# The Implications of Labour Market Restructuring in Industrialized Societies for Occupational Health and Safety

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# The Implications of Labour Market Restructuring in Industrialized Societies for Occupational Health and Safety

Michael Quinlan
University of New South Wales

Over the past 20 years the labour markets of industrialized countries have undergone a series of profound changes. These changes have been associated with significant changes in work processes but until recently no attention was given to the consequences of this for occupational health and safety (OHS). This article reviews available evidence on the impact of particular labour market and work arrangements on the incidence of occupational injury and disease, the reporting and treatment of OHS problems and regulatory regimes. The evidence is fragmentary and far more research is needed. Nevertheless, available evidence indicates that labour market restructuring is having a significant (adverse) but often hidden impact on OHS. In many cases, these effects are compounded by competition, labour market and health care policies introduced since the 1980s. If confirmed, the findings indicate that a significant reassessment of OHS regulatory regimes is needed.

## Introduction

In the past 20 years the labour markets of most industrialized countries have undergone a number of significant changes. Broadly speaking, changes have been of three types. First, there have been shifts in employment structures and work arrangements, most notably a growth in self-employment, casual/temporary and part-time work and a corresponding decline in the proportion of the workforce holding permanent full-time jobs. There have also been changes to the timing of work, with a growth in shift work and night work. Second, there have been sectoral shifts in employment, most notably a marked movement of employment away from

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**TABLE 1**
**Labour Market Restructuring Trends within Industrialized Societies**

- Growth in female workforce participation rate
- Growth in youth labour force participation rate
- Increasing use of shift/night work
- Ageing of population and labour force
- Decline in male workforce participation rate (though this appears to be slowing)
- Growth of outsourcing and franchise arrangements
- Growth of employment share of small business
- Growth of self-employment, casual, part-time and other contingent work forms
- Declining proportion of employees holding permanent full-time jobs and average job tenure
- Shift in employment away from manufacturing and towards the service sector

manufacturing, mining and construction and towards service industries like hospitality/tourism, finance and information services. Third, there have been important changes to workforce demographics, most notably an ageing of the workforce, a long-term increase in female participation rates and changes to the youth labour market. Table 1 summarizes these changes.

While most of the trends are well known, some qualifications should be noted. First, not every country has experienced every shift. The extent of change within a particular category, such as the growth of part-time work, has also varied between countries. Second, some shifts predate the last 20 years while others have only become apparent in the past decade. Third, the origins of changes are complex and they intersect in equally complex ways. For example, downsizing by large organizations is a factor in the growth of outsourcing and small business, reduced job tenure and the increased use of contingent workers. At the same time, employment growth in service industries like retailing, fast food and tourism has depended heavily on young part-time workers. This might be seen to support Atkinson's flexible firm hypothesis on the expansion of non-standard work but, as others (Burgess, 1997) have noted, this model is too simplistic. Some changes have been cumulative while in other cases one trend has offset another. The increased female workforce participation rate has helped to fuel the growth in casual and part-time employment at the same time as masking a decline in average job tenure among males. Finally,

specific contextual factors, such as employment and social security regimes and relative levels of unemployment, have affected the impact of shifts.

Labour market changes, especially the growth of what was originally labelled atypical/non-standard work and more recently contingent/precarious forms of employment, have been the subject of a growing body of research (see, for example, Delsen, 1995). However, there has been little appreciation of the occupational health and safety (OHS) consequences of these changes, especially when combined with changes to work organization (downsizing, corporatization, privatization, etc.) and work processes (new production technologies and the proliferation of new chemicals in industry). This neglect partly reflects disciplinary fragmentation. Those tracking labour market changes (mostly economists, sociologists and industrial relations scholars) are usually ignorant of OHS. Delsen's (1995) otherwise thorough international overview of the nature and implications of atypical employment hardly mentions OHS (an EU directive is cited in passing while workers' compensation is ignored). Equally, OHS experts have seldom explored the links between labour markets, work organization and job hazards (for an exception, see Nichols, 1997). Fragmentation also flowed from the blinkered perspective of policy-makers, something exacerbated by the microscopic vision of economic rationalism which has dominated public policy discourse since the early 1980s with its mantra of reducing regulation, increasing competition and labour market flexibility.

Some changes to labour markets may have positive OHS effects for occupational health and safety, notably the shift in employment away from traditionally hazardous industries and gains in knowledge/experience from an ageing workforce. However, assessing the impact of sectoral shifts is difficult. Far less is known about OHS problems in growing service industries and the concentration of casual and other contingent workers within, for instance, fast food/hospitality makes workers' compensation data less reliable. Further, patterns of injury and disease are undergoing change in traditionally hazardous industries due to shifts in production technologies and management practices. Berggren (1993) draws on Richard Wokutch's (1992) detailed account of OHS in the Japanese automobile industry to argue that lean production entails an increased risk of manual handling/soft tissue injuries – what he aptly subtitles 'Working with Pain'. Few studies have tried to assess the

OHS consequences of the work reorganization and labour market change associated with new management techniques. An exception is Wright and Lund's (1996: 196–212; 1998: 3–15) account of the introduction of engineered standards into grocery warehousing. Wright and Lund (1996: 209) argue that the use of agency-supplied temporary labour exacerbated OHS problems because casuals strove to beat performance standards in order to secure future work and in the hope of securing a full-time position.

There is evidence that older and more experienced workers are at less risk of injury. A Canadian study of manufacturing establishments found that companies with workers who were older, had longer seniority and low turnover tended to have lower lost time workers' compensation claim frequency rates (LTFR). They found that lower LTFR 'were also associated with greater worker participation as well as lower expectation that workers simply follow management instructions' (Shannon et al., 1996: 267). These findings are consistent with a hypothesis that higher levels of labour volatility and casualized employment, and a weakening of worker unionization and empowerment which usually flows from this, have worse OHS outcomes. In some circumstances the benefits of an ageing workforce may be overwhelmed by other factors. For example, because the health impact of shift work increases with age, the combination of expanding shift work and an ageing workforce could mean that adverse health effects will multiply for both individuals and the community. Further, casualized employment and reduced job tenure will lead to complicated work histories that make it difficult to identify occupational exposure to hazardous substances. Increased labour market volatility also weakens the link between worker age, on-the-job knowledge and experience.

In sum, there are grounds for examining the impact of labour market restructuring on OHS risks. Labour market changes also affect OHS regulatory regimes. The next two sections discuss each aspect in turn.

## Labour Market Restructuring and Patterns of Occupational Injury and Disease

There has been little research into the OHS effects of labour market restructuring. Many of these effects will be masked, understated

or missing entirely from OHS statistics derived from workers' compensation claims data. These data often fail to record key variables such as employment status (casual, self-employed, etc.). Recording conventions are another source of distortion. A Swedish study found increased outsourcing in the mining industry led to an understatement of injuries and risks because injuries involving contractor workers were not recorded under the mining industry but under the industry classification of the contractor (Blank et al., 1995: 23). There are also widespread flaws in workers' compensation coverage that affect OHS statistics. Several flaws have significant ramifications in the context of a growing contingent workforce. Self-employed contractors are often formally excluded from workers' compensation cover and even those with cover frequently do not lodge claims due to ignorance, financial pressures to keep working or fear of losing their job (Mayhew and Quinlan, 1997a, 1997b). The latter factors explain a significant level of non-reporting among other groups of contingent workers, such as home-based workers, temporary workers and part-timers (Queensland Division of Workplace Health and Safety, 1994). The underreporting of occupational disease and stress-related illnesses by workers' compensation systems could mask the effects of downsizing. Workers holding a succession of short-term jobs will find it harder to prove a link between disease and a workplace exposure to hazardous substances. Overall, growth of the contingent workforce will exacerbate existing limitations in OHS statistics. Inter-industry differences in the level of contingent labour will also translate into variations in the extent of underreporting across industry and occupations.

Gaps in workers' compensation data are only partly offset by other sources such as epidemiological studies, hospital admissions data and fatality censuses. Nevertheless, a sifting of available research is sufficient to develop hypotheses for which there is evidence. In several cases, most notably subcontracting, the evidence is becoming persuasive while in others it is still fragmentary. Nevertheless, more compelling evidence in one area provides a guide as to what factors might be explored elsewhere. The remainder of this section focuses on three related sets of labour market changes, namely: the growth of outsourcing/self-employment and home/telework; labour shedding and the growth of small business; and finally the growth of temporary and part-time labour.

*The Impact of Outsourcing/Self-Employment, Homework and Telework*

There has been a trend to outsourcing (or the subcontracting of production and services by an organization) in most industrialized countries since the 1970s, and more especially the 1980s. Outsourcing is a primary cause of a corresponding growth in self-employment, labour hire agencies, telework and home-based work (see Health and Safety Commission, 1994; Vandenheuvel and Wooden, 1995; Bureau of Labor Statistics, 1995; Meulders et al., 1996; Menzies, 1997; Felsted, 1996; Lafferty et al., 1997). Evidence on the OHS implications of outsourcing is of several types.

First, a strengthening body of census data indicate self-employed workers face a significantly higher risk of serious injury and death than employees. Not all self-employed workers are subcontractors but the categories do overlap considerably. The US Bureau of Labor Statistics' annual census of fatal occupational injuries has consistently shown that self-employed workers account for 19–20 percent of fatal injuries but represent only around 8 percent of the employed workforce (Abraham et al., 1996; Bureau of Labor Satistics, 1996a, 1997a). Ranking fatalities by occupation revealed a fairly consistent pattern, headed by truck drivers followed by farm-workers, salesworkers, construction labourers, other labourers, military personnel, timber cutters, police, pilots and electricians (Bureau of Labor Statistics, 1997a: 5). Subcontracting and self-employment are pervasive in at least five of these high fatality risk occupations. Similar findings have emerged from fatality censuses and research on work-related deaths in Australia (Mayhew et al., 1997; Mayhew and Quinlan, 1997a, 1997b). In the UK, the Health and Safety Commission (1994) found that while agriculture and construction accounted for about 30 percent of self-employed workers in 1992/3, these two industries accounted for just over 70 percent of all work-related fatalities. Eurostat (1998) statistics for the EU also indicate that work-related fatalities are highest among male workers in agriculture, road transport and construction – industries where self-employment is most pronounced.

Second, a number of industry and incident studies have identified OHS problems associated with outsourcing. A Finnish study of 99 serious incidents (Salminen et al., 1993: 352) found that the risk of injury was significantly higher for subcontractors. 'Subcontracting

increased the accident risk one and a half times . . . the accident risk of workers employed by subcontractors was higher than that of the workers for main contractors' (Salminen et al., 1993: 356). The authors identified tight time schedules and production pressures as primary causal variables. A study of the Swedish mining industry (Blank et al., 1995) found contractor workers undertook different tasks, experienced different working conditions and were involved in more frequent and severe injuries (for similar findings in the US see Rousseau and Libuser, 1997: 109–10). A study of the petrochemical industry by Rebitzer (1995) found that the outsourcing of maintenance had led to major OHS problems, including several catastrophic explosions. Like Rousseau and Libuser's examination of the 1996 crash of a Valujet DC-9 in the Florida Everglades, Rebitzer emphasized the link between outsourcing, disorganization in the workplace and regulatory failure.

The OHS problems posed by outsourcing are not confined to serious injury risks (see Paoli, 1995: 51, 88, 100) or large workplaces like mines and chemical plants. Self-employed subcontractors like taxi drivers work in isolation under a piecework payment system and with an illusion of autonomy that obfuscates their economic subordination and encourages individualization of OHS risks (Dalziel and Soames, 1997; Mayhew and Peterson, 1999). In Australia, studies (Mayhew et al., 1997; Mayhew and Quinlan, 1997a, 1997b; and Mayhew and Quinlan, 1999) comparing outsourced and non-outsourced workers in building, garment-making, road transport, hospitality and childcare found OHS outcomes were worse for outsourced workers and their presence also exacerbated OHS risks more generally. In a similar vein, a Swedish study (Ono et al., 1995: 686–93) found that homecare workers had a higher annual incidence of musculoskeletal injuries than nursery school workers due to the physically stressful tasks they undertook.

Drawing this evidence together, three sets of causal factors can be identified (Table 2). The first is the economic and reward systems associated with outsourcing. Often fierce competition for work among subcontractors and payment-by-results systems encouraged a range of hazardous practices including evading legal requirements to save time and long hours to offset low returns. Outsourcing often also entails a transfer of work processes to a smaller employment unit with fewer resources to devote to OHS. The removal of hazardous work processes from direct control is sometimes a deliberate

**TABLE 2**
**Risk Factors Associated with Subcontracting/Outsourcing**

**Economic and Reward Factors**
- Competition/underbidding of tenders
- Taskwork/payment by results
- Long hours
- Underqualification and lack of resources (i.e. like small business)
- Off-loading high risk activities

**Disorganization**
- Ambiguity in rules, work practices and procedures
- Inter-group/inter-worker communication
- More complicated lines of management control
- Splintering of OHS management system
- Inability of outsourced workers to organize/protect themselves

**Increased Likelihood of Regulatory Failure**
- OHS laws focus on employees in large enterprises
- OHS agencies fail to develop support materials
- OHS agencies fail to pursue appropriate compliance strategies
- Self-employed not covered by labour minimum standards laws
- Self-employed not covered by workers' compensation

attempt to avoid expensive regulatory requirements. Second, the presence of subcontractors often creates more fractured and complex work processes and management structure leading to disorganization. Third, regulations and compliance programmes that focus on permanent employees in larger workplaces fail to address subcontracting and have insufficient resources to cope with the proliferation of employment units. Regulatory problems are exacerbated where subcontractors are effectively exempt from minimum labour standards or workers' compensation.

The major risk categories can overlap in practice. For example, pyramid subcontracting intensifies cost competition among subcontractors and also increases the potential for hazardous forms of disorganization (including weakening the prospect of collective organization among workers). Further, economic pressure on subcontractors makes them less willing to abide by regulatory controls. The impact of these risk factors will differ across industries and

work settings. Available evidence suggests that adverse OHS effects are most pronounced in the case of self-employed workers who operate – de facto or de jure – in a less regulated context. However, this distinction is mediated by other factors and should not be overstated. Competitive pressures can compromise OHS even where contract workers are employees of a large firm or labour-hire agency. In some industries, like construction, employment status is fluid or ambiguous. Finally, comparing self-employed and employed workers only partly captures the impact of outsourcing because competition between contractors and employees can cause a deterioration of OHS among the latter (Mayhew and Quinlan, 1997b).

Not all home-based work or telework entails a subcontracting arrangement but shifting the location of work often has similar implications for OHS. Isolated workers are more vulnerable to economic/productions pressures, disorganized work processes are more likely and regulatory controls are likely to be ineffective. There is little systematic research on OHS among home-based or telecall-centre workers. One study of clothing outworkers found they reported three times the number of injuries as a comparable group of factory-based workers (Mayhew and Quinlan, 1999). Menzies' (1997) study of telework in Canada identified a number of factors likely to impact on OHS including low pay, late hours, domestic disruptions, the individualizing of work experiences, work intensification via narrow management definitions of productive/paid activity and stress arising from computer tracking of performance. An EU report on telework (Huuhtanen, 1997: 68–9) identified OHS risks in the combined effects of isolation, monotonous work, job control and vulnerability to management bullying. Like others (see de Vries, 1996), it pointed to problematic regulation and the limited activities of government agencies directed at teleworkers. Similar problems apply to the overlapping category of home-based workers (see Westberg, 1997: 10–11; Mayhew and Quinlan, 1999). A recent ILO convention on homeworkers includes teleworkers but excludes self-employed workers (Huuhtanen, 1997: 7). A number of studies have linked the growth of telework/home-based work to a re-emergence of child labour in industrialized countries (Boris and Prugl, 1996; Huuhtanen, 1997: 67; Mayhew and Quinlan, 1999) but the OHS effects of this disturbing trend are yet to be investigated.

*Labour Shedding by Large Organizations and an Expanding Small Business Sector*

Since the early 1980s there has been a decline in permanent full-time employment due to a combination of labour shedding by large organizations, outsourcing and a shift to temporary or part-time employment, especially in the service sector (Moorehead et al., 1997; Bureau of Labor Statistics, 1996b; US GAO, 1996). There are problems in using job tenure/retention as a measure of job insecurity (Gregg and Wadsworth, 1997). British and US evidence indicates that increased workforce participation by women has largely offset a decline in median job tenure among male workers (Robinson, 1997; Bureau of Labor Statistics, 1997b). Nevertheless, the job market has become more volatile for at least some workers and there is international evidence of a significant increase in perceived job insecurity (OECD, 1997: 130). For OHS, perceived job insecurity may be as important as actual levels of job turnover since workers who believe their jobs are at risk are liable to be under stress and reluctant to report either injury or hazards. Labour shedding by large organizations, along with outsourcing and franchising, have contributed to a growth in small business that presently accounts for over 40 percent of total employment in many industrialized countries (Burgess, 1992; HSE, 1996; Wiatrowski, 1994; Witmer, 1997).

Downsizing, long-term changes to workplace size and the growth of small business can all have consequences for OHS although the evidence is fragmentary. Downsizing by large organizations (and associated practices like privatization) should be seen in the context of other changes to employment practices that weaken job tenure (such as greater use of probation, performance and dismissal procedures) and foster a climate of perceived job insecurity. The process of labour shedding can affect OHS in a number of ways, most notably:

- Increased workloads/deadline pressures, longer hours and other forms of work intensification which also adversely affect work/family balances (Houben and Nijhuis, 1996; Simpson, 1997). McCarthy et al. (1995) found organizational restructuring was frequently associated with work intensification, coercive management styles and bullying of workers.

- Loss of corporate memory, technical expertise and experienced personnel, magnified by the tendency of older workers to take redundancy packages and for more able managers to jump ship (see US GAO, 1996: 40).
- Insecurity generated stress/mental illness, lowered morale/commitment and guilt among those surviving bouts of labour shedding (Hartley et al., 1991; Moss, 1992). Peterson (1999) found a rising level of stress-related illness claims in the Australian public service during the 1990s was linked to anxiety, forced relocation and other pressures associated with downsizing and reorganization. A link with the apparent increase in workplace anger/violence is also plausible (Bensimon, 1997).
- Workers being distracted from job tasks and participation in activities deemed as non-essential, including health promotion, safety and training. Daykin (1997: 106) found organizational change caused lower paid and insecure workers to view health promotion as a burden and to avoid health services for fear the information would be used in redeployment/redundancy decisions.
- Job transfers or task restructuring where insufficient attention is given to OHS risks and a direct undermining of the OHS management function due to reorganization, bypassing in decision-making, disrupted communication channels and a breakdown of trust among employees (Underwood, 1994; Stoner and Hartman, 1997).

Unfortunately, most studies only explore a selection of these factors. From the mid-1980s studies of 'surviving' workers by psychologists and management researchers found that downsizing led to reduced job satisfaction and organizational commitment, increased strain and absenteeism and might also influence commitment to unions (for a summary see Parker et al., 1997: 289–90). Much of the research took an individualized or managerialist perspective, focusing on how reduced commitment affected work effort and identifying moderating factors such as self-esteem, coping strategies, supervisor/fellow worker support and procedural fairness in selecting workers to be laid off (see, for example, Lim, 1997). Workload and disorganizational impacts of downsizing were largely ignored. A longitudinal study by Parker et al. (1997: 289–303) argued detrimental effects on worker well-being could be offset if the

downsizing process entailed increases in control, clarity and participation. Yet, as already implied, downsizing typically entails precisely the opposite tendencies.

More recently, medical researchers have turned their attention to the health impacts of labour shedding. A study of over 900 local government employees in southern Finland undertaken by Vahtera et al. (1998) found downsizing had a significant negative impact on employee health as measured by medically certified sick leave (absence), especially among older workers (particularly musculoskeletal disorders). A Polish study (Szubert et al., 1997) also found downsizing led to a significant increase in the level of sickness-related absenteesim. These are important findings. Nevertheless, assessing the OHS effects of downsizing is difficult, not simply because these are complex and mixed in with other changes like outsourcing, but also because conventional OHS indicators such as injury rates, absenteeism and compensation claims can be distorted by reporting effects. Problems with the 'healthy worker survivor' (see Arrighi and Hertz-Picciotto, 1994) effect may be especially acute in downsized organizations if pre-existing health influences those targeted for discharge. Further, workers fearing redundancy may avoid absence or making workers' compensation claims while those whose fate is already decided may exercise claim entitlements (for deafness, etc.) eschewed in the past (Stoner and Hartman, 1997). In general, medical researchers have ignored these organizational variables.

A Norwegian study of organizational restructuring in a telecommunications organization addresses some of the problems just mentioned. Saksvik (1996: 55) found the majority of employees reported a deterioration in working conditions following reorganization, along with reduced job performance, an increase in health complaints and turnover intentions. However, there was no change in sickness and absenteeism rates, largely due to pressure from management, fellow workers and the fear of losing their job. Those who took sickness absence during this period were an especially vulnerable group with low job satisfaction and significant health problems. Similarly, a study of managers in the UK (Simpson, 1997) found that increased workloads and insecurity associated with downsizing created pressures to be at work and to work longer hours. Both these studies indirectly raise a more general issue, namely the extent to which voluntary absenteeism is used by

workers to deal with hidden ailments such as mental illness, stress, alcohol and drug abuse. The impact of work intensification on the incidence of such problems, and what affected workers do when absenteeism is not a viable option, warrants investigation (De Lorenzo, 1997: 103–23).

Measuring OHS performance in small business is equally difficult. The concentration of casuals, self-employed and family helpers in these firms affects the level of workers' compensation claims. The separate but overlapping categories of small workplace and small business (including those on large multi-employer worksites) are often conflated. Nichols (1997) and Tombs (1988) have challenged any presumption that smaller workplaces are safer because they are less bureaucratic. OHS management may be fragmented even where small workplaces are part of a large firm. Reviewing previous research, Salminen et al. (1993: 352) found the majority of studies (nine out of 12) indicated that 'accident frequency was several times higher in small companies than in big ones'. Their own study confirmed this finding. Similarly, a study of work-related fatalities in the chemical industry found the fatality rate in small firms was more than twice that of large firms (Suruda and Wallace, 1996: 425–8).

These studies, together with a growing body of general research into OHS in small business (Tuskes and Key, 1988; Eakin, 1992; Lamm, 1997; Hassle and Limborg, 1997; Mayhew, 1997), have identified a number of common problems, notably:

- A low level of OHS awareness and a tendency to place responsibility with workers.
- A lower level of worker training.
- Limited knowledge of OHS regulations and little contact with OHS agencies.
- The 'top-down' approach of OHS agencies and generic nature of OHS materials are not appropriate for small business who prefer a 'bottom-up' or hazard-focused approach.
- A low level of OHS compliance due to ignorance, a failure to see the need for government intervention or calculated by the remote risk of prosecution.
- An absence of a systematic decision-making and a lack of expertise, time and logistical resources to devote to OHS. Small business operators rely heavily on guesswork.

These factors may combine with labour market and institutional influences. For example, younger workers are more likely to be found in small workplaces and in casualized industries. This can be a lethal combination. A US study of young building workers found that fatal injuries were far more likely in small and non-union firms (Suruda and Dean, 1996: 58). Growth in small business (in terms of numbers or employment) will accentuate demands on regulators. Wiatrowski (1994: 34) reports that US establishments with ten or fewer employees are not required to keep OHS records and are not subject to inspections. Even in countries without formal exemptions, most inspectorates have concentrated on larger workplaces.

### *Casualization and the Growth of Part-Time Work*

Since the early 1970s part-time employment has grown significantly in virtually all OECD countries. In many, part-time workers doubled as a proportion of total employment between 1983 and 1995 (OECD, 1996). In some, most notably Australia, France and Spain, there was also a significant increase in the level of casual/temporary employment in the decade from 1983. Even in countries where this was not the case, there was a significant increase in temporary employment among younger workers (especially 16- to 19-year-olds; see OECD, 1996: 8). The growth of temporary and part-time workers relied heavily on increasing female participation in the workforce. In many countries there is considerable overlap between temporary and part-time work. Industries like retailing and hospitality have increasingly depended on young casual part-time workers, many still at school or college (Campbell and Burgess, 1997: 27; Brooks and Davis, 1996: 153). In the USA, for example, the fast food industry is the largest employer of young workers. In most industrialized countries casual workers receive markedly inferior employment conditions to permanent workers, are less likely to be unionized and find it more difficult to access regulatory protection (Campbell and Burgess, 1997). The distinctions are less marked in the case of permanent part-time workers.

There have been few attempts to measure the OHS effects of these changes. There is a growing body of international evidence on the higher incidence of serious injuries (including fatalities and burns) among young workers (Kinney, 1993; Castillo et al., 1994;

Laflamme, 1997). Few studies entail a detailed breakdown of employment characteristics. However, areas like retailing and fast food – where young workers are overwhelmingly employed on a casual part-time basis – have increasingly been identified as major domains of risk (see Inansci and Guidotti, 1987: 730; Rossignol et al., 1989: 751; Knight et al., 1995: 794, 797; Brooks and Davis, 1996: 159). This coincidence is sufficient to warrant further investigation. Brooks and Davis (1996: 159) refer to the dearth of quality OHS information on industries and jobs where young workers are concentrated. Drawing fragmented research together, a number of OHS problems associated with temporary and part-time work can be identified.

First, these workers, and especially casuals, are less likely to receive training, including training in OHS (Dennis, 1997). The problem may be acute for younger workers. In the 1991/2 EU work environment survey (Paoli, 1995: xiv–xv) young workers identified lack of training as a major concern (along with exposure to hazardous substances, part-time work and time pressures). Several US studies (Kinney, 1993: 295; Knight et al., 1995: 798) linked lack of training to a high incidence of serious injuries among young workers employed in retailing and fast food restaurants. The volatility of casual employment diminishes the value of training that does occur.

Second, temporary workers are more likely to lack job specific knowledge and experience. Dwyer (1994: 6) calls this problem underqualification and cites several French studies identifying a higher incidence of injuries among workers transferred to another job or employed under temporary contracts (see also Beaumont and Harris, 1997). As with subcontractors, the presence of temporary and part-time workers (see Meulders et al., 1996: 594) can lead to disorganization in the workplace. High labour turnover weakens the link between age and job specific knowledge. Together with work intensification, this may help explain Beaumont and Harris's (1997: 43) finding that age 'negatively impacts on illness/injury for part-time workers'.

Third, casualization, part-time/fractional work or job-sharing can entail covert or overt workload increases affecting both contingent workers and residual permanent full-time staff called on to fill gaps or coordinate work processes (Wright and Lund, 1996; Branine, 1997: 22). Work intensification can occur by outsourcing activities to small firms using temporary or part-time workers.

Large organizations may also adjust production schedules to levels that workers cannot meet over prolonged periods. In their international study of grocery warehousing, Wright and Lund (1998: 6) found the introduction of engineered standards lifted work rates (by 30 percent or more) to levels that significantly increased the risk of manual handling injuries and which two National Institute of Occupational Safety and Health (NIOSH) studies found were unsustainable.

Fourth, echoing conditions 100 years ago, many temporary employees lack the bargaining power to safeguard their own safety. The introduction of temporary employees can lead to work-group disintegration (undermining the communication role these groups play), weaken union representation, facilitate a more authoritarian style of management and encourage workers to normalize risks (Dwyer, 1994: 8–10). Further, from a management perspective, conventional organizational controls have limited effects on temporary employees (Saks et al., 1996).

Fifth, despite presumptions to the contrary, temporary and part-time work can lead to incompatibilities between work and family commitments that adversely affect OHS. A French study (Bue and Chrislofari, 1986; cited in Meulders et al., 1996: 593–4) found part-time work could involve long working days (especially with split shifts), longer working weeks (including weekends), a greater likelihood that employers will alter timetables and less employee access to flexi-time. A study of public sector employees undertaking part-time work in Denmark, France and the UK (Branine, 1997: 22) also identified employee concerns with poor shift arrangements.

Sixth, the increasing use of temporary workers creates additional demands on OHS agencies to ensure this is not compromising OHS standards. As yet there is little indication of a response from agencies apart from targeting risks to young workers (see NIOSH, 1994).

These risks can be compounded where corporate devolution, outsourcing or franchise arrangements undermine OHS management systems or preclude their development. Some recent incidents illustrate this and the need for further research. In Australia a Sydney-based pump manufacturer and a large labour agency both incurred substantial fines after six workers (including young backpackers supplied by the agency) suffered serious injuries to their fingers from contact with saws and sheet rolling machinery. Courts found the manufacturer failed to maintain a safe system of work and the agency failed to meet its 'special responsibility' to protect the

workers it supplied who were unfamiliar with the workplace (*Workforce*, 28 November 1997: 3). In the USA and Australia serious injuries (burns, electrocutions and struck/splashed by flying objects/hazardous substances) suffered by young workers in restaurants suggests the absence of effective OHS management systems even within large multinational fast food chains (Anon., 1994). The OHS effects of subcontracting and part-time casual work in the transport, courier and parcel delivery industry also warrants attention. United Parcel Service (UPS), for example, transformed its US workforce (from 42 percent part-timers in 1986 to 60 percent by 1997) and also made increased use of subcontractors and part-timers in international operations. During a 1997 dispute the Teamsters Union argued that the shift to low-paid casual part-time workers, a corresponding increase in labour turnover and induction/training requirements, and a management decision to raise the package weight limit from 70 to 150 lb in 1994 contributed to a high level of OHS violations and an injury rate 2.5 times the industry average (*Teamsters News Release*, 23 April, 25 May, 26 June 1997).

## The Implications of Labour Market Changes for Governments

Overall, there are grounds for suspecting changed labour market structures are having adverse effects on OHS and the young and female workers are especially at risk. In many instances these effects will not show up in official statistics because, as noted earlier, the same changes reduce reporting via workers' compensation claims. This problem should be of concern to governments. As the contingent workforce expands official statistics become progressively less representative of broad patterns, industry and intra-sectoral trends in the incidence of occupational illness. Workers' compensation data will become an increasingly inadequate basis for OHS policy development at the level of the firm, industry and economy. This is especially disturbing given the growing use of risk management/loss control and cost benefit analysis to drive OHS policies at organizational and government level. These devices are usually underpinned by readily available measures of incidence and costs, most notably workers' compensation claims data (Hopkins, 1994). In a number of countries (such as the USA, Canada and Australia) a regulatory impact assessment based on cost benefit analysis is

required before a new OHS standard is introduced. The growing contingent workforce makes such assessments more difficult or inaccurate. It also makes it more difficult for OHS agencies to show that new standards can be effectively implemented as part of that assessment. The merging of prevention and compensation agencies in some countries (such as Canada) has reinforced the reliance on compensation data to drive prevention strategies. It also creates a potential conflict of interest which may inhibit attention to emerging areas of risk (because they represent new sources of claims) and an emphasis on claims management (especially in relation to growth areas like stress) as distinct from addressing the underlying causes of these problems.

Labour market changes pose direct and indirect challenges to prevailing regulatory regimes concerned with safeguarding workers and providing monetary compensation/rehabilitation. These aspects are dealt with here in turn.

### *Prevention*

Historically, the OHS regulatory regimes of most industrialized countries have focused on full-time employees in large workplaces. While OHS laws purport to cover all workers, little compliance activity has been directed to smaller workplaces, subcontractors or more casualized forms of employment. The same applies to the provision of preventative services, with the impact of the European Framework Directive being mainly confined to large firms (Walters, 1997: 267–8). From the late 1980s government agencies in Australia, Denmark and elsewhere demonstrated a growing recognition that lifting OHS performance in small firms required materials and strategies different to those used in large organizations (Lamm, 1997; Hassle and Limborg, 1997; Mayhew et al., 1997). However, only Denmark appears to have fully integrated small business into its compliance programme, rather than treating it as a special case (Jensen, 1996).

Risks to younger workers have attracted increased attention, backed in some cases by union initiatives. Articles 6 and 7 of the European Directive on the Protection of Young People at Work (94/33/EC) requires employers to take specific account of young workers' experience, awareness and maturity when assessing risks and allocating tasks. Parents of school-age children are also to be

informed about risk assessment outcomes and control measures. Implementation of these provisions by member countries has varied widely.

Likewise, the OHS problems of outsourcing have evoked a muted response. Some OHS agencies have produced guidance material on managing contractors (see Victorian WorkCover Authority, 1996; HSE, 1997) but this is still exceptional. Seldom, if ever, does the guidance material provide a combination of generic and industry-specific material that addresses the sectors where outsourcing is widely used. Some agencies, including most in Australia, have utilized general duty provisions in OHS legislation to prosecute employers, major contractors and labour hire agencies for failing to provide a safe system of work for outsourced workers. This activity has had some effect. But in areas like road transport, safety enforcement continues to ignore subcontracting (Mayhew and Quinlan, 1997b). In other countries the regulatory apparatus is ambiguous or discourages major contractors taking on a responsible role in relation to OHS (see Rebitzer, 1995: 56). It also appears that OHS agency initiatives have been overwhelmed by the promotion of competitive tendering/outsourcing as part of the micro-economic reform agenda being pursued in many industrialized countries. In Britain and Australia, for instance, OHS problems were raised but then largely ignored during the development of competitive tendering/outsourcing programmes (Tombs, 1996: 321; Industry Commission, 1995a: 189). Tombs (1996) argues that although the conservative Thatcher government abandoned a direct assault on OHS regulation its pursuit of privatization, competitive tendering and other deregulationist policies undermined the Health and Safety Executive's ability to carry out its mandated functions.

There has been even less recognition of the need for new compliance strategies in relation to part-time and temporary workers. In 1990 the European Commission adopted a draft directive on the protection of health and safety for part-time, temporary and seasonal workers ('Atypical Working in Europe', 1996: 16). The implementation of this measure remains unclear and there have been no comparable steps in countries like Australia with high levels of part-time and casual labour. Governments have been equally slow to respond to the growth of home-based work and telework. There has been some preliminary investigation of the OHS problems experienced by these workers but little in terms of

dedicated regulation. In the Netherlands, the Dutch Working Environment Act covers employed but not self-employed teleworkers (de Vries, 1996: 91). Regulatory coverage means little without compliance activity and inspecting home-based workplaces remains as logistically difficult as it was 100 years ago (Mayhew and Quinlan, 1999). In Germany and some other countries, OHS provisions for home-based/teleworkers have been incorporated into specific collective agreements (see Schroder, 1996). However, these agreements cover only a minority of home-based workers and enforcement may be problematic where unions are preoccupied with issues like privatization.

Overall, governments and international agencies have only just begun to respond to the challenges of labour market restructuring. A recent ILO report on contract labour contained one brief reference to OHS (Egger, 1997: 8). Some neoliberal governments have even used the growth of small business to justify deregulation of OHS, arguing existing laws are becoming irrelevant (Witmer, 1997). In Britain a Health and Safety Executive (HSE, 1996) discussion paper on labour market restructuring rejected the wholesale exemption of self-employed workers from OHS laws (although one change made in construction had this effect; Mayhew and Quinlan, 1997b: 199–200). However, it also failed to propose any initiatives to cover these and other categories of contingent workers. Most government reports have ignored the cost benefit implications of labour market restructuring. However, one prepared for the Netherlands Ministry of Social Affairs and Employment (van Waarden et al., 1997) raised the spectre of a serious deterioration in OHS performance and increased costs unless regulation was refashioned to address the growth of contingent workers and other workplace changes.

Labour market changes pose particular problems for worker and union input into OHS regulation. In most industrialized countries unions make an important contribution to maintaining OHS standards. Not all these contributions are apparent. Collective labour regimes and union presence have established a baseline of minimum wages, maximum hours and other employment conditions protecting workers as well as creating an institutional framework for more explicit negotiations over OHS. Political lobbying over OHS standards and union representation of injured workers in compensation proceedings have also had aggregate effects. Even in countries

without participatory mechanisms in OHS legislation (like the USA), union presence at the workplace has facilitated the raising of safety problems by workers without fear of losing their jobs (Quinlan, 1993: 140–69). In other cases union input is more explicit. Reforms to OHS legislation in many advanced industrialized societies (especially northern Europe and Australia) since the 1970s were predicated on a collaborative approach built on informed employees and high levels of union organization. In some countries, procedural mechanisms governing health and safety representatives and joint workplace committees based on size and union input made it unlikely these structures would exist in small or non-unionized workplaces. Even where non-unionists have a formal right to involvement this has proved problematic in practice (James and Walters, 1997: 35–50).

By contributing to a decline in union density in many industrialized countries (notable exceptions include Sweden and Austria) the growth of precarious employment has weakened worker input into OHS regulation. In countries like Canada, New Zealand, Australia and the UK the impact has been reinforced by changes to labour law restricting union rights (to enter workplaces, recruit members or bargain) and shifting the locus to more decentralized bargaining or individual employment contracts. There is evidence more decentralized or decollectivist industrial relations regimes have facilitated work intensification and an erosion of OHS standards, particularly among contingent workers with little bargaining power (Quinlan, 1996: 22–4; Beaumont and Harris, 1997). Nichols' (1997) study of British manufacturing during the 1980s argued that the combination of work intensification, labour market changes and weakened unions overwhelmed the improvements in injury rates which might have been expected from the Health and Safety at Work Act.

Finally, labour market changes pose a challenge to more elaborate OHS management/internal control regimes that originated in Sweden and Norway and are, to varying degrees, being adopted by countries such as Australia. The growth of precarious forms of employment and smaller more volatile employment units may weaken these developments by:

- Reducing the proportion of the workforce employed by large organizations where the systems approach is most applicable.

- Increasing the number of workers in isolated or inadequately planned work settings and encouraging competition between different groups of workers.
- Making it more difficult to address insidious health risks of hazardous substances.
- Creating enclaves of contingent workers in large organizations whose integration in OHS management systems will be problematic (Legge et al., 1996); and
- Making it more difficult for workers and unions to vet systems' performance.

The extent of these problems in particular countries will vary according to the level of casualization, outsourcing and so on, government policies and the nature of employment legislation. To meet these challenges will require the commitment of considerable resources at a time when public expenditure on OHS regulation is stagnant or declining in many industrialized countries (Walters, 1997: 266–7). Even then, some categories of contingent workers, notably home-based workers and child labour (which has re-emerged in industrialized countries like the USA), exist in a shadowland of informal employment. Attempts to address the OHS problems of these groups without other forms of regulatory intervention are unlikely to prove effective (Kinney, 1993; NIOSH, 1996; Mayhew and Quinlan, 1999). A more comprehensive and cost-effective solution of regulating to discourage contingent forms of employment and arrest union decline would directly confront the twin policy mantras of globalization and microeconomic reform. Yet this radical step can be supported on the grounds that microeconomic reforms invariably fail to consider a number of externalities, not least of which is the economic, social and human cost of occupational illness (Purse, 1997).

### *Workers' Compensation and Rehabilitation*

Labour market restructuring has implications for the scope and effectiveness of workers' compensation and rehabilitation regimes. In many countries self-employed workers/contractors are largely excluded from workers' compensation and few take out adequate private insurance cover (Egger, 1997: 8). Even those with cover are reluctant to make claims because of economic pressures to

keep working (Mayhew and Quinlan, 1997b). In recent years provisions on independent contractors have been altered in a number of countries. In some cases the aim was to clarify or extend coverage (see Berreth, 1997: 43–50) but in other instances cover has been curtailed on the grounds of administrative simplicity/cost containment. Further, while temporary or part-time employees and those working in small business are formally entitled to workers' compensation, a significant number will not make claims due to job insecurity, involvement in illegal practices or ignorance. There is also a problem of small business failing to take out compulsory workers' compensation cover. Where part-time workers hold multiple jobs simultaneously (increasingly the case) or where temporary workers hold a succession of jobs, even relatively uncomplicated trauma-based claims can be problematic. With regard to exposure to hazardous substances, the problems for contingent workers with complex job histories will be manifestly greater because occupational disease is already significantly underrepresented in the workers' compensation systems of most countries (van Waarden et al., 1997).

The growth of contingent labour is also liable to offset government attempts to promote rehabilitation services in many countries since the 1980s. Self-employed, temporary workers and those in small business are less able to utilize these services (contributing to the lower compensation costs of small business; *Time for Business*, 1996: xviii). Even with large organizations job security is important to the rehabilitation process. In trying to meet this challenge, governments will need to rethink rehabilitation policies and solutions may be difficult to find.

Overall, workers' compensation agencies have been slow to respond to changes in the workforce. In the USA a number of state legislatures have recently required temporary help/labour-hire agencies to take out workers' compensation cover on the employees they supply (Berreth, 1997: 44, 46). However, such measures need to be balanced against 'efficiency' reforms to workers' compensation in a number of countries which reduced entitlements (via claim thresholds) or increased cost shifting from business and unhealthy forms of system competition (Weissman, 1997: 22–6; Purse, 1997, 1998). Himmelstein and Rest (1996: 23) argue that the application of managed care practices to workers' compensation has important policy implications because, unlike other areas of health care, doctors are involved in adjudicating compensability and deciding on a return to work. Some changes just mentioned

are liable to disadvantage contingent workers disproportionately because they are in a weaker position to make claims or dispute unfavourable rulings.

In most industrialized societies a significant level of hidden cost subsidization already exists in relation to occupational injury and disease. Costs not met by employers flow on – often in a gender-biased fashion – to the public health and social security systems, the taxpayer and the families of injured workers (Stewart and Doyle, 1988). In Australia the Industry Commission (1995b: 392–3) estimated employers bore around 30 percent of total costs of occupational illness (mainly workers' compensation premiums), injured workers and their families bore around 30 percent, and taxpayers around 40 percent – a breakdown similar to that found in other countries like Norway. In the case of serious injury the cost burden on workers and the community was even greater (Industry Commission, 1995b: 102) Restrictions to workers' compensation entitlements and the growth of contingent work will cause a further cost shifting away from employers. This creates a series of labour and product market distortions. Without countervailing state intervention, the expansion of contingent labour will undermine workers' compensation/rehabilitation systems and the role they play in managing OHS.

### *Indirect Effects on Inequality, Social Deprivation and Health Care Infrastructure*

The growth of precarious employment has been associated with a significant widening in income inequalities and consequent increases in social deprivation (Brosnan, 1996). This can have indirect effects on OHS by reducing general health standards among some workers and their families (Wilkinson, 1996), placing additional demands on government health infrastructure, and forcing unions to rethink strategies on working time and other matters (Valkenburg and Beukema, 1996: 738–54). In most industrialized countries the publicly funded health care system picks up a substantial number of work-related injuries and diseases that fall through the gaps in workers' compensation. How these systems will cope with an increasing burden as these gaps widen is unclear. In the USA, the absence of a comprehensive public health insurance system has meant that employers have incorporated health cover into employ-

ment conditions. The growth of the contingent workforce has undermined this already partial form of protection, as well as access to employer-based pension benefits. Using US government statistics, Nollen (1996: 573) found that, in comparison to full-time workers, a significantly lower proportion of temporary workers had formal entitlements to paid vacation, paid holidays, life insurance and health insurance. The gap was even wider when the proportion actually receiving such benefits was calculated (to say nothing of differences in the quality of benefits). The impact of labour market changes on health inequalities is liable to be more profound in the context of an ageing workforce (Campanelli, 1990).

These shifts also entail significant externalities. In the UK the growth of self-employment in the decade after 1981 was more than matched by growth in the number of these workers receiving social security benefits. This could have arisen from their low incomes, greater susceptibility to chronic illness or the involvement of many in the 'black economy' (Paddon, 1997). In Australia there is also evidence of a connection between low pay and calls on social security among contingent workers (especially women) in cleaning, textile, clothing, footwear, hospitality and retailing (Buchanan and Watson, 1997: 6). Externalities are often hidden because some contingent workers remain outside various legislative safety nets (Egger, 1997: 8; Westberg, 1997: 11–13). The extent of exclusion depends on entitlement provisions and whether the social security system is insurance/contribution based. In the USA, Japan, Canada and some European countries social security regimes set minimum requirements in terms of employment/contribution duration, hours worked or remuneration that effectively preclude some categories of contingent workers, especially those in low paid part-time or short-term jobs (Delsen, 1995: 116–17). Formal requirements understate the level of exclusion. In Sweden, for example, homeworkers face significant practical obstacles in securing sick pay entitlements (Westberg, 1997: 11–12). Further, most temporary and part-time employees in Sweden are not covered by collective private social security schemes.

The growth of precarious employment requires a reconfiguration of social protection legislation especially where systems are predicated on an insurance/income loss principle (based on the notion of life-long full employment) or focus on the elderly as a high-risk poverty group (Delsen, 1995: 120–1). These schemes fail to address the burgeoning ranks of young families dependent on contingent

jobs (Esping-Andersen, 1996: 615–34). Despite this, in countries like Sweden recent cost-cutting reforms to social security legislation have exacerbated these imbalances and increased the burden on women through changes to family, leave, further education and childcare entitlements (Westberg, 1997: 13, 21–3). In other countries, such as the UK and New Zealand, legislative protection has been undermined by the pursuit of a low-wage policy, weakening minimum wage and collective labour laws and the expansion of privatized/user-pays health care arrangements (Esping-Andersen, 1996: 628–9). Social protection laws play a role in OHS by establishing a baseline for wage levels and conditions which directly protect some workers, discourage some low-paid types of jobs, and assist lower income families to feed, clothe and educate their children (and not rely on their labour).

Outsourcing, self-employment and casual jobs contribute to other regulatory problems including a substantial loss in taxation revenue due to a combination of low income and evasion via an expansion in the 'black economy'. The Australian Taxation Office recently estimated that outwork in the clothing industry resulted in an annual tax revenue loss of between $A80 and 100 million (Mayhew and Quinlan, 1999). Similar problems originate from 'cash-in-hand' payments to casual workers – especially common in small business – and other clandestine work arrangements. Without some regulatory adjustment, a long-term increase in precarious employment will have implications for the state in terms of the proportion of workers able to finance their own retirement through superannuation schemes (Doring, 1996: 686). A significant growth in the contingent workforce is liable to erode the tax base while simultaneously leading to additional calls on social security infrastructure and shifting the cost burden away from employers and towards taxpayers, injured workers and their families (van Warden et al., 1997). Arresting this trend requires a rethinking of social protection programmes in a direction diametrically opposed to that currently propounded by neoliberal policies.

## Conclusion

A series of interconnected changes to labour markets and work organization in industrialized societies over the last 20 years present a major challenge to OHS in the 1990s and beyond. For a number of

reasons, including the cumulative nature of changes, disciplinary divides and deficiencies in official OHS data, these impacts are only beginning to be recognized. More research is needed, including studies that take account of inter-country differences in labour market trends and regulatory structures. Nevertheless, available evidence supports a number of general observations. First, the growth of contingent work has adverse effects on OHS by exacerbating disorganization at the workplace, attenuating management control systems and subjecting more workers to the unfettered market forces where OHS issues are subordinated. Although these changes affect broad categories of workers, the conjunction of particular market and job characteristics will mean an increased level of risk for already vulnerable groups, especially the young and women. Second, labour market changes are undermining the effectiveness of OHS laws by weakening participatory mechanisms, making the implementation of internal control systems more difficult, further stretching inspectoral resources and creating more work settings where even minimal enforcement of OHS standards is problematic. OHS agencies also need to reorientate their compliance activities to recognize the problems associated with outsourcing and so forth. Third, these changes are eroding the effectiveness of workers' compensation systems and associated occupational health and rehabilitation services. They also weaken the value of claims data to drive prevention policies at a time when some countries are placing greater emphasis on the compensation/prevention link. Important areas of risk are liable be understated or overlooked. Fourth, there appears to be a progressive externalization of costs associated with occupational injury and disease. This places an increasing burden on public infrastructure, taxpayers, workers and their families while making it more difficult for governments to shape OHS outcomes using conventional means.

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Michael Quinlan

is head of the School of Industrial Relations and Organisational Behaviour at the University of New South Wales, Sydney, Australia. Apart from occupational health, his major research interests are immigrant workers, industrial relations history and policy. His books include *A Divided Working Class: Ethnic Segmentation and Industrial Conflict in Australia* (with Constance Lever-Tracy) (London: Routledge, 1988) and *Work and Health* (Melbourne: Macmillan, 1993). Together with Dr Claire Mayhew, he has researched the OHS effects of contingent labour in a number of industries.