Conflicting Perspectives on Stress Reduction in Occupational Settings: A Systems Approach to their Resolution[1]

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Running Head: Reducing Work Stress

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16. Abstract (Limit: 200 words) An effort was made to determine how an experimental concept such as stress became altered in the real world of special interest groups, how the definition of stress chosen influenced subsequent interventions, what corporate and union definitions for stress and strategies for stress reduction existed, relation of reduction methods to the definitions, and the effect of strategies if the problem of stress was viewed with a different basic definition. In all, 217 organizations and individuals were contacted, including 67 corporations and 53 labor unions. An initial stress management questionnaire was mailed to 63 labor and corporate representatives. A second questionnaire, focusing less on program and more on ideology, was mailed to labor representatives. Specific stressors noted by labor representatives included lack of control over the work content, lack of control over the work process and pace, unrealistic task demands, lack of understanding by supervisors and management, the inability to keep work and home life stressors from interacting negatively, and lack of predictability and security about the future of the job. Most unions had not gone beyond the day long workshops and educational material format for stress reduction. Little emphasis was placed on lifestyle reformation and health promotion programs. Corporations recognized acutely the role of individual habits and perceptions in generating stressful situations. Missing from the corporate approach was the acknowledgment that organizational or work setting constraints help to create maladaptive behaviors and cognitions.

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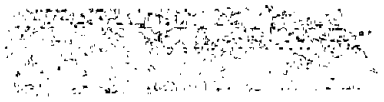

Introduction

This research project for NIOSH began as an investigation of stress management programs for blue collar workers. We had originally intended a survey and site visit of particularly innovative stress management programs run by enlightened corporations and unions. Extensive phone-calling to consultants. corporate health departments, and academics, resulted in a rethinking of our intended purpose. Health (how to get it and keep it) sounded the dominant theme in all conversations and written materials. If stress received mention. and it seldom did, the reference inevitably evoked stress's deleterious effects upon health.

Meanwhile, we called and wrote to labor unions. albeit with a premonition that the phrase "stress management" would not sit well with them. We did not anticipate the vocal hostility that many of these representatives expressed. when quizzed about existing stress management programs for their members. What we heard instead amounted to impassioned explanations of collective bargaining. grievance procedure, governmental intervention, and increased worker control. The daily exercise of a union's duties, we were told. provided the best prescription for stress.

As researchers with experience in defining and isolating the experimental concepts of a stressor and a stress response, we were simultaneously amused and frustrated to see how these words were being stretched. Accordingly, we shifted the focus of our original task. Since the phenomenon of stress in work seemed at once elusive and omnipresent, we

decided to impose our own boundaries upon the usage of the word. We reasoned that by making explicit our understanding of stress, we could systematically compare our definition to the corporate and labor conceptualizations. This would allow us to understand different efforts at stress management both on the terms of a research psychologist and on their own terms. Our task took on the following reformed questions:

1) How does an experimental concept such as stress become altered in the real world of special interests?

2) How does the definition of stress that one chooses influence the subsequent interventions applied to its amelioration?

3) What are the corporate and union definitions of stress, as determined by our questionnaires and conversations?

4) What are the corporate and union strategies for stress reduction?

5) Do they flow logically out of the definitions they employ for stress?

6) To come full circle - what effect would the corporate and union strategies for stress reduction have upon the problem of stress as originally defined by our research?

This last question carried a great deal of weight. What it asks boils down to a test of dual validity. First, were the experimental findings on stress actually applicable to the experience of stress in the field? Second, if we assumed they were, were stress reduction practitioners in labor and industry honestly attacking the real problems of stress, as opposed to simply improving health or raising productivity?

As our starting point for understanding stress, we relied on the well-established factors of controllability, level of stimulation, and predictability (Frankenhaeuser,1979; Levine, 1980). At the same time, we asserted the importance of employing a bio-psycho-social perspective (Leigh and Reiser, 1980; Schwartz, 1982). Much of stress might be characterized as disharmonies among the biology, psychology, and environment of a given individual. Schwartz (1983) describes the disregulation of any of these systems with each other as both stressful and potentially harmful to health. Loss of control, excessive demand, and lack of predictability can take place within each of these systems, in the linking of these systems, and in their interactions. A sleepy body cannot tolerate stimulation; an anxious mind cannot attend to the body's exhaustion; an impersonal organization will overlook this frazzled state of affairs. Recognizing the importance of this systems perspective, we developed an assessment tool, the Occupational Stress Evaluation Grid (OSEG). (see Table 1) that would allow us to observe both individual and institutional conceptualizations of stressors and efforts to reduce them. The OSEG was designed to reflect a systems perspective and ranges from physical dimensions all the way up to socio-cultural levels of analysis (Von Bertallanfy, 1968; Miller, 1978; Schwartz,1982;1983). Additionally, it recognizes that any stressor produces a reaction that at some level serves an adaptive function. The distinction of formal and informal interventions in the OSEG allows one to gauge the amount of personal and organizational control inherent in any one adaptive reaction. We discuss the OSEG as an integrative instrument in the last section of this chapter.

After presenting our own framework for stress, we will turn to the world of occupational stress as seen through the differing visions of labor and management. We will briefly review the methodology used to gather our data on their respective perspectives. Then, each view of stress and stress reduction will be presented separately. First, we attempt to extract a definition of stress from the diverse opinions of each sector. These rough definitions will be described with attention to the bio-psycho-social levels of the OSEG. After the stressors are enumerated, the matching stress reduction strategies will be listed and discussed. General remarks will be made within each section. Finally, an integrative conclusion is offered.

A Research Definition of Stress

In forming a purposely "bare bones" definition of stress, we drew on the basic psychological and psychophysiological concepts of controllability, level of stimulation and predictability. The research of Frankenhaeuser (1979) and Levine (1980) served as our reference points.

Controllability and Level of Stimulation

Frankenhaeuser and her laboratory in Stockholm have produced over twenty years of studies on the psychological factors that precipitate catecholamine increases above baseline levels (Frankenhaeuser and Jarpe, 1961; Frankenhaeuser, 1971; Frankenhaeuser, 1979). In reviewing this work, Frankenhaeuser has highlighted the importance of moderate stimulation and limited task demand in holding down excessive catecholamine release.

Laboratory research and field studies of factory workers indicate that people function best subjectively and show the least stress physiologically when work is neither too monotonous nor too stimulating. Moderate, but not harmful, increases in epinephrine are also correlated with moderately demanding tasks. When an individual is asked to do too many things at once, the stress response accelerates by as much as 50 per cent over the baseline. Other potent increases of epinephrine identified by Frankenhaeuser are task conflict (having to choose between two stimuli demands), lack of control over work pace, and overcrowding during commuting to work. These stressful dimensions closely parallel those outlined by Robert Karasek of Columbia University, who has developed a stress grid with coordinates of autonomy and job demand (Karasek. Marxer. Ahlbom, and Theorell, 1981).

A common theme linking all this research is the amount of control an individual exercises over external demands. Frankenhaeuser writes, "... Conditions characterized by uncertainty, unpredictability, and lack of control usually produce a rise in adrenaline output" (Frankenhaeuser, 1979. p.134). Recently, she has demonstrated a hormonal pattern of cortisol suppression during situations of strong personal control. Other researchers have shown an outpouring of cortisol when individuals experience a loss of control and essentially give up (Henry and Stephens, 1977).

Predictability

Seymour Levine has added a second dimension of predictability to the theme of control as a stress inhibitor (Weinberg and Levine, 1980). Levine has shown in several studies that animals receiving warning of shocks, who also possess the ability to escape or avoid the shocks, will show lower levels of plasma corticoids than rats without control or signal warnings. Interestingly, the rats with the highest corticoid levels are those to whom warnings are given without any possibility of escape. Levine sums up the important relationship between predictability and control

> The positive aspects of predictability might be attributed primarily to control, while the negative aspects of predictability might be attributed to lack of information about safety. Thus predictability of a noxious stimulus may always be more aversive unless the organism also has control or unless the contingencies of the situation enable the organism to gain information about safety. (Weinberg and Levine, 1980, p.53)

Levine seems to be suggesting that the excessive stress reaction can be contained if individuals have enough information about potential threats to formulate plans of action to minimize their resulting harm.

Other Factors

We also recognized in our delineation of the stress concept that personal styles can interact with environmental strains to produce a stress response. Lazarus (1977) and Glass (1977) have written at length about two other mental determinants of the stress response. Lazarus's work has pointed to the overwhelming importance of cognitive appraisal. how our

learning history and current psychic resources allow us to interpret the emotional value of a stimulus. Glass's contribution to the Type A literature implicates a behavioral pattern of time urgency, aggressiveness, competitiveness, and achievement-striving in development of coronary heart disease.

Methodology

We began our investigation in a somewhat traditional manner with a file of clippings about stress interventions and several lists of employers, labor groups, and trade associations. Using telephone contacts with these individuals/groups as a starting point, we developed an extensive list of programs and people who were involved with some attempt to reduce occupational stressors and improve health in the workplace. In all, 217 organizations and individuals were contacted (see Appendix (1) for the specific breakdown). Of these, 67 were corporations and 53 labor unions. 61 organizations of this 120 sent us written material in addition to answering structured questions on the phone. After selecting particularly representative or unique programs, an initial stress management questionnaire was mailed to 63 labor and corporate representives. A second questionnaire, focused less on programs and more on ideology, was mailed specifically to labor representatives. The overall response rate to the two questionnaires was 46%, with corporate participation at 57% and labor response at 32%.

Characteristics of the First Questionnaire

The first questionnaire was organized around some rough notions about stress management that had emerged from our initial phone conversations.

These original assumptions could be characterized as follows:

1) Stress management is one of a range of interventions that can be made at the workplace to handle the problem of stress.

2) Stress management comes in programs or packages that are administered to workers in organizational-clinical settings.

3) Stress management involves some transmission of information, skills, or peace of mind to an individual or group of individuals, usually by a trained professional who is a relative 'outsider' to the daily work environment. We also assumed that stress interventions could be initiated by workers or labor groups, as well as employers.

In addition to a lengthy list of stress management techniques (ie., relaxation training, yoga, biofeedback, meditation, exercise, discussion groups, etc.), we sought more general information about counseling, recreation, and educational presentations. We also included queries about work redesign and worker participation. As our knowledge through phone calls and written materials became more extensive, we introduced some major revisions into the survey. Faced with the paucity of stress management programs for blue collar workers, we revised our target population to include non-professionals - clerical, technical, and service workers. We continued to expand our definition of stress management to include any active interventions that sought to improve "life at work." We tried to include questions that discriminated in-house programs from programs

purchased from consultants or health professionals.

Questionnaire responses were both informative and problematic. International unions were unable to answer how individual locals handled stress reduction; other unions were put off by our emphasis on programmatic activity so common in sophisticated corporations. In turn, some companies were so diverse or of such large size that it was difficult for them to account for the ways that different divisions or offices handle approaches to stress. Still, much valuable information emerged from their responses and will be summarized in the Corporate section.

Characteristics of the Second Questionnaire

This questionnaire was sent only to selected labor representatives and was designed to allow a more open-ended discussion of stress reduction. Rather than a programmatic focus, it simply asked for definitions of stressors affecting their specific workplaces and strategies that had been employed to combat these stressors. The responses to this questionnaire, though few in number, tended to be rich in content and observation.

Data Analysis

The format of this investigation of stress management was decidedly qualitative. Though we used questionnaires and tabulated some rough results, their purpose was more to structure our telephone inquiries and written materials than to generate meaningful statistics. Our selection of questionnaire recipients was non-random and in fact biased toward groups whom we believed to have particularly interesting intervention strategies.

The tables to be presented in the text of this chapter are thus based on a synthesis of our diverse approaches to NIOSH's initial request for a non-traditional study of stress management. They are not meant as exacting depictions of the state of stress management in the corporate and union sectors. Rather, they represent the converging data we managed to cull through extensive phone discussions, personal interviews, document research, and compilation of survey replies. In this respect, their main purpose is to stimulate hypotheses and models that may be submitted to more rigorous and quantitative methods of inquiry.

Results of Labor Union Stress Evaluation

Definition of Stress

Turning from the laboratory to the field, we will investigate how the labor movement's depiction of stress parallels the experimental models discussed. Clearly, cross-fertilization takes place between the research and work worlds. Much of the Frankenhaeuser research on stress focused on the catecholamine output of individuals in different work settings, including sawyers, bus drivers, and VDT operators. Still, the tendency of the lay person, when using a concept as topical as stress, is to fit it into his or her already existing political understanding.

With this in mind, our central question concerns the outcome of an operationalized experimental phenomenon when it makes its debut in the "real world" arena of competing social and economic interests. The parsimony the honest researcher values in describing stress may be neglected for the political or economic advantage conflicting groups might

gain in crying the "Stress Wolf."

NIOSH's request to our research group allowed us to pursue this concern in an extremely concrete manner. Through telephone contacts, questionnaires, and the extensive mailings we received, we were able to ascertain how over fifty major labor unions and organizations across the country conceptualize stress. By focusing more specifically on how these groups choose to prevent, reduce, or cope with stressors, we learned a great deal about what they think causes stress, and at what levels (biological, psychological, or social) they believe it is most effectively battled. It surprised us to see how closely their stress complaints corroborate the basic research findings on stressors. This fact is most clearly highlighted by the choice of specific stress-reducing strategies that confront head-on the majority of experimentally defined stressors. As we shall see, the labor movement in its more progressive stance argues for worker control over stimulation, work pace, task demand, and role conflict. Similarly, it seeks to build more predictability into workplaces, by demanding in contracts advance notice of technologial change, plant closure, and downgrading of work.

Finally, though for its own strategic purposes it has been slow to handle this issue, the labor movement has begun to confront injurious life styles and habits of its members (including diet, substance abuse, and emotional illness). Generally, there is a positive correlation between the newness of a portion of the labor sector and its commitment to attacking stress on multiple levels. The most progressive organizations in stress

reduction are those which represent the rapidly growing clerical, service, and health care workforce. It is probably no coincidence that women comprise the rank and file majority of these sectors; our work strongly showed women to be more outspoken and less tolerant of intrusions upon their their mental and physical equilibrium.

We will now turn to the data collected by our interviews and surveys, beginning with the stressors most commonly identified by labor organizations. These range from the physical/biological to the psychological/interpersonal to the organizational and the sociopolitical.

The Stressors Most Commonly Named by Labor Organizations

Physical and Biological Stressors

These stressors are the ones most likely to be handled by the OSHA statutes and NIOSH recommendations. They range from representing acute and chronic life-threatening hazards to the subtle and persistent "hassles" that may be just as lethal in creating a long term stress problem. In our survey, the older more established industrial trade unions named the kind of stressors one would expect to find on a shopfloor of an assembly belt. A more revealing class of physical hazards was offered by VDT and CRT operators, whose ergonomic considerations have only recently begun to receive attention. Table 2 is meant to be a representative selection of the biological/ physical/environmental stressors we uncovered, ordered from industrial to office settings (see Table 2). It illustrates a variety of physical and environmental stressors named by the participants in our

survey, but is not meant to be exhaustive or to imply that the workers replying are the only groups exposed to these stressors.

Many of the stressors identified in Table 2 have direct biological consequences, such as silicosis, cancer, deafness and tissue damage. Yet even without ever producing actual health effects, they wield the constant psychological threat of their potential injury. In this sense, biophysical stressors are particularly relevant to the experimental stressors we have identified. For example, a NIOSH-supported study by Ramsey, Burford, and Beshir (1982) makes clear the behavioral influences of heat exposure beyond the physical danger of prostration, "Temperatures below and above the preferred level (approximately 17C to 23C) have a significantly detrimental effect ($p<.01$) on worker safety related behavior." Workers exposed to extremes of temperature are more likely to use their hands instead of the appropriate tools, lose control over their work pace, neglect safety equipment and fail to maintain their tools properly. Physical stressors, by reducing a workers' ability to control his/her environment, and by posing an unpredictable threat of injury, create circumstancess where an elevated stress response would be naturally invoked.

Work-setting/Psychological/Interpersonal/Socio-cultural Stressors

In these levels of stress-inducing events, union representatives appear more and more willing to identify stress as emerging from both the workplace and the homelife. Economic hard times, unemployment, plant

relocation, and automation have tended to blur the boundaries among job stress, family stress, marital problems, and social problems. This type of systems analysis by workers is particularly prevalent in the "cleaner" more white collar sectors. A stress manual used by the Graphic Artists International Union divided stressors into environmental and lifestyle categories including non-occupational stressors such as sex, the natural environment, and bereavement.

An American Federation of Teachers publication called Stress and Burnout in the Schools divides the work-setting and interpersonal realms into three levels, the microsystem, the mesosystem, and the exosystem, representing the smallest work unit, the organization, and the outside social supports respectively (a fourth, the macrosystem, encompasses the socio-political-economic conditions). Borrowing this conceptualization from two researchers on burnout (Carroll and White, 1981), the union identifies stress as ranging from role mismatch and overload in the microsystem to the effects of family demands and school board decisions in the exosystem.

Bearing in mind this comprehensive definition of stressors used by the less traditional unions, we may list the variety of psychological, work-setting, and interpersonal stressors identified by our study's participants (see Table 3). Table 3 is again meant to be a representative, but not exhaustive, illustration of the major non-physical stressors discussed by labor union representatives. The stressors ascend roughly from the formal work process to the less formal psychological and social influences that affect work. See Appendix (1), for an enumeration of the organizations who

provided information about exposure to stressors.

This extensive list of stress complaints represents only a sampling from the organizations and individuals who aided us in our research. What kinds of stressors workers face who have no union or organizational backing is clearly a pressing question. Because of the limitations on time and resources, our sample could not include the vast number of small unrepresented workplaces across the country. We also had virtually no contact with the unorganized workforce that has been rapidly growing in the Southwest. Of the groups whom we contacted and conversed with, we do not pretend the above list adequately conveys the complexity of demands and stressors that exist in their work. What our summary does show is a certain current of repetitive factors that span the work environment of the punch press to the word processor. Labor representatives seem in accord that the following stressors are most troublesome:

1) A lack of control over the work content. Individuals are unable to influence the choice of product, the design of the work and the level of effort it requires. They feel no direct influence over the product they create.

2) A lack of control over the work process and pace. Workers feel no power to regulate the level of stimulation the work produces, whether effort will come in quick bursts or monotonous lulls. Pacing of the work is often machine-determined leaving the individual little opportunity to regulate the task to his/her own rhythm. The result is a tense secretary waiting for the terminal to reply or a worker in a SO2 plant watching one warning

gauge for an eight hour shift.

3) Unrealistic task demands. Individuals are requested to handle conflicting tasks (ie. teachers must be sensitive role models and plainclothes policemen at the same time). Inadequate resources and poor conditions make the successful performance of one's job impossible (i.e., correction officers must confront unresponsive lawmakers and overcrowded prisons).

4) A lack of understanding by supervisors and management. This factor includes the overwhelming frustration when complaints go unheeded and one has no power to change stressful conditions. Principals are characterized as too caught up in their own paperwork demands to listen to the teachers' problems. Supervisors on the assembly line were described as seldom listening to workers' suggestions about how a production process could be done more efficiently or cheaper.

5) An inability to keep work stressors and home-life stressors from interacting multiplicatively and negatively. There is a growing movement in unions to admit that all the stress at work does not come simply from the work itself. People have personal troubles, divorce, mental illness, family death, regardless of what work they do. Though unions are not about to concede that such problems are the major stressor for their members, they are more willing to face up to their own foibles or misfortunes and not blame the company blindly for the stress that befalls them. On the other hand, the union-management relationship is almost inevitably an adversarial one over the allotment of resources. It would be neither realistic nor appropriate to expect the unions to play up their members'

shortcomings or troubles at the risk of distracting attention from the workplace stressors they daily face.

6) A lack of predictability and security about the job's future. This factor pulls together questions of plant relocation, automation, general economic downturns and skill obsolence. It has taken on a new urgency in face of business and government support of "high tech" industries. Workers in the older industrial trades face the accelerating phasing-out of their livelihoods, while younger workers are unsure what skills will be appropriate in a technological workplace that innovates yearly. Unions intimately involved with assembly work must grapple with their position toward robotics and entirely automated belts. The problem of downgrading of existing jobs is dramatized by office workers' claims that their jobs as key puncher and "word processor" is leading to the creation of a "mental assembly line." The recent successful drives to organize clerical and technical unions at large universities (most notably at Yale) suggests that a new force of female workers is demanding control over the future structure and pace of their work.

Responses to Stressors

Unions show remarkable consistency in tailoring their stress reduction efforts to combat the stressors they named in our survey. A statement by Lee Schore, UAW #805, in a pamphlet he sent us sums up quite well the dominant union approach to stress reduction,

> A union approach is based on the belief that hazards of job stress are related to the structural conditions at the workplace and affecting

> all workers there, not merely the "troubled" worker. We do not seek to help workers manage their stress better or to adjust to the conditions that are potentially dangerous to their health. Rather when we speak about stress reduction we are really talking about stress prevention - creating healthy workplaces. This calls for collective solutions and requires collective forms.

Accordingly, of the 53 unions included in our inquiries, none of them had its own in-house stress management or counseling service. A small number contracted psychologists including the state AFL-CIO office in Hawaii, the Montgomery county police in Maryland, and a UAW local in New York City (which has made referrals to a psychoanalytic institute for 20 years). Municipal workers in New York City pay into an HMO, which gives them access to short-term counseling and social work services. Many Bay area local unions in California have hooked up with the Institute for Labor and Mental Health, which runs 8-week support and educative groups on occupational stress, covering topics such as the physiology of stress, organization of work, and self-blaming and anger. The Institute also offers steward training and documentation of disabling workplace stressors.

Aside from these more recent efforts to offer more individualized stress treatment, the majority of unions who provided information had not gone much beyond the day-long workshop and educational material format. There was very little emphasis on lifestyle reformation or health promotion programs. A health and safety representative for an electrical workers union summed up,

> I think health promotion is important but does not belong in the conflict-ridden workplace atmosphere, but in the community. It is difficult for workers to enthusiastically embrace a program when the company offers health promotion with one hand and toxic exposure with the other hand.

Biological/Physical/Environmental Stress Reduction

Turning to the preventive rather than management tactics unions employ, we might start again with biological/physical/environmental stressors. Though the stressors might be located on the lower end of the OSEG, the unions' formal intervention takes place at the work setting and above. Table 4 illustrates the dominant responses of labor representatives to how they might handle physical stresssors in the work place. Their emphasis upon legislative restraints and strong contractual control in regards to physical health hazards fits well with their conceptualization of stress as a lack of control over their work environment. As many union leaders put it in our discussions, there will be little improvement in working conditions, if workers simply learn ways of improving their leisure and deep breathing. The lengthy latency period of many occupational illnesses precludes an extensive emphasis on shortterm adjustment strategies.

As a case in point, labor representatives cite the problems of office workers in changing working conditions. 80% of public-employed clericals are not unionized, while 90% of private sector clericals remain unorganized. Without an institutional advocate, these workers have little recourse if health and safety conditions are unsatisfactory. OSHA statutes

primarily serve older industrial worksites; the proper safeguards for office environments have yet to be promulgated. The lack of organization and of federal guidelines forces the clerical worker to rely on the social support of fellow workers. Perhaps, for this reason, international unions, such as the UAW and the Hotel and Restaurant Employees, who already represent some office worker locals, have begun to put time and money into organizing this sector. As the supportive network of the coffee break grows into a fledgling organizing committee for a union drive, we see a powerful example of how an informal intervention strategy can gain legitimacy and structure until it is formalized by larger institutions.

Responses Psychological/Interpersonal/Work setting/Socio-cultural Stressors

The union response to non-physical stressors is outlined in the second part of Table 4. In controlling work setting stressors, the strongest active strategy recommended by the union spokespeople was a contractually-empowered health and safety committee, composed of union and corporate members. Worker participation at this shop floor level returns the opportunity for self-control to the individual worker. They are able to effect the ergonomic changes necessary for stress reduction including lengthening work cycles, removal of swing shifts, flexitime, monitoring of production equipment, and redefinition of task demands. Such participation through Health and Safety committees and worker-approved Quality Circles allocates partial responsibility back to the worker, relieving some of the burden from the middleman supervisor. This might in turn aid the poor

relationship between workers and supervisors, encouraging them to be collaborators rather than adversaries. Some unions went further to suggest that supervisors receive educational credits in human relations and personnel management courses.

With American industry in the midst of a massive retooling for automated assembly, unions face the multiple stressors of unpredictability, redundancy, downgrading and virtual extinction of certain job sectors. While they acknowledge that jogging might keep their minds off a future fast approaching, most union representatives advocate strong contractual guarantees to protect their members against the high tech dismantling of their livelihoods. Appendix 2 offer an example of strong contract clauses that request advance warning of technological innovation and subsequent retraining without penalty for the displaced workers. Recent efforts by the UAW to achieve lifetime employment clauses are also geared toward maintaining some predictability and control for workers in this disorienting period of industrial modernization.

Finally, as mentioned earlier, some unions have also begun to address the more immediate injuries these diverse stressors inflict upon the worker. Beside the referral programs described in brief above, the International Association of Machinists and Aerospace Workers might serve as a useful example of a progressive union approach to the psychological health of its members. The international has given a mandate to its locals to create a "Human Contract", based on the training of union counselors in 8-12 week courses. These union counselors learn about the community

resources of various helping agencies, health providers, psychological services and social work facilities. They learn about listening skills, state laws, and financial assistance (including disability and insurance payments). The expectation for these union counselors is that they will help to tie the union membership back into the community and encourage the collective perception and solution of common stressors. Ultimately, this attention to psychological and community stressors may pay off politically for the union. By broadening its services, it increases its vitality and allegiance. Strongly bonded unions enter collective bargaining with the distinct advantage of solidarity.

Discussion of the Labor Perspective

We began this chapter with speculation on the buffeting an operationalized experimental concept might absorb in the "real world" arena of special interests. Reviewing some of the major experimental studies on the antecedents of stress, we determined control, demand, and predictability to be crucial psychological factors in evoking the stress response. When we moved to the field and surveyed a diverse group of labor representatives, we found their discussion of specific stressors paralleled closely the experimental findings. Further, the overriding concern of their formal interventions to alleviate stressors was the increase of control over work setting and organizational factors. This emphasis on structural change, as opposed to individual change, was reflected in the relative lack of personal lifestyle, diet, and exercise interventions advocated by labor organizations. Similarly, union spokesmen were adamant

in rejecting a Lazarus/coping style approach to work place stressors.

Cognitive appraisal is an attractive strategy with its stoic belief in the power of human expectations to alter the stress value of stimuli. If the worker changes his/her perception of the job demands, the stress level will be accordingly diminished. Unions reject this perspective, arguing that the fact that workers have begun to complain about stress is a healthy sign. Union members see themselves as entitled to jobs with creativity, autonomy, and self-determination. Their appraisal of dissatisfaction with the limitations of their existing working conditions is strong evidence of this emerging attitude in the workforce. To alter this self-affirming appraisal would be a step backward toward the older industrial notions of the "dumb worker" and expendable labor.

In the same way, unions rejected spending large resources of time and money on altering Type A style behavior in their membership. Their politically-based complaint focuses on a society which fosters aggressive, competitive and time-racing behavior. They argue that their members would learn more relaxed styles if the demands and deadlines, job-loss threats and speedups, were diminished to a more acceptable level. To adjust the worker to these stressors is to make them more bearable. The more bearable they become, the less motivation the rank-and-file will have to alter the institutions that impose these stressors. For the more adversarial representatives with whom we spoke, coping is tantamount to accepting and thus only blurs the battlelines.

Ultimately, unions may have inadvertently helped to define the concept of stress even more precisely than the laboratory. The advances of the Frankenhaeuser and Levine studies demonstrated that the crucial variable in the stress response was a stimulus's effect upon the individual's psychology. Still, their method of validating this assertion relied upon physiological indices correlated with behavior and self-report. The most obvious interpretation of their data suggests the potential health ramifications of prolonged stress exposure. Yet to relate stress to its physical influence upon years of life or potential illness is to fail to define its meaning completely. While unions recognize the material effects of stress (and have never been ones to underplay material gains at the bargaining table), they increasingly emphasize the psychological import of the concept. Improvements in health due to stress management are not satisfactory, if the psychological imperatives of control and moderate predictability are not obtained. In recognizing autonomy and self-determination as stress-reducers in themselves, independent of their influence on physical health, the unions argue for the integrity of the psychological world aside from its bodily concomitants. They do this, one might add, with the experimentally-supported conviction, that as they alter the psychological atmosphere of their members, the physical changes will follow suit.

Unions add to the researcher's understanding of stress by clarifying its preeminence as a psychological construct. They define it as the tension between deciding for oneself and being dictated to, between possessing

adequate resources for a task and being overburdened by unreasonable demands, between having reasonable expectations of future events and being surprised by unplanned contingencies. Ultimately, they portray stress as the power struggle of the individual with environments and institutions that impose rather than collaborate. Alternatively, the absence of stress implies the individual able to self-pace and reach accomodation with the demands presented to him/her.

Unions point out that many experts describe stress as an "inevitable" fact of life. They wonder if this is not a justification of a political system that characterizes life in marketplace and competitive struggle terms. If such a characterization is correct, and stress with its incumbent struggle is inevitable, then the next step for everyone should be taken in a jogging shoe. Since the labor groups are unwilling to grant stress an evolutionary status in the society, they will continue to pursue political action in the hope of eradicating work stress altogether.

Results of Corporate Stress Evaluation

Definition of Stress

In contrast to the approach of labor groups, the most salient feature of the corporate approach to stress is its tendency to avoid characterizing stressors. Of all the materials we obtained from corporate organizations, only one included a list of the stressors to which employees were exposed. This lack of formulation typifies the main theme of the corporate conceptualization of stress. While excessive job demands and responsibilities may receive mention in discussions of stress, the main

emphasis falls on maladaptive personal styles and poor "person-environment fits" (Chesney and Chavous, 1981).

Many corporate approaches to stress disregard workplace characteristics or work organization altogether. The focus is on personal responsibility and coping. Employees are instructed to identify stressors and strains and to recognize the role of stress as a risk factor in disease. Modification of one's lifestyle is promoted, with particular attention to exercise, nutrition, and coronary-prone behaviors. Employees are encouraged to develop personal strategies that would improve their resistance to stress or their ability to cope with strain. Relaxation, cognitive restructuring, communication skills, and stress management are among the solutions proposed.

Though the term, stress, is rather unspecific in corporate parlance, the motivation for stress management seems much more defined. Corporations see satisfied employees as healthier and more <u>productive</u> workers. The corporate world has recently experienced an explosion of consulting groups whose main message is that the quality of an employee's life and the success of a firm are one and the same goal. As we detail the variety of corporate health promotion and stress management programs, it will become very apparent that many well-intentioned corporate members take this philosophy to heart and have vastly improved the day-to-day working environment of their employees. In this manner, they have defined stress on personal, biological, and physical dimensions. Their intervention strategies fall on the same levels of the OSEG. What we might keep in

mind, as researchers with a particular definition of stress, is the extent to which these approaches address the full problem of stress. Are the problems of control, demand, and predictability across the multiple levels of the bio-psycho-social model confronted by this person-focused approach?

What gets lost in the proliferation of workshops and exercise programs is any precise discussion of the organizational antecedents of stress. As more progressive companies go beyond health promotion to institute employee involvement programs, quality circles, and participative management, more open discussion of structural stressors will inevitably take place. What the corporate response to these alternate views of stressors will be remains an intriguing and largely unresolved question. Our research suggests that some corporations came to employee involvement as a progression from health promotion to employee assistance to crisis counseling to stress management, finally arriving at as fully an integrative program as possible. Their continual evolution toward a psychological sensitivity to their employees' needs suggests that an eventual rapprochement is not impossible.

The discussion that follows offers a synthesis of the information gathered from the 67 corporations we spoke to or from whom we received materials or questionnaires. It also draws on the comments and questionnaires of the twenty-three consultants we contacted who specialized in health promotion or stress management programs (see Appendix 1 for more specific demographics).

Biological/Physical/Environmental Stressors

Corporations largely choose to define biological and physical stressors in personal, as opposed to ergonomic or workplace terms. As a brochure of one "life extension" company states, "Whether an individual lives or dies, possesses vitality and health, or suffers debilitating illness is largely in his or her own hands." Still, this individual orientation has not meant a lack of imagination or breadth in corporate "stress management" strategies. The variety of personal health risks corporations have begun to identify suggests an awareness of employee behaviors that cuts across the entire bio-psycho-social system. The following list illustrates the comprehensiveness of their approach:

a. Nutritional excesses or deficits

b. Smoking

c. Alcohol and drug use

d. Lack of exercise and recreation

e. "lifestyle diseases" including cancer and hypertension

f. Chronic pain

Corporations with active attention to these concerns range in size, type of product, and location. Communications, business machines, paper products, health needs, missiles, computers and software, insurance, automobiles - the leading corporations responsible for each of these products or services have developed extensive programs to define and isolate the health concerns listed above. In all 80% of the corporations and organizations responding to our questionnaire have some form of health promotion program.

The beginning stage of a representative corporate program is a health

risk appraisal. An employee schedules an appointment with the company physician and undergoes a thorough physical and lifestyle history. Blood pressure, blood chemistry, height, weight, cholesterol, and other diagnostic clues are recorded including an extensive family history. The physician integrates this information into a profile of the employee's general health, specifying problem areas and remedial actions that might be taken. Review of the health profile leads neatly to a referral to one or more of the health promotion programs also offered by these companies. These programs will be discussed later on.

Upbeat and attractive educational packages always accompany any corporate health appraisal program. Newsletters, departmental contests, fun runs, audiovisual guides, and illustrated brochures provide incentives for the employees to "get involved" with their own health.

By the above account, it should be clear that corporations have chosen to rely upon health professionals, most often physicians and occupational nurses, to define the parameters of physical and biological stressors. The health promotion programs have almost without exception arisen from intact medical departments and in this regard reflect national trends in preventive health and lifestyle management.

Work-setting/Psychological/Interpersonal/Socio-cultural Stressors

Once again, the corporate focus tends to avoid organizational or work-related definitions of stress in their discussions of non-physical stressors. The majority of companies center their approach in the OSEG

levels labelled Interpersonal and Psychological. Table 5 lists the kinds of non-work stressors that corporations have begun to identify as influencing the welfare of both the workers and the company. It also includes a small set of work-related stressors that a few of the companies identified. The list demonstrates an emerging awareness in the corporate world of employees as complicated human beings with continual challenges outside their work. The breadth of what the company considers in the purview of treatable stressors suggests they will leave no stone unturned to aid the employee in achieving satisfaction and productivity. It is not uncommon to hear stress consultants and managers quoting the self-actualization theory of Abraham Maslow. Believing their employees have moved up the ladder of physical needs and achieved security as well, managers attest their sensitivity to the life goals and creativity of their employees.

An emphasis on non-physical needs necessitates an integrative perspective toward the employee. One must think of him/her in family or community roles outside the workplace. Recognition of variations in personality, temperament, and mental capacities is equally important. For humanitarian or economic reasons (or both), most large corporations will no longer send the employee off to the mines and forget the person's name. How they follow up the single employee with every conceivable program of psychological and physical health promotion is the topic of the next section.

Corporate Responses to Stress

Corporate organizations vary significantly in the kind of efforts employed to promote health or reduce stress among employees. If our contacts with many of the world's largest corporations are an accurate indication, the majority have either not addressed employee health or stress with specific programs, or have done so exclusively through health insurance packages. Representatives from many companies greeted our inquiry with pride or defensiveness and proceeded to describe their employee assistance referral system to deal with "troubled employees." On the other hand, there were organizations that had so many programs in progress that they were reluctant to characterize their efforts in any simple way. Instead, they sent us thick envelopes filled with glossy brochures and handouts, or referred us to the administrators, clinicians, or consultants responsible for different program components. Even within the most comprehensive efforts, however, individual programs often remained isolated from one another.

If corporate responses to stress vary across organizations, they also seem to vary across classes of industry. At this point, high technology (communication and information) concerns and large-scale manufacturing companies lead the way in the diversity and depth of their efforts. Retail and service organizations are less likely to have implemented health promotion or stress programs for their employees. While economics may be the most important contributor to this discrepancy, another reason may involve the relative decentralization of retail and service personnel. The reliance of corporations on in-house provision of services and education is

better suited to centralized work settings.

To put what follows in perspective it must be understood that there are now large companies whose sole function is to promote health or manage stress. While some corporations have contracted their services, the larger corporations represented in our questionnaire replies, provide over 90% of their health promotion services and over 80% of their stress management services in-house. While health promotion more clearly falls under the medical aegis, stress management programs are administered by a cross-section of corporate departments. The list includes Human resources, Personnel, Employee advisory services, Medical department, Educational training, Employee service organizaton, Psychological services, and Office of stress management. This lack of commonality in approaches to stress is mirrored by the differing sources of funding for stress management. In our questionnaire results, 35% of the respondents'programs were funded by a medical plan, 45% by the company's general funds, and 25% were fee-supported (some companies using mixed funding strategies).

Table 6 presents corporate strategies for handling the extensive health and psychological stressors, which they have characterized as troubling workers and the workplace. The first category, health promotion and education is usually open to all employees, professional and non-professional. There were instances, however, in a few corporations in which executives still received certain educational materials and physical screenings that were as yet not offered to the non-management employees. Whereever programs were offered, attendance and utilization by all

employees was reported to be remarkably high. When scanning the extraordinary breadth of health services offered by the larger corporations, it is apparent that many of the approaches extend up and down the levels of the OSEG. In accentuating education, prevention, and lifestyle enhancement, the more progressive companies break down mechanistic models of the body and challenge the employee to think holistically about health.

Further, as Table 6 indicates, the corporate outlook on health is both technologically and humanistically sophisticated. Combining computer health appraisals with fun runs blends gravity and amusement in a way that promises to keep employees motivated about health promotion. The company representatives we contacted often remarked that beyond the potential health benefits, the education and prevention programs elevate the morale of the company. The programs, courses, and facilities serve to remind employees that they mean more to the firm than their time cards or production quotas. In addition, corporate studies mailed to us indicate employee satisfaction with learning techniques of self-mastery and control. These findings suggest that the health policies of corporations may have tangible psychological benefits in reducing stress on both the biological and psychological levels of the OSEG.

Employee assistance and substance abuse rehabilitation programs are often closely linked in corporations, with the former growing out of the latter. For example, an extensive alcohol program at one company has evolved into a "pretreatment intervention program dealing in secondary

prevention." Availability extends to all employees and their dependents. The emphasis is on union/management/community support to help the "troubled employee" back on to his/her feet. This type of program appears more and more common, extending into financial, pre-retirement, and psychotherapeutic counseling. A second corporation with a similar spirit employs a volunteer network of "peer conselors", whose main role is in assessment and referral. ALMACA (Association of Labor-Management Administrators and Counselors on Alcoholism), the EAP's association, has intensified epidemological efforts in recent years to identify high risk populations and take more appropriate preventive actions.

Of the companies in our questionnaire pool, nearly 80% listed stress education offerings including literature, classes, and workshops. Yet actual stress management interventions, such as relaxation training or meditation, were utilized by 50% to 60% of companies responding. As opposed to health education and promotion, both stress education and management programs were less likely to apply to non-professional staff.

While health promotion and education remain the province of the medical department, psychologists led all other health providers in directing stress management and education programs. Perhaps, even more surprising, psychologists were outnumbered as directors of these programs by the "other" category - i.e., health educators, exercise physiologists, training and development staff, and in one case, legal staff. This finding of our questionnaire suggests again that stress is not yet the domain of any single profession. Its diffuseness of definition in the corporate world

allows for many interventions with widely different starting points. This idea also accounts for the frequency with which stress education programs were provided by personnel from outside the organization. Diverse professionals appear eager to share in the recent "boom" in stress management workshops and in-service training by consultants. Accordingly, stress reduction programs have expanded their province to the realm of management training. Conflict resolution, human relations, and value clarification were mentioned as workshop topics by many of our corporate contacts. For organizations contemplating worker participation, these efforts may facilitate structural changes.

What all the stress management perspectives in our research have in common is an overarching theme of personal responsibility and personal change. The Lazarus/coping model plays a large part in the educational materials we received. Stress educators mention control but mostly in terms of teaching individuals what they can and cannot control. Little of the corporate material focused on stressors discussed enhancement of individual control through structural change.

The emergence of the QWL (Quality of Working Life) movement suggests that the corporate conception of stress has finally penetrated into the work organization itself. With the automobile companies the most dramatic case, a new effort toward employee involvement and joint labor-management ventures has begun. A large utilities company offers an excellent shopfloor example. Employees, both hourly and salaried, meet weekly in an accident prevention committee. Membership is rotated and published minutes

of the meetings are distributed to all employees. The committee reviews issues of lost time due to accidents and equipment problems that might lead to accidents.

The exact nature of redesign and participation efforts remain unclear. Corporations are wary of sharing too much information about these interventions, claiming "trade secret" prerogatives. Consequently, we feel less able to offer a meaningful analysis of their actual benefits to workers as stress reducers. To the extent that they actually enhance worker participation in decisions about work organization or demands, they hold great promise for reduction of stress and enhanced perception of control by employees.

General Discussion of Corporate Approach

The corporate approach to stress concentrates upon the individual employee's lifestyle and health habits. It defines stress, when it does define it, as personal styles or sets of expectations that are inappropriate for the demands of the environment. The management of stress parallels this definition by specifying techniques to alter one's habits or perceptions in an effort to achieve a better person-environment fit. Comparing this perspective to our research defintion of stress provides a useful contrast. In this 3-dimensional model of the biopsychosocial approach, the corporate strategy essentially omits the third dimension of the social environment. Just as labor organizations played down an individual emphasis, the corporations make little mention of how work structures might bend to fit the workers. Within the 2-dimensional world

of biology and psychology, the corporations demonstrate continual innovation in enhancing the personal control of their employees. Employees educate and train themselves in sensible nutrition, exercise, and substance abuse. They master self-regualtion techniques and potentially become less reliant on the health care system. They begin to counsel each other and gain the valuable buffer of social support. They possess the opportunity to reduce physical demands upon themselves, to increase biological and psychological control, and to achieve a more moderate and predictable pace in their lifestyles.

The corporate motives for these tangible gains must necessarily be mixed. The progressive corporations who wrote or spoke to us liked to characterize their organizations as humane profit-making firms. Though the research evidence on these interventions is not yet in, the corporations bank on the prospect of their cost-effectiveness in reduction of health services utilization, absenteeism, and accident rates. The corporate understanding of how an individual's well-being influences other lives in his/her family, community, and, most relevantly, within the corporation, demonstrates a dexterous integration of all levels of the OSEG. At the same time, the corporate silence with respect to the reciprocal effect of society and company upon an individual's experience of stress reveals a curious inconsistency. Whether corporations simply overlook the role of organizational stressors, believe them to be inexorable, or perceive them as necessary is also a complicated and controversial question.

Related to this last observation, corporations show less initiative in developing networks with existing community services, often favoring an in-house or consultant approach. If their integrative approaches will be effective in the long run, they may need to establish resource exchanges with public agencies who have long histories of human services.

Conclusion

The concept of stress, as experimental research has defined it, often seems far afield from the ways unions and management describe and treat stress. We have observed that the manner in which unions and corporations define stress along the biopsychosocial continuum dramatically influences their intervention strategies. The union perspective defines stress chiefly in terms of control and predictability, thus affirming the experimental concept. However, its viewpoint pays less attention to the influence that an individual's personal style or set of expectations may have in creating stressful situations. Conversely, corporations recognize acutely the role of individual habits and perceptions in generating stressful "person-environment fits." Missing from their approach is the acknowledgement that organizational or work-setting constraints help to create maladaptive behaviors and cognitions.

Similarly, labor-initiated stress reduction strategies flow out of their organizational orientation. They emphasize regulation, contractual restraints, access to decision-making, and increased autonomy at the worksite. Only the most progressive service sector unions (usually higly female and urban) combine these reduction tactics with a comprehensive

approach to mental and physical health (ie., through HMO membership). Corporations lavish attention upon the physical and psychological well-being of employees in an effort to slow down ineffective and harmful behavior patterns. They take pains to increase employees' control in the interpersonal, financial, and life development domains. Yet, only recently have they initiated efforts to involve workers in workplace decisions and organization. Both labor and management appear consistent in providing stress reduction strategies commensurate with their circumscribed definitions of stress. This leads us to the final question posed at the start of this chapter.

What effect do corporate and union stress reduction have upon the problems of stress, as originally defined by our research? The answer is less scientific than political. The major finding of our research is that unions and corporations effectively handle certain aspects of stress, and just as effectively choose not to handle other aspects of stress. A union that concedes that its members' personal habits are inefficient or harmful to the company, gives ground to management in the struggle for a finite pie. A company that acknowledges safety or psychological hazards has little recourse but to instate costly changes.

Organizations in society invested with certain economic interests will take from the stress concept the level of understanding that is friendly to their cause. It is both expedient and logical that unions and corporations construe stress as they do. Since corporations occupy such a dominant position in society, they would be loathe to initiate large alterations in

material conditions in the society. Thus, they often latch on to stress as the unfortunate biological and psychological reaction of certain individuals to the pressure of work or family life. The precipitating pressures will continue to be viewed as parts of life, "what we all must face." Meanwhile labor unions, with a vested interest in altering material condtions (though not dramatically) point out the environmental and organizational pressures that lead to stressed workers.

These selective formulations of the stress concept frustrate the psychologist because they are not wrong; they are simply incomplete. To the researcher, each of the strategies described above makes sense when considering the diverse contributions to the stress response. To the political individual caught up in ideological wars, some of these methods seem worthless or even malevolent. Used in isolation, they indeed may be. It seems potentially dangerous to encourage jogging to an individual who leaves work pent-up with rage at a brutal work schedule. The physiological benefits of running may be greatly distorted by his/her emotional state. Similarly, a contract clause assuring advance notice of a plant closing may not help very much if little preparation has been made for familial strife or mental illness that may emerge in spite of the warning.

As we have emphasized by repeated reference to the OSEG, true stress management manages the relations between the biology, psychology, and environment of the individual and the organization. Political contingencies may cause organizations to neglect one or more of these dimensions, but in doing so, they may later observe ramifications not only

in the neglected area but in the areas to which they attended. This is the essence of a systems approach. If the problems of stress involves an interconnected whole, as the OSEG suggests, then selective attention to one aspect is not only doing less than a complete job, but threatens to be useless in the long run. A corporation, busy with a yoga program, may let a discussion of health and safety standards slide as toxic exposures accumulate. In this case, how cost-effective will the corporate investment in stress management be, as workers develop acute reactions and take sick time? Just as in a geodesic dome, touch any part of the OSEG and the rest will spring with it. As long as corporate and union positions are pitched in adversarial camps, they will neglect one level of the system for another and both suffer for it.

The systems or ecological perspective embodied in the OSEG suggests that labor and management positions, though unique, are necessarily dependent. An ecological approach would involve interventions that recognize the importance of the relationship between organism and environment, between worker and workplace.

The Children's Health Center in Minneapolis, Minnesota provides a nice example of a "top-down" ecological approach to stress reduction. In this case, hospital administrators made an initial decision that the well-being of child patients and their families were of primary importance. They went one step further when they empowered a mental health/ecology officer with the authority to propose and implement changes in the system that would reduce stress and improve health for the patient. Guided by a

biopsychosocial model of illness, the ecology officer (a clinical psychologist) and administration effected changes in admission procedures, visiting policies, interior design, and medical procedures. Perhaps, the most exciting aspect of this program is its gradual extension to staff training in interpersonal relations - with the dual purpose of increasing sensitivity to children in a hospital setting and increasing sensitivity to each other.

In agreement with the Minneapolis project, the OSEG emphasizes that stress reduction, simultaneously personal and organizational, is in the interest of both unions and corporations. We suggest that a comprehensive multiple level commitment to stress reduction is the most effective answer to occupational stress. This means a resolve by corporations to introduce true democracy and autonomy into the workplace. At the same time, it means hard work on labor's part to improve the health and social supports of its members. Once organizations yield more control to their members, the onus will then fall upon employees to look more carefully at their maladaptive personal styles. With corporate action on control and predictability and labor initiative on personal habits, the experimental concept of stress would finally be integrated with its treatment in the field. We might then predict better health and greater satisfaction for employees. This should mean an increase in employee cost-effective behaviors as well.

However, until labor gains greater control over work oranization and quality, it is unlikely that union representatives will direct their membership to personal change. Our hope is that a perception by both

groups of the interrelatedness of all levels of stressors could produce a collaboration. How to inculcate that view into corporate and labor perspectives remains a major challenge of a biopsychosocial approach to stress.

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Table 1 OCCUPATIONAL STRESS EVALUATION GRID

Levels	Stressors	Interventions: Formal	Interventions: Informal
Sociocultural	Racism Ecological shifts Economic downturns Political changes Military crises Sexism	Elections Lobbying/political action Public education Trade associations	Grass roots organizing Petitions Demonstrations Migration Spouse employment
Organizational	Hiring policies Potential plant closings, Lay-offs, relocation, Automation, market Shifts, retraining Organizational priorities	Corporate decision Reorganization New management model Management consultant inservice/retraining	Social activities Contests Incentives Manager involvement & ties with workers Continuing Education Moonlighting
Work Setting	Task (time, speed, autonomy, creativity) Supervision Coworkers Ergonomics Participation in decision making	Supervisor meetings Health/safety meetings Union grievance negotiations Employee involvement Quality circles Company initiated redesign Inservice training	Slow downs/speed up Redefine tasks Support of other workers Sabotage, theft Quit, change jobs
Interpersonal	Spouse - divorce separation, marital discord Death Child problems Friends Parents Inlaws	Legal services Time off Counseling, psychotherapy Insurance plans Family treatment Loans/credit unions	Seek social support & advice Seek legal or financial assistance Self-help groups Vacations/leave of absence Childcare
Psychological	Personality, Coping behavior (e.g. Type A, repression) Emotion/mood/"stress" expectations, beliefs, goals Self- inefficacy Mental illness	Employee assistance (referral/inhouse) Counseling, therapy (cognitive, behavioral biobehavioral) Medication Supervisory training	Social support (friends, family, coworkers, church) Self-help groups/books Self-medication Recreation, leisure, Sexual activity "sick" days
Biological	Circadian rhythm Nutrition, sleep exercise, weight, age, sex, race (genetic) Current illness impairment/disabilities Drugs Pregnancy	Rescheduling Placement & Screening Health education Counseling Substance abuse treat. Biobehavioral treat. Maternity leave Health promotion	Change sleep/wake habits Sleep on job Bag lunch Drugs Cosmetics Diets, exercise Medication Self-care Dietary change
Physical/ Environmental	Climate Poor air Noise Toxic chemicals Pollutants Poor lighting Architecture Radiation	Clothing & equipment Climate control Ventilation Chemical control Interior decoration Muzak Protection Medical office	Own equipment, decoration Walkman Soap operas Music Personal physician

Table 2 - Biological/Physical/Environmental Stressors

Stressor	Source	Specifics
Heat	Flint Glass workers and related industries; Electrical workers; Glass bottle blowers	Temperatures above and below 17 C to 23 C
Ventilation	Mining and chemical workers among many other industrial workers	Inadequate exhaust systems, blowers, and hoods
Noise	Machinists; automobile and aircraft assembly, heavy assembly work	Punch presses, drills, grinding
Hazardous Machinery	Electrical workers	Unguarded punch presses, frayed or ungrounded wiring; absence of safety shields and hoods
Dust and Toxic Fumes	Painting; mining, chemical workers, rubber workers, textile workers, asbestos workers	Overemphasis on personal prevention (respirators, masks, safety goggles) as opposed to structrual alteration of the work site or process
Toxic solvents	Paint and chemical workers	Anilines - suspected carcinogens
Radiation	Nuclear plant workers; also a worry of office workers exposed to low level radiation from CRT's.	Inadequate knowledge of long term effects
Poor Ergonomic Design of Work	All workers contacted	Chronic back pain, carpal tunnel syndrome, pulled and strained muscles and general fatigue. Building architecture - windowless, declining industrial workplaces, overcrowding of work stations

Office Work Hazards	Clerical and technical workers represented by non-profit organizations	"Sealing-in" - where toxic fumes, vapors, bacteria, and dust are recirculated by central air conditioners; toxic office substances - methanol in duplicators, solvents in stencils and correction fluids, nitropyrene in toners; VDT's - poor lighting, glare, muscle fatigue, inadequate breaktime, constant breakdown

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		and physical anger; the spilling over of work stress on to marital relations and the reciprocal effect on work; general personal problems - mental illness, family deaths, substance abuse
Job Security	All unions contacted	Lay-offs; plant relocations; plant closings,

Table 4
Union Responses to Biological/Physical/Environmental Stressors

Stressor	Informal Response	Formal Response
Heat, ventilation, noise, dust,etc.	Slow downs; self-regulation; prophylatic devices and clothing; frequent breaks; postural adjustments; denial; apathy and accomodation	Federal statues through OSHA - education, monitoring, requesting inspections; NIOSH research to substantiate claims of adverse health effects; Health and Safety committee with equal representation of employer and worker and contractually-guaranteed powers; write in health and safety clauses in contract to formalize grievances.
Office work hazards	social support; petitions; meetings with supervisors; sick days; sabotage; quitting	Request government hearings; request NIOSH and labor department research; lobby for legislation; unionize in order to obtain collecitve bargaining and contractual strength

Union Responses to Psychological/Interpersonal/Work setting/ Socio-cultural Stressors

Work pace, load, content, shiftwork, supervision	slow down/speed up; sleep on job, sabotage; redefine task; quit	OSHA statutes;, contract language assuring grievances; Health and Safety committee; Quality circles; training of supervisors
Automation	sabotage; develop new skills; hide redundancy; go into management	Advance notice and retraining clauses in contracts; participation in corporate planning through board membership or stock

		ownership
Psychological job pressures	Social support; self-help; recreation; substance abuse; vacation	Referral to health agencies; leaves of absence; joint company and union alcohol and counseling programs; union-sponsored therapy or counseling
Job security	Become "indispensable"; find "recession-proof" line of work; try not to make waves; take lower wages and less benefits	Security clause in contract; gain voice in corporate decisions by board membership or stock ownership

Table 5

Psychological/Interpersonal/Worksetting/Socio-cultural Stressors

Stressors	Potential Ramifications
Personal Psychology a. Type A b. Anxiety c. Depression d. Dissatisfaction e. Apathy	Stress-related reactions including all the maladaptive health behaviors listed by the corporations (i.e., hypertension, substance abuse, lack of exercise, etc.); Absenteeism; Lessened productivity; Health services overuse; Poor interpersonal relations with co-workers; No "team spirit"; Sabotage; General frustration and fatigue due to over or under-exertion on job
Life Development a. First job b. Starting family c. Raising children d. Middle age e. Retirement	Distraction from the job itself; Increased burden to earn more money; Fear of "dead-end" job or too slow advancement; Loss of interest in work time; Narrowing of interests and mind; loss of energy and acuity; Fear of uselessness and Death
Interpersonal Relations a. Spouse difficulties (Divorce, separation, abuse) b. Children or parent difficulties (discipline problems, illness, parents) c. Death of relation or close friend d. Loneliness or unsatisfying relationships	Irritability; Inattention to task; Aggressiveness; Time conflicts; Apathy; Relationships with co-workers; Sexual harrassment
Financial and Legal Problems a. Debts b. Liability suits c. Tax evasion	Overwork; Absenteeism; Theft
Rapid Changes in Society a. Economic shifts b. Technology	Job reorganization; New skill requirements; Transfers; Automation; Alienation

Work Setting Issues a. Job Demands b. Person-Environment fit c. Hazards or stresses intrinsic to work (ie. police or air traffic controllers)	Dissatisfaction; Ineffective employees; Burnout; Loss of self-esteem; Chronic anxiety; Influences on mood and sleep

Table 6
Corporate Responses to Biological/Physical/Environmental Stressors

Stressor	Program
Maladaptive Health behaviors	a. Health Education - brochures, workshops, audiovisual tapes, newsletters, courses b. Health Promotion - Smoking cessation, weight reduction clinic, exercise gyms and jogging breaks, aeorobic conditioning, first aid, CPR, screening (cancer, diabetes, hypertension, teeth), healthy back, safety-accident reduction, defensive driving
Substance Abuse	a. Drug and Alcohol Rehabilitation programs b. Employee Assistance Programs - offering shortterm counseling and referral

Corporate Responses to Psychological/Interpersonal/Work setting/ Socio-cultural Stressors

Personal Psychology (Type A, Anxiety, Apathy)	a. Stress Education - Courses on time management, lifestyle changes, anger/ conflict management, communicaton and negotiating skills, values clarification b. Stress Management - Meditation training (including providing rooms), Relaxation training, Biofeedback, Group discussion, yoga, self-hypnosis, development of social support networks c. Employee Assistance Programs - Screening, crisis, shortterm, longterm counseling, referral service to community agencies
Life Development	See EAP above; Retirement counseling;
Interpersonal Relations	See EAP above; Family therapy; Couples therapy; Support groups; Volunteer employee counselors
Financial and Legal Problems	See EAP above; Financial counseling; Legal assistance
Change in Society	See Stress management and EAP above;
Work Setting Issues	a. Pre-screening b. Transfer c. EAP referral d. Work redesign - Quality circles,

employee involvement, flexitime,
management-employee discussions,
e. Management training
f. Bring in outside consultant
g. Research

APPENDIX 1
SOURCES OF INFORMATION

Respondent	Contacted By Phone	Descriptive Material Received	Questionnaire Sent	Questionnaire Completed
1. Unions and labor	53	29	28	9
2. Corporate/Business	67	32	35	20
3. Hospitals/Health	9	6	4	2
4. Government	12	11	4	3
5. Trade/Professional	14	9	2	-
6. Academic/Research	30	19	6	-
7. Consultant	23	12	7	4
8. Occupational Health	9	5	2	1
Totals	217	123	88	39