

Occupational Health and Safety: Challenges for Industrial Relations

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This paper is designed to demonstrate how the changing context of industrial relations, including shifts in occupational structure and labor force, globalization of economy, and the application of microelectronic technology, has posed new challenges for work environment training and practice. In particular, occupational health and safety aspects of the labor and industrial relations field are explored and suggestions offered for future training and preparation of practitioners.

The emergence of a global economy, capital and managerial mobility, and the transnational nature of new technologies in factory and office work make the occupational health and safety and industrial relations connection equally relevant in all industrial nations. In this paper observations and generalizations drawn out of one country are meant to apply to all. The particular approach may vary between Canada, England, Australia, and the United States and other industrial relations systems not derived from Anglo-Saxon labor law, however, the overall points apply in all cases.

CHANGES IN WORK AND INDUSTRIAL RELATIONS

The patterns of industrial and labor relations in most industrial societies are the product of legislation since the 1930s and the dominant focus on manufacturing. The practice has been, to a large extent, set on a stage in which most of the players are male, European or of European ancestry, in factory based employment, and within a context of labor law mostly adopted from the 1930s through the 1960s. Hence, industrial relations practice, most texts, and university training have been catching up as the features of the economies have been altered.

The dramatic decline in the proportion of the workforce in manufacturing and the expansion of the service sector which we have experienced in the 1970s and 1980s is linked with the feminization of the workforce, application of microelectronic technology in factory and office environments, and the globalization of the economy. The growth of racial and ethnic minorities in the work force and the rising level of education and skill requirements, are equally significant. In brief, who works and what work they do have shifted substantially over the past couple of decades. Added to these are the more recent reverberations and developments coming from the international economic crisis of the late 1970s and 1980s. Capital mobility and international shifts in production to reduce labor and production costs have given rise to severe dislocations. Contract labor and part-time employment, so-called concessionary bargaining, and managerial ideology hostile to unionism and collective bargaining are all part of the landscape at the beginning of the 1990s. In short, it is a quite changed industrial relations climate.

What does this mean for the industrial relations curriculum and training of practitioners, and for industrial relations practice and needs in the workplace? The most obvious area of impact is new technology. First are the vast consequences in the application of microelectronics, be it in CAD/CAM and computer integrated manufacturing, use of robotics, or the office automation systems in myriad forms. Worker dislocation and replacement, reduction and expansion in workforce, and work reorganization are the most immediate results. Changes in work rules, job classification, and pay systems follow closely, along with altered challenges in terms of skills training. It is apparent how this affects labor and management relations, negotiations and collective bargaining, content of agreements, and the core agenda of issues around which industrial relations practitioners spend their efforts (Deutsch, 1987, 1988, 1988, 1989; Quinlan, 1984).

One of the most important areas of impact of new technology is the work environment, and yet that has been insufficiently addressed by the industrial

relations analysts, practitioners, and especially in the training of students. The safety issues related to robotics, the prevention concerns in the field of ergonomics and office equipment design, the potentially adverse health effects of VDU work in terms of vision, muscular-skeletal problems, and stress ought to be given more attention as part of industrial relations. Can we imagine any labor union not taking up the concerns over VDU health problems on behalf of its members? Should we not expect equally that managerial people will wish to learn more about these issues and how to most appropriately deal with them? In short, the challenges for industrial relations coming from new technology must include occupational health and safety considerations.

TOWARD A HOLISTIC APPROACH IN THE WORK ENVIRONMENT

In most societies a rather traditional view of occupational health and safety continues to stress the safety side and place greater attention on the predominantly male construction and heavy manufacturing industries. In the United States the term reversed to safety and health in the title of the law and government agencies, revealing the thinking of the 1960s when the field got its modern push. However, as suggested earlier, most of the workforce today is in office rather than factory settings. In the United States white males, no longer the majority, will shrink as a proportion of the workforce in the coming decade. Women make up 45 percent of the American workforce, a figure close to that in Australia, England, Canada and not much different in other industrial societies. Sex segregation of the workforce is one of the most distinguishing features of the economy as women are concentrated in about ten occupational categories, and are overwhelmingly dominant in some such as office clerical work. Earlier images of a male construction worker must be shared by women office clericals, health care workers and others when one talks about the work environment.

The older image, whether it stressed safety or health first, has been largely limited to physical and chemical hazards: machine guarding, acute injury prevention, most severe forms of toxic exposure controls, and the like. The broader view taken in Scandinavia makes the most sense; namely, that we need to conceptualize an umbrella which covers all facets of one's workplace during the entirety of time at work. Psycho-social factors and job stress, an increasingly significant part of the occupational health and worker's compensation system in recent years, must be included. Supported by much research, the work environment laws in the late 1970s in Norway and Sweden made explicit issues of work organization, technology, and factors which are known to generate job stress (Deutsch, 1981, 1988). The industrial relations community needs to adopt a holistic approach to the work environment and to consider all appropriate methods to reduce workplace injuries and illnesses, including occupational stress. Of course, it is in the interest of both employer and worker representatives to do this. The evidence argues strongly for workforce activation on health and safety as a basic means to achieve a better work environment (Deutsch, 1981, 1981, 1988, 1989; Mathews, 1985, 1989; Creighton, 1986).

THE ROLE OF OCCUPATIONAL HEALTH AND SAFETY IN INDUSTRIAL RELATIONS

In 1985 leading Australian industrial analysts stated that, "There is no real doubt but that occupational health and safety is now a major focus for industrial relations activity in Australia" (Creighton and Gunningham, 1985: 8). A systematic review of Australian, British and American industrial relations journals and texts would not corroborate that view. While I found a few articles, scant attention is given in journals, texts, and leading works in Industrial Relations today.¹ A parallel is found in management journals which I reviewed for content and where the profile is strikingly similar.² A number of reasons exist for this.

First is the tradition that management should assume responsibility for occupational health and safety which is built into most law and which has therefore removed the issue from the labor relations agenda. Until the more recent worker and union activism around work environment questions, considerable willingness to accept managerial prerogatives and action in this area existed. A second historical reason is found in the compensation system which provided victims of work related death, injury, and illness some award, but kept the problem out of the industrial relations arena by confining the issue to compensation and not prevention. Recent escalation of compensation costs and managerial efforts on loss prevention altered this. The pattern of excluding health and safety from the industrial relations terrain has been long standing in the United States and Australia (Willis, 1989).

Texts in the field rarely cover the work environment and when they do, whether it be in the case of England, the United States or Australia, attention usually is limited to describing legal provisions, employer obligations, and some broad linkages to collective agreements on "working conditions." Yet, a few important pieces in the industrial relations journals and some industrial relations analysts have continued to make health and safety connections (Willis, 1989; Quinlan, 1984, 1988; Creighton & Gunningham, 1985; Mathews, 1985).

Typically departments of labor promote labor-management relations and oversee compliance with labor laws that include the work environment area. In both Australia and the United States, the cabinet minister for labor has jurisdiction over industrial relations as well as occupational health and safety. However, a division of responsibility usually separates those concerned with labor-management relations and those dealing with the work environment. This has both contributed to and is a reflection of the state of the field. But there also are some important signs of change. The concepts of humanization of work (Germany), quality of working life (Scandinavia), labor-management cooperation (US), and industrial democracy (Australia) have come to include work environment factors. As a result, governmental industrial relations units have increasingly made occupational health and safety integral parts of the labor-management terrain.

Perhaps nothing has compelled the placing of occupational health and safety within the labor-management discussion as much as the militancy of unions, workers, health professionals, and others in recent years. The movement to obtain workers' right to know what they are exposed to, the right to actively participate in the health and safety process, and the right to refuse unsafe and unhealthy work has been a foundation of reformers and activists. In the United States the annual survey of workers conducted by the University of Michigan revealed for the first time in the late 1970s that concerns over the work environment were at the top of the list. To be sure, job security and full employment, economic benefits, and the typical worker and union concerns continued, but health and safety on the job became more recognized, with the new consciousness among workers pushing union leadership to emphasize work environment in shop floor labor-management relations, in negotiations and collective bargaining.

By the 1980s a significant movement, coalescing health professionals and unions, called for state and local "right to know" legislation in the United States, and a federal standard on hazard communication was adopted. Other coalitions engaged women's and environmental organizations along with health and community activists and unions and continue to push for legislative solutions, such as VDU workers' protection. This activity strengthened the concerns around job safety and health making these issues part of the industrial relations agenda in both factory and office settings.

SEVERITY OF OCCUPATIONAL HEALTH AND SAFETY PROBLEMS

For health compliance officers or inspectors, priorities are set either by level of toxicity and immediate danger or by frequency, hence concerns focus on highly dangerous situations even if few workers are affected, or situations which may be more moderately hazardous but affect large numbers. In reality, both issues are critical. Attention is given both to the small numbers of workers involved with known carcinogens, and to the large numbers of VDU workers.

In Australia between 500 and 700 deaths occur annually at the workplace. Almost 1000 workers each day suffer a compensable injury or illness on the job, totalling around 300,000 per year. Compensation costs have reached \$4.8 billion, lost production and retraining costs are \$4.8 billion. Thus, over \$9.6 billion per year in direct and indirect costs are caused by occupational health and safety problems in the Australian workforce. Worker's compensation at 1.3 percent of gross domestic product and 2.5 percent of labor costs is an issue in the Australian economy which urges improvement (Morris, 1989).

Worksafe Australia has targeted six priority areas with prevention strategies paralleling the U.S. National Institute for Occupational Safety and Health. These are: back disorders, which involve over \$1 billion in compensation costs; hearing loss, which affects 10,000 Australian workers annually in compensation, while another one-half million are exposed to the gradual, nontreatable hazards of excess noise; hazards among the 80,000 chemicals in use in Australian production today with 3000 new ones introduced each year (according to the U.S. National Academy of Science good toxicological data exists on only 15% of chemicals in use); skin disorders; cancer, with Australia rating highest in asbestos cancer in the world; and trauma or mechanical injuries, which count for at least one-third of total worker compensation costs (Morris, 1989).

An unacceptably high cost in economic and human terms is being paid by Australian workers. Saving some of the more than \$9 billion dollars would have significant impact on the national economy. This pattern is similar in other industrial market economies, with the impetus for preventions coming in part from the economic wastage. A recent push occurred in Australia to standardize state legislation to reduce the costs of workers' compensation and productivity losses to industry (Osborne, 1990). A joint endeavour by commonwealth and state governments and industry suggests clearly the importance of taking work environment factors into consideration in the labor-management picture. The fact that accident and injury rates vary across nations with similar technology and production suggests that industrial relations systems, managerial philosophies and procedures, levels of worker involvement and training, and other factors may be critical (Deutsch, 1981, 1988; Carson, 1989; Quinlan, 1987). As industrial relations practitioners realize that health and safety outcomes are alterable, the attention given work environment in labor-management relations will increase and public policy makers are likely to push labor and management to work in concert towards prevention. To the extent that it is linked with the goal of meeting the challenge of global competition, the likelihood is that concerns over productivity, competitiveness, and effective use of technologies and human resources will incorporate work environment concerns as well.

INDUSTRIAL RELATIONS: TRADITIONAL AREAS AND NEW CHALLENGES

The traditional areas of industrial relations - labor law, collective agreements and negotiations, contract administration and grievance handling, unions and union administration, labor market policies and wages - will certainly continue. Interest in the relationship between labor history and industrial relations will be maintained. The most dramatic developments concern new challenges such as the impact of gender at work, feminization of the workforce, issues of

affirmative action, and special needs in training and personnel policies related to women and racial minorities.

No better illustration emphasizes the connection with the work environment than office work. The overwhelming majority of clerical workers are women. Applications of microelectronic technology in office settings occurred at a dramatic rate with an impact on job classification and pay system, skill building and career development, levels and types of management, job evaluation and the use of electronic workplace monitoring, and health problems stemming from poor ventilation, lighting, and VDU work with vision, muscular skeletal and stress effects (Stellman and Henifin, 1989).

New technologies not only raise industrial relations challenges in traditional areas of compensation, job analysis, and systems of supervision, but challenge the roles of labor and management. Much of the new emphasis on productivity and competitiveness asserts and assumes that new technology is critical and that cooperative and joint efforts by employers and employees are required (Lansbury & Davis, 1984; Deutsch, 1987). The Australian labor accord, many employer and union publications, and reports from the Commonwealth Department of Industrial Relations and other units, have stressed work restructuring and participatory systems of management coupled with new technologies as the correct formula to obtain a more productive workplace.³ Technological change - how best to design, implement and work with it - poses new questions for the industrial relations community which is modifying some of the traditional approaches. When one mixes technological change with the parallel challenges of new gender issues of pay equity, career development and affirmative action, the old industrial relations formulas do not hold up.

The U.S. National Institute for Occupational Safety and Health states that 20 percent of the workforce is at risk for muscular-skeletal injury. Workforce Australia stresses the importance of such injuries, even though there is still some debate in Australia whether repetitive strain injury is an emotional or physical problem (Bammer, 1990; Taylor & Pitcher, 1984; Quinlan, 1988; Spillane & Dever, 1987). VDU workers manifest a range of muscular-skeletal problems with a growth in ergonomics consultants, office equipment and furniture firms, and publications responding to the need. Are VDUs the "asbestos of the 1990s" as some have said? Work environment problems of the automated office are well established in research and policy advisory bodies such as the U.S. Congress Office of Technology Assessment have urged participative management practices and labor relations systems with sensitivity to adverse work environment caused by new technology (OTA, 1985). The agenda compels that occupational health and safety become a central part of the industrial relations scene. In practice, personnel and human resource managers and industrial relations directors lament the inadequacy of their training to address work environment questions, especially in the context of microelectronic technology and a workforce which is mostly white collar and female.

A second illustration comes from the field of health care, a large and growing sector of the workforce and the national economies of all industrial societies, which employs a disproportionate number of women and has seen the most advanced application of microelectronics, from diagnostic machinery and therapeutic technologies to electronic monitoring of hospital wards, individual patients, and the full complement of office automation. In earlier times labor-management relations in health care dealt with traditional issues, while in recent years the awareness of health hazards has risen with AIDS and infectious diseases, muscular-skeletal problems, job stress, and other concerns. Work environment issues are at the core in industrial relations within the health care industry, and again a consistent theme among administrators and industrial relations practitioners is the inadequate training received for their current challenges. This was observed to be as true in Australian institutions as with counter-parts in the United States and in Norway.

Other areas of challenge for industrial relations are being presented in the 1990s. We have seen the growth of the human resource management field with a wider repertoire of concerns than labor-management relations. The cost effectiveness of employee wellness and health promotion has been a major impetus for this area of growth. Nutrition counseling, exercise, smoking cessation and other lifestyle changes have led to lower absenteeism, fewer deaths, and hence reduced training and replacement costs and raised productivity. The key is to join worker health promotion with improvement in work environment.

The quality of working life (QWL) movement has impacted industrial relations as well as the human resource management field. Employee involvement, not an end in itself, is adopted as a means for organizational effectiveness in the interests of management. But what about the employees? This is a matter of considerable debate in North America because of the use by some managements of participative systems to weaken unions and maintain "union free environments" in some settings. An activated workforce on health and safety leads to an improved record in illness and injuries, something which was established and formed the basis for Norwegian and Swedish law (Deutsch, 1981, 1988, 1989). Quality of working life processes distinctly address the work environment and, as QWL becomes increasingly important in the field of industrial relations, the joining with job health and safety concerns will become strengthened.

Human resource management has emerged as an omnibus organizational responsibility, encompassing industrial relations. This has generated major initiatives in skills training as the gap has grown between skills demands of the labor market and skills of the labor force. This human capital crisis has emerged in all industrial countries. The training arena is now central in the mandate for industrial relations managers, and the need to incorporate effective work environment training along with task and career training is abundant. The new stress on skills acquisition also links to the concerns over workplace health and safety.

Finally, the traditional role of law in industrial relations is changing. One reason is an increasing move towards legislative work reform to augment the bargaining mode. When the proportion of the workforce which is organized declines and new coalitions develop which involve a majority (unions, women, environmental and community activities, health professionals), the political process is more apt to be utilized. While collectively negotiated agreements will continue to be the foundation for industrial relations in the North American and Australian milieu, legislative initiatives have been developed and are likely to form an important role in the future.

INDUSTRIAL RELATIONS PRACTITIONERS AND OCCUPATIONAL HEALTH AND SAFETY

A discrepancy exists between how leading texts in industrial relations cover the work environment and what practitioners report as the span of their work, and what they think is needed in industrial relations training on occupational health and safety questions. A review of ten leading Australian Industrial Relations texts in the 1980s reveals that hardly any attention is given the work environment and only one text devotes any substantial amount on the topic (Hill, et al, 1982; Dufty and Fells, 1989; Ford and Plowman, 1989; Dabscheck and Niland, 1981; Dabscheck, 1989; Ford, et. al., 1987; Bray and Kelly (eds.), 1989; Lamprati, 1984; Howard (ed.), 1984; Carroll, 1983). This is paralleled by a review of comparable numbers of American, Canadian, English, and Comparative Industrial Relations texts (Blanpain, 1982; Bamber and Lansbury, 1987; Bean, 1985; Barbash and Barbash, 1989; Poole, 1986; Deeks and Boxall, 1989; Bain, 1983; Keenoy, 1983; Herman, 1987; Kochan, et. al., 1986; Anderson, et. al., 1989). The field of industrial relations has largely excluded occupational health and safety.

This separation was explicit in the Robens Report on occupational health and safety in England, which served as a model for the New South Wales law (Creighton and Cunningham, 1985; Gunningham, 1985). In contrast, the State of Victoria law on health and safety made involvement by the working parties central and thereby assumed that links to labor-management relations were necessary (Creighton, 1985; Carson, 1989; Deery and Plowman, 1985; Mathews, 1985). The point is that academic books, which constitute the core of teaching materials in the field of industrial relations, generally place little or no emphasis upon occupational health and safety, assuming that it is outside the realm of the practitioner.

Reality makes it clear that the assumption is invalid and lacking. Worker consciousness on occupational health and safety issues developed in the late 1970s and unions have demanded that work environment questions be an important part of the industrial relations picture and deserving of critical attention in shop floor relations and negotiated agreements. Similarly, economic motivations have been playing upon the management community stressing that human resource and industrial relations personnel address issues of accidents, injuries and illness to reduce compensation costs, absenteeism and replacement costs, retraining and personnel shift expenses. Hence, industrial relations managerial professionals are under pressure to incorporate work environment issues in their span of activity and many are assigned the health and safety role.

Most industrial relations managers interviewed in the United States lamented the inadequacy of their own training and the need for such professionals to learn more about occupational health and safety. This is consistent in both public and private sector organizations, in manufacturing in fields such as auto, forest products, aerospace, and in services including telecommunications and health care. The American Hospital Association has extensive in-service professional training for managers with labor relations responsibilities in health care facilities where work environment concerns are central in their job descriptions. Similarly, in Australia industrial relations persons interviewed in auto, chemical, hospitals and health care institutions, and state services, believe that industrial relations professionals need more training on work environment matters and also indicated that health and safety were among their areas of responsibility.

Some interesting developments in Australia in which creative industrial relations approaches have been utilized to address workplace health and safety matters. A participative system has been developed with active joint labor-management committees in NSW State Rail, focusing on hazard recognition and prevention strategies, and linking award restructuring to work environment improvement (Hawkins, 1990; Mason and McNally, 1989). The innovative Industrial Relations Commission decision at ICI Botany not only addresses labor-management relations and the award, but opens a new approach to occupational health and safety. The health professional staff and industrial relations and human resource managers are working in concert, and with their union counterparts. At several hospitals the personnel manager and the person in charge of labor relations became highly sensitized to work environment problems and sought to integrate health and safety questions into the total labor-management relationship. In these and other cases industrial relations managers explicitly said that they had no training on work environment issues and yet had major responsibilities in this area.

Training of management and union personnel on health and safety is carried out by the respective organizations, and both CAI and ACTU obtain funds from the National Commission on Occupational Health and Safety/Worksafe Australia. But few of those involved in industrial relations have obtained health and safety education as part of any formal industrial relations education. Just as the Machinists' union in the United States gives some new technology training to all of its staff and explicitly to top representatives involved in negotiations with the large companies, so the Australian Trade Union Training Authority recognizes

that a range of skills are needed for union staff and leaders, including some attention given the work environment.

Specialized training of workers in occupational health and safety has been financed in the United States by grants from the Occupational Safety and Health Administration ("New Directions" training grants) and the National Institute for Environmental Health Sciences (hazardous waste worker training grants as part of the "superfund"). Many of the trainees have been those whose primary roles have been in contract negotiations, collective bargaining, and as shop floor union stewards. In the training of lower level supervisory personnel in the Australian T.A.F.E. programs, there is a basic course which includes a unit on occupational safety and health precisely because those in industry argued that it was needed. This illustrates needs in the workplace influencing training.

The Australian Workplace Industrial Relations Survey is an important piece of research currently underway. What that survey reveals concerning the work environment will be valuable. Meanwhile the Australian Centre for Industrial Relations Research and Teaching has conducted a survey of all universities and colleges in Australia to determine what is being taught in industrial relations. While the general industrial relations texts rarely cover occupational health and safety, there are courses on the topic offered in some institutions.⁴ In general the pattern has been that management and labor practitioners in industrial relations do a good bit of their jobs on matters of the work environment and feel that they were inadequately trained. Those who received university industrial relations training particularly note the absence of such preparation and call for a change. What industrial relations professionals do and what is covered in the typical texts are discrepant in this regard.

TRENDS FOR THE FUTURE: WHERE TO IN INDUSTRIAL RELATIONS?

Considerable discussion has already been given on the far-reaching changes in the global economy, with microelectronic technology and an altered workforce. These have caused some notable rumblings in the field of industrial relations. At the same time, the pressures on productivity and cost reduction have heightened concerns in the management community to lower injury and illness rates, compensation costs, and other diseconomies in the work environment. The matter of working conditions has always been a bargaining issue, but the passage of occupational health and safety laws in Australian states in the 1980s formalized this area in industrial relations. A similar development occurred in provincial laws in Canada and national legislation in the United States and England. In short, in the past twenty years industrial relations practitioners have increasingly dealt with occupational health and safety. This trend is almost certainly going to become more pronounced.

While some analysts have been exploring the transformation of the industrial relations system in the United States (Kochan, et. al., 1986) and noting the shifting patterns with the declining proportion of labor organized, new forms of management, major movement of employment from manufacturing to services, and an increasingly female and minority workforce, the fact is that the work environment itself has been changing. More than two-thirds of Americans work in offices and that figure is growing. A similar trend is shared by other industrial nations, including Australia. Hence issues of toxic chemicals, ventilation contaminants and respiratory ailments, heat and noise, muscular skeletal injuries, and job stress are different than in the case of primarily manufacturing industries in the past. Industrial relations will naturally continue to focus upon issues of personnel selection, promotion and training, systems of compensation and benefits, job classification and performance evaluation, and related topics. Worker concerns over health protection and quality of working life, and employer concerns for a healthy and productive workforce means that industrial relations will ever more tend to these matters.

The position taken here is that this is a necessary and welcome development which should be driving the curriculum in university industrial relations education and agendas for industrial relations research. The inclusion of work environment facts in award decisions by the Industrial Commission (McDonald, 1989) and attention given occupational health and safety in working documents for revisions in industrial relations law (Brooks, 1988), have occurred in the Australian context. In the United States one initiative has been the explicit effort to infuse management and industrial relations university education with job health and safety content. "Project Minerva" is important enough to be worthy of some special comment.

In the early 1980s the U. S. National Institute for Occupational Safety and Health, charged with supporting the training of occupational health and safety professionals, recognized that the management community needed to be included, especially those who might be playing a leadership role rather than being reactive or outside the arena. An initiative was developed to stimulate universities to build work environment information into the curriculum and from this came a small grants program, coordinated curricular development and professional conferences, a newsletter and research resource network, and a concerted effort to alter the teaching of management and industrial relations.

Other programs emerged which joined the tracks of training usually kept separate. A dual degree program at Temple University provides both an MBA degree in management and a MS degree in industrial hygiene, for the professional seeking expertise in both areas and working in occupational health management. For most programs the idea was simply to expand the curriculum to educate students in management and industrial relations on occupational health and safety making them more effective in their professional work, which it is assumed will take on work environment questions.

An illustration is shown in the case of the University of Oregon, one of 12 universities to receive a NIOSH grant in 1984-1985 to develop the curriculum in the graduate program in industrial relations and management. The following courses were altered to include materials on occupational health and safety: Human Resource Management; Small Business Management; Employment Policies and Practices; Performance Evaluations and Training; Employee Benefits; Industrial Relations Research Methods; Employment Legislation Standards; Occupational Safety and Health (an existing course experimentally cross-listed in Management/Industrial Relations to attract more students in those fields). Courses range over a normal curriculum and include key subject matter in management and industrial relations. Faculty received special materials from NIOSH which contained adaptable modules for inclusion in the course, readings, and cases and research topics for students (NIOSH, no dates; Heath, 1989; NIOSH, 1988). The point was to elevate the level of student awareness, not to make students into experts on occupational health and safety, but to infuse them intellectually and practically so that as human resource managers or industrial relations professionals they would appreciate the importance of work environment factors and would have greater skills in dealing with this subject matter. Evaluation at the end of the first year demonstrated achievement toward the goals and how such instruction might become even more effective. Reports given to NIOSH by various universities have been used to develop additional materials, make presentations at professional conferences, and campaign for increased teaching of occupational health and safety in graduate programs of industrial relations and management.

This parallels developments in other countries. The Swedish Joint Industrial Safety Council, which includes both the labor and employers' federations, initiated an effort in 1985 on "Work Environment Training for Middle Level Management" targeting those with technical and substantive work environment responsibilities as well as those with more legal and industrial relations aspects of the work environment. Here, too, it was recognized that practitioners in industrial relations had insufficient training before assuming

their jobs and needed special assistance to deal with occupational health and safety matters (Swedish Joint Industrial Safety Council, 1984).

In 1989 Worksafe Australia argued for the integration of occupational health and safety training into general industry training programs stating such to be an essential element of high quality industry training (Stanton, 1989). This is another reflection of the need expressed by those in industry for training on work environment matters, and a rejection of the old assumption that personnel management and industrial relations were separate from the occupational health and safety management area.

Where does this leave projections for the future of Industrial Relations? The rising militancy of European and North American unions in the 1970s, the emphasis on occupational health and safety negotiated agreements, and the centrality of work environment issues in industrial relations changed the pattern for the 1980s and the 1990s. In Australia a similar movement in the 1980s, along with state legislation, have placed health and safety issues squarely in the industrial relations arena. John Mathews, author of the leading union health and safety training manual in Australia states,

In Australia, I have been impressed with the great progress made by unions in the 1980s in negotiating a consultative framework at workplace level within which health and safety questions may be addressed as a collective issue between employer and workers organized in their unions (Mathews, 1989:87)

Industrial relations texts and industrial relations journals of the 1980s placed little emphasis on the work environment typically only referring to existing laws and not placing the area within the industrial relations framework. At the same time, industry practitioners are making unequivocal assessment about the need for training since they have occupational health and safety factors in their realm of responsibility. Both employers and unions have increased training to facilitate the effectiveness of their representatives in the labor-management area in addressing work environment considerations. New efforts to train the current and future industrial relations professionals have been proposed and introduced. Nevertheless, most industrial relations educational texts and research agendas have inadequately approached or even failed to include occupational health and safety. This is indeed a disjunction which needs remedy.

GETTING FROM HERE TO THERE: WHAT SHOULD HAPPEN IN INDUSTRIAL RELATIONS EDUCATION?

A former Australian Minister for Industrial Relations stated that, "Managers must understand the nature of hazards in the workplace, the ways in which jobs might be redesigned to avoid hazards, and other preventive measures which can be taken to avoid injury and disease." (Morris, 1989:11). But how are professional managers to acquire the sophistication to undertake such tasks? One cannot simply emerge without education and training and have skills in hazard recognition and techniques of job redesign. An assumption is made that by some means managers will obtain appropriate training for such work. An American approach to training the next generation of managers in university curricula (Project Minerva) has been presented.

Industrial Relations curricula can be developed around the overarching theme that the economic milieu is undergoing continuous and substantial change, that the assumptions and the approaches of the past may well not apply, and that a labor-management posture which is flexible, adaptive, and innovative, will most likely bring the best and desired results for all parties. Furthermore, we know that law typically reflects existing values, and therefore we can assume that

labor law is also a reflection of the past institutionalizing precedents and "past practice" in industrial relations.

In Australia some patterns of industrial relations, the role of the Industrial Relations Commission, and the wage setting system are well established. These are at some variance from the approach in Canada and the United States and cause a non-Australian to be humble in any assessment (Strauss, 1988). One thing is certain, the world of work and labor-management relations are undergoing considerable change. The entire concept of work restructuring, by definition, implies this, and the award restructuring and work reform movement is in high gear. The field of Industrial Relations must orient students and professionals for the future to changing parameters, assumptions, conditions, procedures and operations, and give them skill for acquiring new professional information on a continuing basis. The study of labor economics, the facts of labor history, the existing labor laws, courts and legal procedures are basic. But most of the other issues in industrial relations concerned with the relations between employers and employees and the work process are in flux. Training in skills which will enable the search for flexible and site-specific solutions will be required. New systems of compensation, flex-time, self-managing work groups, home-based computer work, and a host of approaches to make work organizations more flexible and productive and work life more satisfactory have altered the agendas for labor and management and the role of the industrial relations professional.

One of the most changing areas concerns the work environment. A larger proportion of the workforce are in services rather than manufacturing, in offices versus factories, using microelectronic technology with new kinds of job skills. Architectural and design principles have had difficulty catching up with some of these changes, hence the problem of redesigning workplaces to make them ergonomically healthy. How is an industrial relations professional to cope with no knowledge of what ergonomics is, much less basic design features and approaches? The same former Minister of Industrial Relations pointed out that, "Workplace health and safety training is an integral part of the award restructuring and workplace reform processes" (Morris, 1989: 9). Of course that is true. If one is educated on systems of participatory management, affirmative action and equal opportunity, new systems of compensation and benefits, and personnel practices, will that qualify one to implement an appropriate health and safety training program linked to work reform and award restructuring? I think not. Skills training and career development is increasingly recognized as central to meeting the "competitive challenge", increasing productivity and best utilizing human capital along with new technologies and effective work organization. Employee training involves aspects of the work environment, but is rarely taught in university industrial relations programs. The point is not to incorporate detailed health and safety education, but to substantially elevate awareness, present a core of information, develop health and safety sensitivity, and recognize the work environment as a critical and central part of labor-management relations activity.

Let us assume that most Industrial Relations curricula consist of a core that includes:

- Labor-Management Relations
- Labor or Industrial Law
- Industrial Relations Theory
- Labor/Industrial Relations History
- Labor and Industrial Relations Law
- Labor Economics/Labor Market Policy/Wages and
Compensations
- Comparative Industrial Relations
- Human Resource Management
- Unions and Unionism
- Social Aspects of Industrial Relations/Policy/Work and Society

Industrial Democracy

Research Methods in Industrial Relations

To that list might be added a number of other courses; graduate brochures for Australian or American universities show quite substantial extension, involving many disciplines such as psychology, sociology, law, political science, history, economics, and management.

Many excellent materials have been published on occupational health and safety that lend themselves to the courses above. This is equally true for film and video materials covering excellent historical footage and documentation of the struggles over the work environment, and the current impact of microelectronics in the office. Every one of the dozen course categories listed above would lend itself well to the introduction of materials and the topic. One of the great advantages of "Project Minerva" is the presentation for the novice with case materials, readings, and modules for various courses with instructor manuals. The review of industrial relations texts and materials also uncovered many illustrations of how work environment questions might be included. A reader on industrial democracy (Creighton, 1986) or new technology (Quinlan, 1984) which has a contribution on occupational health and safety will serve as a model of how to tie in that material. New works on the history of occupational health and safety are most natural for the history course (Rosner and Markowitz (eds.), 1987). Similarly materials on law and the work environment law are useful in making the linkage with industrial relations (Twomey, 1986; Gunningham, 1984; Lamprati, 1984; Brooks, 1988); although it is likely that occupational health and safety is covered more in labor law courses than in others.

Film material is especially effective for teaching occupational health and safety since it makes the work environment obvious and the points vivid. Physical and chemical hazards become apparent, as do the newer issues around office automation and VDUs. Materials are produced by governmental units, employer associations, labor organizations, and documentary film makers in all of the English-speaking countries. Excellent programs have been broadcast by television, including commercial stations in the United States. Some years ago I invited a piece dealing with audio-visual resources in occupational health and safety for the Spring 1981 issue of Labor Studies Journal which I edited. Since then much more has been produced and anyone teaching in industrial relations who wishes to use film material will not have difficulty.

Rarely do Industrial Relations faculty bring in guests practitioners who deal with occupational health and safety - be they employer or union representatives, lawyers, health professionals and governmental personnel. This is something which any instructor ought to consider as a way of learning themselves as students learn, and introducing work environment materials into the regular industrial relations courses. The response to a public seminar given under the University of Sydney Industrial Relations auspices would suggest considerable interest among practitioners in sharing their occupational health and safety and industrial relations experience with the academic community.

The reverse is also valuable; taking students out on field trips to diverse workplaces where they can talk with the industrial relations managers and union representatives and learn how work environment issues are central in their activities. Students can see the variations in industrial relations practice and in work environment issues if they experience, for example, a large manufacturing plant; an automated office in telecommunications, banking, or insurance; a food processing operation; or a health care facility. Internships connected to industrial relations courses are useful, serving as the basis for a research paper or thesis and involving on-site work with industrial relations professionals. Regardless of the topic or course, this kind of exposure to work environment problems demonstrates how they form part of the larger labor-management relations picture.

Comparative labor movements or comparative industrial relations courses are well suited to include work environment materials. Many materials from countries with differing approaches, such as Norway and Sweden, are published in English, and increasingly there are useful comparative materials on occupational health and safety (Elling, 1986; Deutsch, 1981, 1986).

Developing detail here on how a course syllabus might be designed for the core offerings which are in Industrial Relations university curricula would not serve well. Perhaps the best way to summarize this discussion is to suggest the following key points for those involved in the education of industrial relations students today, the practitioners of tomorrow.

- 1) Adopt the term work environment, as a holistic concept for the range of factors associated with worker health. Include job stress and work organization features as part of the broader view of the working environment.
- 2) Demystify occupational health and safety. Job safety and health is the business of managers, industrial relations directors, union leaders. No longer seen as outside of labor-management relations, it is not something left to "others" including scientific experts.
- 3) Recognize the changing needs of industry and the world of work for those newly entering it, and adapt teaching and studying in industrial relations to that new reality. As one addresses the feminization of the workforce, the impact of microelectronics, and the new systems of participative management and employee involvement in work restructuring and change, ties to occupational health issues become apparent.
- 4) Recognize that the hours, wages, and working conditions formula for labor-management relations has come increasingly to include, as part of working conditions, the broad range of issues that form the work environment. Although it always was part of the industrial relations milieu, historically occupational health and safety was largely removed from the terrain. What is called for is a return to its important place in the industrial relations curriculum, in textbooks, and in industrial relations research.
- 5) Integrate work environment materials into the full complement of industrial relations curricula. However, add a course explicitly on occupational health and safety, geared to industrial relations students heavily focused on the policy and labor-management aspects of the topic. Increasingly such courses are provided for health professionals, occupational health nurses, industrial hygienists, physicians in occupational medicine, who are in positions of managing health and safety programs and employee health departments in work organizations. The cooperation between schools of public health and industrial relations departments and institutes has been an important development in the United States in recent years. Graduate degree programs in occupational health for mid-career professionals have been developed in the U.S., at the University of Oslo, Norway and the University of Sydney, Australia, with the assumption that the students in these programs need industrial relations and managerial skills around the substantive concerns of the work environment.

ENDNOTES

1. The following Industrial Relations Journals were searched to determine what was published in the broad area of occupational health and safety:
 - Industrial Relations (1980-1990); 3 articles
 - Industrial and Labor Relations Review (1987-1990); 6 articles
 - British Journal of Industrial Relations (1980-1990); 1 article
 - Industrial Relations Journal (UK) (1987-1990); 1 article
 - Journal of Industrial Relations (1987-1990); 3 articles
 - Australian Bulletin of Labour (1980-1990); no articles
 - Labour and Industry (1987-1990); 3 articles
2. A ten year survey (1974-1983) of leading management journals in the United States (Fortune, Harvard Business Review, Sloan Management Review, Wharton, Columbia, Academy of Management Review) revealed few articles on occupational health and safety or the work environment, with a maximum of 4 articles in 10 years in any journal in the management field.
3. There are too many publications to mention, one need only examine the range of pieces published by the CAI, ACTU, and various governmental bodies. Good illustrations are, Workforce Involvement: The Competitive Edge, National Industry Extension Service; and the CAI/ACTU Joint Statement on Participative Practices: A Cooperative Approach to Improving Efficiency and Productivity in Australian Industry, April 1988.
4. One of the most established programs is at the Elton Mayo School of Management at the South Australian Institute of Technology, led by John Rudge. He has a curriculum geared to educating management/industrial relations students on work environment issues, and offers continuing education for professional

managers and industrial relations practitioners on issues of occupational safety and health, with seminars, workshops, special topics presentations as well as on-going courses. The interactive style of a university with matriculating students, alumni, practitioners, and continuing education is especially creative and worthy of duplication and expansion.

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