orman, M.D., a practicing internist who has developed a new model for understanding human stress. This model--called Biolinguistics--represents a major advance over previous mind-body concepts. Biolinguistics, emphasizes the central role of language in human stress and shows how language is a body-mediated, not an intellectual or cognitive, phenomenon.

In addition, Dr. Orman will discuss a simplified, step-by-step approach for coping with stress that can be used by almost anyone. Not only has Dr. Orman used this method successfully in his own life and medical practice, but he has also taught it to thousands of other people, including many doctors, nurses, businessmen, medical students, and other individuals. Each participant in the workshop will receive a take-home copy of Dr. Orman's new book, The 14 Day Stress Cure (Breakthru Publishing, 1991), which summarizes his ideas and innovative coping strategies.

CULTURAL FACTORS IN COPING WITH JOB LOSS IN PUERTO RICO

Angel M. Pacheco, University of Puerto Rico
José M. Villanueva, Ana G. Méndez Foundation

Massive job loss is not new to Puerto Ricans who by now have endured the phenomenon through more than one generation in modern times. In this study we sought to identify some of the cultural factors that emerge from the experience of Puerto Ricans coping with sudden massive job loss. Participants in this study were 40 persons who, following job termination, chose to participate in a psycho-social assistance program. These persons were interviewed, observations were conducted at their former job sites and other psycho-social data were obtained from key informants at their work environment.

Age differences were found in the modes of experiencing job loss. Younger persons responded initially with a rational instrumental approach oriented to determine whether they could obtain more income through government assistance than by getting paid in a new job. This orientation was not found in older males (40 years and over) who on the contrary, although overwhelmed by the fact that they were "discarded", did in fact express their will to seek another job. The stressful impact on the self-esteem was found to be considerable for both women and men. Some of the subjects preferred modes of coping were: anger ventilation and acts of aggression by males against management, for women ideation of bringing out the custodial (non working) mother role was found exemplified in comments such as: "Well, now I will have more time for my children," men joining in groups to drink alcohol and ventilate grievances against the former employer and women acting out their anger and grief in public in highly emotional ways. Traditional sex roles distinctions emerged in the ways workers experienced job loss as women expressed emotions more openly. The extended family, the network of friends and even the local loan shark or illegal numbers game runner appeared as intervening to mitigate the vicessitudes of job loss which was seen as a personal and family shame and disgrace and socio-cultural understandings were found to provide a shield that reduced stress and negative self-esteem and feelings of guilt associated with job loss is a problem for the cross-cultural research agenda of an applied psychology in the 90's.

THE ETHICAL IMPLICATIONS OF WORKSITE STRESS REDUCTION PROGRAMS

Joseph S. Pachman

The ethical implications of stress management programs in the workplace is addressed in this paper. More specifically, the potential for creating employee and medically sanctioned control over worker's lifestyles is explored. It is argued that the focus of programs on non-work related personal behaviors can obscure the impact of institutional worksite stress promoting conditions.

In addition, positive images of the employer are projected by worksite stress reduction programs. The "it can't hurt" philosophy underlying many of these programs underscores the absence of an empirical justification or evaluation. However, rather than merely being benign, a resulting "blame the victim" syndrome can place the responsibility for impairment solely on the individual. A relevant question is: Which party's values are reflected in stress management programs? The result can be an implicit definition of the ideal employee, with concomitant discrimation against those who will not participate in the prescribed lifestyle changes.

The ethical parameters of EAP's, as facilitators of such programs, also needs to be examined. Relative to the ethical principles of beneficience and malificience, confusion often reigns as to whose interest the EAP really represents. Additional potential for conflict of interests exists when the EAP directors maintain private practices in the community.

Specific suggests to insure ethical safeguards in stress management programs should include the undertaking of a needs assessment. Worker involvement in the development and management of stress management programs can help avoid ethical conflicts of interest. For true worksite stress reduction to be achieved, the rights of employees must be recognized, the limits of control must be observed, and the workers health needs to be placed above all other interests. As has been suggested, perhaps one error regarding these appoaches to woksite stress management is to assume that better behavior change strategies are needed, rather than accepting some limitations of the individual behavior change model and seeking alternative solutions.

Firefighter reports of subjective stress.

Michael J. Paley, Anthony J. Masalonis and Donald I. Tepas
University of Connecticut

Subjective stress levels associated with various aspects of responding to emergency calls were studied by asking firefighters to judge how tense they were. All twenty-one active firefighters at the fire station volunteered and participated in this study. Participants had a mean age of 36.1 years, ranging from 22 to 59, and a mean of 8.5 years of firefighter experience, ranging from 1.2 to 19.6. A bimodal distribution of experience allowed comparisons between ten firefighters with mean experience of 15.9 years, ranging from 10.8 to 19.6, and mean age of 43.7 years, ranging from 30 to 59, and eleven less experienced firefighters with mean experience of 1.72 years, ranging from 1.2 to 3.7, and mean age of 29.27 years, ranging from 22 to 43. Data were collected over a six-week period encompassing all three shifts of round-the-clock operations for each firefighter.

Firefighters answered questions concerning the time and type (fire/medical) of their last emergency call response plus the following as a measure of stress:

"How tense did you feel during the following situations on your last call?: 1) Waiting for a call at station; 2) On the way to the call; 3) At the call location; 4) On the way back from a call; 5) Back at station after the call."

Participants answered on a four point scale ranging from "Not at all tense" to "Extremely tense" if they had responded to a call during the current shift.

A one-way analysis of variance with the five situations as the independent variables and rating as the dependent variable was significant ($F = 21.49$, $p < .001$). Post hoc

Tukey tests revealed that "On the way to the call" and "At the call location" were not significantly different from one another, but were significantly greater (more tension) than the remaining situations. A 2x2 repeated measures, mixed factorial analysis of variance, with experience as the between-subjects independent variable and type of call as a within-subjects independent variable was also computed. The main effect for experience was significant ($F = 12.66$, $p < .001$) but not for type of call ($F = .48$, n.s.). Post hoc Tukey tests showed a significant difference between the two only in the "At the call" situation.

The data supports other investigators' claim that there is a monotonic and parallel increase in subjective anxiety as the time before a known dangerous event decreases. Ratings increased as the firefighters approached the call location and decreased significantly as they returned to the station. This pattern was prevalent in both groups, although the senior firefighters reported being more tense in all situations. However, these differences must be interpreted with respect to possible mediating variables that may account for some of the variance between them. For example, the less experienced members were younger and less likely to be married. Additionally, investigators suggest that when a person does not perceive a situation to be dangerous then it may not cause anxiety. Thus, it is possible that the less senior firefighters may not have enough experience to realize the true danger of the situations.

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DESIRING CAREERS BUT LOVING FAMILIES: COHORT, PERIOD AND GENDER EFFECTS IN CAREER AND FAMILY ORIENTATIONS

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We examined cohort and period effects on career orientation and sources of life satisfaction for three cohorts of male and female alumni (classes of '69, '79, and '89), participants in the Davis Longitudinal Study. Respondents (N=1016) were surveyed at graduation and as alumni at 10 and 20 years. Respondents reported on career aspirations as seniors and on career achievements as alumni. At every survey they ranked three life domains (family, career, avocation) in terms of importance to life satisfaction. In 1991, respondents also indicated whether they had experienced low points in their family and work roles.

As expected, increasing proportions of men reported professional aspirations as graduating seniors in each successive cohort (70% to 75% to 80%). Among graduating women professional aspirations increased dramatically between 1969 and 1979 (19% to 67%), but dropped slightly in the third cohort (54%). The disparity between males and females in rate of professional employment decreased; from 63% vs. 20% in '69 alumni, to 52% vs. 36% in '79 alumni. Males, however, continued to be employed as professionals at a higher rate. Consistent with the heightened career aspirations of females in the '79 cohort, their rate of professional employment as ten-year alumni was nearly twice that of females in the '69 cohort.

Notwithstanding this apparent emphasis on professional goals, most people, regardless of cohort or gender, indicated that families were their primary source of life satisfaction (except for the '89 men, who ranked avocations as their most important source). Career was generally rated as the least important source of satisfaction. This family orientation was markedly stable at all time points; career orientation appeared to be decreasing in favor of avocational interests.

For every cohort, men were more likely to report work stressors than family stressors as lifetime low points. Not surprisingly, women in the first two cohorts showed the opposite pattern. However, the '89 women were more like their male counterparts in reporting more career than family stress. Parenting stress was notable only among the older cohort.

In summary, there appears to be a growing discrepancy between career aspirations and sources of life satisfaction. While the percentage of men and women who desire a professional career is increasing, there is a concomitant decrease in the perception that such a career will be their primary source of life satisfaction. How this will affect people's stress levels in the future should prove interesting.

ORGANIZATIONAL HEALTH: A BRIEF CONSULTATION MODEL FOR INTERVENING WITH DISTRESSED WORKGROUPS

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The traditional EAP framework assists individual employees through brief counseling and referral, and limits interaction or direct intervention with an employee's workgroup. This holds true even in those cases where the source of an employee's distress might be a toxic supervisor or an ineffective job design or organizational structure. It was previously believed that to intervene with a total workgroup could possible jeopardize individual confidentiality as well as the EAP's organizational neutrality.

In the past several years, however, it became clear that distressed workgroups need assistance. EAP practitioners have seen how an individual intervention (counseling) is limited in impact and possibly counterproductive for an organization in the long run. An individual employee usually has limited ability to change a stressful organizational climate. Employee options are to get sick, to act out with hostility, or to leave the system. It is all too easy for an organization to target an individual employee as the source of workgroup distress and to look no further for underlying structural or work environment problems which might be contributing to or maintaining the presenting problems.

In California, and throughout the United States, there are reports of rising occupational health costs. Such costs derive not only from individually distressed employees, but also from the ripple effect on entire workgroups. The Los Angeles Department of Water & Power, a company of approximately 11,500 employees, is seeking an integrated approach to reducing the effects of job stress on both individuals and on organizations. Broadening the EAP focus from brief counseling to the inclusion of a brief consultation model is supported as a good business decision.

The proposed approach is to treat incoming individual referrals as potential system problems. This modified way of thinking about clients requires a new philosophy for EAP work as well as new skills for EAP counselors. The consultation model for distressed workgroups simultaneously intervenes on both the individual and system levels, using both clinical and consulting approaches. It is focused, short term, and goal oriented.

The work is accomplished through a series of steps which progressively involve layers or segments of the organization or workgroup. The guiding principle is to restore organizational health within a defined time frame and with minimum total costs. This model provides an ongoing link with management that enables the consultant to directly observe a workgroup in action and to facilitate corrective experiences and needed learning processes. Its components include organizational diagnosis, feedback and recommendations, primary and secondary interventions, evaluation, and periodic follow-up contacts.

Typical consulting interventions (e.g., team building, training) are ineffective with seriously distressed workgroups due to the high level of distrust and dysfunction. What is required is a delicate balance of both clinical and consulting skills. Some dilemmas that have occurred in applying this consultation model are the following:

- how to assess the presenting problem(s) of the distressed workgroup and optimally balance individual clinical and organizational consultation interventions
- how to determine whether the intervention is or is not going to really solve the problem(s)
- how to terminate the intervention effectively.

By using the model EAP's can provide more effective service to employees in the short term and prevent further individual or organizational distress in the long term.

DUAL ADVOCACY MEDIATION

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Approximately 850 employee relations cases at Los Alamos National Laboratory (LANL) were analyzed to determine the locus of employee and management concerns. Over 45% of the cases involved high levels of stress in the area of work relationships, including issues such as job expectations, employee performance deficiencies, management style, personality clashes, and communication problems. Traditional methods of dealing with these stress-linked work relationships were found to only minimally impact long term resolution of problems. Also, the traditional models were frequently long term in the number of counseling sessions while short term in effectiveness.

In an effort to shorten the time allotted to successfully intervene in dysfunctional interactions in the workplace, LANL Counselors developed a new technique for conflict resolution. This method involves a unique relationship in which each distressed client is assigned a mediator/therapist who functions as a personal advocate during counseling and mediation sessions.

The mediation process involves in-depth planning coupled with a structured procedural format. A six step plan consisting of issue definition, client preparation, mediator/therapist planning, mediation sessions, relapse prevention, and follow-up was developed. The first two steps are conducted in 2 to 3 individual sessions. The planning stage focuses on developing interventive strategies tailored to the clients' individual pathologies. Mediation sessions are divided into issue presentation, problem solving, and formulation of agreements. These conjoint sessions consist of approximately four to six 1 1/2 hour sessions. The last of the conjoint sessions is dedicated to developing a plan for relapse prevention. Clients return about 6 weeks after the final session to evaluate their interim experiences and refine their on-going action plan.

The Dual Advocacy Mediation intervention method has been used at LANL for approximately two and a half years with significant success. Current data and on-going evaluation of completed cases indicates reduced interactional conflict. Additionally, clients routinely self report reduction of personal stress along with an increasingly functional interactional environment.

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SECTION: Risk Factors For Workplace Stress

The 90s corporate culture is dramatically different from anything we have seen before. Transformational changes, that is, companies either becoming extinct (through takeovers, mergers, bankruptcies, etc.), or surviving but becoming something quite different through new business development, new product lines, and the like. With these changes come subsequent job loss and very different skills required of employees, which are a source of profound stress in the workplace. Also, these changes have created different reward systems with measures shifting from more concrete, quantitative ones to more abstract ones. As the numbers of women grow in organizations, and companies become more ethnically diverse, management must learn what different gender-specific and ethnic-responsive needs and rewards systems work to promote the mental health and well being of their employees. With the current shift in mental health benefits delivery, managed health care companies, such as Human Affairs International/Aetna, are best able to plan these gender-specific and ethnically diverse strategies by assisting with individualized company benefits designs, as well as providing specific clinical services. Programs to meet family, marital, child care, job discrimination and threats of violence issues for women are a few of the areas which have already been identified. Of course, employee needs will vary depending on their occupational level, whether they are support staff or upper management, blue collar workers or white collar workers. The strategies needed in the 90s will fine tune the mental health delivery systems and enhance the well being of employees and their families.

WORK AND MENTAL STRESS: A COMPARATIVE ANALYSIS OF THE EXPERIENCES OF WOMEN AND MEN

Cynthia A. Piltch, Ph.D., M.P.H.

This study explored whether there are important differences between women and men in experiences of mental distress that arise out of conditions of work. It focused on testing two models of mental distress -- the Job Strain (JS) Model and the Expanded Model of Work Impact on Mental Distress (The Expanded Model). The JS Model, developed by Robert Karasek, postulates that the interaction of two intrinsic job conditions (psychological job demands and job control) result in adverse mental (and physical) health. The Expanded Model, synthesized from the work of several occupational stress researchers, builds upon the JS Model but incorporates other work-related factors (such as perceived likelihood of job loss, perceived job stress and satisfaction with the fit between work and outside obligations) and personal factors (such as marital and parental stress) that have been found relevant to mental distress.

Data from a representative sample of 2004 male and 669 female industrial workers were used to compare the relative usefulness of each model. Part of these analyses included an assessment of whether the perception of job stress played a mediating role in the relationship between other factors in each model and symptoms of mental distress. This research also explored how two important psychosocial factors (job control and social support) affected the males and females.

The findings of this study supported the validity of the JS Model for the male subsample but undermined its validity for the females. More specifically, although psychological job demands and job control showed independent (main effect) associations with mental distress for both genders, only in the males did job control moderate the effect of psychological job demands on mental distress. In this study, for both genders, the Expanded Model provided a significantly greater explanation of mental distress than did the JS Model. Perceived job stress and satisfaction with the fit between work and outside obligations were two of the most important factors for both genders. The key gender differences that emerged in this study were that lower levels of social support were more strongly associated with higher levels of mental distress in females than males, while lower levels of job control were more strongly associated with higher levels of mental distress in males than females.

Given the few studies of this nature and limitations imposed by a cross-sectional research design, the research reported here is exploratory. The most important contributions of this research are: 1). it showed the importance of work-related and personal factors for understanding mental distress, 2). it suggested that important differences may exist in how perceived job control and social support operate for men and women, and 3). it demonstrated for both genders that perception of job stress is an important correlate of symptoms of mental distress and serves as an intermediate step in the process resulting in mental distress.

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ANALYSIS OF WORK SUB-CULTURE: AN ETHNOGRAPHIC APPROACH TO IDENTIFYING WORK STRESSORS AND A MECHANISM FOR CHANGE

Use of alcohol as a mechanism for coping with stress is often given as an explanation for substance abuse. An ethnographic methodology which included participant observation and interviews, was utilized for capturing areas perceived to be stressful in a building trade in Detroit. Stessors were identified if listed in the context, "And you wonder why we drink so much". The explanations were provided during drinking behavior. The primary areas that emerged as stressful were unsafe working conditions, job instability and pressure to conform to group drinking behaviors. When supervision was involved in setting the drinking norms, the effect of the latter two factors was compounded.

Three issues emerge from this research. First, the ethnographic methodology which relies on participant observation and documentation of actual behavior, is a valuable research tool. Second, gathering of information during group exchanges provides information that isn't always available with surveys or interviews. Third, analysis of the work sub-culture not only permits documentation of perceived and actual stressors, but also offers a potential mechanism for intervention by identifying social networks and their effectiveness.

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PEER SUPPORT NETWORKS AS AN INTERVENTION STRATEGY FOR SUBSTANCE ABUSE IN THE BUILDINGS TRADES

The image of blue collar beer drinking is as American as apple pie. Historical roots for drinking on the job, particularly if the job is outside or involves strenuous physical labor, as in the construction and building trades, extend back to the 1700's. While no occupation is immune to drinking problems, the association of drink with occupational identity presents significant challenges to prevention and intervention. Three factors contribute to this challenge. First, building tradesmen work in environments that have been shown to be at risk for increased drinking: low supervision, frequent travel away from home and stress from uncertainty of employment. Second, new employees are apprenticed to older, experienced journeymen for four years. During this period the "cubs" not only learn skills of the trade but also role modeling for appropriate tradesman behavior. Finally, since work contracts fluctuate, a social network, often composed of relatives, maintains communication about which companies are hiring and who is looking for work. Often this communication occurs in the bar or in association with male drinking.

Employee assistance professionals often have difficulty penetrating this relatively closed sub-culture. In contrast peer support networks have been successful in translating intervention into methods adaptable to the building trades work culture. Both the tunnel workers in New York and the National Maritime Union have successfully utilized this approach. A similar peer intervention program for a building trade in Detroit will be discussed. Identification of volunteers, training and organizational structure will be presented. The emphasis will be on identifying and utilizing existing social networks for effective intervention. This model has potential for application to health prevention and intervention efforts beyond substance abuse.

STRESS MANAGEMENT FOR MANAGERS: A PROGRAM DESIGNED AS AN INTERVENTIONIST STRATEGY

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This stress management program and intervention strategy was designed to give company managers direct feedback on their present stress level and to provide relevant data from which to write total Stress Reduction Action Plans. Four questionnaires and one statistical software package were used to assist managers in stress awareness delineation and focused personal/professional intervention planning.

Management Development trainers can do a lot to intervene between organizational stress and manager stress, "burn-out", and exhaustion. Standard presentations on stress do little to help a manager determine what, specifically, is stressful and which daily techniques s/he can use to reduce the effects of stress. In view of this situation, a prevention/intervention stress management training program was designed and presented to twenty-one (21) managers. The immediate post program feedback was excellent. Researching the APA's PsychScan national data bank in Washington, D.C. and various texts on stress, program content was selected and developed, and four (4) questionnaires chosen to be administered to participants. These were: the Stress Audit Questionnaire (S.A.Q.), the Managerial Stress Check-Up (M.S.C.U.), the Managerial Stress Index (M.S.I.) and the Stress Response Inventory (S.R.I.). Questionnaires were coded for confidentiality, mailed out to the managers, and returned for computer assisted statistical scoring and reporting. All questionnaires were scored and profiled for each manager using a statistic packaged called Statistical Analysis System (S.A.S.). On the S.A.Q, stress source scores were computer for Family, Individual Roles, Social Being, Environment, Financial Condition, Work/School Involvement, and Life Changes. The S.A.Q. calculated how managers were reacting to stress as well as coping response effectiveness. All clusters were designed to evaluate whether a given item (stressor) within the cluster had effected the manager "within the past 6 months" or would within the "next 6 months". This gave a measure of past and future stress intensity and a manager's general anticipatory anxiety level. Additional measures were taken on the effect of stress on the nervous, emotional, cognitive, endocrine, and immune systems and found to be very helpful to managers. Finally, the S.A.S. analysis gave the manager data regarding mean and median comparison scores on how their stress level compared to other company managers within the training session. This later data provided an element of added relevancy to information the managers would use in planning a new stress management program of action. The Managerial Stress Check-Up dealt with the stress clusters: Private Life, Environment, Organizational Overload,Job Adequacy, Role Conflict, Managing People, Interpersonal and Personal. This excellent multi-checklist helps managers pinpoint stress in reference to their role demands. Managerial Stress Index is a 30 item questionnaire which lets a manager evaluate his stress based upon a list of the most common managerial work related stressful situations. Finally, the Stress Response Inventory (S.R.I.) assesses 156 techniques managers could use to cope with stress. These techniques are clustered into six (6) categories: Social Interaction, Intellectual Stimulation, Entertainment, Personal Interests, Managerial Techniques, and Coping Attitudes. The results of this diagnostic questionnaire showed how managers were coping with their stress. The balance of this managerial intervention training program provided multiple advanced strategies for coping with the stress. Post program results were..... "thank you".

AN INDIVIDUALIZED STRESS MANAGEMENT PROGRAM FOR EMPLOYEES OF SMALL BUSINESSES - HMC RICHMOND'S "TENSION PLAN"

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Jane Terry & Robin F. Foust, Health Management Corporation
(Blue Cross & Blue Shield of Virginia affiliate)

This poster will describe: (1) the rationale for the Stress Management Inventory, a computerized stress appraisal that provides employees with a confidential Stress Personal Profile that identifies and describes their own stress levels and coping patterns; (2) a description of the "Tension Plan" - a program package that includes a Stress Personal Profile and an accompanying stress management book for each employee as well as group reports for managers summarizing employees' stress and coping patterns; (3) the process by which the program was implemented in over 1200 small businesses served by Health Management Corporation, Richmond; (4) results of a quantitative and qualitative employee survey conducted to determine the extent to which participants found the program to be a useful tool, became more aware of their stress and coping patterns after participating, and made positive changes in lifestyle and habits.

The program outcome data include results of a quantitative and qualitative survey of a randomly selected sample, consisting of approximately 10% of the more than 6,000 employees who participated in the Tension Plan Program. Of the 600 participants mailed the four-page survey, 162 completed and returned the questionnaire.

The questionnaire asked respondents in various ways whether they had read the material sent them and to what extent this material was of value to them. Responses showed that 86% of the respondents read through their Stress Personal Profile once or several times; 74% said they learned something or a lot about themselves from doing so. Nearly 60% said they had tried one or more of the stress-management techniques described in the accompanying book, 42% reported using one or more new techniques to cope regularly with stress, and 63% reported that they were using an already familiar technique more regularly after receiving the materials. Sixty-two percent said they had experienced a decrease in stress since taking the inventory and receiving their profile and book, 57% said the stress management package had helped them to deal with stress in their lives, and 77% said they would recommend the program to others.

Factor analysis showed two related clusters of people who seem to have benefited from the Tension Plan program: those who felt they learned more about themselves after reading the report, and those who read more of the book and tried at least some of the techniques benefited more. That is, employees in one or both of these groups compared to those who were not were more likely to report a decrease in their level of stress.

Trouble in Paradise?
A Study of Stress Among Teachers of the Gifted

by Ernest R. Pysher and Irvin Schonfeld

The research literature supports the view that high parent and teacher expectations and administrative pressures are important sources of teacher stress, suggesting that the teachers of the gifted would experience more distress than the comparison teachers.

In a study of New York City public high school teachers, 52 teachers taught in schools for the gifted and 97 comparison teachers taught in well-run, but more conventional schools. To minimize bias in the comparison group, teachers who worked in special education, vocational high schools, "alternative" and night high schools, or high schools with a history of violence or racial tension (e.g., Bensonhurst) were excluded from the comparison group. The five zoned high schools in which the comparison teachers worked were deliberately chosen in order to match the schedule and environment of the schools for the gifted.

The teachers completed a survey that included Schultz and Long's (1988) revision of the Teacher Stress Index (TSI). The modified TSI allowed teachers to rate, in order, their most stressful school situations. They could also comment on solutions to these problems.

Contrary to expectation, the mean total stress score of the teachers of the gifted was significantly lower than the mean of the comparison teachers. In these samples, teacher stress was more related to the teacher's relationships with administrators and colleagues than with the student population. Only 10% of the teachers of the gifted and 8% of the comparison teachers listed student-related stressors (e.g., student motivation) as "most stressful."

Stress in other areas was explored. Paperwork other than lesson plans, non-classroom assignments, administrative pressures, and lack of support from colleagues were the most frequently cited sources of stress in both groups. In order to assess dimensions of job stress, TSI Administrative Stress, Role Ambiguity, Role Stress, Task Stress, Life Outlook, and Feelings of Uselessness Scale scores were calculated. The teachers of the gifted were significantly lower in all areas but Role Stress and Life Outlook. Both groups, however, reported relatively high levels of dissatisfaction with their jobs. Math and science teachers in both samples showed significantly less Task Stress than those teaching other subjects. There were no sex differences. Previous full- or part-time employment outside of education was not related stress.

AN INVESTIGATION OF THE DEMAND/CONTROL MODEL OF JOB STRAIN

Sally A. Radmacher, Ph.D. & Charles L. Sheridan, Ph.D.

Stress levels of 439 workers measured by the Quick-Scan Stress Test were analyzed in relation to the demand/control model. This model suggests that the interaction of psychological demands and decision latitude interact to create four distinctly different kinds of job strain: Low Strain, Active, Passive, and High Strain (Karasek & Theorell, 1990). Participants from 20 occupational classifications were assigned to the job strain categories based on criteria described by Karasek and Theorell.

The Quick-Scan is a 27-item check-list of statements describing stressors, e.g. "Being overburdened with responsibility." This instrument is a short form of the Comprehensive Scale of Stress Assessment (CSSA), Part I (Sheriden & Smith, 1987) which was developed from a large pool of items reflecting stress in work, home, and other environments. The CSSA has well established reliability and validity.

The means for the four job strain categories were in the direction predicted by the demand/control model. The differences between categories were statistically significant, F, (3, 382) = 22.1 $p < .0001$, $eta^2 = .13$. Ad hoc comparisons revealed a statistically significant difference between the Passive group and the Low Strain group. Statistically significant differences were also found between the High Strain group and the Active, Low Strain, and Passive groups ($p. < .05$).

A second analysis omitted Air Traffic Controllers (ATCs) from the High Strain group to determine whether the differences between that category and the others were confounded by the high stress associated with ATCs. The differences between the groups, although smaller, remained statistically significant, F (3, 382) = 9.15, $p < .0001$ with similar ad hoc comparisons.

Principle factors extraction with varimax rotation was performed. Eight factors with eigenvalues greater than 1.0 were extracted and accounted for 52.2% of the variance. Several clear factors emerged representing overload, conflict/ambiguity, unpleasant work environments, lack of social and material support, loss of status, weak sense of coherence, and low task identity. One factor was less clear than the others but seemed to be related to alienation.

Several of the factors directly reflect the dimensions of demand and control. For example, items that load heavily on the overload factor indicate a high degree of work demand, and the unpleasant work environment factor could be seen as a measure of some combination of demand and control, e.g. "Working at a task that requires constant attention, but leaves little room for initiative." However, the two dimensions of the job strain model do not do justice to the larger number of independent dimensions obtained here. Although the factors could be interpreted within a demand/control framework, their orthogonality indicates that it would be correct to view them as eight independent dimensions. Thus, we propose a more variegated expansion of the demand/control model.

THE IMPACT OF OCCUPATIONAL STRESS AND INTERPERSONAL STRAIN ON THE PHYSICAL AND EMOTIONAL HEALTH OF EMPLOYEES BEFORE AND AFTER

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Previous research has documented the relationship between job stressors (ambiguity, role conflict) and measures of employee strain (worry, arousal)(Sime, Mayes, Witte, Ganster, & Tharp, 1984). This research supports a theoretical model of job stress which states that organizational structure, task-role conflict, and personality are linked to psychological, physiological and behavioral symptoms which, in turn, predict future health problems and organizational inefficiency (Mayes, Ganster, Sime, & Tharp, 1984). Karasek's research on work load and work control (1979) further illustrates the work-health relationship. Jobs characterized by high demands and low control were associated with symptoms of exhaustion and depression with a high risk of coronary heart disease.

However, research on the effectiveness of stress control programs in the workplace, although extensive, has been inconclusive (Larsson, 1987). Programs have been criticized for not tailoring interventions to the particular needs of the individual (Lazarus & Folkman, 1984). Consequently, interventions usually result in changes in knowledge but not in attitudes and behavior (Arborelius & Brember, 1988).

Intervention programs designed on the basis of two new assessment instruments, Stress Profile and Lifestyle Profile, have demonstrated significant behavioral change. These instruments, developed in Sweden, have been validated in studies involving over 10,000 individuals in Europe and are currently being validated in the United States.

Three recent studies in Sweden focus on the use of these instruments in designing intervention based upon an individually-tailored approach to cognitive appraisal and coping processes designed to mediate the impact of external conditions and personality factors on somatic and psychological short- and long-term outcomes.

The first study explored the relationship between perceived work load/work control and several measures of somatic and psychological health among male supervisors in a major industrial company (Larrson & Setterlind, 1990). Low work load/high work control was associated with favorable scores on self-image and coping efforts. Self-image, work conditions, and coping were highly correlated with somatic and psychological health variables.

A subsequent experimental study focused on stress control intervention programs led by nurses (Larsson & Setterlind, 1991). Participants randomly assigned to the treatment group showed significant improvement in the following variables: fewer perceived daily hassles; more positive self-esteem; improved problem-focused coping capacity; improved eating and exercise habits; fewer self-reported psychological symptoms; improved subjective health status and well-being; lowered levels of diastolic blood pressure; reduced waist-hip ratio; and an increase in actions taken against stressors.

In a similar intervention study conducted on school teachers (Larsson, Setterlind, Starrin, 1990), the treatment group reported significantly different mean responses on eight dimensions at a post-training assessment, including fewer perceived stressors in the work situation; more use of emotion-focused coping strategies; improved health behavior; fewer physical and emotional stress reactions; a more cheerful overall mood state and a higher sense of well-being nd work satisfaction; less work-related ill-health; a lower intensity of reaction in response to daily hassles, and an increase in actions taken against stressors--individually and collectively--at work and in private life.

UTILIZATION OF A NEW PSYCHOSOCIAL STRESS PROFILE AS THE BASIS FOR INDIVIDUAL AND GROUP INTERVENTION PROGRAMS IN THE WORKPLACE

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Stress control programs have been criticized for not tailoring interventions to the particular needs of the individual. Consequently, interventions have usually resulted in changes in knowledge but not in attitudes or behavior. Four new assessment instruments, Stress Profile, Lifestyle Profile, Work Environment Profile, and Quality of Life Profile, are designed to provide information at the individual and organizational levels upon which group and individual intervention programs can be designed.

Initially developed in Sweden by Dr. Sven Setterlind, the Stress Profile, for example, has been validated by over 10,000 subjects in Europe, and the results support several theories about the role of stress in the work environment. These instruments have been translated into English, Norwegian, and Danish, and their cross-cultural validity is currently being tested to establish standards for health risk and optimal performance in the workplace in the United States.

Previous research by Antonowsky, Folkman, Lazarus, Karasek, Frankenhaeuser, DeLongis, Levi, Michenbaum, and others, demonstrates that people who are happy at home and challenged but not "stressed out" at work are more productive and have less absenteeism. Furthermore, management is becoming more cognizant of the psychosocial factors and stress responses which affect work performance and are interested in making changes which have potential for helping employees cope more effectively.

Intervention programs based on the results of the Stress Profile and Lifestyle Profile have demonstrated significant changes in a favorable direction on a number of variables including: (1) fewer perceived stressors in the work situation; (2) fewer perceived daily hassles; (3) more positive self-esteem; (4) more use of emotion-focused coping strategies such as distancing, positive reappraisal, seeking social-emotional support, and self-control; (5) improved problem-focused coping capacity; (6) improved health behavior (drinking, exercise, nutrition, relaxation, and smoking); (7) fewer physical and emotional stress reactions; (8) a more cheerful overall mood state and a higher sense of well-being and work satisfaction; (9) less work-related ill health; and, (10) an increase in actions taken against stressors--individually and collectively--at work and in private life.

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"WELL ON MY WAY AT UVA" The UVa Health Services Foundation Wellness and Fitness Center (WFC) has developed and delivered to over 2,829 UVa employees a comprehensive health screening, referral, and follow-up service which seeks to integrate physical and mental health promotion activities leading to constructive behavior change. The Employee Assistance Program (EAP), Employee Health Service (EHS), and Employee Wellness Program (EWP) work together closely under WFC direction to provide screening, feedback, and intervention services. Modifications have been made to the Carter Center HRA to put more emphasis on potential alcohol abuse as well as the behavioral signs of stress and depression. This emphasis is then integrated into the screening and feedback sessions. EAP follows the screening and feedback program with supervisor training workshops for increased skill in managing issues of alcohol, stress, and mental health in the workplace. EHS provides follow-up services through nurse-managed clinics, and EWP delivers group interventions in nutrition, smoking and fitness. EAP and EHS have seen increases in utilization following the screening programs. PC-based data management and desktop publishing systems have been developed to support the program. The program is funded by an agreement with the university as an employee benefit and is on schedule to offer this service to all university employees (10,000+) who wish to participate over the first three years. Participation rates for the first 18 months have varied by department from 25% to 85% of the eligible employees. This presentation will outline 1) historical and contextual factors important to program implementation (Why this? Why now?); 2) screening and data management methodology; 3) "lessons learned" in gaining the support of top administrators, program providers, and target populations; and 4) program spin-offs in related research, product development, and professional education.

WORK-RELATED STRESS AND DEPRESSION IN EMERGENCY MEDICINE RESIDENTS: A LONGITUDINAL STUDY

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This study examined the effect of work environment characteristics on work-related stress and depression in emergency medicine residents. Based on previous research it was hypothesized that residents experiencing task and role conflict and little support would be more likely to report work-related stress and more depression symptoms.

Data were collected from three cohorts randomly sampled from U.S. residency training programs between 1989 and 1991 and followed to 1992. There were 556 first year, 369 second year and 192 third year residents in this ongoing study. The average age was 30 years (SD=3.6) and most residents were men (74%) and married (56%). Each year, residents were administered mail surveys including the Work-Related Strain Inventory, Center for Epidemiologic Studies Depression scale, and scales assessing task and role conflict and work group support and cohesion. Regression analysis was used to evaluate the impact of the work environment and occupational stress on depression after adjusting for demographic variables and baseline depression.

Work-related stress ($p<.05$) and first year depression ($p<.0001$) were significant predictors of depression in the second residency year ($R2=.32$). In the third residency year, women reported more depression ($p<.03$), and those with greater work-related stress ($p<.0001$) and depression during year two ($p<.004$) had more symptoms of depression ($R2=.38$). When interaction terms were added, gender ($p<.05$), work-related stress ($p<.02$), and depression in the second residency year ($p<.003$) continued to contribute to the regression model. Role and task conflict ($p<.03$) increased depression symptoms and the interaction between task and role conflict and work group support was significant ($p<.05$). Almost 40% of the variance in third year depression scores was explained by this model.

These findings suggest that task and role conflict and work-related stress contribute to symptoms of depression in emergency medicine residents. Strong and cohesive work groups act to moderate these effects in the presence of conflict.

PREMORBID HISTORY, STRESS, AND BEHAVIOR MODIFICATION

Virginia A. Rockhill, Ph.D.
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Health care and its attending problems of availability and costs have been identified as one of the foremost social, political, and economic obstacles facing our country in this decade. Much of the current disagreement centers around the distribution and payment of services, i.e., to provide health insurance or some other form of socialized medicine for everyone. An equal area of importance which has not been adequately addressed is how to positively influence individual and societal attitudes toward health promotion, safety programs, and treatment compliance. Sullivan (1991) has proposed a "culture of character" to successfully achieve a state of good health for this country in which we must promote self-responsibility and modify life-styles toward more healthful attitudes and behaviors. If we are to accomplish this proposal, public and private efforts must be integrated to facilitate these attitudinal and behavioral changes.

The workplace has augmented our concept of the "extended family." Employers have increasingly supported health prevention efforts physical fitness, and daycare programs for their employees. However, before any meaningful program can be implemented, the individual's perceptions toward occupational illness and injury must be taken into consideration. Strategies should include the assessment and acceptance of risk (perceived or real), cultural differences, historical compliance with occupational and environmental health guidelines, and management's commitment to the psychological and physical health of its employees. Comprehensive health and safety worksite programs can help reduce the incidence of job stress contributing to immunological, psychological, and physiological disorders.

Individuals who experience increased stress are more likely to suffer from illness and injury. Identifying these high risk individuals is one way to mediate the effects of distress on health and safety. Demographics like childrearing styles, parental loss and deprivation, domestic violence, and personality linkages all historically impact on predispositions to stress-related disorders. Demographic data of individuals who have experienced stress-related disorders are being analyzed for associations among employment and premorbid histories. These results can be useful for behavioral workplace intervention strategies addressing the role of stress with health and safety.

Occupational health and safety programs can significantly increase their effectiveness by incorporating Behavior Modification as an interface within training, policies, and procedures. Some strategies we have used in this area include the following: 1) Identifying high risk situations; 2) Coping skills for high risk individuals; 3) Cognitive restructuring; 4) Self-monitoring; 5) Problem solving and alternative behaviors; 6) Balanced lifestyle; 7) Relapse prevention and follow-up. This behavioral safety approach has been effective with work-related behaviors, as well as addressing other risky biopsychobehavioral factors. In addition, efficient, cost-effective opportunities exist to incorporate health promotion strategies and to screen employees for job stress. By treating an individual's perceived and actual stress, the likelihood of an occupational illness and/or injury can be reduced.

Taking a proactive approach to the reduction of workplace stress and other occupationally-related illnesses and injuries is necessary for the protection of our workforce and is vital in facilitating the global competitiveness so essential to the economic survival of our country. The associated costs of treating injured workers along with lost productivity and absenteeism have been shown to greatly exceed the cost of prevention efforts. Identifying individuals at high risk for stress-related disorders and implementing behavior modification strategies can address the psychological variables contributing to occupational illness and injury.

JOB LOSS AND INSECURITY: STRESS AMONG ADULTS WHO NEED LITERACY TRAINING

Dr. Ronald C. Rodgers and Stephen Alexander, Employment Research Institute;
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Dr. Raymond G. Wasdyke, Wasdyke & Associates

This study is in progress with the District of Columbia Public Schools to assess the workplace literacy training needs of adults in the D.C.-area labor market. Initial findings focus on the following:

1. Analysis of demographic and employment data from the 1990 Census, the Department of Employment Services, and the Bureau of Labor Statistics (BLS).
2. Assessment of the learning and workplace literacy skills of adults who have participated in recent DCPS literacy training programs.
3. Evaluation of workplace literacy skills required in the D.C.-area labor market based on employment patterns and opportunities in the District, Maryland and Virginia.
4. An inventory of adult literacy training programs to assess what is being offered to the adult literacy training population, how well it matches workplace literacy and employment opportunities, and whether refinements should be implemented to improve this match.

The adult literacy training target population focuses on residents of D.C. census tracts in which more than 70 percent of the District's non-high school graduates reside. Empirical findings compare educational attainment, average household income and economic dependency data by census tract. Brenner (1976) documented significant national patterns linking high unemployment with suicide rates, rising criminal violence and declining mental and physical health. Studies from the Greater Washington Research Center document similar sources of stress among D.C. residents with limited skills, including Bendick and Egan (1988), Carr, et al. (1988), Dearborn (1988), Grier and Grier (1988) and Maxfield (1988). This study is linking these local, national and international indicators to the educational attainment and employment experiences of D.C. residents in the adult literacy training target population.

Interviews and testing have begun with 2,500 members of the adult literacy training target population to assess their education, employment-related training and workplace literacy skills. Some preliminary results from these interviews and tests may be available for the conference.

PERCEPTIONS OF ORGANIZATIONAL STRESS AMONG FEMALE EXECUTIVES IN THE U.S. GOVERNMENT: AN EXPLORATORY STUDY

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The psychometric properties and factor structure of a 15-item self-reporting instrument (Job Related Tension Index) measuring perceptions of stress precipitators was investigated in a sample of 146 female Senior Executive Service employees of the U.S. federal government. The data were analyzed using Item Analysis, Factor Analysis, and Cluster Analysis. A four factor solution was found to best represent the sample. Additionally, cluster analysis revealed the presence of three relatively homogeneous subgroups of sample respondents, based on the source and level of their perceived stress. It was found that "concerns about one's performance" was the highest ranked stressor, followed by concerns about work load, responsibility and authority ambiguities; and the fear of making the wrong decision. The cluster analysis resulted in three groups of stress patterns. The highest stress group included women who put the job above all else, the second highest group had a high propensity for job achievement, and the lowest stress group represented women who placed a high emphasis on self-actualization and "out-side" job considerations.

BIOFEEDBACK SELF-REGULATION (BFSR) FOR STRESS DISORDERS: YEAR 2000

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Workplace stress-related disorders have been dealt with by psychotherapy, educational and management approaches, but many conditions respond best to prevention and intervention programs which include BFSR.

A stress symptom can be an indicator of problems in the individual, the family system, or work system. Actual or imagined stress on self, work or family can activate intense emotional and behavioral responses and impairs the body's ability to properly regulate autonomic balance and prevent disease or dysfunction.

The Year 2000 health objectives for the Nation emphasize prevention and treatment of stress-related health disorders, conditions known to respond BFSR. The objectives include:

- Increase to at least 40% the proportion of workaites employing 50 or more people that provide programs to reduce employee stress.
- Decrease to no more than 5% the proportion of people aged 18 and older who report experiencing significant levels of stress who do not take steps to reduce or control their stress.

For over 20 years BFSR has been at the leading edge of new approaches to health, medicine, education, performance and prevention. Biofeedback self-regulation is used to enhance performance, function and health.

Biofeedback instruments transform physiological information into continuous auditory or visual signals. The signals facilitate awareness, self-observation, self-regulation and control. Biofeedback is like an electronic mirror by which one sees, hears, or feels the body's response to stress, providing immediate information on muscle activity, skin moisture and temperature, blood flow, etc. Sensors are applied on the surface of the skin. Biofeedback makes it easy, accurate, and interesting to learn voluntary control of the body, thoughts, behavior and one's part in personal and work relationships. Instrumentation can be used to monitor psychophysiology during psychotherapy to facilitate seeing the connection between stressful thoughts and physiology.

BFSR lowers health care costs and absenteeism and increases productivity. It has been used to treat psychophysiological stress-related disorders including headaches, hypertension, insomnia, gastro-intestinal problems, allergies, pain, depression and anxiety, performance, relationship problems, smoking, substance abuse, and to management of chronic illness. It may be used by executives, professionals, and physical laborers alike.

Biofeedback treatment usually begins with an individual or group orientation session. The body is monitored for stress levels while at rest. Typically, individual sessions are provided once a week for 2 - 3 months. Treatment length varies depending on severity of problem (duration, intensity, and frequency), individual goals and motivation, and may last a year or more. When workers' motivation is high, as few as 4 - 6 hours can offer succesful prevention. Between sessions, people are encouraged to keep a record of important daily events, feelings, and thoughts to help integrate the biofeedback-learned skills into their daily lives. During treatment, attention is also given to nutrition and exercise. Daily home practice with relaxation audiocassettes is important.

Treatment plans are usually coordinated with the patient's physician and health care providers. Referrals can be arranged through administrators, EAP'S, or physicians. Biofeedback programs can also be set up in the workplace. The Biofeedback Certification Institute of America in Colorado (303)422-8436 FAX (303)422-8894 provides a directory of nationally certified biofeedback clinicians.

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FAMILY ADJUSTMENT TO THE INJURED WORKER: A NEW TASK FOR WORK HARDENED PROGRAMS

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The injury of a family member causes stress for the entire family system. When that injury has an impact on the family member's work capacities, the stressors are particularly intense. The present paper reviews some of the stressors that family members face in this situation and discusses a means of addressing family issues within a work hardening rehabilitation program.

Nature of injury: Family response can differ depending on the cause of the injury. An accident at work and a motor vehicle accident each have dramatically different effects on the family and on the worker's ability to perform job responsibilities. Families' feelings regarding the injured workers' return to work can vary. When the injury is work-related such as due to machinery, or heavy work responsibilities, the family may feel anger and resentment. Their concerns may center around safety in the workplace, worker education and company policy regarding workers compensation. The focus of the family's resentment, however, is directed away from the workplace when the injury occurs from a motor vehicle accident or other nonwork activity.

Impact on family functioning: The impact of the injury on a family can vary. Severe injuries can cause changes in financial status, the family's daily routine, and interactions between family members. For example, a parent who was usually away at work before the injury may have difficulty adjusting to being home after the injury. Home responsibilities, scheduling and disciplining children may all have to be altered as a result. An injured and noninjured spouse may demonstrate changes in patterns of communication, sexual interactions, and methods of resolving conflict.

Given these problems, it is important to broaden the scope of traditional work hardening programs to include a focus on the worker's family. This goal may be accomplished in several ways. One, the assessment of the worker for the work hardening program should also include some assessment of that individual's family. This assessment may include interviews with family members or asking the worker him/herself for information about how the family is reacting to the injury.

Two, the family can be encouraged to observe and participate in treatment sessions. Education of the worker and the family about the nature of the injury, treatment and prognosis will help all family members to cope with the injury. At times family support groups and formal family therapy may be included. Three, the worker should be encouraged to discuss his/her reactions to family issues in the context of the work hardening treatment. Too often work hardening programming is focussed almost entirely on physical reconditioning and education about body mechanics without attention to the underlying emotional stressors for the worker and the family.

There are, admittedly, several problems with a program of family treatment in a word hardening program. These problems include: resistance on the part of the worker and family in discussing family issues, practical difficulties in scheduling families to come in for treatment, lack of reimbursement for family treatment designated as such, and limitations of time in the short-term work hardening program. It is felt, however, that greater attention to family problems in the work hardening program will lead to more positive outcomes for workers.

EMPLOYEE ASSISTANCE PROGRAM - DADE COUNTY PUBLIC SCHOOLS

Cheri M. Sanchez-Smith

Dade County Public Schools' (DCPS) is the fourth largest school district in the country, with an enrollment of 300,000 students and 37,000 employees. The DCPS Employee Assistance Program (EAP), established in 1980, helps employees and their families experiencing problems that may tend to jeopardize health and continued employment. A "broad brush" approach, employee problems include chemical dependency, mental health, stress, medical, family, financial, legal or vocational difficulties. Employees who need help in these areas are provided with assessment, intervention, referral, and followup counseling. A 24-hour hot line provides coverage for evening, weekend, and holiday periods. The EAP provides special "Stress Management for Educators" workshops, and support groups for teachers. Three full time staff experienced in social work, mental health, chemical dependency, and family counseling provide in-house services. Senior staff are Certified Employee Assistance Professionals.

The scope of EAP was expanded in 1984 to include a Wellness Component. Wellness promotion at work is defined as "activities designed to support behavior which optimizes personal health and reduces health risks of employees and family members." Wellness focuses on personal responsibility and the development of "health-supportive climates" at work and at home. Activities involve employees in the Great American Smoke-out, Cancer Control Month, and Heart Month. Staff coordinates Stop Smoking, Stress Management, CPR and Exercise/Nutrition classes. Resources include district Community Schools for after work classes, Weight Watchers, and the American Cancer Society. The Mount Sinai Medical Center Health Van, provides health screening on the worksite. 35,000 copies of "A Wealth of Health" newsletter are published and distributed monthly, with tips on staying healthy, and recognition of worksite activities.

Employees report a high degree of enthusiasm for worksite programs related to Wellness. Longitudinal studies demonstrate that EAP improves teacher performance, and reduces absenteeism and substitute teacher costs.

STRESSFUL OFFICE ENVIRONMENTS AND WORKERS' HEALTH AND WELL-BEING.

Ted Scharf,[1] Daniel Stokols,[1] Arza Churchman,[2]
Janaea Martin,[3] Renee Nishimoto[4]

This presentation examines some of the links between: 1) the physical environment at work, 2) workers' evaluations of the office environment, 3) stressful work experiences, and 4) overall health and well-being. Specifically, the structure, arrangement, activity level and privacy of the office environment are used to predict employees' stressful experiences.

The research and analyses that address these questions derive from the Focused Research Program on Work Environments (FRP), at the University of California, Irvine. The FRP is a multi-disciplinary, multi-method study of relocating, rearranging, and non-moving office units and the workers in these units. Measures included assessments of the physical environment by members of the research team and by the office employees. In addition, employees' work-related experiences and health status were recorded.

A major focus of the FRP has been an examination of the relationship between the physical environment and office workers' assessments and experiences. This effort added a comprehensive evaluation of the physical environment to the study of occupational stress and worker well-being. Analyses completed to date suggest a moderate to strong level of agreement between assessments of the physical environment by members of the research team and by office employees. The next logical step in the analysis of the results from the FRP is to connect the research team and employee assessments of the physical

environment to employees' work-related experiences and overall health and well-being. Employees' perceptions of the physical environment are expected to predict stressful work experiences. Alternatively, the physical environment may contribute to stressful work experiences through mechanisms that are not perceived by office workers.

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ELDER CARE AND THE CHANGING WORK FORCE: IMPLICATIONS FOR WORKPLACE POLICIES AND PROGRAMS

Andrew E. Scharlach, Ph.D.

This presentation will provide an analysis of existing knowledge regarding employee elder care responsibilities, including the policies and programs that have proven to be most effective in preventing or alleviating occupational stress and health problems associated with elder care. Data for this presentation will be based primarily on the presenter's recent research regarding elder care responsibilities among approximately 10,000 employees in three work sites in California, as well as a summary of existing knowledge regarding the interface between elder care and work.

The presentation will address the following issues:

1. Prevalence. Most previous studies of elder care responsibilities in the work force have yielded prevalence estimates of 20-30%. Adjusting for response bias, a more accurate estimate of the percentage of employees with any elder care responsibilities is 8-12%. Only 2-3% are actually providing hands-on care at any one time.
2. Impact on job performance. Employees with elder care responsibilities experience significantly higher rates of absenteeism, workday disruptions, and work-family stress than do other employees. As a result, the average employee with elder care responsibilities loses approximately 35 hours of productive work per year. In addition, elder care providers experience higher rates of stress-related illnesses, psychotropic medication use, and depression.

The presentation will discuss the factors that should be considered in designing effective elder care programs and policies, and in conducting research on employee elder care. The presentation will conclude with an examination of the role of psychologists in assisting employees who have elder care responsibilities, and in conducting research regarding the interface between elder care and occupational health.

BURNOUT AND ICU-PERFORMANCE

Wilmar B. Schaufeli, PhD
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Several studies show that nurses working in Intensive Care Units (ICU's) are particularly susceptible to burnout since their jobs are stressful and emotionally demanding. Generally, it is suggested that burnout results from work overload and leads to poor - medical - performance. However, studies on ICU-burnout are seriously hampered by the lack of objectively measured indicators of workload and performance. Virtually all investigations exclusively rely on self reports.

The present study includes 770 nurses who are employed in a representative sample of 35 Dutch ICU's. Their workload is measured objectively by: (1) the Therapeutic Intervention Scoring System (TISS), which is based on the quantity and quality of patient care; (2) the average severity of illness (APACHE II); (3) the number of patients requiring technology intensive treatment. Several objective ICU-performance indicators were used: (1) the patients' length of stay; (2) ratio of predicted versus observed mortality. The objective workload and performance measures are based on data from 15,000 patients who were admitted to the ICU's during six months. Additionally, experienced workload and self-reported performance were included. Burnout was assessed with

Maslach's Burnout Inventory. Data were analyzed on the individual level as well as on aggregated ICU-level.

Results show that associations of burnout with subjective measures of workload and performance are stronger than with similar objective measures. The relationships of burnout with objective workload and performance are complex: particular burnout-dimensions are related to specific indicators. For instance, emotional exhaustion is related to patient characteristics like severity of illness, which are indicative for the emotional demands of ICU-nursing. On the other hand, depersonalization (a callous, impersonal attitude towards patients) is related to technological demands. The results are discussed in relation to recent developments in occupational stress research (i.e. process models of burnout). Additionally, the validity of objective and subjective measures of performance is addressed.

CHARACTERISTICS OF ENRICHED JOBS AND CARDIOVASCULAR HEALTH: A PROSPECTIVE STUDY

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The characteristics of "enriched" jobs (i.e., those that are complex along dimensions of experienced meaningfulness, knowledge of results, responsibility, and dealing with other people) are consistently shown to correlate positively with work satisfaction. There is some evidence, however, that such enriched jobs can be stressful. We measured enriched job characteristics using the Job Diagnostic Survey (JDS) as well as an objective complexity factor based on variables from the Dictionary of Occupational Titles (DOT) among a sample of 251 police and fire department employees with sound cardiovascular health. Type A behavior pattern was measured using the Structured Interview. Follow-up data on work satisfaction and cardiovascular health was collected from individuals who had stayed with the organization seven years later and who had not undergone fundamental job changes (n=110). Job complexity as measured by the JDS was positively correlated with work satisfaction measured at both time periods. JDS and DOT complexity factors correlated with cardiovascular morbidity over time, as did Type A behavior pattern. For each job dimension, the relationship between complexity and cardiovascular morbidity was significantly positive among Type A's whereas it was negative for Type B's. These findings were robust after controlling for six different perceived job demands, and three of these demands showed the same interaction with Type A in predicting cardiovascular health. These findings raise questions about the universal desirability of job enrichment programs.

Environmental Stress During Desert Storm and Their Influence on Obstetric Interventiom and Premature Delivery

Eran B. Schenker and Shlomo Mor-Yosef

INTRODUCTION. *The Persian Gulf war in 1991 presented Israel with it's first experience of a threat of chemical attack on the home front. There is no doubt that the Gulf war and the missile attacks caused extensive environmental stress in large segments of the Israeli population. In this research we studied the connection between the influence of environmental stress on preterm delivery and the effect of anxiety on pregnancy outcome, as well as the possible changes in obstetric intervention due to the threat of chemical missiles attacks during the Gulf War.*

METHODS. *The study group included all deliveries (1022) at nine hospitals throughout Israel, during the first 10 days of the missile attacks. The control group included all deliveries (1027) at the same hospitals on these dates in the previous year.*

RESULTS. *The two groups showed no difference in: the average gestational age, the rate of premature labor, and the cesarean section rate. The percentage of instrumental deliveries using forceps or vacuum and the mean weight of the newborns were significantly higher ($p<0.05$) in the war group.*

CONCLUSION. *Contrary to previous studies, our data show that prolonged high anxiety state during war time causes more obstetric intervention, yet had no influence on the pregnancy length, and did not cause preterm deliveries.*

SPACE ENVIRONMENTAL STRESS AND HUMAN REPRODUCTION

Eran Schenker

INTRODUCTION. When speaking on the long duration of space flight and eventual colonization in space, there will be a need for successful control of reproductive function and a full understanding of the unique factors of space environment. The biological interaction between stress and reproduction is the result of the action of stress hormones at the brain level, especially on the Hypothalamus-Pituitary Axis. Stress hormones such as Adrenaline, Nonadrenaline and Dopamine interact with Gonadotropin Releasing Hormones, Prolactin, LH and FSH which are responsible for normal reproduction function. Endogenous opiates and Melatonin secretions are altered by stress and interfere with fertility functions.

METHODS. In our research we studied the possible influence of space environmental stress on human reproduction in general and fertility of males and females specifically.

RESULTS. The interaction between emotional stress and reproduction has been investigated for many years. most of the studies that were performed during the last two decades show that in the majority of the cases stress is the result and not the cause. Our study unionized four main factors of space environmental stress that influence the most on the space travelers. As time will pass on a long duration of space flight: feelings of Isolation, feelings of not having control of your own life, disruption of day to day life as well as day and night time, will aggravate the effects of the environmental stress. Stress that will encounter the human reproduction potential in space.

CONCLUSION. Life in space - from egg to the grave - may seem a long way off but the idea of future generations living in space deserves for more research in the vital area of reproduction in space.

MOOD DISTURBANCE AND MUSCULOSKELETAL DISCOMFORT EFFECTS OF ELECTRONIC PERFORMANCE MONITORING IN A VDT DATA-ENTRY TASK

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This study evaluated mood disturbance and musculoskeletal discomfort effects of using electronic performance monitoring (EPM) to enforce compliance with performance standards for a numeric data-entry task. Forty-seven female subjects were assigned at random to one of the following data-entry conditions: (1) EPM Work Management (24 subjects) or, (2) No EPM Work Management (23 subjects). The study focused on data-entry workers who were most likely to experience work overload and negative performance feedback under EPM work management conditions; that is, workers who had difficulty maintaining data-entry performance standards (greater than 200 keystrokes per minute and less than 6 errors per minute). Under the EPM Work Management condition, keystroke and error rates were electronically monitored, and performance feedback was provided via the subjects' VDTs to enforce compliance with the performance standards. In this condition, subjects who performed below the work standards received negative performance feedback, while subjects who met or exceeded the work standards received positive performance feedback. Under the No EPM Work Management condition, no performance standards were imposed, and no performance feedback was provided to the subjects. Self-ratings of mood disturbances and workload dissatisfaction were monitored at periodic intervals over three consecutive workdays. EPM Work Management generated higher ratings of mood disturbance (e.g., irritation, time urgency, workload dissatisfaction) and musculoskeletal discomfort (e.g., hand discomfort, neck discomfort) than No EPM Work Management. The results of this study suggest that EPM Work Management elicits a pattern of psychological distress and physical discomfort among workers who have difficulty meeting data-entry performance standards. Future studies should be directed toward the development of EPM work management strategies that reduce or eliminate such adverse effects.

[1]Dr. Schleifer initiated this research during his tenure as a Research Psychologist at the National Institute for Occupational Safety and Health, Cincinnati, Ohio.

AN INVESTIGATION OF THE STRESS-STRAIN RELATIONSHIP IN SHIFTWORKING AND NON-SHIFTWORKING POPULATIONS

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Working at odd hours of the day and night is thought to exacerbate environmental and physiological stressors. Shiftworkers sleep less than dayworkers, shiftworkers have greater problems with social integration, and research has indicated that shiftworkers exhibit higher rates of stress-related illness (e.g., gastrointestinal disorders and cardiovascular disease).

As part of a larger study, the current investigation involved the interaction between role ambiguity and shiftwork status (i.e., shiftwork vs. non-shiftwork) in predicting two health indices (i.e. gastrointestinal complaints and cardiovascular symptoms). The subjects were nurses who completed questionnaires at two hospital sites (combined N = 208); both shiftworkers and non-shiftworkers were obtained at each location. No mean differences between shiftworkers and non-shiftworkers were found in the self-reported health measures. When the entire sample was considered, however, interaction terms (role ambiguity by shiftwork status) predicted a significant incremental amount of variance in the health measures. When subgroup comparisons between the shiftworking group (N = 126) and the non-shiftworking group (N = 82) were performed, it was found that role ambiguity was more effective in predicting health problems in the shiftworking group.

While the current findings could be interpreted in a number of ways, a plausible interpretation is that shiftwork sensitizes individuals to stressors in their environments. Frese and Okonek (1984) describe this situation as some shiftworkers working until they reach their "biological/psychological breaking point," the point at which they may leave their jobs or suffer medical problems. It may be that the stronger link between stress and physiological strain for shiftworkers is evidence of a breaking point. Incremental differences in workplace stress may have more of an effect on the physiological health of shiftworkers than non-shiftworkers because shiftworkers are closer to their breaking points, and additional stress leads to greater effects.

One implication of the study is that researchers should not only focus on overall group differences between shiftworkers and non-shiftworkers, but should also consider differences in how variables interact within the two groups. Also, if shiftworkers are especially sensitized to increases in workplace stress, special efforts should be taken to reduce job stress in shiftwork and to aid shiftworkers in coping with stress on the job.

A TEST OF THE KARASEK MODEL OF JOB STRAIN USING OBJECTIVE AND SUBJECTIVE DATA SOURCES

Leigh P. Schmitt, Jefferson R. Sulzer,
John M. Cornwell, and Diana Meier

The study assessed the effect of the interaction of job demands and decision latitude on the stress outcomes of a sample of 170 public sector clerical workers, according to the model proposed by Karasek (1979). Karasek and his colleagues (1981) found that hectic job demands and lack of control on the job predicted symptoms and signs of coronary heart disease for a cross-section of the male Swedish work force. Karasek (1979) also found that high demands and lack of control predicted psychological outcomes of mental exhaustion and depression. Additional theoretical considerations tested were the potential moderator effects of growth need strength and negative affectivity.

According to the Hackman and Oldham (1975) Job Characteristics Model, individuals who have high levels of growth need strength are expected to gain higher levels of job satisfaction as a result of job enrichment programs (that increase decision latitude). Therefore, it may be expected that high growth need strength individuals may experience stronger effects of stress reduction through autonomy.

Some recent stress studies have reported the construct of negative affectivity as a moderator of stressor and stress outcome relationships (Parkes, 1990; Jex, Roberts, & Gudanowski, 1992). This study extends their work by testing negative affectivity as a moderator of the Karasek job strain model.

The study also addressed some methodological issues pertaining to research based on the job strain model. Specifically, much of the research has been criticized for confounding due to cross-occupational data, lack of statistical moderator tests, inadequate operationalization of measures, and over-reliance on self-report data. The study addresses these issues by including both objective and subjective sources of data for a clerical job family. Stress outcomes measured include self-reports of job satisfaction, psychological symptoms, physical symptoms, and drug and alcohol use. An objective stress outcome measure of absenteeism taken from personal records was also included. Job demands were assessed by a 400 item task inventory of job analysis data and self-reports of job conditions taken from the Job Characteristics Inventory (Sims, Szilagyi, & Keller, 1976).

EMPLOYEE DISPOSITION AND WORK VALUES AS ANTECEDENTS TO JOB STRESS

Kimberly T. Schneider

Employee stress is a potentially costly consequence of job and organizational characteristics for organizations. It has similarly costly, albeit different, consequences for individuals. The immediate consequences of employee stress, such as absenteeism, are serious; the long-term effects of stress are even more detrimental. Organizational withdrawal, encompassing both work and job withdrawal, deteriorating physical and mental health, and job dissatisfaction are all negative outcomes for organizations and individual employees. It is necessary to identify the antecedents of job stress in order to develop an understanding of job stress as well as possible interventions.

One determinant, or moderator, of the impact of job stress on employees is their affective disposition. Affective disposition has been shown to have an effect on job satisfaction through subjective well-being (Judge, 1990; Judge & Hulin, in press). Disposition is a determinant of the degree to which an employee can effectively (or ineffectively) deal with job demands, job stress, and job inequities. An employee with a positive disposition is generally more satisfied with their life and their job. This well-being is likely to have positive consequences for their behavioral responses to experienced job stress or job dissatisfaction. Positive affective disposition may have the effect of insulating employees from some of the negative effects of job dissatisfaction and job stress. An employee with a negative disposition is significantly more likely to be dissatisfied with their job, and more likely to engage in withdrawal behaviors.

Work values also influence job satisfaction. When an employee's work values are congruent with organizational values, the similarity has a positive effect on job satisfaction, thus reducing stress. When personal work values and organizational values are incompatible, the resulting job dissatisfaction can also cause stress.

Other variables, such as satisfaction with pay, co-workers, supervisors, perceived inequity between an employee and another referent, and even factors beyond the organization's control such as marital relationships or the state of the economy are antecedents of job satisfaction and job stress. Disposition and work values represent relatively unstudied areas in comparison to the above variables. More research is needed to determine whether disposition and work values are also moderators that influence the level of job stress and the means by which the employee exhibits stress on the job.

Data collected on approximately 330 University employees' work values, disposition, job attitudes, job stress, and health condition will be presented. Conclusions regarding relationships among these measures, based on longitudinal and causal modelling analyses, will be discussed.

One-year Longitudinal Study of Depressive Symptoms and Job Morale in Newly Appointed Women Teachers

by Irvin Schonfeld and Fang Xia

The purpose of this presentation is twofold. The first is to take up an issue the first author raised at the initial APA/NIOSH meeting (Schonfeld, 1992), that of confounding in measures of the work environment. The second is to highlight findings bearing on the relation of the "best" measures of newly appointed teachers' working conditions to depressive symptoms and job morale.

A representative sample of newly appointed female teachers was followed during their first year on the job. To maximize differences in exposures, the sample (n = 192) was limited to women who met the following criteria: They worked full-time; they were teachers in both the fall and spring; and they remained in the same schools during the interval.

An investigation of the measures employed revealed that neutrally worded self-reports (Kasl, 1987; Schonfeld, 1992) of episodically occurring job events as well as self-reports of crimes against the teachers were less confounded with prior symptoms than neutral self-reports of ongoing job conditions ("strains").

Substantial differences in depressive symptoms (CES-D) and morale (job satisfaction and motivation to be a teacher in the future) mirrored differences in school conditions. In addition to detrimental effects associated with exposure to adverse job conditions (e.g., student fighting), we found beneficial effects associated with obtaining a job in schools with few such exposures. Among the women who obtained jobs in the best schools, depressive symptoms declined below preemployment levels.

The work-related differences could not be explained by differences in other factors including preemployment symptoms and coping behaviors. The findings have implications for rival interventions aimed at affecting teacher well-being: environmental protection vs. individual behavior change.

HOT NUKES: THE STRESS INDUCED RISKS OF CLOSING NUCLEAR POWER PLANTS

Justin W. Schulz, Ph.D.
A. Clegg Crawford

The downsizing of organizations has become a fairly common occurrence during the past six years. Predictably, these reductions in force produce substantial changes in stress related problems including increased anxiety, depression, hostility, and decreased concentration. Extrapolating from studies conducted in the U.S. and in Europe on the effects of perceived occupational control and health, we can surmise that the stress of job layoffs even puts workers at higher risk for stress-related illness, such as heart disease. Over the next three decades we will be experiencing downsizing and layoffs in one particular industry which poses more complex problems from layoffs for both the work force and the community at large - the nuclear power industry.

There are three reasons to pay particular attention to the psychological strain of employees affected by impending or active plant closings in the nuclear power industry - *potential hazard to the community, greater risk exposure for workers,* and *chronicity of stress. First*, while most nuclear plants have operated safely, the potential hazard to the community is potentially enormous, far beyond the negative economic consequences of loss of income in the community. *Second*, defueling and dismantling a nuclear facility poses a far greater risk of worker exposure to hazardous materials and events than does the ongoing operation of a plant. *Third*, unlike most plant closings, such as in the auto or steel industries, which are of a short cycle, closing a nuclear plant takes years. This long time cycle adds an element of chronicity of stress as well as acuity of stress from facing the loss of ones job.

This paper will include a theoretical basis for understanding the stress induced by closing nuclear plants, model interventions to mitigate the detrimental consequences of stress, and research on a survey instrument for monitoring organizational stress. The theoretical basis is derived from Karasek and Theorell's three-factor model for analyzing the psychological health of work. These three factors are (a) psychological demand, (b) degree of decision control, and (c) degree of psychosocial support. This three-factor model will be reviewed at it applies to long-cycle layoffs.

This presentation will elaborate on methods for managing the long-cycle downsizing process of closing nuclear plants. A case study of a nuclear plant closing will be presented with conclusions for a comprehensive stress management program which includes: (a) monitoring indicators of individual stress, (b) providing interventions for individuals and their families, (c) providing interventions for work groups, (d) providing individual incentives for maintaining work commitment, (e) monitoring indicators of organizational effectiveness, and (f) implementing strategies for supporting managers and the executive management team in planning and completing the closure process.

Research on the development of an organizational assessment instrument for monitoring increases in organizational stress as well as individual stress will be reviewed. This will include preliminary findings on eleven measurable factors which can be routinely monitored to assess changes in organizational functioning.

PSYCHOLOGICAL PROCESSES THAT SHAPE THE IMPACT OF JOB STRESS ON WOMEN'S WELL-BEING AND FAMILY LIFE

Marc S. Schulz and Jeffrey R. Measelle; Dept. of Psychology,
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Findings will be presented from a study that examines the psychological processes through which stressful experiences at work affect women's family lives and well-being. Most studies of work-family connections measure work stress and family functioning at one point in time. The fact that the variables found to be correlated are measured at the same time makes it impossible to ascertain the direction of influence between the variables, and also limits our understanding of how one variable might influence the other. To better understand the direction of influence and the nature of the underlying linking processes, more sophisticated research approaches are necessary. This study employs an intensive short-term longitudinal methodology to explore the linkages among daily stressful experiences and mood at work and women's subsequent interpersonal behavior, coping responses and mood at home at the end of the day. Forty married women with an oldest child of Kindergarten age were drawn from a larger longitudinal study for participation in this project.

Principal Objectives:

1. To improve our knowledge of how women behave *within their families* after experiencing stress and negative emotional arousal during their work day. How do women cope and interact at home after a stressful day at work?

2. To identify personal, familial and social factors that buffer or exacerbate the impact of work stress and negative emotional arousal on family life. Individual factors such as the personal meaning of work and family life for each woman (e.g., preferred work-family balance, reasons for working), family factors such as a

couple's division of family labor, and social factors such as women's income and the type of job they hold are investigated as moderators of the impact of work stress on family life.

3. To explore the links between women's patterns of response to work stress and indices of well-being. Are women's patterns of response to stress and negative emotional arousal emanating from work related to their self-esteem, marital satisfaction and physical and psychological symptomatology?

Project Design:

In the first phase of data collection, mothers completed questionnaires that assessed their well-being and relatively stable characteristics of their work and family lives. The second phase of data collection employed a time-samples design with repeated measurements of (1) daily emotional experiences and stress at work and (2) behaviors and mood at home at the end of the work day. On three consecutive days participants completed separate daily reports (a) before leaving work and (b) before going to bed at night. The coping and interpersonal behaviors assessed in the daily reports of family experiences focus on several dimensions relevant to the internal and interpersonal regulation of negative emotional arousal, such as the seeking of social support, withdrawal in order to relax and angry, aggressive interactions. The repeated measures of work and family experiences are combined with a within-subjects data analytic approach to examine connections between variations in a woman's experiences in the work domain and subsequent variations in the family domain.

UNEMPLOYMENT STRESS, SOCIAL RESOURCES, AND HEALTH

Ralf Schwarzer, André Hahn, & Reinhard Fuchs
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Unemployment represents a stress situation that often results in depression, anxiety, health risk behaviors, social conflicts, and physical symptoms. For individuals who have experienced a critical life transition, e.g., refugees and migrants, a prolonged state of joblessness in their new environment creates severe cumulative stress and impedes adaptation. This panel study deals with the conditions of stress and health in East Germans who left their country and settled in West Berlin in 1989, at a time when the Eastern system collapsed. Over one year, 243 persons filled out questionnaires at three points in time.

The present analysis aims at various determinants of health changes, e.g., unemployment as a stress indicator. Half of the sample was unemployed most of the time. Different aspects of social resources were expected to moderate or mediate the stress-illness relationship: Social integration, social support, social conflicts, and loneliness were measured at three waves and linked to a number of physical health complaints and mental health indicators, including anxiety and depression. By a repeated measurement MANOVA, the joint effects of employment status and social factors on health-related outcome variables were examined. Also, causal modeling with LISREL revealed complex relationships that point to the crucial role social resources can play within the unemployment and health context. The results are discussed in terms of transactional stress and coping processes in challenging person-environment encounters.

INTERPLAY OF STRESS AND FAMILY DYSFUNCTION IN HIGH RISK OCCUPATIONS

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Psychologists have been relatively successful in identifying prevalent stress factors in the workplace. However, these studies generally focus on the "nine to five" stressors and fail to recognize the interplay between work and family stress. Nowhere is this lack of attention more apparent than in high risk occupations that often fail to conform to the nine to five schedule because of unpredictable, emergency and crises features. Consequently, the stress of these occupations does not remain at the office. Rather, it intrudes at home by limiting family life and by contributing to family conflict. Conversely, this interplay can return to the workplace and diminish employee effectiveness.

This paper addresses the interplay between high risk occupation stress and families, in general, and then focuses on one public safety occupation to demonstrate how a confluence of work related stress factors influences families of the Nation's law enforcement officers. The unique pressures brought to bear on police families are examined within the context of high risk occupational cultures where culture impact extends beyond affecting individual employees to include those in non-salaried family support roles. The related costs of the incursion of police stress into family life is detailed, along with developing trends in the efforts of police departments to respond to these issues, including using psychology as a resource.

The paper addresses the range of services that psychologists currently provide to law enforcement agencies and describes how these efforts intervene in the interplay between work and family stress. It demonstrates how psychologists can influence policy decisions that not only reduce officer stress but also benefit law enforcement families. Finally, it illustrates how psychologists brought these issues to national attention in a 1991 congressional hearing that addressed police stress and family well-being, and which culminated in proposed legislation to fund research on the mental health and well being of police officers and their families. The paper concludes with recommendations for identifying and remediating family dysfunction relative to specific high risk occupations; and suggests an advocacy role for psychology to establish a national agenda of priorities relative to work-family stress.

COMPUTERIZATION AND AGE IN A LARGE MUNICIPAL ORGANIZATION

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Along with the development of information technology and various application softwares, organizations are increasingly computerizing their administrative and planning functions. In parallel with this tehnological advance, the workforce is aging in most industrialized countries. We know from previous research findings (e.g., Bradley 1989) that the introduction of new technology in general is related to stress and apprehension among the employees exposed to the changes. On the other hand, the aging process means changes in human physiological and psychological functions, as well as in attitudes and ways of learning and in the acquisition of new skills (Lovelace 1990). Consequently, there is a risk for disturbances in human well-being and organizational performance.

The findings reported in this paper are from the first part of a study in which the introduction of new office information systems are followed in a large municipal organization. The first part was a questionnaire survey of previous and current experiences about the usage of computerized devices and application softwares as well as the benefits and problems of computers encountered by the employees before the introduction of new systems.

The study is being conducted in three organizational units. The employees represent various professional groups, such as architects,

engineers, lawyers, clerical workers, etc., handling various tasks required in municipal planning and decision making processes. A questionnaire was mailed to all of the employees who have used or will be using computerized devices. 691 of the 1021 questionnaires sent (67.8%) were returned. 61 % of the respondents were females. 13 % of the respondents were 30 years old or younger and 20 % were 50 years or older.

84 % of the respondents felt that the attitudes in their organization toward technological changes had been positive. 67 % assessed that the impact of information technology on their own future was positive. However, the positive attitudes decreased systematically from the age group of 35 years on. The reasons given for positive development were, e.g.: work tasks will become more interesting and varying, the utilization of one's abilities will be better, and task performance will be more effective. The younger employees mentioned these positive aspects more often than the older ones. The problems encountered in the use of computers were, such as, understanding computer terminology, remembering and understanding of functions, using manuals, and understanding a foreign language. The problems were associated with age. Older employees also experienced stress more often than the younger ones, due to inadequate skills in using computers.

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TRAUMATIC STRESS OF MULTIPLE MURDER INVESTIGATIONS

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The phenomenon of serial, spree, and mass murders has become pronounced and publicized in the United States within the last few decades. With the response to and investigation of such crimes come significant and unique stress to law enforcement personnel. The violence and dehumanization often associated with these crimes, both in terms of magnitude and multitude, exceed preparation given the typical responding law enforcement officer or even a well-prepared and experienced homicide investigator. Such visual and emotional stress is magnified by organizational stressors, including administrative pressure to solve the crime and conflicts within an officer's role and responsibility, and event stressors, especially those relating to an inability to bring closure to the crime.

The impact of such unique traumatic stress has been subjected to little analysis and, more especially, empirical research. Utilizing a theoretical framework developed for training violent crime investigators and drawing from the experiences of Special Agents within the Florida Department of Law Enforcement assigned to a major multiple murder investigation, this presentation will attempt to empirically analyze the perceived trauma associated with multiple murders.

With the understanding offered through such research, agencies can better respond to the needs of their personnel. Successful management of this unique type of law enforcement stress requires a strong organizational commitment, specific management programs involving training and critical incident debriefing, and community support.

CONSTRUCT VALIDATION OF THE TIME MANAGEMENT BEHAVIOR QUESTIONNAIRE

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Research on coping strategies aimed at alleviating the negative effects of stress is imperative. One potential strategy often suggested by counseling services is time management (Schuler, 1979). Inadequate time management behaviors are often proposed as a source of stress and poor performance. Therefore, training people on effective time management behaviors would seem to be an obvious strategy to increase performance and to reduce the negative effects of stress. However, a reliable and valid measure of time management behaviors is necessary before one can implement or evaluate a training program. To this end, the present study was conducted to further examine the psychometric properties of the Time Management Behavior Questionnaire (TMBQ) (Macan, Shahani, Dipboye, & Phillips, 1990). Specifically, a preliminary investigation of construct validity was attempted by examining the correlation between the TMBQ and three other time management questionnaires.

A total of 93 undergraduate college students participated in this study for class credit. Subjects first completed the TMBQ which consists of 46 items that measure behaviors critical to time management (alpha=.87). The scale is made up of four factors: Setting goals and priorities (TMBQ1) (alpha=.85), Mechanics- planning and scheduling (TMBQ2) (alpha=.78), Perceived control of time (TMBQ3) (alpha=.77), and Preference for disorganization (TMBQ4) (alpha=.67). Subjects then completed the Time Structure Questionnaire (TSQ) (Bond & Feather, 1988). The TSQ is a 26 item scale that measures the degree to which individuals perceive their use of time as structured and purposive (alpha=.73). The scale is made up of five factors: Sense of purpose (TSQ1) (alpha=.75), Structured routine (TSQ2) (alpha=.76), Present orientation (TSQ3) (alpha=.55), Effective organization (TSQ4) (alpha=.75), and Persistence (TSQ5) (alpha=.75). Next, subjects completed the 80 item Temporal Experience questionnaire that measures individual differences in the subjective experience of time (TEQ) (Wessman, 1973) (alpha=.61). The scale is made up of four factors: Immediate time pressure (TEQ1) (alpha= .66), Long term personal direction (TEQ2) (alpha=.79), Time Utilization (TEQ3) (alpha=.86), and Personal inconsistency (TEQ4) (alpha= .74). Subjects finally completed the Time Attitudes Questionnaire (TAQ) (Calabresi & Cohen, 1968) which consists of 46 items that measure time experience and

time attitudes (alpha= .76). The scale is made up of four factors: Time anxiety (TAQ1) (alpha= .76), Time submissiveness (TAQ2) (alpha=.60), Time possessiveness (TAQ3) (alpha=.33), and Time flexibility (TAQ4) (alpha= .61).

The correlations between the overall TMBQ scale and the other three time management questionnaires was first examined. The TMBQ was significantly correlated with the TSQ (r =.69, p < .001) and the TEQ (r =.54, p < .001) but not with the TAQ (r = .12). Next, the factor scores of the TMBQ were correlated with the factor scores of the other three scales. TMBQ1 and TMBQ2 correlated highest with TEQ3. TMBQ3 and TMBQ4 had the highest correlation with TSQ4. An overall examination of the data of this study revealed supportive evidence regarding the construct validity of the TMBQ.

THE PLURALISTIC WORK ENVIRONMENT AUDIT

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While some companies have initiated costly training programs designed to build productive, pluralistic workforces, few have also designed strategies for assessing the changes resulting from these efforts. In order to adequately analyze the value of investing in pluralistic intervention, companies must measure the pluralism in their work environments before and after pluralism consultations and training programs.

The Pluralistic Environment Audit is a survey tool designed to meet the needs of human resource specialists, diversity management consultants, and managers who need to assess diversity issues within the work environment. The Audit is an 83 item questionnaire which can easily be completed by employees within 15 minutes. It uses a true/false format for ease in response. Aggregated responses from managers and staff are compared to highlight potential areas of need. The Audit is sensitive to perceived discrimination, preferential treatment, and tensions between groups based on race, gender, or ethnic background.

The Pluralistic Environment Audit measures: 1) Harmony between groups: items on harassment, discrimination, and social interactions are included. 2) Equality: items on promotions, status, salary, equal opportunity, recognition, and feeling valued are included. 3) Structural integration of diversity: items on work group composition, retention, hiring, and training are included.

The Audit can be used to assess the current status of diversity issues within the workplace and help to inform managers, human resource specialists, and organizational consultants about the degree of need and the specific areas to target with diversity management training/consultation. The Audit can also be used as a pre/post measure of work environment changes resulting from diversity management training. This would help inform fiscal decisions regarding the value of external consultants.

The use of this instrument can advance our knowledge of the extent of problems of diversity in the workplace and help to promote success in the programs that are adopted by organizations.

PRODUCTION PERFORMANCE STANDARDS, INCENTIVES, AND WORKER STRESS

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The assessment of human performance, and the concept of incentives and rewards are not new ideas; and date back to early civilizations. More recently in the modern day industrialized world, formal work measurement and methods engineering began during the late 1800's with the work of Frederick W. Taylor. His techniques for analyzing work and improving methods also included the establishment of work measurement based performance standards and incentive earnings as a function of production above the job standard.

Today, performance standards and incentive systems are developed much differently than in Taylor's time about one-hundred years ago. Modern work measurement may be defined as the application of techniques designed to estimate the time for a qualified worker(s) to conduct a specified task at a defined level of performance to produce a minimum acceptable quality output. There are five fundamental work measurement techniques in use at the present time; judgement estimating, historical data (includes accounting records and self-logging), direct observation timing with performance rating, work sampling, and predetermined time systems. While each technique is different and has certain advantages and limitations, a commonality among them is the assumption of "normal" or the production output of the "average" worker.

Many of the problems associated with performance standards and incentive systems including worker stress are caused by standards that can not be achieved by the majority of the workforce. Assuming a qualified workforce, this condition is the result of an incorrect standard usually found to be errors in the establishment of normal and/or incorrect time allowances for necessary non-work activities. Traditionally, the allowances included in a performance standard are for: personal, fatigue, and unavoidable delay times with no consideration given to possible worker stress.

Performance standards and incentives are applied to direct and indirect personnel in a wide variety of work environments including manufacturing industries, service organizations, and government. This paper discusses two prevention and intervention strategies. First, to add a psychological component (stress allowance) to the traditional allowances for personal, fatigue, and unavoidable delay times. Second, to permit workers to choose the amount of work and the corresponding incentive earnings (the elective incentive concept).

The key entry task will be utilized as a case example of performance standards established that exceed the capability of the majority of the workforce. The added effect of electronic performance monitoring will also be discussed.

The benefits resulting from implementation of worker stress reduction (elimination) include better utilization of human resources through a reduction of worker lost time, and the economic benefits associated with lower health costs, less workers' compensation costs, and the overall improved utilization of physical assets.

Psychosocial and Familial Factors In Pain of the Spine

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Pain of the spine is the single most important debilitating injury of working Americans. While the problem is responsible for over 40 billion dollars in medical costs and lost production, less than 15% of injured workers demonstrate any objective, verifiable physical findings. Numerous studies have demonstrated the importance of psychosocial variables in the intensity, severity, and duration of pain and disability in this sub-population of injury. These variables have included life stress events, social support, and assessment of affective disorders. By contrast, few studies have investigated the influence of family factors on the problem. Several recent studies have implicated general marital and family adjustment in the severity and duration of pain in family members.

The link between the family and health is beginning to be revealed by studies such as those investigating the family's influence on coronary artery disease, depression, and schizophrenia. For example, data analyzing factors such as emotional involvement of family members and perceived criticism by family members suggest a modicum of perceived criticism can be motivational to patients with depression while the perception of intense criticism can be debilitating. Given that depression often co-exists with spine pain, it would seem important to examine the effects of perceived criticism and emotional involvement on recovery. The importance of social support and stress in spine pain have also been found to be significant variables in recovery after injury, but the effects of family stress and family support have not been investigated.

This study first reviews the literature on psychosocial and family factors in spine pain and then evaluates the effects of family support, family stress, family criticism, family emotional involvement, and individual's reports of symptoms on the return-to-work patterns of spine pain patients. Spine pain patients at an occupational medicine center are assessed at the point of entrance to the center with medical evaluations and self-report surveys. They are followed as they see medical specialists, engage in rehabilitation programs or rest until the time they return to work. The psychosocial, family, and individual variables are used as predictors of the individuals' time off work. Outcomes will provide information to businesses, medical and rehabilitation facilities about screening instruments that can be used as predictors of return-to-work behavior of individuals with spine pain. Outcomes will also provide information to be used in family education of spine pain patients as to the importance of family variables in recovery. Preliminary data from this study will be presented.

AIDS PATIENT CONTACT: RISK FOR WORKPLACE STRESS?

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A purposive national sample of 240 registered nurses (RNs) working in high persons-with-AIDS (PWA) settings and similar low or no PWA settings self-administered a 30-minute questionnaire. All nurses had held their current jobs for at least three months. The amount and nature of contact with PWA was assessed two ways: (1) amount (none, <10% time, 11-30% time, 31-70% time, >70%time) and (2) type (none, no physical contact, low risk physical contact, bodily fluids, high risk contact). Because chi-square analysis between these two methods indicated that they were independent, comparisons were made both ways instead of combining them into a single independent variable.

Dependent variables were measured by the Cooley and Shelley Patient Care Stress and Satisfaction Inventory; Maslach Burnout inventory; Cohen, Kamarack, and Marmelstein Global Measure of Perceived Stress; Patterson, Glynn, and McCubbin Social Support Index; and Bradburn Well Being Scale. Retention was also assessed. The findings include:

- Contrary to the literature, few differences were observed.
- RNs with high PWA contact were NOT more distressed than those with less contact or none.
- RNs with moderate amounts of contact experienced more global stress and problems in coping than those with high contact. This casts some doubt on the current practice of doing away with AIDS units to mix up various diagnostic groups of patients. Instead of preventing burnout and stress as intended, this practice may actually be promoting them.
- Nurses, regardless of PWA contact, were experiencing high levels of emotional exhaustion, depersonalization, and patient care stress. However, they also experienced high levels of patient care satisfaction; coping ability; social support from family, friends, community, and especially, co-workers; personal accomplishment; and well being. Sixty-six percent planned to remain in their jobs indefinitely, and only fourteen percent intended to leave within one year.

ROLE OF SUPERVISOR SUPPORT IN BUFFERING THE STRESS-STRAIN RELATIONSHIP

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A quasi-experimental field study was used to examine the role of supervisor support in buffering occupational stress and the effectiveness of a stress management intervention for reducing stress and strain. A sample of 79 male employees of a large transportation company were obtained from each of four different geographic locations. Participants were assigned to one of four treatment conditions at separate locations: No Treatment Control, Employee Training, Supervisor Training, and Employee plus Supervisor Training. Multiple measures of salivary cortisol, blood pressure, heart rate, depression, state anxiety, personal stress symptoms, perceptions of occupational stress (role overload, role insufficiency, role ambiguity, role boundary, and responsibility), and supervisor support were obtained.

Results of regression analyses indicated that Role Overload explained 8% of the variance in self-reported anxiety and 28% of the variance in personal stress symptoms. Thirteen percent of the variance in systolic blood pressure was attributable to the measure of Perceived Responsibility. The combination of Role Overload and Responsibility accounted for 13% of the variance in pulse measurement. Finally, Role Insufficiency accounted for 14% of the variance in the measure of depression. Hierarchical regression was used to determine that a significant main effect was found for the Role Boundary and Self-reported physical symptoms. A main effect was also found for the relationship between Role Overload and pulse. A significant interaction effect was found between Supervisor Support and Role Overload when regressed onto blood pressure. Results of MANOVA indicated that significant decreases in cortisol were observed for the two groups that received supervisor training. However, no pre-post differences were observed between all four treatment groups on the strain measures.

These results provide support for both the main effect and buffering role of supervisor support in the amelioration of occupational strain. Furthermore, the inclusion of supervisor support training in a stress management intervention contributed significantly to the reduction in salivary cortisol levels of study participants.

The Independent Effects of Threat and Challenge Stress Appraisals on Supervisors' Performance

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The present study is based on Lazarus' cognitive-relational construct of stress appraisal. We studied two dimensions postulated to underlie stress appraisal and their relationships with individual performance at work: threat and challenge appraisals. We hypothesized that threat and challenge appraisals that concern the same set of stressful situations would be relatively unrelated, each representing an independent dimension that underlies stressful situations (Hy.1). Following the results of the few field studies on stress-performance relationships, we hypothesized that threat appraisals would be negatively associated with performance, and challenge appraisals positively (Hy.2) that both would be independent predictors of personal performance (Hy.3), and that over and above their combined main effects, they would interact with each other to predict performance (Hy.4).

Participants in this research were 200 supervisors in two state-owned metal plants belonging to the same concern. They were all male employees, with average age and seniority of 48.6 and 23.3 years, respectively. Our stress measures included indices of role conflict, ambiguity, and overload; insufficiency of resources; and lack of participation. In the present research, we report on an aggregate index thereof, dubbed chronic stress. The questionnaire used for measuring stress had two components. In the first component, each respondent was requested to assess the extent to which each of the stress items was challenging (i.e., allowing opportunities for the use of my special skills and demonstrate my capabilities--the challenge appraisal measure). In the second component, he was asked to assess the extent to which each of the same stress items was threatening (i.e., may cause me damage or bring about negative consequences for me--the threat appraisal measure). Objective performance was the ratio of allocated to actual work time of the work unit supervised by a respondent for the three months following the stress measurement, as determined by time-study experts (industrial engineers). Evaluated performance was the mean summated score of a supervisor's merit rating by his two immediate managers, as performed on the basis of eight analytic job dimensions.

Each respondent, during the stress measurement, was asked to complete for himself the same rating scale: the resultant mean score was dubbed self-assessed performance. Participants completed the questionnaire, which included the chronic stress and self-assessed performance scales, in small groups. Evaluated performance was assessed concurrently with the administration of the questionnaire.

Hy.1 received considerable support when we factor-analyzed the stress measures correlation matrix. The regressions of each of the three performance measures on the two chronic stress measures, threat and challenge appraisals, and on their interaction, provided support for Hy.2 and Hy.3. Threat appraisal was the first predictor to enter the regression equation, followed by challenge and by their interaction term. We found a significant interaction term for only objective performance. However, for all performance measures, for those with low threat appraisals, high challenge appraisals augmented markedly their performance levels. This was interpreted as providing partial support to Hy.4. This study suggests that threat and challenge appraisals of stressful situations may have, respectively, lasting negative and positive effects on performance. It is further proposed that these opposite effects on performance may explain the confusion and controversies evident in past research on stress-performance linkages in work organizations.

THE MYERS-BRIGGS TYPE INDICATOR AND ITS RELATIONSHIP TO STRESS AND COPING STRATEGIES

Gola J. Short and Anthony F. Grasha

Of the many different aspects of everyday life in which the MBTI has been applied, the relationship of the MBTI to how people experience and cope with stress has had very little documentation in the literature.

Recently, the Holistic Stress Test (HST) has been developed as a new tool to use in the quantification of stress and coping behaviors. One potential advantage that it has over previous measures is that stressors and coping strategies may be identified for various samples, allowing for comparisons.

The purpose of this study was two-fold. First, this study attempted to examine how the underlying theoretical constructs of the MBTI compare to the constructs that constitute stress and any attendant coping behaviors. Second, this study aimed to provide further information on the reliability and validity of the Holistic Stress Test.

Two hundred fifty-two first line managers were recruited from the research and development division of a large multinational corporation. The sample was composed of 190 males (76%) and 61 females (24%); 40% of the sample had Bachelor's degrees and another 29% had Ph.Ds.

The Myers-Briggs Type Indicator and the Holistic Stress Test were administered to the subjects at a leadership workshop.

The Myers-Briggs Type Indicator (MBTI) is a self-report instrument designed to implement Carl Jung's theory of psychological type. Carskadon (1977) reports that test-retest reliabilities of continuous scores of the MBTI were found to range from .73 to .87, in general.

The Holistic Stress Test (HST) is a 185 item self-report instrument that identifies common stressors and coping strategies employed in stress management. Internal consistency coefficients on the sources of stress subscales (Type A-B personality, sensation-seeking, external locus of control, work stress, family stress, social stress, environmental stress, and life change stress) range from .54 and .84. Internal consistency coefficients for the coping subscales (assertiveness, time management, problem solving/decision-making, social hardiness, mental hardiness, and physical hardiness) range .44 to .90.

Consistent with the scope of the instrument, the intercorrelations between the stress and coping subscales of the HST were generally negative, such as the correlation between Mental Hardiness and most of the stress subscales. Also, Social Hardiness and Assertiveness were significantly related to the social aspects of stress in this particular sample.

Regarding the relationship of the MBTI to the HST, the intercorrelations between the scales range from low to moderate, providing evidence for the idea that some underlying constructs may be shared by the two instruments, especially the Introversion-Extraversion dimensions and the social aspects of stress. In addition, multiple regression techniques indicated that the Introversion-Extraversion MBTI scores were related to several aspects of stress, while the Thinking-Feeling MBTI scores accounted for portions of the HST coping subscale scores.

The Psychological Basis Underlying Age Discrimination

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This mail survey assessed constructs related to age discrimination and attitudes about the role age has in decisions about individuals and the allocation of resources. Respondents were drawn from the Duke Aging Center Subject Registry, ranged in age from 20-78 (birth cohorts 1901-1959), were predominanatly white (97%) native born (92%), protestant (81%) and well-educated (mean = 16.2 years of education).

Three between subjects vignettes failed to elicit age discrimination in this sample. However, 21% of Ss reported being victims of age discrimination (10% because they were too young and 11% because they were too old). Age ranked third in importance after race and sex discrimination but ahead of discrimination due to handicaps or due to veterans' preference.

Importance of age and veterans preferance were positively correlated as were importance of race and sex discrimination. However, these two were negatively related to each other. Furthermore, those who ranked age discrimination as a more important problem were more likely to think that a large amount of age discrimination exists in the United States.

QUALITY OF LIFE: THE PREVENTION AND TREATMENT OF VIOLENT BEHAVIOR

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ABSTRACT

Reviewed are activities of a committee on Prevention and Treatment of Violence in a large midwestern Medical Center, leading to development of brief, crisp educational presentations on principles and practical suggestions for verbal interventions with disturbed and/or disturbing patient or visitor behavior by front line staff (including physicians, residents, clerical, administrative and professional personnel). The teaching module is the basis for discussions of effective verbal communication for new employees and those in crisis areas such as ambulatory care clinics and psychiatric wards and where there is high employee turnover rate.

In this medical center microcosm, we have been led to the conclusion that almost all violent behavior is staff instigated or system generated and that tendencies to violence (including suicidal behavior) will be defused if we foster a social-psychological ambience that includes courteous, prosocial, cooperative, non-adversarial relationships with veteran-clients and among staff. Education emphasizes that, in interpersonal crisis and conflict, delay is preferable to confrontation or counter-reaction, that passivity and mastery through words rather than action must be a large part of a repertoire of response to threat. (This exquisite

requirement for civility is opposed to the natural fight or flight reaction which is the automatic, reflexive, physiologically based response to real and perceived danger generated, driven and sometimes addictively conditioned by adrenalin release) (Dubos, 1974).

The implications for violence-prevention in the wider society may also fall into two categories: (1) Parallel to the staff instigation of violence in a hospital setting may be the personal (interpersonal) provocation or triggering or neglect or exacerbation of violent behavior by those in interaction with the violent person. (cf. recent homocidal behaviors in large organizations such as the postal service). (2) Parallel to system-generated violence may be the influence of the noxious quality of some man-made structures and environments. (The freeway violence during certain traffic grid locks in Los Angeles conceivably illustrates this negative factor as it interacts with certain personality). The designing and experiencing of surroundings that are benign and calming as well as the constructing of liveable interpersonal ambiences characterized by harmony, grace, as well as efficiency may contribute to non-violent subjectivity and behavior. (A paradigm is detailed by Hiss (1991) in his description of the main concourse of Grand Central Terminal, an enormous room with fourteen entrances the main purpose of which is to move people through it. It was designed to handle

hugh crowds and to impress with the immensity and dignity of enclosed public places in a modern city. Referred to as an American Cathedral (the main concourse is bigger than the nave of Notre Dame), the experience it offers is an introductory course in the cooperative choreography of New York City).

The level of violence in our microcosmic institution (a veterans affairs medical center) and its quality of life is influenced by the personal attitudes of its staff, the interpersonal ambience they create as well as the ecological and administrative structures within which they exist. Generalizations to wider communities lead one to consider ways of designing prosocial subjective experiences deriving from a positive attitudinal and environmental ambience.

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THE EFFECTS OF HUMAN VERSUS COMPUTER MONITORING OF PERFORMANCE ON PHYSIOLOGICAL REACTIONS AND PERCEPTIONS OF STRESS

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Being monitored during work performance is an inescapable part of most of our lives. Increasingly, performance monitoring is being done by computer, in such service industries as sales and health care delivery. Recently, computerized monitoring of job performance has been alleged to be detrimental to the health of the workers being monitored. Although being monitored is an ubiquitous characteristic of most (if not all jobs), little research has examined the extent of the physiological effects of being monitored by a computer. This study examined the physiological effects, in particular heart rate and urinary cortisol levels, of being monitored by a human versus being monitored by a computer in a laboratory setting.

Forty female undergraduate students were randomly assigned to one of four experimental conditions in a 2 (monitoring source) by 2 (monitoring level) settings: performing a task with human monitoring, in the presence of a non-evaluative other, with computer monitoring, and alone. In all four settings, subjects performed a mail-sorting task on a visual display terminal. Heart rate was recorded continuously and pre and post task urine samples were collected from each subject. In addition to physiological measures, a subjective measure of stress was constructed specifically for this study to assess perceived stress due to the experimental situation.

Results indicated no significant physiological differences among subjects performing the task in the four settings. There were differences among the groups for the subjective measure of stress. Lack of agreement between physiological and self-report measure is consistent with previous research which has attempted to correlate the two kinds of measures. Although it appears reasonable to assume that specific physiological measures and self-reports of arousal would provide converging evidence of stress, people are not accurate estimators of their arousal states. Conversely, subjective measures may be an indicator of a composite score of arousal that may correlate with a global perception of stress, even though a single physiological measure may not.

Mean differences among the groups indicated a main effect for source of monitoring, and subjects expressed a higher level of self-reported stress in the conditions that had a human element in them (either in the form of a monitor or a non-evaluative other). These results suggest that computer monitoring of performance might not be as detrimental to health as originally alleged.

ATTITUDINAL, CIRCADIAN, CIRCUMSTANTIAL AND SUBJECT SELECTION EXPLANATIONS OF SHIFTWORK EFFECTS ON HEALTH

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A study of 218 day and shift workers from seven West Coast plants of a plastics manufacturing corporation examined four contrasting explanations for adverse health effects of shiftwork. These explanations include:

Circadian: Physiological effects of nightwork.

Circumstantial: Stresses induced by asynchrony with life routines.

Subject Selection: Biases resulting from filters controlling switching between day and night worker status.

Attitudinal: Negative effects on health and safety practices as a result of job dissatisfaction of shift workers.

The study includes cost measures as a dependent variable, drawn from insurance records, as well as the self-report and frequency of health claim data usual in shiftwork studies. We administered a 200-item

questionnaire to all research subjects, where items clustered around dimensions of job and life satisfaction, safety attitudes and practices, health attitudes and practices, self-report of emotional and physical health, networking with friends and family, and felt support from management, friends, co-workers, and family for positive changes in health practices. Participation rates were 90%.

Typical shiftwork effects on health emerged, particularly in the graveyard shift. Shift workers had significantly more health claims, showed a tendency toward higher health costs, and reported themselves as significantly less healthy. Expected subject selection factors also emerged -- night shifts were younger and more female -- and were ruled out by selecting a subsample of ages 20 - 40, the middle 85% of the sample, which did not differ by shift along any demographic dimension.

Shifts differed significantly along most of the constructs measured by the questionnaire -- safety attitudes and practices both on and off the job (shiftworkers less careful), exercise (shift workers exercised more), social support (shift workers felt more supported), feelings about management (shift workers more alienated), nutrition (shift workers less healthful), life stress and satisfaction (shift workers less satisfied), use of alcohol (shift workers report more use), smoking (shift workers smoke less). However, none of these factors, with the exception of smoking, correlated significantly with health claims, costs, or self report measures.

The fact that shiftwork predicted adverse health claim and cost effects with demographics controlled, combined with the fact that attitudinal and social variables did not predict adverse health effects, tends to rule out Subject Selection and Attitudinal explanations. Remaining hypotheses are Circadian and Circumstantial. Shift workers did report more stress and less sleep, lending support to a Circumstantial explanation.

Although the attitudinal explanation for shiftwork effects on health was not supported, it is noteworthy and worrisome that shift workers reported relatively poor job and life satisfaction, higher use of alcohol, poorer health and safety attitudes both on and off the job, and alienation from management. These results obtained over all seven plant locations, both urban and rural.

PERCEPTION OF WORK SPACE AND SPACING MECHANISM AS PREDICTORS OF WORK SATISFACTION

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Work space characteristics and spacing mechanism are the essential parts of architectural design and planning and important mediators of employee productivity and satisfaction.

Present study concerns with the role of spacing mechanism and perception of works space characteristics as correlates of work satisfaction. Spacing mechanism includes inter-personal as well as physical distances, while work space characteristics are concerned with the perception of work space as crowded, noisy, pleasant etc.

85 bank employees of different cadre from two banks of Bhopal, India. (Mean age = 36.2 yrs) were asked to fill work Environment and Work-Satisfaction Questionnaire (designed for the purpose) to rate their perception of work and work

space on a 7-point scale. For spacing mechanism i.e., distance from nearest visible neighbour's desk, distance from supervisor, distance from entrance and number of enclosed sides direct measures with the measuring tape were made during off hours with the consent of bank management. Work satisfaction was found to be positively correlated with perception of pleasant work space, distance from entrance and distances from supervisor while negatively correlated with, crowding, noise, privacy of work space, work complexity, distance from neighbour and enclosed sides.

Results showed that spacing mechanism plays an important role in the work satisfaction of the employees. The findings supported the hypothesised conceptions of spacing mechanism. Environment-behaviour theories provide the frame work for conceptualizing the results. Overstimulation theory explains that lesser the distance of employee's desk from the main entrance the greater the exposure

to noise and other distractions leading to irritability and stress and a reduced level of work satisfaction. The more complex the job, the greater the privacy demands and greater the satisfaction with work.

Thus physical environment plays a key role in facilitating work satisfaction. Sensitive designers can arrange architectural space in offices and institutions to maximize individual's performance and satisfaction.

A DEVELOPMENTAL MODEL OF OCCUPATIONAL STRESS CONDITIONED BY A SOCIAL TRANSITION: IMPLICATIONS FOR RESEARCH AND INTERVENTION IN THE FORMER SOVIET UNION

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In the traditional model of occupational stress the stressors are seen as a partial disturbance in the person-environment fit connected with a specific event, while other factors remain stable. This is an appropriate way to address the issues of stress in a relatively stable social environment. Yet, this approach is not capable of explaining the origins and outcomes of stress in the occupational behavior of individuals who operate in a highly changeable social context. In this latter case, previous research on either age or career stage related variability in stress, strain, and coping does not match a model of the ongoing processes. In a period of rapid social transition, social tasks, including occupational ones, no longer match normative expectations in terms of age and the concept of fit changes its meaning. A model of occupational stress for such changed conditions could be based on the developmental-contextual approach to life-span career development (Vondracek, Lerner, & Schulenberg, 1986).

Rapid changes in the former Soviet Union in recent years have produced an occupational context that is extremely stressful for almost everyone. Virtually all elements of the social system have been drastically altered, leaving most workers confused and uncertain about their occupational future. The result is a dramatic increase in the level of occupational strain and distress as evidenced by the rapid canalization of organizational burnout. Moreover, in contrast to Western societies, the mediating factors of social support are no longer available through intergenerational and social institutions. At the same time, within this continually stressful environment, the mechanisms of occupational behavior and career development are quite different for various age groups (cf. Skorikov & Vondracek, in press). Those differences are best explained in terms of vocational developmental trajectories.

A developmental-contextual model accounts for the unstable environment by emphasizing dynamic, reciprocal interaction between worker and occupation in the context of life. While stress is often described as a result of the inability to adapt, it is seen in the model as a usual element of developmental processes. Subjective incongruence between a potentially stressful occupation and extra-occupational demands, on the one hand, and perceived motivation and abilities, on the other, as well as an objective discrepancy between those demands and the resources to meet them are the products of self-construction in the course of development.

Developmental status of an individual within a career path becomes a major factor of coping with anticipated stress in an unstable context, providing an individual with the possibility of eustress depending on self- and environment-constructing

occupational behavior. The present situation in the former Soviet Union provides a unique opportunity for a multivariate study of stress patterns in a longitudinal perspective. The transition of the former Soviet society to a capitalist economy will remain stressful for the majority of the population for a prolonged period of time. Yet, the stress level could be reduced significantly through special intervention programs. Those interventions should support individually-centered processes of occupational self-construction, as well as the restructuring of occupational environment.

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AN INVESTIGATION OF COPING WITH ORGANIZATIONAL STRESS ACROSS MULTIPLE STRESSORS AND SAMPLES

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Although voluminous clinical and social psychological literatures exist on coping with life stressors, we know relatively little about how people cope with specific organizational stressors. What we do know about the coping process at work has often been based on only how they cope with typical role stressors (i.e., role conflict and ambiguity), and these data have frequently been collected with coping scales that were not developed for the work domain. To address these issues, the present research had three goals. First, we investigated the content domain of job-related stressors. Second, we examined the link between the appraisal of specific job stressors and the selection of resultant coping strategies. Third, we investigated the associations between coping strategies and personal and organizational outcomes. To enhance generalizability, this research was replicated across three very diverse samples of workers (total N = 574).

Our first goal was to identify the content domain of job-related stressors. Workers selected several different types of stressors from eleven categories of common organizational stressors. Across all samples, they indicated that time pressure and physical demands and dangers were salient stressors. People oriented stressors (e.g., interpersonal or competency problems with coworkers and supervisors) were also frequently identified.

Our second goal was to examine whether certain types of coping behaviors or strategies were linked to specific types of job-related stressors. Our results were consistent across all samples and indicated that workers used primarily active or problem-focused behaviors when managing stressors at work, although escapist or palliative strategies were also reported. Contrary to predictions, these results did not vary across the several different stressors investigated.

Our third goal was to examine the associations between specific types of coping strategies and outcomes. Across two or more samples, we found that, consistent with predictions, the increased use of escapist strategies was related to negative outcomes (e.g., increased depressed mood and lower job satisfaction). In more than one sample, however, increased use of active coping was related to negative outcomes, which was

contrary to predictions and the results of prior research. The relations between coping and outcomes were also stronger for the escapist than the active coping strategies. Finally, the use of coping strategies did not vary across levels of stress for any outcomes examined here.

In sum, the present study demonstrated three important points. First, organizational stress researchers need to investigate stressors other than typical role stressors in work settings. Second, reported coping strategies may not differ across varied types of work stressors. Third, the use of active or problem-focused coping may be associated with negative outcomes. These results have implications for both future organizational stress research and the development of stress management programs in industry.

A STRUCTURAL MODELING ANALYSIS OF THE MEDIATING ROLE OF COGNITIVE-AFFECTIVE AROUSAL IN THE RELATIONSHIP BETWEEN JOB STRESSORS AND ILLNESS AMONG ACCOUNTANTS

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The purpose of this study is to investigate measures of "stress" that have been utilized frequently in behavioral accounting research domains. Specifically, it investigates the 15-itme Kahn et al. (1964) measure of job-related stressors and the 20-item Everly et al. (1989) measure of cognitive-affective (i.e., stress) arousal to ascertain whether the scales are measuring two distinct constructs. Data gathered from a sample of 1,618 members of the American Institute of Certified Public Accountants are analyzed to measure the psychometric properties of both instruments. Internal consistency, exploratory and confirmatory factor analyses, and item analyses were conducted on both scales.

The internal consistency of both scales was quite high with overall coefficient alpha measures of .831 and .929 for the Job Tension Index (JTI) and Stress Arousal Scales (SAS), respectively. Moreover, all items correlated positively with their respective scales, with the R ranging from .149 to .663 on the JTI and from .506 to .705 on the SAS. These values provided supportive evidence of the relative homogeneity of each scale.

Exploratory factor analysis of all of the items which comprised both scales was conducted in order to determine whether the manifest variables could be explained by distinct underlying theoretical constructs. Based on a scree plot of the eigenvalues which indicated the existence of four factors among the 35 items, the factor analysis was conducted in which the eigenvalue cutoff was set at 1.0 and four factors were specified in order to observe the loading of the individual scale items on each factor. In order to ensure factor subscales of high reliability, variables included as

part of each factor loaded at .5 or higher, and did not load at .3 or greater on any other factor. The four factors which emerged were as follows:

1. Psychological Discord. This factor reflects the state of emotional distress experienced as a result of cognitive interpretation of environmental events. This factor consists strictly of SAS items.

2. Role Ambiguity/Lack of Control. The items loading on this factor suggest that uncertainty regarding one's role and lack of control over key aspects of one's job are significant job stressors. This factor consisted solely of Job Tension Index items.

3. Relaxation. This factor consists entirely of SAS items which denote a state of cognitive-affective and psycho-physiological homeostatis, i.e., a lack of extraordinary arousal. These items are all reversed-scored on the SAS.

4. Overload. This factor, consisting entirely of JTI items, taps the previously defined construct of perceived job stress resulting from excess work demands.

In order to provide further evidence of the independence of the items on the JTI and SAS scales, a confirmatory factor analysis was conducted. Items loading on each factor (noted above) were summed to arrive at factor scores for each latent variable. These factor scores were then used as input to the confirmatory factor analysis testing the hypothesized model illustrated in Figure 2. The results from this analysis indicated a good overall fit for the tested model with the normed fit index (Bentler-Bonett, 1980) and the comparative fit index (Bentler, 1988) each measuring 1.000, thus indicating that the two scales are tapping different underlying constructs.

Based on the results of these analyses, the authors prescribe that future research efforts take into account that "stressor" measures do not provide adequate proxies for more precise measures of stress, and that specific "stress", e.g., cognitive-affective arousal, measures be included in inquiries of the nature discussed and envisioned herein.

THE FLEXIBLE WORKFORCE: THE CASE OF INVOLUNTARY PART-TIME WORKERS

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Part-time employment is perhaps the most prolific of the flexible work arrangements. Formally part-time work is defined as any arrangement involving 35 hours or fewer per week (Nardone, 1986). Currently 18.1% of the labor force works part-time, up from 12.1% in 1957. One of the distinctions commonly made in part-time employment is the extent to which it is the chosen or preferred arrangement of the employee. Some persons may prefer a full-time job but have difficulty finding one, or find themselves employed as part-time at their employers' discretion. Much of the growth in part-time employment recently has been attributed to the rise in involuntary part-time work; i.e. persons who desire full-time work but are forced for some reason to accept part-time. These involuntary part-timers represent almost one-fourth of the total part-time workforce. An interesting case of an organization employing significant numbers of involuntary part-time workers is the Baltimore County government.

Baltimore County is a metropolitan/suburban county, surrounding Baltimore city and extending northward to the Pennsylvania state line. The County government employs a total of 8000 persons; approximately 1200 are considered part-time. Part-time employees are defined as those persons working fewer than 35 or 40 hours per week, depending on the job classification. Approximately 500 employees work 34 or 39 hours per week. An interview with the Director of Personnel for Baltimore County revealed two reasons for employing 34/39 hour employees; staffing flexibility and control of benefit costs. Like many public sector employers, the County must operate with a fairly complicated system for hiring full-time employees. Part-time positions can be created and eliminated more easily than can full-time ones. Also, the benefits for the 34/39 part-timers are substantially less; a health plan after five years of service (compared with immediately for full-timers) and fewer vacation, sick-leave, holiday and personal days. Further, the 34/39s are not eligible for membership in the County's two unions; the Maryland Classified Employees Association and AFSCME. Interestingly, Baltimore County has used this system since the mid-1970s, before the recent fiscal crises which have beset many state and municipal governments.

The vast majority of 34/39s can confidently be labelled as involuntary part-timers since most of these workers would be available for one more hour per week and would trade that hour for additional job security and benefits. A selected group of these workers was interviewed. They were asked questions relating to perceived advantages/disadvantages of the system, fairness of its implementation, its rationale and their overall job satisfaction.

CHILDCARE BENEFIT PRACTICES: HOW DO THEY IMPACT WORK-RELATED STRESS?

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Working parents may experience stress due to role incompatibilities between work roles and parent roles in three areas: resources (time, money) required for one role may be committed to the other role; role conflicts and role ambiguities may cause strain in fulfilling multiple conflicting roles; and, behaviors required for one role may be unacceptable in the other role. These stresses have negative influences on the individuals and in the workplace. Childcare responsibilities are linked to employee problems of turnover, absenteeism, productivity, morale, and effective recruiting.

Consequently, organizations are becoming more involved in childcare. Although only about 50 United States companies were involved in childcare in 1970, by 1990 18% of medium and large sized companies offered childcare benefits. Most current childcare benefits address the strains caused by competing demands for time and financial resources, the first of the three role conflict areas identified. Pretax spending accounts, onsite or nearsite facilities, flexitime and flexiplace are examples of innovative approaches to resource allocation incompatibility.

However, transitional difficulties encountered by working parents as they move from one role to another, from one behavior pattern to another, are not well addressed by current childcare benefit practices. Individuals with various role-transitional styles (immediate, anticipatory, or lagged) may experience differing degrees of stress with home-to-work-to-home-to-work shifts. For instance, a worker with an immediate transition style may find flexiplace (working at home for several days a week) a desirable work arrangement. She may easily shift from her job to her child and back with little loss of productivity. However, a flexiplace worker with an anticipatory transition style may not be fully immersed in her work. Instead, she listens with one ear for the interruption of her toddler's cry.

This paper identifies current childcare benefit practices and measures the three identified role stress areas. Data from nearly 200 white collar employees, including demographic information, childcare practices of their employers, and responses to a work-family conflict survey are reported. Seventy percent of the respondents reported that their employers offered some type of childcare benefits. Such benefits may exacerbate, rather than lessen, role conflict stress for some parents.

Several practical actions may be initiated to account for transition style differences. Because commute time provides transition time, ideal commute distances may vary for individual workers. In two parent families, transition style could be a determinant of how children are transported to and from care facilities. Workday schedules may be accommodated to transition styles. Further research in this area, with a larger sample, in blue collar or other work settings, is needed.

COPING WITH JOB LOSS AND FACILITATING REEMPLOYMENT

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The outplacement industry is providing counseling, training, and administrative support to an increasing number of displaced white-collar employees. As the number of professional and mid-level jobs decreases, the industry is challenged with a growing pool of difficult-to-reemploy individuals: long-tenured, older workers many of whom are technical specialists who do not readily promote themselves in the job market. Faced with these clients and a tight market, the outplacement industry is now especially challenged to reach beyond counseling and training in "job search technology," i.e., how to find a job, to better address the well-documented psychological and physical health risks faced by today's unemployed professional. The purpose of this study was to test an intervention, expressive writing, designed to facilitate coping with the job loss itself and to enhance performance of the search activities that lead to reemployment.

The writing intervention was designed based on a series of research studies by Pennebaker and others (e.g., Pennebaker, Colder, & Sharp, 1990; Pennebaker, Kielcolt-Glaser, & Glaser, 1988; Pennebaker & Susman, 1988) that have shown that writing deep feelings about personally traumatic events yields

significant physiological and psychological benefits. Theoretically, when significant events are confronted, as in the writing experience, they become cognitively understood, organized and assimilated and the physiologically stressful work of inhibition of emotion is reduced. The present study predicted that expressive writing about job loss would relieve distress, enhance coping and motivate appropriate job search activities by outplaced individuals.

In the experimental study 41 unemployed, middle-aged professionals (mostly engineers) were randomly assigned to write about either the trauma of job loss or about a non-traumatic topic for twenty minutes on five consecutive days. (The experimenters also tracked a non-writing control group of 22 subjects who were participants in the outplacement program.) Pre- and post-experiment measures included behavioral and self-report data on job search activity and psychological and physical health.

Results of the experiment were somewhat surprising. The data did not support predictions that those who "worked through" the job loss trauma in writing were more active job seekers. Predicted benefits to health were also not supported. However, analysis showed that experimental and control groups

differed significantly on the most crucial variable: reemployment. At eight months, when the study was officially ended, 52.6% of experimental subjects had secured full-time jobs compared to 23.8% of writing control and 13.6% of the non-writing control subjects. These results suggest that perhaps there is a qualitative difference in the efforts of the job seekers who have addressed the psychological issues of job loss. Expressive writing appeared to affect subjects' perspective on job loss and orientation to job seeking, rather than their motivation. The experiment has important implications for how the outplacement industry can better assist the unemployed in securing new jobs.

THE TREATING PSYCHOLOGIST MUST BECOME AWARE OF ENVIRONMENTAL HAZARDS

By

WILLIAM A. SPINDELL, PhD.

During the early days of the space program, engines were designed to operate in the space environment which needed no "spark plugs" to ignite them into operation. An ingenious technique was devised whereby fuel and oxidizer came together and spontaneously ignited. The materials are said to be hypergolic, and the process tremendously simplifies propulsion in space. Not only are these engines used for propulsion purposes, but they are used for orientation so that an unmanned satellite will point in the direction that it is programed to point in because the small engines will minimize the drift that occurs from many space factors. These hypergolic fuels are extremely valuable and are also extremely toxic. Technicians would handle these fuels without too much concern for their own health. Then, material began to surface on how toxic they really were. By this time, however, many technicians had been exposed many times, so it became a case of drawing up safety standards so that this exposure would be minimized.

Like many other products, such as asbestos, cigarettes, and Dalcon Shields, serious down-range effects were appreciated neither by the companies producing them or customers using them or people being exposed to them.

What of the persons that were exposed before this information became available? As is often the case, there is a long lag between the time that information becomes available and the time that it is disseminated amongst the people who need it the most. This author recalls the efforts toward development of sensing systems which would sense concentrations as small as 0.5 parts per million for rocket fuel oxidizers and 5 parts per million for rocket fuels themselves. The Air Force's Minuteman Program, including a program called MX, utilized these fuels for what is called a post-boost propulsion system, which propels the warheads to their ultimate targets. Air Force maintenance personnel were constantly exposed to leakages of this highly volatile fuel oxidizer combination, and a serious safety problem was perceived for the thousands of people coming in contact with the material at depots, missile sites, and manufacturing plants.

Unfortunately, the down-range effects of these materials were poorly understood. What would happen, for example, to a technician who was exposed initially to high concentrations of material and then, after his company wisely took adequate safety precautions, was exposed to much smaller amounts over the course of his career. Literally, until symptoms surfaced, there could be no certainty that the symptoms are not the result of normal aging effects, exposure to other types of environmental hazards, and combinations of all three.

Epidemiologically, one would have to wait until sufficient numbers of people were exposed and then classify their symptomatology, attempting to eliminate any extraneous or spurious effects. That would be difficult since the people involved would be living their lives in unique fashions, as people tend to do. There is no close experimental control, and, at best, we can make some retrospective experimental plans, but, as in all of psychology, we must be very careful about our generalizations.

The following study describes the neuropsychological and neuropsychological examination which ensured when the author and a medical collegue collaborated to explore ongoing effects of long term exposure.

A Recent Example of the Use of Neuropsychological Assessment In a Community Health Problem

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April 4, 1986

Carbon Monoxide Exposure and Subsequent Hyperbaric Treatment for 200 Student and Faculty Females at Mount Saint Mary's College

Between the evening and morning hours of December 3rd and December 4th, 1985, 200 students and faculty members at Mt. St. Mary's College (MSM) were exposed to high concentrations of carbon monoxide as a result of a faulty central heating plant exhaust fan. The college is run by Crandellet Teaching Order and is an exclusive liberal arts school atop a mountain near Santa Monica, California. There was malfunction of an exhaust system in a central heating building providing heating and air conditioning to several dormitory and residence halls. The malfunction occurred over an undetermined period of time and created toxic levels of carbon monoxide which overcame three persons and exposed some 200 other dorm residents to dangerously high levels of carbon monoxide. The construction of the building was such that the highest concentrations may have occurred at the basement or ground level, but this relationship changes from floor to floor because of its unique mountainside construction of the building.

All students and faculty were evacuated from the hall during the late hours of December 3rd by police and fire authorities. Many symptomatic students were transported to local emergency rooms, including Brotman Memorial Hospital, Daniel Freeman, UCLA, Santa Monica Hospital, and four faculty members were air-evacked to Northridge Hospital. Carbon monoxide arterial blood levels were drawn on many of these individuals, the ranges were from about 1.2 to 22.1. At least one person, a faculty member, remained hospitalized overnight because of cardiac and respiratory distress. The others were treated on December 4th and released that evening. This faculty member had a blood level of 20.9.

Drs. John Alexander and Tim Cannis were consulted for the patiets brought to Northridge Hospital and were in close touch with Dr. Steve Rotman at UCLA Hospital's Emergency Room. Many of these 200 exposed persons were seen and later offered hyperbaric treatment. During the next 10-11 days, about 126 persons voluntarily received hyperbaric oxygen therapy at Northridge Hospital's Western Center for Hyperbaric Medicine. Many of these persons reported symptomatology well into the week of 12/8/85, and several remained symptomatic throughout the remainder of the month and into January 1986.

A neuropsychological protocol had been developed at the Maryland Institute for Emergency Medical Service Systems in Baltimore for neuropsychological screening of persons exposed to carbon monoxide. The battery, called the Carbon Monoxide Neuropsychological Screening Battery (CONSB), was developed in 1981 "... in response to an observed need to improve the assessment of the carbon monoxide intoxicated patient in emergency settings ..." The Maryland people had been impressed by the lack of correlation and discrepancy between clinical presentations of carbon monoxide impaired patients and their carboxy-hemoglobin (COHb) levels. In a paper authored by Drs. Messner and Myers, it had been observed that some patients with low and even normal COHb levels were observed to be "incoherent, disoriented, and semiconscious; whereas others with higher levels were clinically quite a bit more lucid." Messner and Myers (1985) concluded that the possibility exists that carbon monoxide patients, despite low or normal COHb levels may still be impaired in their functioning and, thus, require aggressive oxygen therapy.

During the evening 12/3/85, a meeting was held at the Western Center for Hyperbaric Medicine among administration, medical specialists, and psychologist, Dr. William Spindell. It was the consensus that any patients requesting hyperbaric therapy would have access to it. In a similar meeting held at Mt. St. Mary's College on 12/12/85, the medical office at the college made the therapy available to any student that requested it and anyone who was a resident at one of the two dormitories/residences that were affected by the original contamination. No restrictions were made or implied as to who could or could not have the therapy, and many undergoing the hyperbaric therapy had not had CO blood levels drawn. Further, it was decided that although neuropsychological testing was desirable for pre- and post-hyperbaric therapy, therapy would be given the highest priority.

With the assistance of UCLA, neuropsychological testing was done on many of the students who had been exposed. The protocol used was identical to that used by the Maryland Institute for Emergency Medical Services, but Dr. Spindell added certain tests that he thought would be useful for pre- and post test comparisons. The rationale for pre- and post treatment testing was based on empirical as well as subjective data. Empirically, the Maryland group had noted improvements in mental status testing using the same instruments just after hyperbaric treatment. Subjectively, the patients who had had the hyperbaric treatment tended to report an improvement in mental status manifested by improved alertness and mental acuity. The psychological tests that were chosen by the Maryland group were thought to be relatively robust in that there was little tendency for the pre-test to contaminate the results of the post-tests. Dr. Spindell added several tests to the battery which would improve the pre- and post-test precision. In particular, he added highly correlated brief IQ tests available in three alternative forms which could be administered pre- and post-hyperbaric treatment.

There was no opportunity to pre- and post-test the faculty members because of the need to start the hyperbaric treatment rapidly, and the nuns had significantly higher exposures than the student population possibly because of the location of their temporary quarters in the building. Therefore, only post testing was done.

On the other hand, many of those students who received hyperbaric therapy were pre- and post-tested between three and seven days from the CO exposure. The testing was done in three places: at Northridge Neurological Medical Group in Northridge, California (Dr. Spindell); at UCLA's graduate psychology training facility (Dr. Nancy Kaiser-Boyd); and on campus at Mt. St. Mary's College (Dr. Spindell). Table 1 presents mean pre- and post testing values for seven of the students tested during this episode.

Subsequently to the testing, several students and some faculty were seen approximately six weeks later on an outpatient basis and interviewed. Table 2 details the subjective complaints about six weeks after the exposure.

In the ensuing months, several students were tracked by Dr. Spindell and tended to report a variety of complaints, mostly in the area of mental acuity, headaches, easy fatigability, and inability to thoroughly address their studies. At least one student has dropped out of school, opting to go to another nearby university. Several students complained that their college's administration tended to be insensitive to the problems caused by the CO exposure, tending to minimize these issues because of the legal aspect of residual medical problems as well as psychological problems.

The importance of timely hyperbaric oxygen therapy was discussed in various forums by a number of the team members that were originally involved in the problem. Dr. John Alexander reported his findings at grand rounds at UCLA Department of Emergency Medicine and Respiratory Medicine. Dr. Robert Cobenour reported his findings at a neurological conference held in the winter of 1986. Mr. Ray Winter presented his material at a nursing conference in Florida in the spring of 1986. and Spindell presented his material at Cold-water Canyon Psychiatric Hospital in a brief talk entitled *A Recent Example of the Use of Psychological Assessment in a Community Health Problem*. The team meets informally to discuss the lessons learned during this serious exposure episode and how these can be applied to future problems as they arise.

The important thing is that neuropsychological assessment was a key element in the treatment program. While neuropsychological assessment was not used as a screening tool and the nature of the problem does not lend itself to clear-cut experimental designs and analysis techniques, it nevertheless represents an important psychological contribution in a community health problem.

TABLE 1
Pre to Post Test Differences After Hyperbaric Treatment

	PRE	POST	CONF
I.Q. (Ammons Q.T.)	102	118	P ≤ 0.05
WAIS Block Des. Subscale Score	9	11	P ≤ 0.10
WAIS Digit Recall	8	10	N.S.
Trails A Time	45"	44"	N.S.
Trails B Time	96"	70"	P ≤ 0.05
Aphasia Screen Errors/Positives	4	3	N.S.

TABLE 2
Post Carbon Monoxide Exposure, Pre-Test Subjective Complaints Among Hyperbaric Therapy Patients

No Headache	3	(N = 11)
Mild Headache	1	
Moderate Headache	6	
Severe Headache	1	
Reduced Mental Acuity	8	
Depression	8	
Reduced Frustration Tolerance	8	
Increased Sleep Requirements	9	
Visual Problems	8	
Dyslexia	7	
Decreased Reading Comprehension	7	
Fatigability	10	
Memory Deficit – Short Term	6	
Persistent Cough	7	
Increased Sleep Onset Latencies	2	
Frequent Awakenings	2	

Legislative Report

Continued from page 5

by providing that employee benefit plans, or trusts established under the plans, are not deemed to be insurance companies nor to be engaged in the business of insurance. California psychologists have long complained of reimbursement problems from insurance policies covered by ERISA. Employers increasingly have self-insured their health plans to qualify them as employee benefit plans and claim ERISA exemption from state laws and regulation. In so doing, they have defied freedom of choice (direct recognition) laws as well as mandated mental health benefit laws. A number of recent lawsuits in other states have raised the question of the underlying scope of ERISA exemption and the CSPA Sacramento office has undertaken an exploration of solutions to problems associated with insurance plans delivered in other states. One solution in an amendment by U.S. Representative Pete Stark (Oakland/Alameda) attempts to discourage employers from using ERISA exemptions by disallowing tax deductions of those employers who do not comply with state mandated benefits and freedom of choice laws. This effort is being coordinated with APA's Office of Professional Practice and Office of Legislative Affairs.

Health Occupations Council

Recently, the American Medical As-

Continued on next page

OLDER WORKING WIDOWS: PRESENT AND FUTURE QUALITY OF LIFE IN COMPARISON TO MARRIED WORKERS[1]

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OLDER WORKING WIDOWS: PRESENT AND FUTURE QUALITY OF LIFE IN COMPARISON TO MARRIED WORKERS

Abstract. The workforce is increasingly composed of older workers, and perforce widows. Present quality of life (QOL) and expected QOL (five years from now) were determined for workers over 50 years of age. Work uplifts and work hassles were used to predict reported present and future QOL, for widows, married women, and married men. Although, uplifts were generally more important than hassles, different predictors emerged for the three groups.

Introduction. Older workers occupy an increasingly large sector of the workforce (Kacmar & Ferris, 1989; Wittwer, 1990). An unrecognized corollary of the increase in older workers is an increase in the proportion of widows in the workplace. Although older working widows are a common feature of the workplace, references to their work experiences are uncommon in the literature. The present study compares expected QOL as well as present QOL in older widows and married workers.

Method. The participants were 164 full-time workers over 50 years of age with an average age of 64. Self-report measures of present and future QOL were obtained during an interview with nine-rung Cantril Ladders. The questionnaire packet, responded to the previous day, included Kastenbaum Functional Age items, the Hope Index (Staats, 1989), and the Daily Events Scale (Delongis, Coyne, Dakof, Folkmann, & Lazarus, 1982). Work-related items were extracted from the latter scale and used to construct work uplift and work hassle scales. The reliability coefficients of these scales ranged from .82 to .89.

Results. Uplifts from work were greater than hassles from work for widows ($t=2.76$) for married women ($t=3.34$) and for married men ($t=5.30$)(all p's$< .01$). Both uplifts and hassles decreased with age, a finding consistent with the literature on age related affect (Diener, Sandvik, & Larsen, 1985). Hierarchical regression analyses, entering demographic, hassle, and uplift variables were significant predictors of present QOL and were even better predictors of future QOL. Individual weights of predictors differed by subject group. For example, increasing years of widowhood was related to higher present and future QOL for widows. Age was a significant predictor of future QOL for males only and work related hassles were a significant predictor of future QOL only for married females. Functional age was a predictor of present QOL for widows and for males.

Discussion Older workers are present in the workplace in increasing numbers. Widows are a large sub-set of this group but are not represented in the research literature. The present study presents information relevant to their experience of present and future QOL. We note in particular the importance of uplifts associated with work. Daily uplifts and daily hassles are more amenable to interventions than are major life events. Hope, and perceptions of one's functional age are amenable to training (Fordyce, 1976; Staats, 1992). An understanding of the specific factors predictive of QOL in widows and other older workers is necessary in order to design a work experience more suitable to these workers. These results suggest that accentuating the positive is an important way to improve QOL. The thrust of the present program of research is to improve techniques for increasing happiness, hopefulness, and positive self-perceptions of functioning.

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PSYCHOSOCIAL FACTORS IN THE ETIOLOGY AND PROGNOSIS OF LOW BACK PAIN

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Low back pain is a major and increasing cause of work-related disability. Most people recover from their back pain after a relatively short time. However, a small proportion develop long-term disability which is costly in terms of individual suffering and family disruption, as well as direct health care expenditure; and needs early identification and prevention.

In the available literature clinical and ergonomic variables have yielded little as predictors of either incidence or prognosis in low back pain and thus increasing attention has focused on the importance of psychosocial factors. In prospective studies lower levels of education and social status, probably markers for heavy physical work, are consistent predictors of low back pain, as are monotony of work and low job satisfaction, seen by some as reflecting job conditions and by others as resulting from individual disgruntlement. Psychological distress, particularly anxiety symptoms, also predicts low back pain - although in some studies this may reflect readiness to consult or report pain and may be secondary to previous back injury.

It seems plausible that risk factors for prognosis differ from those for incident low back pain although low levels of education and job satisfaction are risk factors for both. Psychological variables (anxiety, depression and premorbid pessimism) seem more important in determining prognosis. Psychological distress is most commonly secondary to pain and disability and may promote pessimism about recovery and poor compliance with treatment. Self-efficacy, beliefs about ability to control pain and specific health locus of control predict duration of disability and compliance with treatment. Evidence on the importance of coping strategies is mixed: in chronic pain patients they may reduce accompanying psychological distress rather than relieve pain. These findings are limited because measurement of psychological disorder may be confounded with physical limitations and subject to response bias in workers post-injury. Measurement of premorbid personality in injured workers is also likely to be confounded by current psychological distress. Further, many are based on cross-sectional rather than longitudinal studies.

In future studies more emphasis needs to be placed on measurement of attitudes to pain, the level of understanding of the severity and cause of the low back trouble and beliefs about the link between pain and disability. Psychological distress variables should also be selected to minimize confounding with physical limitations. In addition, consideration needs to be given to non-work acute and chronic stressors, which may add to the burden on the injured worker, and social support at work and at home, which may either moderate these stressors and facilitate return to work or maintain disability and handicap.

REDUCING EMPLOYEE JOB STRESS THROUGH OUTPLACEMENT ASSISTANCE PROGRAMS: SUGGESTIONS FOR MANAGEMENT PRACTICE

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In recent times, U.S. companies have been facing increasing domestic and global competition compelling them to seek new ways to operate in a much more productive and cost-conscious manner. As a result of these significant changes in the economy, corporations have found it imperative to restructure, to down-size and to streamline their operations in order to respond to new business realities. This process invariably has resulted in the necessity to terminate large numbers of employees causing a great deal of stress and anxiety - both to personnel currently affected by the loss of their jobs, but also by those people although still employed who nevertheless fear that they,too, may be terminated at some time in the near future.

Fortunately, responsible and progressive companies recognize that finding oneself unemployed can be a most stressful and anxiety-provoking occasion - not only for the affected employee, but the entire family - requiring professionally-competent readjustment assistance. As a result, more and more organizations are accepting their obligation and responsibility of providing outplacement assistance to employees being terminated.

Employee Outplacement Assistance Programs can be defined as a specialized service offered to terminated employees to assist them to locate and secure appropriate new employment after having been terminated from their previous positions. As such, the purpose of Employee Outplacement Assistance Programs is to help the individual find new suitable employment in the shortest period of time and to significantly reduce the emotional stress and anxiety typically associated with unemployment.

This presentation is a result of a review of current practices and operating methods of Employee Outplacement Assistance Programs and is based on a survey of the recent literature on this subject, in addition to interviews with the principals of several leading outplacement assistance firms.

The presentation offers guidelines and suggestions for establishing and maintaining an effective program. Such a program consists of a four-stage approach:

1. Helping the terminated employee adjust emotionally to the job loss.

2. Analyzing and assessing the employee's marketable qualifications and identifying opportunities that can be developed.

3. Planning a viable job search campaign that focuses on developing a sound job search strategy; identifying various options open to the individual; developing a suitable resume, cover letter and appropriate correspondence; training in the techniques of job market research - e.g. using directories, mailing lists, computer-based data; using contacts and networking effectively.

4. Conducting a successful job search campaign that will result in a satisfactory new position being secured, including considerable emphasis on developing effective interviewing skills.

Finally, the presentation discusses how the effectiveness of outplacement programs can be measured, and looks at the future of such programs.

SOCIAL PARTICIPATION, MARITAL STATUS, CAREGIVING, AND OCCUPATION AS PREDICTORS OF MORTALITY IN TWO-THIRDS OF A MILLION WOMEN

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In 1982 more than 676,000 women age 40 and over in all fifty states were enrolled in a prospective mortality study by 77,000 American Cancer Society volunteers. The baseline questionnaire included items on health, marital status, number of persons cared for by the enrollee, occupation, numbers of hours of paid work and housework. It included measures of social participation, such as hours of volunteer work, frequency of church, club, and other group attendance. Participants could have enrolled as individuals, or as part of a household.

During the first four years of follow-up, more than 20,000 deaths were observed. Death certificates were obtained from State Health Departments and causes of death coded to a modification of the Ninth Revision of the International Classification of Diseases. Death rates were computed as numbers of deaths divided by woman-years of follow-up, stratified by age. Standardized mortality ratios were computed as observed deaths divided by expected deaths, with expected deaths obtained as death rates in a reference group (such as all married women), stratified by smoking status or other confounding factors.

We present results for women not in ill health at enrollment. Significant differences in mortality according to marital status, occupation, and degree of social participation were observed. Total mortality rates among unmarried women with minimal or no social participation were twice as great as among married women. Greater levels of social support, as measured through church attendance or participation in clubs or group activities, were associated with lower mortality rates. Participation in the study as part of a household versus individual enrollment among married women, one measure of social cohesion of the household unit, was associated with lower mortality, as was the responsibility of caring for larger numbers of persons.

Teachers and office workers had lower mortality rates, while women in factory assembly jobs and food service workers had higher rates, after adjusting for smoking. Lower mortality was also associated with employment outside the home.

THE TREATMENT OF OCCUPATIONAL STRESS IN THE INTERNATIONAL LABOR OFFICE'S ENCYCLOPEDIA OF OCCUPATIONAL HEALTH AND SAFETY

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Since the early part of this century, the three editions of the ILO Encyclopedia of Occupational Health and Safety, published by the International Labor Office of the United Nations, have served as a standard reference on workplace related health and safety issues. The 3rd Edition, completed in the 1970's, has been translated and published in several other languages, including Spanish, Russian, Chinese, and Hungarian. Work has recently begun on the 4th Edition, which is scheduled for publication in 1995-6.

Analysis of coverage of occupational stress and related subjects in previous editions provides insight into how perspectives and approaches to occupational stress have evolved within the Encyclopedia and the ILO. It also reflects major international trends in occupational stress recognition and prevention of each era. We also compare the Encyclopedia's perspectives with those of selected contemporary occupational health and safety textbooks.

For example, in the 3rd Edition of the Encyclopedia, discussion of psychosocial stress is present in some chapters dealing with blue collar employment, such as work in livestock confinement and the sawmill industry. However, professional occupations, such as executives, musicians and actors, and physicians are the major areas in which psychosocial hazards are emphasized. In contrast to many contemporary texts, the Encyclopedia contain extensive coverage of the theoretical framework for understanding occupational stress.

The 4th Edition, now in its final planning stage, will expand the coverage of occupational stress and will include the psychosocial environment of work in each of the comprehensive chapters on risk factors in all industries and occupations. The effects of stress on organizational performance and management and the inter-relatedness of social welfare facilities for workers, and social policies which provide security and basic health assurance to deal with occupational stress will be covered. The approach of the 4th Edition is compatible with the modern trends reflected in the APA-NIOSH Conference on Occupational Stress.

Title: Prevention/Intervention Program Description: The Duke EAP Experience

Presenter: Craig R. Stenberg, Ph.D.
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This presentation will provide an overview of the Employee Assistance Services developed by Duke University Medical Center for its own faculty and staff (the internal program) as well as for other organizations (external programs). Included will be a review of the program's history, a description of the range of services, staff recruitment and training, utilization experience, and linkages with other organizational functions such as occupational medicine, wellness programming, and long term benefits (especially managed mental health care benefits). Special attention will be given to two recently developed early intervention services: (a) critical incidence debriefings and (b) consultation and employee support services for organizations anticipating reductions in the size of their workforce.

Duke initiated its Employee Assistance Services in 1984. During the past eight years, the internal program has grown to include full-time positions for four clinicians. The program provides assessment, brief treatment, and referral services to Duke's more than 20,000 employees. The external program now has two full-time faculty, three part-time clinical staff, and clinical affiliates in more than 145 cities around the United States. It provides EAP services to corporations in a number of industries including manufacturing (such as chemical, electronics, paper), transportation (airline), local and federal government. Approximately 10,000 employees are currently receiving EAP services through Duke's external program. In addition to providing individual services, the program has an ongoing educational/publicity component which provides employee and supervisory training on a number of mental health topics including stress. Stress management workshops have also been designed for employees at all levels including senior managers.

Critical incident debriefing services have been added within the past two years. The presentation will review several case examples including services provided to victims of bank robberies and to co-workers following the accidental electrocution of an employee at work. Both organizational and individual clinical issues will be discussed.

Consultation and employee support services for organizations anticipating reductions in their workforce have been provided for three years. Several cases will be presented including: (a) a site closing; (b) a merger; and (c) an organizational downsizing. The case studies will include descriptions of organizational plans, specific clinical services provided, responses of "survivors," and responses of employees and their family members to job loss and unemployment.

HUMOR AND EFFECTIVE STRESS MANAGEMENT TRAINING

By Stephen O. Stenson, M.Ed.

During the past two decades few topics have received more attention than the effects of personal and occupational stress. Numerous programs have been offered by the medical and psychological community examining characteristics of stress, and providing coping skills to help manage stressful situations as they arise. By utilizing HANS and FRANZ, who are here to "pump you up," presentations on stress management and coping skills are eagerly accepted and retained. This presentation has developed into one of the most popular and effective stress prevention and intervention programs ever created.

Within the largest medical center in the Southwest with approximately 3500 employees, Stress Management has been taught during the last two years using the HANS and FRANZ humorous skit format. This presentation is given every other Monday morning for new employee orientation. Usually between thirty-five to sixty new employees participate within each program. The stress management component is only one of several topics covered during the orientation process; however, it routinely receives the highest rating on feedback evaluations. This has been consistent throughout the two years.

Specifically, HANS and FRANZ are well recognized characters from the television show Saturday Night Live. Their presence is charismatic, unpredictable, informative, confrontational and most importantly entertaining. The humorous format needs to be carried by selected professional behavioral health individuals with a flair for theatrics. The personal chemistry or interaction between the individuals playing HANS and FRANZ must be well rehearsed and spontaneous.

The stress management material is presented with a dramatic flare as two experienced body builders who are there to empower participants with insight on identification of sources of stress, and then ways to effectively cope with stress. The actual presentation involves a dramatic introduction, and teaching of well documented revisions of stress management information historically utilized by the United States Air Force. This information is presented with an overhead projector.

Within the first segment of the presentation sources of stress are identified such as changes in life, irrational beliefs, unstable relationships, poor health, environmental factors, personality and mood, biological factors, lifestyle, and poor coping behaviors. Then the focus moves back to the participants who are asked to give a brief statement of their name, where they will work, their greatest sources of stress, and what they do to cope with their stress, i.e., hobbies, exercise, recreational activities, meditation etc. The second portion of the presentation examines stress management coping skills. This includes life goals and lifestyle, relationship skills, attitudes and perceptions, self-care techniques, and ways to cope with a stressor. The presentation ends with a ten minute relaxation exercise utilizing systematic deep breathing and visualization, reinforcing personal empowerment to use new acquired skills. Once totally awake, they are asked to do two physical stretching maneuvers to limber them up for the rest of the day.

This teaching format has effectively taken difficult and sometimes boring information and packaged it in a manner in which people seem to enhance their stress management skills and enjoy themselves at the same time.

/SOS

STRESSED MUSICIANS; A NEGLECTED POPULATION AT HIGH RISK

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Musicians and other performers constitute a special population of working people, who, by every measure of stress in the lives of the general working American measured by NIOSH, are a working population at high risk for emotional and physical disorders.

Musicians are subject to all of the stress of everyday life and a great number of workplace stressors many of which in and of themselves can generate excessive levels of stress. In addition, musicians must deal with additional stressors; performing before the public and working under the pressure of the expectation of note-perfect performances. Stage fright exacerbates all other work-related problems. Symphony orchestra and opera musicians report lack of control over decisions about their artistic products; Conductors nearly always reserve to themselves such decisions. Poor management styles by conductors and leaders are reported to be a primary stressor in the lives of ensemble performers, further aggravating performance anxiety. Combining these factors predictably results in dangerously high stress levels. A study cited in the New England Journal of Medicine in 1973 reported that professional musicians die 20- 22% sooner than their counterparts in the general public, and suffer 5% higher numbers of cardiac incidents. That stress is known to contribute to or be a direct cause in all of the ten leading causes of death in the United States suggests that it plays a major role in making musicians too ill, and killing them too soon.

This presentation will outline the most common stressors in the lives of performing musicians and discuss directions for remediation. There are a number of areas open to improvement in the workplace. Since, however, there will always be present certain unavoidable stress factors inherent to the profession, there are a number of effective treatment modalities that are applicable to the concerns of musicians, and education of this population in more effective stress management strategies also shows promise. The identification by NIOSH of many workplace hazards and stressors in the workplace can help musicians improve their working conditions; and interventions developed in working with this high risk population offer prospects for applications to other working groups as well.

WORK STRESS AND COPING STYLES: COMPARISONS BETWEEN A MILITARY POPULATION AND OTHER OCCUPATIONAL GROUPS

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Six diverse occupational groups' perceptions of stress and coping strategies were compared using a common measure, the Holistic Stress Test (HST: Grasha, 1988).

Method

Subjects: Sixty-two Military Reservists, 56 Academic Administrators, 92 University Faculty, 90 General Corporate Employees, 248 Corporate First-Line Managers, and 189 College Students with part-time jobs were surveyed.

Instruments and Procedure: A relatively new instrument, the Holistic Stress Test (HST: Grasha, 1988), was used to assess stressors and coping strategies across populations. Individual perceptions of stress and coping were also examined with regard to Explanatory Style using the Attributional Style Questionnaire (ASQ): Peterson, Semmel, von Baeyer, Abramson, Metalsky & Seligman, (1982) and Resourcefulness using Rosenbaum's Self-Control Schedule (SCS, 1980). Questionnaires were completed in conjunction with Stress Management Seminars for the Military Sample, Academic Administrators, University Faculty, General Corporate Employees, and Corporate First-line Managers. College students participated for research credit or as part of course work in psychology classes.

Results and Discussion

The Holistic Stress Test Work Stress subscale was used as a focus for comparing the Military Sample to the other populations. The Military Sample responded to the Work Stress subscale using their reserve job as the frame of reference. As a group the Military sample perceived much less Work Stress than other groups. The Work Stress mean score was lower for the Military sample and the Military sample's responses to individual items of that subscale were also lower.

The most important stressor for the Military sample was less career potential and job advancement possibilities. Lack of time to do a job was perceived as less of a problem for the Military sample than it was for the other groups. When compared to a full-time occupation and/or academic pursuits, the life of a military reservist was not viewed as generating much tension.

Occupational groups differed regarding the coping strategies ascribed to on the HST Coping Strategy subscales. For instance, Problem Solving distinguished Corporate First-Line Managers from the other occupational; Mental Hardiness distinguished College Students from the remaining occupational groups; Physical Hardiness distinguished General Corporate Employees and the Military sample from the other occupational groups. Internal Locus of Control distinguished the General Corporate Employees from all other occupational groups.

No relations were found between explanatory style and the HST subscales. Only small proportions of the variance of any stressor or coping strategy was explained by the ASQ overall composite score (CPCN). The relationship between explanatory style and resourcefulness was also small. Although it approached significance, only 6% of the variance was accounted for. The relationships between resourcefulness and the coping subscales of the HST were not significant. Resourcefulness accounted for 22% of the variance in Mental Hardiness scores on the HST.

ENVIRONMENTAL PSYCHOLOGY AND OCCUPATIONAL STRESS

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Environmental psychology offers a unique perspective on the study and management of occupational stress, relative to the fields of epidemiology, ergonomics, industrial hygiene, and organizational behavior. This paper examines the implications of environmental psychology for reducing stress in the workplace. Environmental psychology encompasses several areas of research on human behavior and well-being within a variety of environmental settings (e.g., residences, work environments, institutional and recreational settings). Among the multiple research paradigms subsumed within environmental psychology are (1) proxemics, or the study of human spatial behavior (including privacy, territoriality, personal space, and crowding); (2) environmental stress (e.g., behavioral consequences of exposure to uncontrollable noise, extreme temperature, spatial density, and information overload); (3) environmental cognition (i.e., people's mental representations of architecturally distinctive and socially significant environments); (4) environmental assessment, or the evaluation of people's preferences regarding the design of environmental settings; and (5) ecological psychology, which emphasizes the organizational dynamics of behavior settings (e.g., psychological and organizational consequences of under- or over-staffing within settings). See Craik (1973), Saegert & Winkel (1990), Stokols (1978), and Stokols & Altman (1987) for reviews of research developments within environmental psychology.

The present paper links research developments within each of the above-noted areas of environmental psychology to the development of organizational and physical design strategies for reducing occupational stress. Particular emphasis will be placed on the following topics: (1) interior design strategies to facilitate effective privacy regulation and to reduce environmental sources of stress in work settings (e.g., Sundstrom, 1986); (2) workers' images of their occupational environments and the ways in which environmental symbolism, aesthetic decor, and signage can strengthen or undermine organizational identity (e.g., Stokols, 1990); (3) interior design strategies to enhance the functioning of team-oriented workspaces or behavior settings (e.g., Stone & Luchetti, 1985); and (4) the use of post-occupancy evaluations ("POE"s) and environmental simulation to assess the impacts of new technologies on workers and to improve the physical design of individual workstations and team workspaces (e.g., Marans & Stokols, in press; Preiser, 1989; Zeisel, 1981). Examples and illustrations of design guidelines and organizational strategies will be drawn from recent studies of workers' reactions to their office environments, both before and after they have experienced a relocation (or renovation) of their workplace (Scharf, Nishimoto, Churchman, & Stokols, 1990; Stokols, Churchman, Scharf, & Wright, 1990).

MOURNINGS COME AND MORNINGS GO: MEETING THE NEEDS OF BEREAVED EMPLOYEES AND THEIR EMPLOYERS

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As the workforce ages and is comprised of greater proportions of women, the likelihood of encountering bereaved individuals at the work place is likely to increase. The death of a spouse is the most stressful live event an individual can face ... surpassing the stress of divorce, personal injury and losing a job. Eight million people below the age of 75 are widowed. More than 1.5 million widowed persons are below the age of 55. Most bereaved persons return to work within three days of the death of a loved one. For many, having productive, routine work is the single-most important factor in helping them through grief. However, individuals in acute grief are hospitalized more often for major illnesses, have higher rates of job absenteeism and tardiness, are more prone to accidents, and are more susceptible to abuses such as alcoholism and chemical dependency. Employer sensitivity to unavoidable life crisis can maintain, perhaps even increase employee productivity.

Studies of widowed persons indicate that it pays to take time to care. Simple adjustments between the bereaved and the employer can meet the needs of both. Focus groups were conducted of employees and of employers. Additionally, a large sample of employers was surveyed as to awareness, current practices and current impact of bereavement on the employee and the work place. Simple adjustments were usually possible for both without compromising the well-being of either. In general, it does pay to take time to care.

The poster session will present basic information on grief and its effects, the role of employers in response to newly widowed individuals and the role of employment for newly widowed persons, and a training resource which has been piloted by AARP member-volunteers at various work sites.

THE RELATIONSHIP BETWEEN WORKSTATION ADJUSTABILITY AND MUSCULOSKELETAL DISCOMFORT IN A COMPUTER BASED TASK

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Data from a field study were used to examine the relationship between workstation adjustability, operator awareness of workstation adjustability, and musculoskeletal discomfort. The VDT operators (N=76, Sex=95% F, mean age=25.70) were full-time workers at a large insurance company. Their task involved processing insurance claims while providing limited customer support via the telephone.

Operators completed a written survey at their workstation to assess their knowledge of the adjustable features of their workstation. The following two questions were presented: 1. "Which of the following features are adjustable at your workstation?" 2. "Which of the following features do you know how to adjust?" For each question, subjects marked as many of the following items as appropriate : chair seat height, chair seat tilt/angle, chair back tilt/angle, armrest height, footrest height, keyboard height, keyboard tilt/angle, monitor tilt/angle, monitor brightness/contrast/color, and document holder. Workstations were evaluated by the investigator to determine which features were actually adjustable.

Based on the investigator's evaluation of workstations, 44.74% lacked keyboard height adjustability (or this feature was not in use), 21.05% lacked footrest adjustability, 14.47% lacked document holders. All workstation chairs were adjustable for chair seat height and chair back tilt/angle. Chair seat tilt/angle was not adjustable. Results indicated that 97.06% of the operators were not fully aware of their workstation's adjustability features. To examine a possible relationship between the operator's knowledge of workstation adjustability features and musculoskeletal discomfort over the workday, "knowledgeability indices" were derived for each VDT operator. These indices reflected the extent that the operator was aware of specific workstation adjustability features. Operators were asked to complete three musculoskeletal discomfort surveys each day over a six week period following the initial workstation survey. Subjective discomfort in five regions of the body was assessed: arms and hands, legs and feet, neck and shoulders, back, and eyes. Operators rated discomfort on a 5-point scale: very comfortable (1), barely comfortable (2), borderline (3), barely uncomfortable (4), and very uncomfortable (5). The number of hours an operator worked at their workstation each day was obtained from company records. The relationship between the knowledgeability indices and level of musculoskeletal discomfort will be presented as well as the relationship between the objective measures of workstation adjustability and musculoskeletal discomfort.

THE EFFECTS OF TASK PACING ON PHYSIOLOGY AND PERFORMANCE AS A FUNCTION OF EFFORT

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Task pacing and effort were manipulated in a factorial design to test the hypotheses that machine paced tasks are more stressful, and result in poorer performance than self-paced tasks, and that effort will mediate the effects of task pacing. Twenty-two college students, 16 females (mean=18), 19 males (mean=19) were studied. There were two levels of task pacing, and two levels of effort. The parameters of pacing were well operationalized, and the task was presented on a computer, as to simulate modern workplace tasks. The task involved the computation of complex arithmetic problems using specified rules. The machine paced task was presented with a constant inter-trial stimulus period (640 ms), and the tolerance period was unlimited. The self-paced condition was the same task as in the machine paced condition, conducted on paper and pencil.

The results predominantly support the hypotheses. Electromyography indicated greater muscle tension with the machine paced task in both the low and high effort conditions, while percentage of answers correct, was lower in the machine paced task. Subjects had a more difficult time lowering cognitive effort, and demonstrated greater cardiovascular reactivity when doing so in the machine paced task compared to the self-paced task.

BACK PROBLEMS: A RESPONSE TO JOB STRESS?

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Chronic disability related to low back pain is a major cause of long term worker absenteeism and, as such, it is associated with high social and economic costs. Epidemiologic studies have linked psychosocial factors related to individuals' experiences in the workplace to both the risk of onset and the prognosis of low back problems. A qualitative study was conducted to elucidate psychosocial factors of importance to workers' experiences of back injury, disability, and rehabilitation. In-depth, semi-structured interviews were conducted with 15 injured workers (10 men and 5 women). Subject selection was designed to include individuals from a variety of occupations and ethnic backgrounds, with back problems of varying chronicity. In addition, key informant interviews were conducted with 10 individuals employed in various aspects of the treatment and compensation of workers with back injuries.

The study findings provide insight into the social construction of a work-related back injury and its relationship to job stress. Work-related back problems appear to be rooted in an intertwining of individuals' beliefs about the nature of back injury, and their interactions with others in the workplace, Workers' Compensation Board, and the health care system. Because of the virtual invisibility of a back injury and the widespread perception that work-related back problems are indicative of malingering, subjects' interactions with others were largely driven by the need to legitimate their pain and suffering and demonstrate the work-relatedness of their condition.

Subjects' perceptions and experiences of back problems suggest that, for some, this condition may be interpreted as a response to and manifestation of job stress. Most subjects related their back problems to unsafe working conditions and excessive or inappropriate job demands. Some linked their injuries to the chronic inadequacy of support they received from others to do their jobs safely. Low status in the workplace, limited employment options, and a pervasive sense of job insecurity exacerbated individuals' experiences of job stress and limited their opportunities for action to change unsatisfactory work situations.

Prognosis of work-related back injuries is also linked to stressors in the workplace. In particular, a supervisor's reaction to a worker's injury and subsequent absenteeism had a profound effect on his/her attitude towards recovery and eventual return to work. As well, the worker's sense of job security was important in shaping his/her response to the injury and subsequent disability.

ANTECEDENTS AND CONSEQUENCES OF WORK-FAMILY CONFLICT: A CAUSAL ANALYSIS

Uday Tate, Art Whatley, and Jim Phillips

Growing body of research on job stress has emphasized three sources of job stress: role ambiguity, role conflict, and work overload (e.g. Jackson and Schuler 1985). More recently, however, work-family conflict as a source of job stress has gained attention of a growing number of organizational researchers (e.g., Bedeian, Burke, and Moffett 1988); Burke 1988; Frone, Russell, and Cooper 1992; Greenhaus, Parasuraman, Granrose, Robinowitz, and Beutell 1989). This new focus has been precipitated by such demographic trends in American society as the increasing number of married women with children joining the work force, a growing number of dual-income families, single-parent families, and families facing the demands of elder care (e.g., Burke and Greenglass 1987; Hall and Richter 1988). The purpose of this study is to extend our understanding of antecedents and consequences of work-family conflict by clarifying its role in the turnover model proposed by Schaunbroeck and his associates (Schaubroeck, Cotton, and Jennings 1989).

RESEARCH HYPOTHESES

The present study examined the following research hypotheses:

H1: As antecedents, role ambiguity, role conflict, and work overload will have a positive effect on work-family conflict; on the other hand, supervisory support and home support will have a negative impact on work-family conflict.

H2: Work-family conflict will have a positive effect on job stress and intent to turnover and a negative effect on job satisfaction and organizational commitment.

RESEARCH METHODOLOGY

The present study used retail salespersons from clothing stores as its population of interest. The respondents were located in a medium-sized city in the Southwestern United States. Using a one-stage cluster sampling procedure, 700 salespersons were contacted. A self-administered questionnaire survey resulted in a response rate of 37 percent (260 usable questionnaires).

The final questionnaire was based on a comprehensive literature review, expert opinions, and pretesting. Several previously tested, reliable, and valid scales were used to measure constructs mentioned in the

research hypotheses. The reliability coefficients ranged from .67 (role conflict) to .87 (job stress).

RESULTS AND DISCUSSION

The hypotheses were tested using the LISREL sequential testing procedure proposed by Williams and Hazer (1986). Specifically, the theoretical model (based on the research hypotheses), Null model (no relationship among the construct), and a trimmed model (eliminating those paths in the theoretical model that were not significant at p-level $\geq$ .05). Based on the trimmed model, the paths from role ambiguity, role conflict, and supervisory support to work-family conflict were not statistically significant. However, work overload and home support had a significant impact on work-family conflict; that is, the higher the work overload, the higher the work-family conflict; whereas, the higher the home support, the lower the work-family conflict.

As proposed in the second research hypothesis, work-family conflict had a positive effect on job stress. Also, work-family conflict had a direct as well as indirect effect on job satisfaction; that is, the higher the work-family conflict, the lower the job satisfaction. However, work-family conflict impacted organizational commitment (-.11) and intent to turnover (-.10) only indirectly through its effects on job stress and job satisfaction.

In summary, the reported results indicate that some job conditions (such as work overload) result in work-family conflict, which in turn, results in job stress and job dissatisfaction, ultimately leading to turnover. Future studies should focus on the interactions and relations between antecedents and consequences of work-family conflict. Also, future research should attempt to examine the effects of antecedents and consequences of work-family conflict different contexts (e.g., types of occupations, managerial levels, cross-cultures, etc.). Finally, future research should attempt to replicate our findings using longitudinal data. Such an attempt will allow stronger inferences concerning cause and effect of work-family conflict than do cross-sectional data.

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FACTORS INFLUENCING THE REGULATION OF WORK DEMANDS AND STRAIN

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This paper is concerned with workload regulation and stress. The focus is on the understanding of the relationship between work demands and strain through the analysis of individual differences in cognitive control processes. It is suggested that in many jobs individuals may be able to exert some level of control in order to prevent decrements in work performance under difficult or demanding situations. This control activity, however, may result in costs to the individual, in terms of changes in affective state and psychophysiological activity, as well as benefits in terms of performance. The nature of the control activity may be determined by individual differences in preferred styles of behaviour and short-term strategy use. A study of workload regulation and stress in air traffic controllers is reported. Data from 65 controllers were collected over two whole working days, one day during the summer (peak) period with high traffic loads, and one day during periods with relatively low traffic loads. Subjective ratings of mood and workload were collected throughout each day, together with saliva and urine samples from which measures of cortisol and catecholamines were derived. The controllers also completed a set of cognitive tasks at the beginning and the end of each day to assess the effects of fatigue on performance. Data concerning coping behaviour, locus of control and well-being had been collected previously in a large scale survey of stress in air traffic control. The paper reports analyses of the trade-offs between performance and other domains of activity. Different response patterns were observed under different levels of objective and subjective workload. The possible mediating effects of long- and short-term styles of coping and other control behaviour are also discussed.

MANAGEMENT OF LIFE CRISES IN EMPLOYEES: THE ROLE OF DIVERSE METAPHYSICAL SYSTEMS

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Employee Assistance Programs (EAPs) are becoming the front lines of crisis intervention in a time when stressful events associated with work, as well as outside the workplace, appear to be more common (e.g. divorce, outplacement, victimization by crime). At the same time, the composition of the American workforce is becoming more diverse as minorities and women find new roles in the workplace. This diversity may also be reflected in dynamic differences in belief systems. In helping employees who are experiencing life stressors, attention should be paid to the emerging literature which suggests that stressors interact with global beliefs about the ways that events occur in life, and the roles of self and others in coping with difficulties. These beliefs can be divided into two different sets (Calhoun & Tedeschi, 1991; Janoff-Bulman, 1989; Wortman & Silver, 1991). Empirical beliefs about the world, e.g. is the world predictable, just, benevolent, and controllable (Epstein, 1990; Janoff-Bulman, 1989), are often shattered by life crises, and this cognitive devastation may account, in large part, for the emotional distress that crises produce. Metaphysical beliefs are not as easily devastated by life crises and may provide an avenue for employees in crisis to assimilate the difficulties into a pre-existing belief system (Tedeschi & Calhoun, in press; Wortman & Silver, 1991).

In this paper, descriptions will be given of ways EAP counselors can address an employee's metaphysical beliefs during crisis intervention and short-term treatment. These approaches emphasize the discussion of these fundamental assumptions about life within the context of the narrative or life scheme (McAdams, 1989; Thompson & Janigian, 1988) which people develop in order to perceive their life as having order and purpose. Attention to these issues can allow employees in crisis to utilize this source of comfort and understanding. The increasing diversity in the work force demands careful consideration of the variety of beliefs which are held by employees, and how such beliefs can be considered in crisis intervention in order to maximize the likelihood of good outcomes when crises are encountered.

This paper describes three issues to be addressed by EAP counselors as they consider the role that metaphysical beliefs play in determining an individual employee's approach to life crises. One issue to be covered is the clinical decision to either help an employee assimilate life crises into the existing belief system or help employees change beliefs in order to understand what has occurred. Also covered is the role of the counselor in encouraging employee growth and change as they cope with their life crisis. Finally, the issue of devoting personal resources to change in certain areas while encouraging acceptance of other circumstances is addressed. Respect for diversity of beliefs is necessary in such matters, as is a willingness to discuss beliefs on which employees base important decisions and perspectives on problems.

PREDICTING THE RESPONSE OF EMPLOYEES WITH BACK PAIN TO A WORK HARDENING PROGRAM

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Employees who have suffered injuries, especially involving back pain, which prevent them from returning to work have received attention in the rehabilitation literature for their tendencies to report chronic pain, magnify symptoms, remain out of work for extended periods, and display various psychological difficulties. In attempting to distinguish between employees who exhibit normal versus abnormal adaptation responses to their injuries, a variety of assessment devices have been used, including pain rating scales, quality and consistency of effort, and various self-reports of psychological response to injuries and personality characteristics. The purpose of the research reported here is to provide evidence for the validity of the Millon Behavioral Health Inventory (MBHI) (Millon, Green, & Meagher, 1982) in predicting response to a work hardening program (Matheson, 1985) among chronic pain patients. There are data which support the use of this instrument in such a population (Labbe', Goldberg, Fishbain, Rosomoff, & Steele-Rosomoff, 1989), and suggest that the MBHI may be an alternative to the often-used MMPI with such patients.

The work hardening program in this study attempts to return employees to the job as quickly as possible using rehabilitation techniques with both physical and psychological components. In this program, physical conditioning to develop increased strength and endurance and proper body mechanics through work simulation is combined with a stress management program which includes lectures and discussions regarding anxiety, depression, stressors, nutrition, and drug managment along with vocational guidance and biofeedback.

A sample of 75 persons, the vast majority of whom carried the diagnosis of lumbar strain or lumbar disc disorder and who attended a work hardening program for approximately six weeks will be described in this presentation. Preliminary data presented here suggests that there is a relationship between prognostic indices on the MBHI and the likelihood employees will return to work after participation in a work hardening program. A multivariate analysis of variance using Hotteling's T criterion revealed that the three prognostic indices, "pain treatment responsivity", life threat reactivity", and "emotional vulnerability" predicted the likelihood that those completing the program for whom follow-up data was obtained ($n=35$) would be employed at six months follow-up ($F = 3.21$, $p<.05$). Univariate tests revealed that life threat reactivity was most responsible for this relationship ($F (1,30) = 8.54$, $p<.01$), emotional vulnerability was less so ($F (1,30) = 7.37$, $p<.05$), and pain treatment responsivity did not reach statistical significance ($F (1,30) = 2.93$, $p<.10$). This suggests that the MBHI may be a good predictor of response to rehabilitation efforts to

return chronic pain patients to employment. Additional data is available on symptom magnification indicators and other MBHI scales, and follow-up data and data on new program participants continues to be added to this database.

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APPLICATION OF BEHAVIORAL COSTING TECHNIQUES TO THE ADOLPH COORS WELLNESS PROGRAM

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Increasing numbers of companies are implementing health and fitness programs in the hope of lowering health care costs through reductions in health risk factors and improvements in employee health. Although evidence suggests these programs can lead to intended changes in employee behavior (e.g., smoking, diet, exercise) there is limited information on the economic impact such programs have on medical costs, sick leave, turnover or productivity. This paper reports the results of a computer simulation that estimated the dollar costs and benefits associated with the wellness program at the Adolph Coors Company.

Coors offers a comprehensive health promotion program that includes employee health risk appraisals, medical screening, and behavior change programs in such areas as stress management, exercise, weight loss, smoking cessation, and responsible use of alcohol. Using concepts from behavioral costing a computer model was written to estimate the dollar costs and dollar benefits of a health promotion program. Costs included start-up costs, and both fixed and variable costs of delivering the health promotion program. Dollar benefits were estimated in four areas: reduced medical costs, reduced sick leave, reduced turnover, and increased productivity. The impact of benefits was phased in over time to more realistically model the temporal effects of health promotion activities.

Input data for the computer model were obtained from the Adolph Coors Company. Three scenarios were created to simulate "best" case, "worst" case, and "typical" case situations. Results indicated that annual incremental costs associated with poor employee health could range from $1,342 to $6,316 per employee. Examination of potential savings indicated that for each dollar invested in the program Coors might expect a return ranging from $1.24 to $8.33. A break even analysis showed that annual operating costs of the program, including fixed and variable costs, can be covered with as few as 130 to 580 participants out of 6,180 total employees. Finally, net present value analyses showed that in the typical and best case scenarios, investment in the Coors Wellness Program would be an attractive use of money compared to alternative investments.

This study demonstrates that comprehensive health promotion programs have potential to yield economic benefits in excess of program costs.

A REPLICATION AND EXTENSION OF KARASEK'S MODEL OF JOB STRAIN AND WORK STRESS

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Karasek (1990) has established that there is a link between high strain jobs and increased heart disease risk. His demands-control model uses the dimensions of "decision latitude" (perceived control over one's job), and "psychological job demands" (perceived work load) to assess job strain. High strain results from a person having low decision latitude and high psychological job demands.

This study replicates and extends Karasek's linking of job strain with increased risk of heart disease. The proposed relationship between heart disease risk and high strain jobs will be tested using risk factors identified by the National Cholesterol Education Program Guidelines under the authority of the National Heart, Lung and Blood Institute.

The Karasek model of job stress, the subject of numerous studies in recent years, has received mixed support. One reason for this mixed support may be attributed to numerous confounding variables in these studies. The influence of life style variables must be separated from influences of work design, worker strain and consequences of that strain. These life style variables include risk factors that influence the prevalence of heart disease: gender, personal and family medical history, cholesterol levels, blood pressure, diabetes, education level, race, age, dietary habits (fat in diet), and tobacco use. Data on each of these risk factors were collected for the subjects in this study.

A sample of 912 female and 1,564 male employees in a variety of white- and blue-collar occupations across 26 different organizations were studied. Along with the data mentioned previously, the dimensions of decision latitude and psychological job demands were each measured with four questionnaire items and showed acceptable reliability ($\alpha = .79$ and $\alpha = .75$ for decision latitude and psychological job demands). Proposed analyses include correlation and multiple regression.

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DESIGN CRITERIA FOR JOB CONTENT AND WORK ORGANIZATION:
prevention of job related stress risks

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This paper presents a sociotechnical based approach for the (re)design of jobs to diminish stress risks and create opportunities for learning with the purpose to improve the well being and the performance of the worker. It contains theory, methodology and application example.

1 Theory

The topic of stress at the workplace can basically be approached at two different ways:

1 by reinforcing the coping behaviour of the worker: making the worker more stress resistant;

2 by improving the quality of the workplace: reducing the job related stress risks.

In this paper the second approach is represented. The structure of the labour division at job level influences both the psychical health (feelings of stress, well being) and the physical health (stress

symptoms, sickness) of the workers and by this way their performance. According to research done the rate of feelings of discomfort, of stress symptoms and of sickness absenteeism due to stress diagnosis is directly related to the balance between the job demands and the control capacity of a job on the one hand and to the level of activity on the other hand (Karasek, 1979). Jobs which are characterized by an imbalance between these two aspects (high strain jobs with high demands and low control capacity or low strain jobs with low demands and high control capacity) give raise to more complaints and sickness indicators, independent of the individually varying types of coping behaviour.

2 Methodology

For a prevention oriented approach of stress an practical instrument is needed with a set of design criteria to:

1 assess the stress risks of a job and

2 make an inventory of scenario's for redesign.

Stress can be prevented by creating a balance between the control requirements and the control capacity of a job. Opportunities for learning exist when the work does an appeal to a broad range of qualifications: occupational, organizing and communicative skills.

This sums up to a set of design criteria for job content and work organization:

1 Completeness: a coherent cycle of preparation, execution and control;

2 Autonomy: to influence tempo, method and sequence of tasks (the process);

3 Contact and cooperation: to influence the output;

4 Organizational tasks: to influence the input;

5 Complexity: to switch between simple and complex tasks;

The redesign of jobs according to the theory can be attained by three strategies:

1 Environmental adaptation

2 Redesign of the job structure

3 Redesign of the production structure

3 Application: a case from the metal industry

With this methodology experiments have been carried out in several different settings with positive results. A project was carried out in a production plant of a multinational producing metal packing products (cans). In this production site work 350 workers. In the beginning production organization and routing are functional and can be characterized as complex with many different types of simple jobs. Sickness absenteeism is high: 20 % of the workforce is daily absent. An intervention strategy is developed based on an active participation of workers. The described design instrument is used to assess and improve work related health risks. Characteristics of the new situation: A relatively simple organization with few relatively complex jobs. Fewer hierarchical levels and short communication lines. Task groups of workers take care of the complete production of a specified product at their own production lines, including a part of the planning, quality control, maintenance and transport. Jobs in these task group meet the previously mend standards.

Results have been attained in the area of the efficiency of the organization: a structural and lasting lower level of sickness absenteeism (-50%) an efficiency improvement (30%), an improvement of the product quality (60% less complaints). The pay back time of the project is 3 years.

PERSONAL AND ENVIRONMENTAL EFFECTS ON THE THREE DIMENSIONS OF BURNOUT

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Burnout has been characterized as having three dimensions, emotional exhaustion, lack of accomplishment, and depersonalization. While considerable literature has examined the relations of various personal and environmental effects on burnout, the purpose of this study was to extend previous literature by including organizational commitment, perceived organizational support, and optimism with characteristics of the work environment that have been found to be related to burnout (e.g., autonomy, clarity, controlling aspects of the work environment, work-group cohesion, supervisor support, and work pressure). Organizational commitment has been defined as having two dimensions, affective commitment and continuance commitment. Affective commitment reflects the individuals adoption of the goals and values of the organization. Continuance commitment, on the other hand, reflects a binding of the individual to the organization based on "side-bets" that accrue from the individual's association with the organization. People with high levels of affective commitment want to remain with the organization because of shared values while individuals with high levels of continuance commitment want to remain with the organization because leaving the organization would be too costly. This study supports the idea that the dimensions of commitment relate differently to each aspect of burnout. Data were obtained from 224 individuals (68% female; 43% full-time employees). Part-time employees reported lower levels of continuance commitment than full-time employees as would be expected since they typically have fewer benefits and have worked for their employers for a shorter period of time. The were no other significant mean differences between full-time and part-time employees; however, the pattern of correlations among the variables was different. For full-time employees, emotional exhaustion was most strongly related to supervisor support although there were significant correlations with perceived organizational support, affective commitment, continuance commitment, work pressure, control, and clarity. A feeling of accomplishment was most strongly related to affective commitment and perceived support although accomplishment also was related to supervisor support, work pressure, innovation, and clarity.

Depersonalization was related only to clarity. For the part-time employees, the results substantially differed. Perceived organizational support was related to all three dimensions of burnout, as were cohesion, supervisor support, and autonomy. Affective commitment was related to depersonalization. As with the full-time employees, work pressure was related to exhaustion and innovation was related to accomplishment, but clarity, control and continuance commitment were not related to any of the burnout dimensions. These results suggest that perceived organizational support and affective and continuance commitment are important factors in studying stress at work.

THE RELATIONS BETWEEN CHILD CARE DIFFICULTIES AND PRODUCTIVITY, CONCENTRATION, AND STRESS

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Much has been written about the importance of quality child care for employees and their families. However, surprisingly little research has examined the effect of child care on employees productivity other than to demonstrate the relation between child care difficulties and parental absences, and then the focus has been primarily on working mothers. This paper will present the results of a survey of 2773 individuals. Of these 2773 individuals, 54 percent were men and 46 percent were women. Approximately one third of these employees had children under the age of 18 living in their homes. Of the total number of respondents, including those individuals who did not have children living with them, 15% of the men and 13% of the women reported that their jobs had been more difficult to perform due to other employees' child care problems. This suggests that the effect of child care responsibilities impacts the productivity of others in the organization beyond those parents who have problems with obtaining child care for their children. The data also indicate that such difficulties as finding affordable child care, reliable child care, safe child care, and child care that corresponds with working parents' schedules are related to increased difficulty concentrating on their work, the level of stress experienced, interruptions at work, as well as missing work. One of the unique aspects of the data is that it included responses from single parents (115 men and 128 women). Results of analyses comparing single men and women parents with non-single parents revealed that single parents, regardless of gender, reported less difficulty in concentration while men reported more problems with concentration due to child care problems than did women. Similarly, fathers reported greater stress from child care problems than did mothers. Somewhat surprisingly, single parents reported less stress than non-single parents. There was a significant interaction between gender and single parent status with respect to interruptions at work. Single fathers reported fewer interruptions followed by non-single mothers and non-single fathers. Single mothers indicated the most interruptions at work. With respect to missing work, being late to work, or having to leave work early as a result of child care problems, non-single fathers reported the highest level of absence followed by mothers. Single fathers reported missing work the least among the four groups of parents.

MALE-FEMALE DIFFERENCES IN SYMPTOMS OF DISTRESS IN THE WORKPLACE

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Since the inception of a strong interest in stress research, there has been a focus on gender differences. A recent meta-analysis by Martocchio and O'Leary (1989) looked at 15 studies with higher than average methodology to determine whether consistent sex differences were found. They conclude: "the widely held belief that there are sex differences in occupational stress was not supported (p. 498)." However, they go on to say that their lack of consistent patterns is not "irrefutable evidence" that gender differences do not exist, only that there needs to be more systematic research on the topic using comparable measures and comparable populations.

The purpose of this study is to examine gender differences in a large-scale survey of American and Canadian workers (n=1500) most of whom were professional or administrative. StressMap® was used as the assessment instrument. The instrument has 21 subscales which are divided into four different areas: the environment, coping responses, personality and symptoms of physical and psychic distress.

Specifically two questions were addressed: 1) whether there are gender differences in environmental pressures, coping responses, and beliefs as well as any differences in the existence of stress symptoms; and 2) if gender differences

are found, what family and work context variables (e.g., marital status, child-rearing status, age, managerial status, occupational level and income) might contribute to these differences.

On the whole, women appear to be under greater stress than men. Women have more work and family pressures as well as more work and personal changes. Women are lower on self-esteem, have more anger symptoms and show far higher symptoms of distress on the physical, behavioral and emotional scales.

Since some of these differences could also be a function of the fact that women are generally in lower levels in the organization and hold less prestigious positions, separate multivariate models was done for each gender controlling for three demographic and three work context variables mentioned above. For men, none of these variables were predictive of physical, behavioral or emotional symptoms. For women, age and child status were predictive of emotional status. Younger women and women were children had higher levels of distress. However, the fact that women unusually have lower occupational status was not a factor.

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Abstract

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"Stress Triangles: A Comprehensive Paradigm For Conceptualizing Employee Stress In The 90's"

For many years Occupational Stress was roughly defined by the presence or absence of this amorphous entity called "stress". We were in the inchoate stages of recognizing that stress may significantly impact employee health, performance, productivity, and overall well being.

As time progressed and our understanding of the dynamics of stress in the workplace deepened, we began to realize that there were many components to stress, with a substantial number of them actually operating outside the workplace. Simple and rudimentary means of assessing, not only levels of stress, but areas of specific stressors began to emerge (Holmes and Rahe, 1967). Around this time, it was also discovered that stress was actually a bifurcated experience that was a culmination of the sum total of "positive" (eustress) stress and "negative" (distress) stress, (Selye, 1976). This became even further refined (Elliott and Eisendorfer, 1982) by researchers that adopted a conceptual model that included four major dimensions: 1) stressors, or sources of stress, 2) reactions, 3) consequences, and 4) mediators. In 1984, Human Synergistics upgraded their Stress Processing Report to include nineteen, discrete bipolar variables, in four clusters that are coded into the form of a "wellness wheel" to define the parameters of stress. The uniqueness of their approach combined previous methods, including a "critical items" list, two self-report sections, a social readjustment scale, and health related questions, which makes for a very refined measure of defining and assessing stress.

Indeed, it is now clear that the amount of stress that a person experiences is directly influenced by their subjective reaction to the perceived stress (Selye, 1976). Although we have identified many aspects of the stress reaction, we have yet to explore the accumulated subjective burden of stress that the individual carries around daily, including those that may have a subliminal but significant impact on an individual's functioning. In this regard, most people can readily identify "Most Recognized Stressors" (M.R.S.) but, frequently ignore environmental influences, "Least Recognized Stressors", (L.R.S.) as exacerbators of their experience. The combination of L.R.S. and M.R.S. comprise "the input triangle" and form a continuum of intensity similar to a wedge or triangle bearing down on the person's experience of stress. In this regard, the M.R.S. may gain more focus and intensity than it deserves. Since the individual usually presents the M.R.S. to Occupational Health Professionals (OHPs), it often becomes the primary focus of treatment, while other factors whose sum total is actually greater than the M.R.S. are ignored. Consequently, treatment attempts that are symptom-focused can prove frustrating to OHPs because the "patient" just won't improve.

On the other side of the continuum, the person's attempts to discharge stress, "the output triangle", can be either done in a positive or negative fashion, depending on the level of perceived threat and the individual's reaction to it. While one person could react to a threat to their basic needs by becoming symptomatic and harming self or others, utilizing denial, or acting out, another could view the crisis as an opportunity and start on a journey to self actualization.

In an attempt to offer a heuristic model for conceptualizing an individual's discharge of stress, the "output stress triangle" seeks to equate specific behaviors with the level of perceived threat utilizing a hierarchy of needs structure (Maslow, 1970). For example, if the OHP is presented with a client that is harming self or others, they may be able to deduce that the person's basic needs for emotional and/or physical security are being challenged. On the other hand, if one is seeing a client that is managing most of their life effectively, we can assume that their basic needs are being met and that they have a sense of mastery over their life, stress, and environment.

Once the OHP grasps the concept of the Stress Triangles, they can then begin to better understand, diagnose, and treat their clients in a more holistic manner, utilizing a variety of approaches focused on a wellness concept. Then they can bring to bear the five major treatment strategies for the stressed individual: recognition, documentation, discussion, referral, and reintegration.

A UNIVERSITY-INDUSTRY COOPERATIVE RESEARCH EFFORT TO IMPROVE VDT WORK: THE CORPORATE PERSPECTIVE

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One consequence of increased office automation is that a pattern of task-related employee health problems has emerged. One of the more serious among these is cumulative trauma disorders (CTDs, or repetitive strain injuries) in VDT operators. CTDs can result from a combination of behavioral, physical, personal, and task design factors such as poorly designed or maladjusted workstations, high risk work behaviors, and prolonged periods of intense keying activity to name a few. From a purely business standpoint, CTDs are costly in a number of respects: lowered employee morale, productivity decreases, lost time during recovery periods, increased workman's compensation costs, and lawsuits. From a humane standpoint, CTDs cause unnecessary employee discomfort and suffering, and in extreme cases, can lead to permanent disability.

CIGNA is committed to becoming an industry leader in developing preventive measures to control CTDs as well as other sources of stress during VDT work. CIGNA is actively seeking effective control measures (e.g., methods of task redesign) that will eliminate the need for medical intervention and other compensatory measures that have limited effectiveness. As part of an ongoing effort to identify effective control measures, the Director of Employee Policies and Programs at CIGNA sought advice from NIOSH and became familiar with

laboratory research on new rest break schedules developed for VDT operators, as well as (a set of twelve) stretching exercises developed to relieve musculoskeletal discomfort during VDT work (Sauter & Swanson, 1991).

CIGNA invited University of Connecticut researchers to evaluate a rest break schedule that included more frequent, short pauses at two of their claims processing sites. University of Connecticut researchers adapted NIOSH's experimental rest break schedule to be compatible with the task characteristics of claims processing operations. An automated system for administrating frequent rest pauses was developed. CIGNA developed their own set of (six) stretching exercises for VDT operators along with a training video.

The main goal of this paper is to describe the organizational challenges and policy issues associated with the implementation of the cooperative research effort described above. Both the positive and negative impact on employee turnover, absenteeism, tardiness, hours of work, and need for progressive discipline will be presented. In addition, we will report worker acceptance of the break schedule and exercise regime based on data collected in a follow-up survey.

THE EFFECTS OF INSTRUCTION ON STRESS MANAGEMENT SKILLS AND SELF MANAGEMENT SKILLS ON EMPLOYEES AND AN ORGANIZATION IN THE PUBLIC SECTOR

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Volunteers that were solicited from a population of custody staff employed at a medium security state prison were assigned to one of four groups. One group received instruction on stress management and self management skills, whereas a second group received instruction on only stress management skills. A third group received instruction on personal development skills (a placebo training group), and the fourth group served as a no treatment control group.

Self management training was based on the principles outlined by Kanfer and Karoly (1982) and by Frayne (1986); this self management training included instruction on self monitoring, specifying goals, self evaluating monitored behavior against goals, and self reinforcement or self punishment. Stress management training included instruction on Jacobson's muscle relaxation skills, Benson's relaxation response, and Ellis' Rational Emotive Therapy.

Training sessions were conducted once a week for six consecutive weeks; the sessions lasted from ninety minutes to two hours.

Dependent variables included measures of reaction, learning, behavior, and organizational results; behavior measures included a physiological measure (i.e., blood pressure), a measure of somatic and psychological symptoms (i.e., the Symptom Check List - 90 - Revised), a measure of state anxiety (i.e., the State-Trait Anxiety Inventory--Form Y), and a measure of job satisfaction (i.e., the Job in General Scale).

Data was collected at pretraining, post training, three months after training, and six months after training. Fifty-four subjects participated in the training and attended all subsequent data collection meetings.

All groups had a favorable reaction to the training.

The groups that received the instruction on stress management skills had higher scores on the learning questionnaire at post training.

Several behavior measures were examined. Training on stress management reduced blood pressure, led to a decrease in somatic and psychological symptoms, and lowered state anxiety. The level of global job satisfaction was not affected

by the training in stress management.

Organizational results could not be determined from the data. It was noted, however, that the frequency of absenteeism was not affected by training on stress management skills.

The results indicated that the overall effects of the instruction on stress management skills for blue collar workers were modest.

The additional instruction on self management skills appeared to augment the standard instruction program, and significantly reduced post training decay on several dependent variables.

THE STRESS OF INTERNATIONAL RELOCATION AND REPATRIATION

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When most people think of stressful occupations, they conjure up visions of police officers facing armed intruders. They don't generally worry about the pressures associated with international travel and relocation. If anything, the rewards of such opportunities are perceived to far outweigh the risks. The stress of both leaving the country and returning home, can prove to be quite serious and needs to be addressed if physical and psychological symptoms are to be avoided and if optimal levels of performance are to be maintained.

While the globalization of the corporate world has created new and exciting job opportunities for applicants with expertise in a range of disciplines, it has also generated somewhat of a crisis in terms of cultural and geographic dislocation. One of the major problems concerns the pressure on management to hire individuals solely on the basis of skill without due consideration for the psychological and social factors attendant upon overseas assignments. In many cases, neither the employee nor his or her family are adequately screened or properly prepared for what can prove to be a difficult experience.

For example, overseas jobs are frequently presented as marvelous chances for career enhancement and economic advancement. Job security is implied. However, data from one Fortune 500 corporation indicates that the problems associated with the initial relocation pale in comparison with those encountered upon return. Separation anxiety occurs at both ends of the assignment.

The single most critical factor in determining whether or not the "posting" will be successful is frequently the response of the family. In a study of relocation stress (Waters, 1992), one of the spouses (who were all women) reported that she had moved as many as fifteen times in eleven years and refused to do it again. For "trailing spouses," the inability to find gainful employment, the need to deal with neighbors and local trades people in a new language, and assist the children in becoming accepted, can become a serious strain on the marriage. Spouses who consciously or unconsciously want to return home may sabotage the working partner's job performance and also jeopardize the relationship.

Since most major American corporations have become accustomed to relocating their promising executives

domestically, the human resource departments may already be somewhat aware of the difficulties that families face due to numerous moves. The stress is generally viewed as the unavoidable price an executive must pay for upward mobility.

Repatriating employees also face problems. Having just spent three to five years establishing a corporate presence in the foreign country, the "expat" may find it difficult to return to corporate headquarters. And what of the family? The stress of breaking up relationships and losing one's support group can affect the whole family very negatively.

The authors, both of whom have been involved in extensive international travel, will delineate the problems of short term trips (if it's Tuesday, it must be Canberra) and long term relocations based on data from several sources (e.g., The Overseas Briefing Center of the State Department, corporate executives and trailing spouses).

TELECOMMUTING: STRESS AND SOCIAL SUPPORT

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Social support and stress were assessed in 3 groups of people: telecommuters, work-at-home, and office employees. Telecommuters were defined as corporate employees who spend between 1 and 4 days working for the corporation at a home office. Communication with the corporation was through telephone, computer and modem, and fax. At least one day per week the teiecommuter drives to the office and works there. Work-at-home employees work out of a home office or on the premises of their clients. Office employees make the traditional commute to a corporate office and work there. All participants completed a survey asking about their experience with computers, family demographics, and specific questions about telecommuting and experiences at work. Additionally, everyone completed the Cohen Perceived Stress Scale, the Social Support Index and the Minnesota Job Satisfaction Scale.

The results of this study suggest that general measures of social support, stress, and job satisfaction may not be precise enough to elucidate significant differences when used with an emerging employee group such as telecommuters. We found that questions about job satisfaction, stress and support which focused specifically on telecommuting as compared to working in the office yielded significant differences among the groups. Among the significant findings were that these telecommuters felt neither isolated nor lonely while telecommuting. They preferred telecommuting to working in the office and found fewer distractions while telecommuting which resulted in a perceived increase in productivity. While the telecommuters felt supported by their supervisors, they also perceived jealously from co-workers assigned to the office.

As the number of people telecommuting continues to increase, the identification of the risks and benefits associated with telecommuting becomes even more important. Procedures for selecting employees to assign to telecommuting must be clearly defined and implemented. Companies must be able to determine the kind and amount of support the telecommuter needs in order to succeed in this style of working. Telecommuters must learn how to recognize personal stressors and discover ways to manage them to facilitate achieving personal and corporate goals. Telecommuting is a work style which offers many advantages. This research is an early effort at delineating some of the psychological and environmental factors which will affect its acceptance by corporations and those who work in them.

A National Survey of Occupational Stress, Psychological Strain, and Coping Resources in Elementary School Counselors

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The study provides a national data base for the understanding of stress related factors in elementary school counselors. It describes overall levels of occupational stress, strain, and coping resources among 410 elementary school counselors employed throughout the United States.

The results include (1) overall levels of occupational stress, psychological strain, and coping resources among elementary school counselors, (2) levels of various stress factors including role overload, role ambiguity and responsibility factors, (3) effects or strains, and (4) levels and types of coping strategies and resources utilized by elementary school counselors. Differences in stress, strain, and coping at various levels of demographic variables are described, including age, sex, marital status, non-job stress, number of years in profession, number of students served, number of students in the school(s), and type of school (urban, suburban, rural).

Five hundred randomly selected elementary school counselors who are members of the American School Counselors Association comprised the sample. The study had an 84% return rate. Instrumentation included the Occupational Stress Inventory and a demographic data form.

Outcomes included moderate to high levels of some stress factors especially role overload. Types and levels of strain factors varied with different levels of several demographic variables. Coping resources and strategies varied at different levels of particular demographic factors as well. Coping resources included social support, rational cognitive coping, and exercise among others. The study is the first to be done on a nationwide sample of elementary school counselors that investigates stress, strain, and coping.

OVERWORK AND TYPE A PATTERNS

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Individuals with type a behavior pattern (TABP) are typically described as competitive, hard-driving, ambitious, impatient and taking little time for him/herself. Such people are usually at higher risk of heart attacks and other illnesses. A "workaholic" is often thought to be synonymous with the TABP person -- but is this really the case? There are many people who are hard workers but not necessarily hard-driving and competitive; some who work extended hours be individuals who have a great capacity to focus and concentrate for long periods of time.

In order to examine the interrelationship of working longer hours and having "type a" characteristics, five groups were formed using data from a national survey of over 900 Canadian workers. These groups included: 1) those high (upper third) on TABP who worked 40+ hours per week; 2) those high on TABP who worked a normal week or less; 3) those low (bottom third) on TABP who worked 40+ hours per week; 4) those low who worked a normal work week; and 5) those in the median range on TABP, regardless of work hours. Demographic characteristics, health status and 20 scales from StressMap® (which measured life pressures and satisfactions, coping skills, self-perceptions and belief patterns and distress symptomology) were examined for each of these five groups.

The two most extreme groups on the StressMap® scales were those who worked long hours but were low on TABP and those who worked normal hours and were high on TABP. The "healthiest" group was the one where long hours were worked but had low TABP. This group had the most favorable scores on work satisfaction, family satisfaction; mentioned having the fewest family pressures, work pressures and had the lowest symptom scores on the physical, behavioral and emotional distress scales. The low hours/ high TABP group had the "worst" scores on all of nearly all the scales. In addition, the high hours/low TABP was the best at time management and had the fewest work pressures and the high hours/high TABP group was the worst on time management and work pressures.

A MODEL FOR STRATEGIC STRESS MANAGEMENT

Brian Tucker (Surrey, B.C., Canada)

This paper presents a new model for stress management - one suggesting strategic choice over coping mechanisms to deal with different types of stress experience. It integrates the fight/flight reaction (Cannon, 1909) with the General Adaptation Syndrome (Selye, 1956), the Person-Environment Fit concept (French and Caplan, 1972), the use of coping mechanisms (Lazarus, 1966) and the Burnout Syndrome (Maslach, 1982) into a comprehensive model of the stress experience.

The synthesized model links acute and chronic stress experiences in a system stabilized by three feedback loops. In general terms, the inability of an individual to adapt to apparent changes in the environment triggers an alarm reaction. Defence mechanisms may be put in place to adjust the person's perception of his or her environment in order to reduce the P-E mis-fit, closing the first feedback loop. At this point, the individual either flees mentally (leading to alienation and, in the long run, a form of schizophrenia) or resists, experiencing acute stress. Coping with that acute stress involves changing the perceptions of the environment by the use of coping mechanisms in order to reduce the P-E mis-fit through a second feedback loop. Unsuccessful coping with acute stress results in chronic stress and exhaustion (burnout), with subsequent effects on the individual's mental health. Mental health can be associated positively or negatively with individual personality, thereby closing a third (long-term) feedback loop for the system.

The stress experience can be differentiated into five qualitative components, identified with anxiety, depression, threat, tension and frustration. They are traced through the stress system via personality and environmental factors, alienation experiences, defence mechanisms, coping processes, acute and chronic stress experiences and psychoses.

The attribution of different components of the stress experience to different types of P-E mis-fit challenges the traditional panacea approach to stress management. The model suggests that coping mechanisms can be selected strategically according to the individual's personality, his or her perceptions of the environment and the type of stress experienced. It explains why common, simple, universal prescriptions for stress management don't always work. A more complex, strategic approach, as offered in this paper, is needed.

INTERPRETIVE HABITS OF INDIVIDUALS AND STRESS

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ABSTRACT SUBMISSION FOR THE
SECOND CONFERENCE ON OCCUPATIONAL STRESS

"STRESS IN THE 90'S:
A CHANGING WORKFORCE IN A CHANGING WORKPLACE"

SUBMITTED TO
SONJA M. PRESTON
PROJECT COORDINATOR
AMERICAN PSYCHOLOGICAL ASSOCIATION

INTERPRETIVE HABITS OF INDIVIDUALS AND STRESS

ABSTRACT

This paper develops a theoretical model of individual interpretive habits which contribute to stress and presents research findings which support the model. The paper is based upon an on-going program of research on stress. To date, data has been collected and analyzed from three research studies. The samples have included managerial and technical employees (n=164), part-time MBA students (n=143), and engineers (n=372).

Stress can be viewed as a complex condition involving three types of events: 1) potentially stressful conditions in an individual's environment (i.e., stressors); 2) an individual's interpretations of those environmental conditions; and 3) physiological reactions including fatigue and tension (strain). This paper focuses on an individual's interpretations of events which contribute to stress. Three interpretive habits associated with stress have been isolated (with analytical support provided through factor analysis): deficiency focusing, necessitating, and low skill recognition.

Each of the interpretive habits involves a tendency to pay greater attention to some aspects of a situation than to others. There are three important characteristics of these tendencies. First, they involve stress-inducing questions an individual asks him/herself. Secondly, they bias what the individual perceives and feels. Thirdly, the individual is seldom consciously aware of his/her interpretive habits and how these habits contribute to stress.

The first interpretive habit, deficiency focusing, is the habit of focusing upon the negatives of a situation at the expense of the positives. Here, individuals focus on deficiencies in something they have done, such as a project, deficiencies in themselves, or deficiencies (i.e., problems) which might occur. This bias in perspective causes deficiencies to become the center of attention, overshadowing positive aspects of a situation. The second interpretive habit is necessitating. Necessitating occurs when individuals think it is necessary or imperative that they do something - that they "have to" do a certain task. This interpretive habit focuses upon commitment at the expense of choice. Tasks are seen as inflexible demands that must be met and individuals perceive they have no choice. The final interpretive habit is low skill recognition. This refers to a tendency in individuals not to recognize the role of their own abilities in producing their successes. Instead, attention is focused upon external sources, including the help received from others, luck, or the easiness of the task - reasons which have little to do with an individual's competence. Low skill recognition results in individuals underestimating their own competence, and feeling that their successes depend upon things outside themselves.

Research support from the three studies mentioned previously using factor analysis, correlation analysis, and regression analysis is discussed. Addressing an individual's interpretive habits has important implications for change programs aimed at helping individuals cope better with stress. This is particularly important since individuals are often not aware of these interpretive habits. A questionnaire with accompanying training materials developed based on this research which could be used in a stress management program is also discussed.

EMERGING ISSUES IN OCCUPATIONAL STRESS: A MODEL OF TECHNOLOGY STRESS

Janet J. Turnage

The purpose of this presentation is to outline a developing model of occupational stress that is related to workplace technologies, such as computerized word-processing systems, computer-assisted software engineering, and other emerging forms of office automation. It emphasizes an individual, as opposed to an organizational, level of analysis. The model integrates previous work in the areas of technology and stress (Turnage, 1990, 1992a, 1992b; Turnage & Howell, 1991; Turnage & Spielberger, 1991) with control theory models of skill acquisition (Kanfer & Ackerman, 1989). It is a human factors-based functional allocation model, where successful (i.e., stressless) human-computer interaction is based on motivational and cognitive components in the individual and flexibility of computer interface design. Contextual features are also considered.

The model proposes that technology stress is a multi-determined, multi-symptomatic construct that is composed of differing factors at the attitudinal and behavioral levels. Incompatibilities between individual expectancies and system realities can cause feelings of cognitive overload and loss of control, producing differing levels of task performance and task satisfaction. The complexity of rigorous empirical analysis is explored in light of potential confounding variables and problems of measurement reliability. Recommendations are given for studying technology stress at a programmatic level and for applying theoretical concepts to real-world problems.

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THE RELATIONSHIP OF ROLE CONFLICT AND AMBIGUITY TO ORGANIZATIONAL CULTURE

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Role stress, including role conflict and ambiguity (Kahn et al, 1964) has been a topic of more than one hundred studies over the past twenty years (McGee et al, 1989). Relatively few of these studies, however, have considered the relationship to organizational-level variables and virtually none have focused on organizational culture. This paper extends the research on role stress by analyzing the relationship between the culture of organizations and the role conflict and ambiguity experienced by their members.

The general proposition under consideration concerns organizational culture (measured in terms of behavioral norms and expectations) and role stress (measured in terms of role ambiguity, person/role conflict, and inter-sender role conflict). The data for this study were collected from 825 organizational members of approximately 150 organizations through the use of the *Organizational Culture Inventory* (*OCI*, Cooke & Lafferty, 1986). The OCI measures organizational norms and expectations for 12 different behavior styles (e.g., Achievement, Affiliative, Conventional, Competitive). These 12 styles factor into three general types of organizational culture: Constructive, Passive/Defensive, and Aggressive/Defensive. Prior field research and consulting/training experience with the inventory suggests that the Constructive styles are positively related to outcomes valued by organizations (e.g., member satisfaction and motivation) and the Defensive styles are negatively related to such outcomes.

The specific hypothesis tested in this paper are:

1. Across organizations, the level of role conflict reported by members is positively related to behavioral norms associated with Defensive cultures and negatively related to norms associated with Constructive cultures.
2. Across organizations, the level of role ambiguity reported by members is positively related to behavioral norms associated with Defensive cultures and negatively related to norms associated with Constructive cultures.

The measures for role conflict and role ambiguity were adapted from the University of Michigan's *Organizational Assessment Package* and *Quality of Employment Survey* (Quinn & Staines, 1979). Role conflict was measured using such as items as "I have to do things that should be done differently" and "I receive incompatible requests from two or more people." Role ambiguity was measured by items such as "I know what my responsibilities are" and "to what extent do you know exactly what is expected of you?"

Preliminary results support both hypotheses; final results will be presented at the APA/NIOSH conference. Discussion of the results will focus on the ways in which some organizations inadvertently create stress for managers and employees by communicating and reinforcing norms for defensive behaviors. Implications for programs designed to reduce this type of stress in the workplace will be considered.

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JOB-RELATED STRESSORS, PERSONALITY HARDINESS, STRESS, & HEALTH IN HOSPITAL NURSES

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The results of two questionnaire surveys are reported. One sample consisted of 100 CCU nurses and the other consisted of 237 nurses from a mixture of hospital units. The samples were drawn from a total of 8 metropolitan hospitals.

Greater job-related stress was linked with noise (continuous beeping of patient bedside monitors, equipment alarms, telephones, excessive foot traffic on unit) in hospital critical care units, working on AIDS special care units, caring for AIDS patients, the number of AIDS patients cared for, and recent change in work shift. These stressors were significantly correlated with emotional exhaustion in nurses.

In the larger sample, over 1/2 of 153 nurses caring for AIDS patients reported feeling fatigued during the workday while 43% reported suffering general health problems "a great deal of the time." Almost 1/2 of these nurses felt at least some discomfort about providing care to AIDS patients with an equal number seeing themselves as being at moderate or higher risk for AIDS.

Health outcomes included higher scores for headaches on-the-job in critical care nurses experiencing greater noise-induced stress. In the larger sample, work-related stress and emotional exhaustion were predictive of greater mental (anxiety, depression) and physical (somatization) health problems. Increase in workload was associated with greater anxiety, depression, and somatization; change in shift with greater anxiety; increase in work responsibilities with greater depression and somatization; and increase in workload with greater anxiety, depression, and somatization.

In the smaller sample of 100 critical care nurses, the commitment to work dimension of hardiness was predictive of less noise-induced stress and less emotional exhaustion. In the larger sample of 237 nurses from a mix of hospital units, hardier nurses reported less job-related stress, emotional exhaustion, anxiety, depression, and somatization. In the latter sample, hardiness subscale scores showed a similar pattern with one exception. Challenge scores were not predictive of the degree of job-related stress.

Job-related stress was measured by Topf's (1985) Disturbance Due to Hospital Noise Scale and by Lyons' (1972) Tension Index; emotional exhaustion by the Emotional Exhaustion Subscale of Maslach's (1979) Burnout Inventory; and hardiness by total and subscale scores of the original inventory by Kobasa (1979) or the newer, 50-item, direct measure (Maddi & Dane, in press). Finally, health was measured by a 6-point self-report item assessing headaches on-the-job and the Anxiety, Depression, and Somatization Subscales of the Derogatis and Spencer (1982) Brief Symptom Index.

MEN AND WOMEN WITHOUT JOBS: FACTORS PREDICTIVE OF MENTAL HEALTH, PHYSICAL SYMPTOMS, AND UNEMPLOYMENT NEGATIVITY

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For most individuals who lose their jobs, unemployment is a very stressful life event. Yet, not all individuals react negatively to being unemployed. Recent research has focused on delineating the factors that might influence the unemployment experience. The purpose of this study was to investigate the role of six different variables as predictors of mental health, physical symptoms, and feelings about being unemployed for individuals without work. Also, because few studies have compared the unemployment experience of men and women, it was of interest to assess whether the six independent variables were predictive of the unemployment experience for men and for women.

Participants in this study included 247 unemployed individuals (128 men, 119 women) who were asked to complete a questionnaire while waiting to see a job counselor at a regional Job Service office in central Iowa. The questionnaire included measures assessing the following independent variables: 1) financial situation; 2) employment commitment (how much work means to the individual); 3) last job satisfaction; 4) job-seeking confidence; 5) time structure (degree to which individuals perceive their use of time during unemployment to be structured and purposive); and 6) coping resources (degree to which the individual has cognitive, social, emotional, spiritual, and physical resources available to help him/her cope). Three outcome variables were assessed: mental health, physical symptoms, and unemployment negativity (how upset an individual is specifically about his/her unemployment).

Multiple regression results for the total sample indicated that time structure was the best predictor for all three of the outcome variables. The variables last job satisfaction and job-seeking confidence were not as relevant to the unemployment experience as expected. Multiple regression results were also compared for men versus women. The pattern of findings were similar for both groups, although the variance accounted for in each of the outcome variables was higher for men than for women. Consistent with the multiple regression results for the entire sample, time structure was the best predictor for the three outcome variables for both men and women.

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APPLYING CLINICAL PSYCHOLOGY OF THE 40s TO INDUSTRIAL/ORGANIZATIONAL STRESS REDUCTION IN THE 90s

Behavioral science constructs such as assessment, prevention, intervention, and stress reduction were uppermost in the minds of an interdisciplinary team assembled in New York City in 1942. An article published in *J A M A*, 124:224, 1944 was the catalyst that led to a series of events that contributed to mental hygiene in the work-place.

In March 1944 Caterpillar Tractor Company of Peoria, Illinois and Cornell University Medical College entered into a research project wherein Dr. Bela Mittelmann and I visited the plant six times per year to interview employees and gather data toward a stress reduction modality in industry. The data gleaned during the next two years were studied by Dr. Harold G. Wolff, Professor of Medicine, Neurology, and Psychiatry at Cornell, Dr. David Wechsler, Professor of Medical Psychology at NYU Medical Center, and Dr. Harold Vonachen, Medical Director and Dr. Milton Kronenberg, Assistant Medical Director at Caterpillar.

In 1947 I published the first paper: " Mental Hygiene in Industry--A Clinical Psychologist's Contribution", *J Clin Psychol*, 1947, 3, 309-320. "Some Aspects of an Industrial Mental Hygiene Program" was published in the *J Applied Psychol*, 1951, 35, 383-385, as a follow-up article.

The program consisted of selection and placement of new employees; induction-orientation lecture to reduce stress, interviewing and non-directive-counseling, training of employment interviewers, training of supervisors, mental hygiene education as a preventative, prophylactic measure using bibliotherapeutic techniques; social service referral and other interventions, and research to validate the above new features.

Non-directive-counseling in industrial settings had its antecedents in the Hawthorne Western Electric plant studies initiated by Dr. Elton Mayo in 1933. In the 40s Dr. John Anderson at R. H. Macy's instituted a similar program of listening to department store employees whose efficiency had fallen due to stress. In the late 40s I utilized this technique in counseling employees who were looking for transfers to other departments. Other employees were referred for counseling since their efficiency was off due to unknown factors. In the 30s and 90s Employee Assistance Programs endeavor to reduce stress using some of the same methods of intelligent listening, catharsis, and confidentiality. The savings in human welfare, mental health, and billions of dollars has been noteworthy.

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THE IMPACT OF CONGRUENCE ON JOB SATISFACTION AND WELL-BEING

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This study investigates the impact of congruence (person-environment fit) on job satisfaction and well-being. The congruence construct, defined by Holland's vocational behavior theory, suggests that a higher degree of congruence between the individual's personality and the work environment results in a higher degree of job satisfaction and job stability. The rationale is that congruent interactions maximize the individual's ability to deal with the challenges presented in a specific work environment.

The subjects in this study are actuaries. The Strong Interest Inventory - Research Form (SII-RF) assesses subjects' personality types. The environmental type for actuaries is ISE. The SII-RF also provides a global indicator of job satisfaction. The Job Descriptive Index measures six specific aspects of job satisfaction (work, coworkers, supervision, pay, promotion, job in general). Two subjective measures provide indicators of well-being: a questionnaire on cognitive and affective dimensions of perceived well-being, and the Vulnerability to Stress scale from the Stress Audit.

The gender and congruence data are analyzed with a 2 X 2 multivariate design. The data for job satisfaction and well-being are analyzed using regression analysis. Results are expected to show that congruent subjects exhibit a greater degree of job satisfaction and well-being.

Crossover of stress, burnout and resourcefulness from one spouse to another

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In the present study we looked at the relationships between one's own job stress and burnout and one's spouse's job stress and burnout, considering the effects of each spouse's main coping resources - social support and sense of control - over these relationships. The main focus of the research was the question of a crossover of job stress, burnout and coping resources from husbands to wives and vice versa. The study was carried out on 101 couples, military officers (64% COs and 36% NCOs) and their working wives, who were randomly selected by the IDF computer. The participants filled out questionnaires that measured burnout, job stress, work support, family support concerning work problems, and sense of control.

The main results show that the husbands scored significantly higher than their wives on job stress and sense of control, whereas the wives scored significantly higher than their husbands on work support, family support concerning work problems and burnout. The husbands' reported sense of control and burnout were positively related to the respective variables for the wives. No relationships were found between husbands' and wives' family support and job stress. The results further indicate that husbands' family support and sense of control were negatively related to their wives' burnout. The wives' sense of control was negatively related to their husbands' burnout.

A multiple regression analysis demonstrated that the wives' burnout adds 8% to the explained variance of the husbands' burnout after controlling for the husbands' own job stress, and that husbands' burnout likewise adds 5% to the explained variance of their wives' burnout. Thus, a crossover of burnout was exhibited from husbands to wives and vice versa.

The issue of spillover of experiences from one domain of life to another has been documented extensively, especially in relation to stressful events. However, the subject of the present study, the phenomeneon of crossover of job stress and burnout from one person to another, has rarely been investigated or discussed.

REDUCING SECRETARIAL STRESS THROUGH TRAINING

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New York State provides training opportunities for 40,000 clerical and secretarial employees through a program begun in 1979 by an agreement between the State and the Civil Services Employees Association, Inc. Subsequently, automation, the creation of new and different job titles, the consolidation of other job titles, and the state's fiscal climate produced massive changes in the workplace and the workforce. To meet employee needs in this changing environment, the current training curriculum includes 30 courses clustered in 7 program areas: stress management, math and accounting, secretarial practices, career planning, work management and productivity, and government. These courses are designed to teach new skills as well as strengthen existing ones. One course in the secretarial skills area is "Taking the Initiative: Growing into the Secretarial Role." This one-day seminar familiarizes secretaries and other clerical staff with the changing role of today's secretaries as well as their full range of responsibilities and duties. Participants learn techniques for taking greater responsibility within the context of their own situation and in relation to their own particular manager. Problem solving, assertiveness, and learning to maintain a sense of humor are significant components. Teaching techniques are interactive and varied; they include role playing and group work, and a video produced for this course. Participants evaluate the course in two ways: they complete pre- and post-tests that measure learning in light of the expressed goals for the course; and they evaluate the instructor, the course content, and the methodology.

CONCEPTS, NORMS AND CORRELATIONS BETWEEN THE HIGH RISK FACTORS FOR STRESS RELATED SYMPTOMS IN A SAMPLE OF SEMI-EMPLOYED SOMATIZING PATIENTS

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ABSTRACT

Eighty-three consecutive out-patients with somatic (psychophysiological) disorders seen prior to therapy were tested on the seven factors of the High Risk Model of threat related disorders (Wickramasekera, 1979, 1983, 1984, 1986, 1988). 32% were high and 28% were low on hypnotic ability, which is more highs and lows than would be expected in a normal population. Counterintuitively hypnotic ability and major life change were orthogonal to all of the other six risk factors. Mean social support and coping skills were significantly below non-patient norms. Mean catastrophizing, negative affectivity (neuroticism), major life change and minor hassles were modestly but significantly above norms for non-patients. Catastrophizing was below psychiatric patient norms. There are modest positive correlations between hassles, negative affectivity and catastrophizing. There are modest positive correlations between coping skills and social support. There are modest negative correlations between coping skills versus catastrophizing, negative affectivity and

hassles. These findings are consistent with the High Risk Model, particulary the orthogonality of hypnotic ability and major life change from other psychosocial risk factors in somatizers. Empirical data is presented relating these patients' somatization to their employment status.

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THREE STATISTICALLY DERIVED MODELS FOR UNDERSTANDING THE CAUSALITY, HANDLING AND PREVENTION OF STRESS CLAIMS

Gordon D. Wolf, Ph.D.

Previously, Corey and Wolf (1991) presented an organizationally based model of understanding the etiology of stress claims, for handling stress claims and for reducing stress claims. Due to the lack of published research, the reasoning underlying the authors' models was based on the authors' experience as consulting Psychologists rather than empirical evidence. The present study sought to find empirical evidence that would support the Corey, Wolf approaches or suggest alternative approaches. Members of the Public Area Risk Managers Association (PARMA) of California and the author developed a survey of actual practices and experience in handling stress claims. This survey was sent to all PARMA members. Approximately one-third of the members of PARMA returned (103) surveys.

Fifteen separate variables were suggested as causing the stress claim problem. Factor analysis of these variables found 2 main factors: "Organizational behaviors that cause stress claims" and "Worker behaviors that cause stress claims." The "Organizational" factor controlled more than twice the variance of the "Worker" factor.

Factor analysis of the data concerning the processing of stress claims yielded a first factor which suggested 11 steps that could be taken by any organization. These steps allow the organization to certify the validity of the claim to protect the organization to certify the validity of the claim to protect the organization and to help the injured worker as much and as quickly as possible. Unfortunately, descriptive data also showed how few organizations actually followed all of these manageable recommended steps.

Factor analysis of the data concerning currently provided programs which might proactively reduce stress claims yielded three main factors. The first was a very proactive combination of 13 programs. These programs are affordable because they are primarily organizationally based and only sparingly used outside consultants. The second factor primarily focused on the use of outside constant based services.

Internal analysis of all the data suggested answers to other relevant questions. For instance, why are EAPs not more effective in reducing stress claims? Based on the data, the type of EAP that is needed to resolve the stress problems should include a conflict resolution component for workers and managers. Yet this type of program was in use in only 19% of the organizations.

Overall, the analysis of the surveys suggested three empirically derived organizationally based models for understanding the etiology of stress claims, and for treating and preventing the claims. While these data add additional credence to an organizationally based approach for reducing stress claims, further research is suggested.

THE EFFECTS OF AGE, FINANCIAL STRAIN, AND VOCATIONAL EXPECTATIONS UPON THE EMOTIONAL AFFECT OF ADULT JOB LOSERS: TEST OF A STRUCTURAL MODEL

Kevin C. Wooten Jefferson L. Sulzer
John M. Cornwell

Increasingly, individual employees across vocations and industries are susceptible to unemployment possibilities. Reviews of the literature (DeFrank & Ivancevich, 1986; Fineman, 1979; Kaufman, 1982; Leana & Feldman, 1988) illustrate stress as a primary result of job loss and unemployment. Due to the fact that there are no studies investigating career expectancies of adult job losers, the present effort examines the role of age in predicting vocational expectancies, and the role of financial strain and vocational expectancies in predicting stress-related anxiety of job losers.

A total of 424 job losers who were corporate-sponsored outplacement clients of a nationwide career consulting firm completed a survey involving antecedents of, and behavioral and cognitive reactions to, job loss. Based on the work of Feather (1983), and Feather and Barber (1983), items were constructed to measure both employment and career expectations, and subjected to both exploratory and confirmatory factor analysis. Through the use of EQS (Bentler, 1989), a second order factor structure emerged, labeled vocational expectancy. One item loaded across all factors (general reemployment), and a four factor structure emerged, reflecting career stability (growth, satisfaction, financial stability), career change (fields, industries), reemployment referent (chances relative to others in education, age, skills, etc.), and employment salary (same salary, better salary). To measure affect, the PANUS-X (Watson & Clark, 1989) was utilized. Exploratory and confirmatory analysis indicated a factor structure for both fear/anxiety, and depression, that was consistent with that of the developer. Financial strain was measured by asking how many weeks subjects could go before becoming financially distressed.

Based on the constructs emerging from the confirmatory analysis, a structural model was tested. Here, age and financial strain acted as a predictor variable, and vocational expectancies as mediating the relationship between age and anxiety. When subjected to EQS, several parameter changes were recommended. The Wald test suggested dropping career change altogether, as well as the relationship between career stability and anxiety. After the recomended changes, the expected relationships were found to be significant. A direct test of the fit of the model to the data yielded a significant chi-square ($x^2(268, N = 374) = 580.186$, $p < .001$.

However, the model did yield a comparative fit index of .938, and a Bentler-Bonnet index of .930. The significant chi-square may potentially be explained as a function of the large sample size (Coovert, Penner, & MacCallum, 1989).

Results of the study extend previous findings that older (Daniel, 1974; Fryer & Warr, 1979), and more economically disadvantaged (Estes & Willensky, 1979; Shamir, 1985; Warr & Jackson, 1984) job losers experience poorer mental health. In this study, age and financial condition were predictive of a specific reaction, namely, anxiety. Test of the model also indicates the importance and viability of examining vocational expectancies, both as a predictor, and as a mediator. Here, the findings suggest that older job losers have lower expectancies for vocational success, and these expectancies significantly influence anxiety. This is of critical importance due to the finding that anxious job losers are less likely to engage in active job search behavior (Swinburne, 1981).

A PROPOSED MODEL FOR THE RELATIONSHIP AMONG JOB CONTENT, JOB CONTEXT, AND STRESS

Jia Lin Xie and Gary Johns

During the last two decades, job stress has been of great interest to both academic researchers and practicing managers. Many studies have examined the effects of job stress, broadly conceived and measured, on employees' well-being and organizational effectiveness. Some research has also examined individual differences in reactions to stress. The majority of work has been dominated by the constructs role ambiguity and role conflict. Although this work has proven useful, it has conceptually confounded stressors with stress reactions. Also, it has overlooked the more basis (and more objective) qualities of job design that can be used to describe all jobs.

This paper aims to address this deficiency by providing a new model of (micro-level) job design and stress. Job design refers to the overall set of job-related activities performed by the job holder. It includes two major aspects: job content and job context. Job content refers to the core job characteristics while job context is the immediate environment surrounding a job. This model highlights the linear and curvilinear relationships between the job characteristics and stress, the interactive effects of job content and context on stress, and the mediating effects of role stressors in the relationship between job design and stress.

One aspect of the model explores the complex relationships between job design and stress. Some job characteristics such as autonomy may be associated with decreased stress, because they enhance one's control over the working environment. Some other characteristics, such as task significance and responsibility, may have a U-shaped curvilinear relationship with stress. Without these characteristics, stress may arise due to a lack of meaningfulness at work. With a high level of responsibility and/or task significance, job design can be stressful as well if the job holder does not have sufficient ability, experience, and time to handle these characteristics.

This model also examines the interactive effects of job content and job context on stress. It hypothesizes that the combination of low job complexity and unsatisfactory job context will create a higher level of stress that expected by their additive effects. Further, role ambiguity and role conflict are proposed as mediator variables in this model. They are functions of job design and predictors of stress.

The approach taken in this paper is one which emphasizes academic research as well as management practice. From the academic perspective, job design provides potential opportunities for researchers to explore the primary causes of job stress. It also helps researchers better understand the effects of the changing workplace on employees' well-being, because the macro-level changes in workplace, including changes in technology, work flow, and organizational structure are reflected in the basic elements of job design. From the managerial perspective, since job stress results from a misfit between the job design and personal characteristics, the attempts of designing "universally ideal" jobs are neither desirable nor feasible. Furthermore, if some job characteristics increase stress while others decrease stress, efforts should be made to examine how to put these characteristics together in order to balance the motivating features and the stress level of a job.

JOB DEMANDS, JOB SUPPORT, AND WORKER STRESS AMONG COMPUTER USERS

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The relationship between various job design factors and occupational stress has been investigated extensively (Smith, 1987). Based on the Balance Theory (Smith & Sainfort, 1989) and on the literature of social support (House, 1981), a model of job design and occupational stress of computer users was developed. The model proposes that an organizational factor (job support) can counteract the effect of a task factor (job demand) on psychological strain of computer users. Three effects are examined : 1) job demands may have a direct main effect on increased stress, 2) job support may have a direct compensating effect of reducing stress, and 3) job support may have a moderating effect on the relation between job demands and stress.

Three public service organizations in the Midwest participated in this cross-sectional study. A total of 262 office workers who used computers for varying amounts of time filled out a questionnaire. The majority of computer users were white female workers holding full-time permanent jobs. Most participants used a computer on a daily basis (82%) for an average of 3.4 hours per day (S.D.=2.2). Two types of job

demands were examined : quantitative workload (defined as the amount of work the person is given to do; Caplan et al, 1975) and computer-related problems (defined as the frequency of computer-related problems, such as computer slowdowns, breakdown, and not having available correct information when needed; Carayon-Sainfort & Smith, 1991). Support from supervisor and co-worker were the two facets of job support examined in this study (Sainfort, 1990). Boredom (Caplan et al, 1975), health problems (Smith et al, 1981), mood states (McNair et al, 1975), and daily life stress (Reeder et al, 1973) were the measures of psychological strain. Pearson correlation and multiple regression were used to test the proposed model.

Results of the study showed that there was a negative relationship between job demands and worker stress. Both quantitative workload and computer-related problems had a direct main effect on increased psychological strain of computer users. Supervisor support was directly related to reduced psychological strain, whereas co-worker support did not have any effect on psychological strain. Supervisor support buffered the effect of job demands on psychological strain.

The main findings of this study are : 1) adequate job support can alleviate psychological strain even when reducing job demands is not feasible, 2) supervisor support is a more important factor than co-worker support in reducing job stress of computer users, and 3) the results fit with the Balance Theory, which states that an organizational element (i.e. job support) could reduce the stress generated from job demands, such as quantitative workload and computer-related problems, that are due to the interactions between the use of technology and the design of tasks. Further research is needed to examine how other type of job support (e.g. technical support) can alleviate the stressful effect of job demands experienced by computer users.

FAMILY HASSLES AND FAMILY SUPPORTS AS PREDICTORS OF WORK AND NONWORK OUTCOMES

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Family hassles and supports can impact on work effectiveness outcomes as well as personal wellbeing. Research on these factors has implications for the functioning and financial well-being of work organizations as well as explaining factors important to people's health.

Stress studies are frequently confounded on gender, hours of work, and marital status. A random sample of female full-time staff (124) and all female full-time faculty (76) at a Canadian university were mailed a questionnaire and covering letter specifying respondents be women working full-time at the university and co-habiting with a significant other. The questionnaire contained a demographic section, family predictor variables (family hassles and support), and criterion variables (life satisfaction, leisure satisfaction, mental and physical health, intention to leave, organizational involvement, occupational role commitment and days absent in the last month). 135 (67.5%) questionnaires were returned and 78 (58%) respondents met the study criteria. The sample is, therefore, homogeneous on gender, full-time work status, and family (significant other and/or children). The scale reliabilities exceed commonly accepted criteria (alpha>.70).

A backward-entry regression procedure was used with the following predictor variables: age, level of education (higher education with higher integer), hours of work, family gross income, and presence of children under the age of 12 (no=1, yes=2), family hassles (FH), and family support (FS).

Family variables better predicted nonwork criteria than work criteria. FS significantly predicted life satisfaction ($p<.0001$), leisure satisfaction ($p<.03$) and mental health ($p<.02$); FH was a significant predictor of life satisfaction ($p<.0002$) and mental health ($p<.03$), and a marginal predictor of physical health ($p<.09$); presence of children under 12 was a significant predictor of leisure satisfaction ($p<.003$). FH was a significant predictor of occupational commitment ($p<.02$) and presence of children under 12 was a predictor of total absence ($p<.0009$).

These results provide strong evidence of the importance family variables have for the wellbeing of full time working women who have family responsibilities. As pressures and hassles accumulate among women in the workforce these findings demonstrate clear and unambiguous evidence of the negative effects that will impact on their wellbeing. Family support was positively related to wellbeing outcomes. Wellbeing is an important component for creating an effective workforce and society.

The evidence is less clear for the effects of family hassles and family support on work outcomes. None the less, absence is a major problem in US and Canadian workforces and the presence of children under 12 is associated with increased absence. The positive relationship between occupational commitment and family hassles draws attention to the possibility that corporate demands on women workers can lead to negative impacts on the family.

A REVIEW OF FAMILY VARIABLES AND THEIR RELATIONSHIPS WITH ABSENTEEISM AND TARDINESS

John K. Yardley, Brock University, Canada

This abstract summarizes the findings of studies reporting relationships between family variables and absenteeism and tardiness. 27 articles were obtained using: a visual search of 13 journals (1980-1991); a computer search of ERIC (1/82-6/91), PSYCLIT (1/83-6/91), and ABI/INFORM (7/86-6/91); and a selection of article references. There were: 13 family variables related to 12 absenteeism measures; 5 family variables related to 4 tardiness measures; 160 family variable-absenteeism, and 22 family variable-tardiness statistical relationships. Space restricts reporting to number of children and marital status.

Absenteeism and number of children (67 analyses): relationships were weak, moderate at best (strongest r=.36, many less than r=.10). The majority (36, or 59%) of relationships were negative, i.e., the more children the less was the amount, or frequency, of absenteeism; 20 (33%) were positive; and 5 (8%) not ascertainable; and weak-moderate evidence of statistical significance (16 or 26%, p<.05, 3 or 5%, p<.10, and 42 or 69%, p>.10). There was a tendency for: negative relationships for males and positive for women; results to be significant for women only, but this evidence is not conclusive. For number of children and tardiness: the relationships were weak (strongest r=.12); the majority (4, or 67%) were negative, i.e., the higher the number of children in the family the less the amount, or frequency, of tardiness; no evidence of statistical significance and little evidence of gender differences.

For absenteeism and marital status (61 analyses), the relationships were weak, moderate at best (strongest r= -.28, many less than r=.10). Nearly two thirds (34, or 65%) were positive, i.e., being married was associated with less absenteeism; 12(23%) of the relationships were negative, and 6 (12%) were not ascertainable. There was moderate evidence of statistical significance (17 or 33%, p<.05, 3 or 6%, p<.10 level, and 32 or 61%, p>.10), and slightly more evidence of married males being less absent than married females. For marital status and tardiness, the relationships were weak at best (strongest r=.16); a large majority (7, or 78%) were positive, i.e., married was associated with less tardiness; 2 (22%) were negative. There was weak evidence of statistical significance (1 or 11%, p<.05, 8 or 89%, p>.05); and very weak evidence that married males were less tardy.

Similar weak and gender inconsistent evidence was obtained for: "primary family income source" (respondent's income was family's primary income); commuting distance/time; and several infrequently measured family variables (home problems, spouse working, kinship responsibility, own relatives near, spouse's relatives near, family income, children under seven, husband a student, and family involvement).

The evidence clearly indicates the vast majority of family variable-work effectiveness relationships are weak. There is a great need to move beyond using simple demographic family variables and models. Number of children, for instance, conveys little information about circumstances affecting a person's ability to work. It is simplistic to expect all one-child families to be the same, therefore, researchers need to use variables such as family conflict, family organization, and parental demands.

STRESS MANAGEMENT PERSONAL INTERACTIVE COMPUTER PROGRAM

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Managers and others are often obligated to assess stress in employees and suggest coping tactics. Unfortunately this burden often falls on those who are unqualified to make such judgments.

We have developed a personal interactive computer program that will make these judgments easier. The program allows individuals to (1) learn about the characteristics and consequences of stress, (2) assess their own stress points on 23 separate scales, and (3) select coping strategies that can be used to counteract stress. The program records, sums and graphs reactions automatically and suggests ways in which individuals can deal with specific stresses. The user can work at his or her own speed and move flexibly throughout the program. Ordinarily it takes an individual approximately one and one-half hours to complete the program.

Employers can use the information to work more effectively with employees. In addition, individual users of the program can pinpoint areas of concern and work toward changing their own behaviors and dealing more effectively with stresses that they cannot control. The program also highlights stress situations and personal characteristics that are not directly related to the job but may nevertheless impact job performance and personal happiness.

The program is intended to (1) offer concrete guidelines for managers to modify their own behaviors and policies and (2) empower program users with knowledge to better understand their own situations and work more harmoniously with management and fellow workers.

OCCUPATIONAL STRESS AND ILLNESS IN THE U.S. MERCHANT MARINE

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In an effort to determine the long term effects of seagoing career on the health of U.S. seamen, the illness reports of 22,763 seamen whose records are entered in the Merchant Marine Accident Data Base (MMADB), were analyzed to ascertain the relationship between job related and situational stress factors and the occurrence of stress related diseases.[1]

The use of this restricted population alleviates many procedural problems in the epidemiological study of stress related illness. U.S. flag seamen represent a clearly delimited population whose characteristics are known. Jobs are defined by regulation and custom. There is little personnel interchange between broad job classifications. Average job tenure of active seamen is 20+ years, minimizing the effect of previous employment. The ambient environment is largely the same for all men at sea. The off duty environment is constant for the duration of the voyage. Finally, most seamen cannot return to their homes at the end of the day's work, thus the effects of extraneous stressors is limited.

MMADB reports corresponding to eight stress related illnesses previously identified in the literature (cardiovascular disease, IDC 390-458; hypertension, IDC 400-404; heart attack, IDC 429; psychoneurosis, IDC 390-458; suicide, IDC 300; peptic ulcer-gastritis, IDC 531-535; arthritis, IDC 710-718; asthma, IDC 493) were analyzed to determine the effect of age, rating (licensed, unlicensed), broad job category (deck, engine), and general ship type (container, dry cargo, tanker) on rate of occurrence. Of the 82,100 illness reports reviewed, 10,588 were in the stress related categories.

Chi^2 analysis showed insignificant mean age difference between groups. A 2x2x3 ANOVA of rank, job category, and ship type, revealed rank difference as the only significant variable ($p=.0042$). Pooling data from all ship types, 2x2 ANOVAS (rank, job) for each of the stress related diseases confirmed that rank was the primary determinant of disease occurrence rate.

[1]This study was sponsored, in part, by the National Maritime Research Center, U.S. Maritime Administration, Kings Point, NY

The results of these analyses show that the licensed group, both deck and engine, show a significantly higher percentage of stress related illness than does the unlicensed group. Higher than expected disease rates are:

Cardiovascular disease - licensed deck, 133%.

Heart attack - licenced deck, 196%; licensed engine, 160%.

Psychoneurosis - licensed deck, 122%.

Suicide - licensed deck, 159%.

Asthma - licensed deck, 174%; licensed engine, 150%.

Inferring stress level from disease rate, licensed personnel are under a markedly higher stress level than unlicensed personnel and deck personnel are under a higher stress level than engine personnel. Licensed deck personnel appear to be under the highest stress level of all.

Explanations for high stress levels among licensed personnel include the burdens of supervisory responsibility in an era of eroding management authority, accommodation to technological and situational change, general ageing of the merchant marine work force, declining job opportunity, and end-of-career anxiety. The latter two factors are particularly relevant for licensed deck personnel since engine personnel can easily transfer their skills to shoreside occupations.

Painful Lessons from the Royal Oak Post Office Shootings: Predicting and Preventing Workplace Violence and Homicide--Group Dynamics, Stress, and Labor/Management Relations Factors

James F. Zender, Ph.D. and Roger Wittrup, Ed.D.

What are some of the factors predictive of an employee reaching the breaking point and becoming violent in his or her workplace? What have we learned from a recent American tragedy costing the lives of five Americans in a United States post office in Royal Oak, Michigan? The fifth such violent incident in the U.S. Postal Service since 1985, could the violence have been prevented, and if so, why wasn't it?

What are some of the organizational forces contributing to the outbreak of violence in the workplace? What are some common characteristics of other organizations that are at risk for similar outbreaks of violence as seen in the Postal Service? What milieu characteristics create a ready climate for violence to erupt?

These are difficult but important questions that American corporations must become sensitive to so as to prevent the senseless loss of lives through violence. How are concepts of the dysfunctional family useful in understanding corporations prone to violence? To what extent are violent incidents predictable? What are the characteristics of individuals and organizations that reach the breaking point of violence? These will be the primary topics addressed in this paper.

PROACTIVE EAP REVISITED:
KEY CHARACTERISTICS AND CLIENT SATISFACTION

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Corey and Wolf (in press) have described the interaction between an organization and its members as a process of "mutual accommodation." Needs of both the organization and its members must be met for the interaction to continue. If the organization's needs prevent the individual's from being met, or if the reverse is true, conflict arises and high cost behaviors such as absenteeism, stress claims, law suits, or employee violence can follow.

The paper presents five key characteristics of the employee assistance program outlined by Corey and Wolf that facilitate the identification of problems in the mutual accommodation process and enhance the possibility of addressing both sides of the interaction. These characteristics are: a focus on problem resolution vs service provision, coordination with organizational interventions, therapist experience, program and peer review, and prevention. This paper outlines within each of these five key characteristics the unique elements that differentiate a proactive EAP from a traditional service-based EAP.

The remainder of this paper presents client satisfaction data from a survey of approximately 4,000 public sector employees. This data is contrasted against other published results. Finally, the authors present a model for assessing and evaluating client satisfaction that considers data from the worker and the employer both, thereby linking this method of program evaluation to both elements in the mutual accommodation process.

Reference

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