



# LUND UNIVERSITY

## Meaningful work in a demanding work environment - teachers at school

Månsson, Eva; Persson, Anders

*Published in:*  
Worklife and health in Sweden 2004

2005

[Link to publication](#)

*Citation for published version (APA):*

Månsson, E., & Persson, A. (2005). Meaningful work in a demanding work environment - teachers at school. In R. Å. Gustafsson, & I. Lundberg (Eds.), *Worklife and health in Sweden 2004* (pp. 319-340). Arbetslivsinstitutet/Arbetsmiljöverket.

*Total number of authors:*

2

### General rights

Unless other specific re-use rights are stated the following general rights apply:

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

Read more about Creative commons licenses: <https://creativecommons.org/licenses/>

### Take down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

LUND UNIVERSITY

PO Box 117  
221 00 Lund  
+46 46-222 00 00



# Worklife and Health in Sweden 2004

*Rolf Å Gustafsson and Ingvar Lundberg (eds.)*



The National Institute for Working Life is a national centre of knowledge about working life issues. The Institute is commissioned by the Swedish government to carry on research and development, disseminate information, and hold advanced, specialised training courses.

The institute's prime objective and mission is to contribute actively to a working life that offers good conditions and development opportunities for women and men. We work to promote a healthy working environment that is adapted to people's different physical and mental needs and capacity. This we do in collaboration with the social partners and professionals who are actively involved in issues concerning working life.

Our research focuses on areas such as occupational health, the labour market and employment, labour legislation, work organisation, ergonomics and strain, physical and chemical health risks, integration and diversity, and development processes in working life. We endeavour to ensure that our research is multidisciplinary and benefits people in their working lives.

Please visit our website [www.arbetslivsinstitutet.se](http://www.arbetslivsinstitutet.se) for more information. Here you can read about current research, subscribe to our newsletters, borrow books and other literature from our library, order books or download reports. You will also find the addresses to our offices and e-mail links to our 400 staff.

© National Institute for Working Life & authors 2005  
Original title: Arbetsliv och hälsa 2004

National Institute for Working Life  
S-113 91 Stockholm, Sweden  
[www.arbetslivsinstitutet.se](http://www.arbetslivsinstitutet.se)  
tel: +46-8-619 67 00

Translation and editing: Hilary Hocking Language & Communications  
Translators: Anne Cahling, Janet Cole, Mimi Finnstedt and Hilary Hocking  
Cover: Per Lindström  
Cover illustration: Kenneth Andersson  
Type setting: Bärnarp Text & Bild AB  
ISBN: 91-7045-745-X  
Printed at: Elanders Gotab, Stockholm, Sweden, 2005

# Preface

We are pleased to note a clear positive message in the 2004 issue of *Worklife and Health in Sweden*: the long deterioration in the work environment seen in the 1990s has come to a halt. At the same time there is a negative message, a fly in this ointment in that the problems remain serious. However, the negative trend has stopped, and what is important now is that we work hard to improve the work environment further.

We see two worrying trends in the material in this book. One is that types of business with known risks are expanding. An example of this is call centres. The other is that fixed-term employment – project employment – is on the increase. For many people, this type of employment brings stress and a lack of security.

We have a powerful tool in the Work Environment Act, which says that work conditions are to be adapted to the physical and mental capacity of each individual. This makes great demands on the adaptation of work conditions so that those who suffer from a disease or have a functional impairment are also able to work.

We need to be more systematic in working with the work environment. Corporate health services have an important role to play in creating a good work environment at our workplaces.

This book discusses various proposals about what needs to be changed. We hope that these proposals will be useful in the creation of a working life that works for everyone.

*Inger Ohlsson*

Director General

National Institute for Working Life

*Kenth Pettersson*

Director General

Work Environment Authority



# Introduction

Sweden is located in the northern part of Europe. As for area Sweden is a relatively large country, 450,000 km<sup>2</sup>. The Swedish population is small, 9 million, smaller than the population of many of the big cities in the world. Although Sweden is a highly industrialised country, the major part of the working population is employed in private and public services and less than three per cent in agriculture, forestry and fishing. The Swedish economy is highly dependent on exports from manufacturing industries and forestry.

Occupational safety and health is an important part of the Swedish political agenda. During the past 30 years, Sweden has had one of the best occupational safety and health records in the world, and has pioneered many efforts in this field. During the last fifteen years, competition arising from increasing globalisation has put Swedish working life under new pressure. Traditional problems of musculoskeletal disorders and noise exposure still exist. Increased work pace has added to occupational stress and made sickness absence a central issue in Swedish working life. The field of occupational safety and health faces new challenges for research, training and development.

This anthology was originally written for a Swedish audience, as an overview of the relationship between work and health during the last years. The translation of the anthology to English is hopefully of interest to researchers and policy-makers in other countries, who want to get acquainted with the working life and health developments in Sweden.

The anthology raises issues that have been the subject of public debate in recent years. The high levels of sickness absence, reports of growing depression and anxiety, and the almost continuous reorganisations and cutbacks in the welfare services (schools, health care and social services) are examples of situations analysed in this book. The well-known problem of stressful work conditions and low pay in jobs where women are in the majority – and often in subordinate positions – is also studied.

The chapters in the book are all based on empirical working life research. This means that the largely negative changes in the work environment over

the past ten years are described, but positive trends are also noted and reported. The research reported in the book reflects a multifaceted view of reality, and shows, for example, that serious work environment problems, which have been recognised for a long time, are recurring in new business operations such as call centres. This underlines the need for wide-ranging analysis of how work environment problems arise and are maintained, as well as the importance of ongoing research and evidence based prevention. The objective of the book is to contribute to the analysis of working life and its potential for improvement.

On first impressions, the book may well seem to simply list a series of problems. Some would claim that the very description of the problems contributes to a low level of well-being in those involved. If so, this may lead to a sense of hopelessness and a risk of reinforcing negative views of work. In this way, working life research could lead to more sickness absence, unemployment and welfare dependency. Research that does not examine real problems, however, will lose its credibility and scientific integrity. We believe that discussions about how to create positive working conditions in various sectors of working life must be based on empirical research and analysis.

The anthology follows up and expands on *Worklife and Health in Sweden 2000*. Our intention is to present current Swedish working life research through recurring publications. The book's content is equally interdisciplinary, since the authors are from various fields and have different experiences. Each author is responsible for the scientific content of his or her chapter, and the chapters were also examined in a series of seminars at which the book's authors submitted views on each other's contributions. The editors have also examined the scientific content of the chapters and edited the texts.

An overview of the content of the book is to be found at the end of the first chapter, "Changes in working life and new forms of production".

*Rolf Å Gustafsson*

Professor of Medical Sociology  
National Institute for Working Life

*Ingvar Lundberg*

Professor of Occupational Epidemiology  
National Institute for Working Life

*Kaj Elgstrand*

Head International Secretariat  
National Institute for Working Life



# Content

Preface

Introduction

## PART 1. INTRODUCTION AND OVERVIEW

1. Changes in working life and new forms of production 11  
*Elisabeth Sundin and Anders Wikman*
2. Indicators of changed working conditions 39  
*Anders Wikman*
3. What do the occupational injury statistics tell us? 79  
*Carin Sundström-Frisk and Jan Weiner*

## PART 2. WORK-RELATED HEALTH CHANGES AND THEIR INDICATORS

4. Occupational diseases in Sweden in a ten-year perspective 109  
*Bengt Järvholm*
5. Can the psychosocial work environment cause neck and shoulder pain? 131  
*Bo Melin and Ewa Wigaeus Tornqvist*
6. Low mental well-being – trends in and outside the labour market 159  
*Lennart Hallsten, Ingvar Lundberg and Kerstin Waldenström*
7. Sickness absence in Sweden 183  
*Ulrik Lidwall, Staffan Marklund and Peter Skogman Thoursie*
8. Trends in new disability pensions 205  
*Peter Skogman Thoursie, Ulrik Lidwall and Staffan Marklund*

## PART 3. WORK-RELATED ILL HEALTH IN VARIOUS ORGANISATIONS AND GROUPS

9. Health and development opportunities for those in fixed-term employment 225  
*Gunnar Aronsson*

10. A welfare state for everyone? The position of immigrants  
in and outside the labour market 249  
*Mikael Hjerm*
11. The welfare of the welfare services 271  
*Rolf Å Gustafsson*
12. The first work environment – children at school 297  
*Ewa Menckel*
13. Meaningful work in a demanding work environment  
– teachers at school 319  
*Eva Månsson and Anders Persson*
14. Working conditions and health at call centres 341  
*Allan Toomingas*
15. Jobs that involve the risk of threats and violence 367  
*Ewa Menckel and Annika Hultin*

#### PART 4. PREVENTIVE WORK

16. Rehabilitation to work 389  
*Kerstin Ekberg*
  17. Work environment policy and the actors involved 407  
*Kaj Frick, Ove Eriksson and Peter Westerholm*
- The Authors 442

PART I

INTRODUCTION  
AND OVERVIEW



## CHAPTER I

# Changes in working life and new forms of production

*Elisabeth Sundin and Anders Wikman*

Many writers consider that we are now in a period of particularly dramatic change in the organisation of the business sector and working life, for example, that we are in the middle of a “third industrial revolution” (Magnusson 1999). Other writers refer to a “second industrial divide” (Piore & Sabel 1984). Coriat (1995) takes as his premise that we have been undergoing a long-term development from “Fordism” to “Post-Fordism”, involving a decisive shift. Castells (1999) refers to an incipient “information age” with many new characteristics. However, referring to the age in which we live as changing is nothing new.

But perhaps something genuinely new has taken place over the past few decades and continues to change our ways of organising the production of goods and services; with national borders erased and increased international dependence.

A relatively short review follows of what is advanced and emphasised in contemporary debate and research with regard to these sweeping changes. First, we discuss issues around the changed conditions of organisations and then their possible consequences. The new experiences, which have consequently faced individuals, are mainly dealt with in the last part of this chapter and will also be discussed in more detail in the following chapters of this anthology. We draw attention principally to Sweden and Swedish working life. There are two reasons for this focus: the first one is practical, as we know more about the situation in Sweden than in the rest of the world; the second one is to show that debates on and developments in organisations and working life are truly international. Sweden is part of the world. What happens here also happens elsewhere.

Health consequences are the main focus of this book. “Health” should here be interpreted in the broad sense of the word, which includes “well-being” and “an ability to adapt to changed conditions”. Health problems, in this broad sense of the word, ultimately concern inadequate mutual adjustments between the prerequisites of the individual and the conditions of working life.

### **Internationalisation and breaking of barriers**

In descriptions of the apparently dramatic developments, the perspective is often that national borders are breaking down and play an increasingly minor role, with major consequences for the business sector and therefore also for labour. Capital rules, irrespective of national barriers! The R&D carried on in one place often materialise in operations elsewhere. What the companies own, develop, manufacture and sell is increasingly independent of national borders.

It is open to discussion how global this development really is. Trade between developed countries is predominant, while trade with developing countries is also increasing. Today, it is not only oil and other commodities that constitute important elements of trade with developing countries. Various types of operations, producing both goods and services, are also increasingly located in developing countries.

World trade has increased substantially in all recorded ways. For obvious reasons, it is difficult to say how unrecorded world trade, such as drugs and human trafficking, has developed. However, some analysts consider that this is also larger than ever. But we can only confine ourselves here to relatively conventional and easily measurable world trade. The statistics clearly show the changes in the global economy. We jointly produce more and more, while world trade is increasing twice as rapidly as global output. We purchase and sell an increasing proportion of products and services abroad.

The increase in foreign direct investment is even larger than the increase in trade, which illustrates the fact that different countries have also become more intimately linked with each other in the actual production of goods and services. The most rapid changes seem to have taken place in the financial markets, which literally exploded during the 1990s. Each day huge sums, equivalent to perhaps thousands of billions of dollars, are moved

around the world. We have acquired new or changed foreign exchange markets, bond markets and stock markets (Wikman 2003).

All this requires both companies and public sector organisations to adapt and change. However, economic expansion and change also create new opportunities. Expansion increases not only the number of competitors, but also the number of potential customers and partners.

It is important to emphasise here that a major qualitative change has taken place, in that exports of services have risen, and consequently their share of total exports. Sectors that were traditionally regarded as national and protected from imports, and impossible to export, have suddenly opened up. This applies, for example, to areas of the retail trade, telephone services and consultancy services.

Whether and how the services are constructed and deconstructed in their new environments cannot easily be determined (see, for example, Røvik 2000 and Scott 2003). Our knowledge is limited and frequently marked by subjective values as to what is good or bad. Views have been clearly expressed that exports of services have become a carrier of “cultural imperialism” – for example, that “the whole world is being McDonaldised” (Ritzer 1996). On the other hand, others have pointed out that cultural adjustments are always made.

Advocates of both viewpoints can find support for their views. McDonalds’ franchising concept may be said to represent the typically American, which ousts Swedish hot dogs, German sauerkraut and so on. But the fact is that many franchise chains are national and base their business concepts on national conditions (cf. Czarniawska & Sevón 1996).

## **Driving forces for change**

The development described is often perceived as inexorable, driven by its own inherent logic; “things just happen”. Companies and organisations seem to be forced to adapt to new conditions. The adjustment creates the impression of anonymous inaccessible forces – but the impression of inexorability disappears on an in-depth and broader description and analysis.

It is important to point out that conditions are always interpreted by people with varying purposes, just as they are affected by their political context. Different interpretations are possible. Sometimes they may even

constitute the most important element of it. The driving forces for change are ambiguous.

### *Technology as a driving force*

Changes of the type discussed here are often attributed to *technical* causes. New and different technical conditions, such as increasingly efficient transportation and logistics technologies, provide more rapid and cheaper transportation worldwide. Operations can be located at considerable distances from each other. Producers can be located far from consumers.

Technological development also provides an opportunity for more complex information flows over considerable distances, thanks to computers, satellite communications, the Internet and so on. Information can be supplied in fractions of a second from one part of the world to another. This is particularly noticeable in the movement patterns of the capital market. The world is shrinking and technology is contributing to our planet becoming increasingly like just one large village. The phrase “the global village” was coined by the well-known mass media researcher Marshall McLuhan in 1959 (McLuhan 1962).

At the same time, we must emphasise that the importance of physical and cultural proximity may remain. Proximity may, for example, still be of importance for the existing trust, which in turn may be important for many professional and financial relationships (Brulin 2002). Local and national borders may consequently continue to be of importance, even when few formal obstacles actually remain.

### *Politics and new values as a driving force*

What now seems to be taking place is also based on changed *political* conditions and politically initiated changes. Over a couple of decades, it has been possible to observe an almost global acceptance of free market forces. The collapse of the Soviet Union and the end of the cold war were of importance for changed political thought patterns, as well as for new ideas among leading economists. Years of free trade negotiations within GATT have resulted in agreements that have reduced customs duties and other trade barriers. The World Trade Organization was set up to monitor compliance with these trade agreements. At the same time, we have faced a



very marked deregulation of foreign exchange trading and the banking system. Goods, services and capital now flow increasingly freely between the countries of the world (Held & McGrew 2000, Kitschelt 1999).

Nations have also altered their national economic policy, in accordance with the new models. The conservative governments of Reagan and Thatcher in particular seem to have been trendsetters. The shift in political perspective is particularly evident in the changed view of the public sector, including New Public Management (NPM). We will return to NPM further on.

### *Standardisation as a driving force*

*International standardisation* should also be highlighted as a further basic, underlying cause of the change tendencies (Brunsson & Jacobsson 1998, Wikman 2001). Standardisation and internationalisation are connected in a complex relationship between cause and effect, where standards can, of course, also shut out and exclude. Having started in the area of production of goods, standards are now also in the process of spreading to services of different types, and have come to include methods and forms of work. If a company has certified the quality of its operations, potential partners know better how the company operates worldwide. Standards and certification are now also used in the core areas of the public sector. Many of the organisational concepts that are now in practice worldwide may also be seen as examples of standardisation thinking, with strict definitions concerning forms of work and working methods.

### *Consultants – concept disseminators*

Technology, new political ideas and standards are not disseminated of their own accord, but by one or more people. Today, the central players in disseminating ideas on the business sector and its organisation are various management consultants. The way in which this takes place means that the consultants should be seen as independent players and creators of organisational change. Björkman (2003) describes this in terms of “new corporate fashions” imposing themselves.

Sweden was long marked by Swedish ideas in the area of working life, which created a specific “Swedish model”. This Swedish model also received international attention for a long time. It included elements of consensus

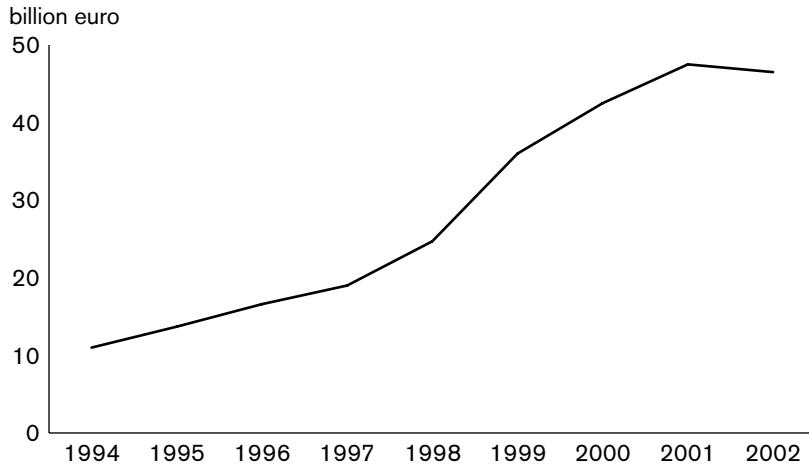
between employers and employees, as manifested, for example, in the “Spirit of Saltsjöbaden”. There was also early an emphasis on health and safety at work and a wage policy showing solidarity with low-paid workers. Resources were mobilised for work environment research (which contributed to Swedish research being considered world-leading in some respects). Considerable symbolic value was attached to Volvo’s plants in Kalmar and Uddevalla, which were considered by many to indicate opportunities for creating a new and better future working life.

In the early 1990s, much of this changed. The deep recession and the economic difficulties shook up the ideas pool and led to the decision-makers looking for other solutions to organisational problems. Björkman (2003) mentions five discernible fashion waves:

“*Service Management*” with an emphasis on customer relations; “*Lean production*” with a focus on “lean organisations”; “*Time-Based Management*” with a focus on streamlining all the stages of the production chain (production flow); and “*Business Process Re-engineering*” with a focus on streamlining cash flows, working capital, invoicing, cash receipts and disbursements and so on. According to Björkman, these four concepts involved a gradual broadening to the extent that subsequent models largely incorporated the previous models.

As a fifth model, Björkman mentions the use of the “*Balanced Scorecard*” and management by performance indicators. There have, of course, been many more models in practice and new models are constantly being generated and tested in the market. The phenomena have been described in both Swedish and international popular accounts and research, (Forssell & Jansson 2000, Furusten 1996, Rövik 2000, Sahlin-Andersson 1996, Sahlin-Andersson & Engwall 2002).

The international concepts are increasingly disseminated, as stated before, by global management consultants (see also Stjernberg & Werr 2003). Figure 1.1 illustrates the development of the consultancy sector on the basis of figures from its own cooperation organisation, the European Federation of Management Consultancies Associations. The figure describes growth from 1994 to 2002, in billion euro. In 2002, the sector accounted for 0.5 per cent of total GDP (according to its own estimates). Global management consultancies have accounted for most of this expansion. According to the



**Figure 1.1.** The development of the European consultancy sector 1994–2002. Billion euro, current prices. (Source: The European Federation of Management Consultancies Associations.)

same source, Swedish consultancies have recently reported reduced invoicing per employee. It should be noted that companies with operations in a large number of countries may prefer to use the same consultancy everywhere – also a consequence of internationalisation.

### **New organisations and their nature**

The situation of organisations changes, and consequently the rules of the game that apply – which in turn contributes to new organisational strategies being tried out. At the same time, the individual organisations' choice of change strategies will become part of other organisations' changed environment. In this way, an interaction arises between changes in various quarters, which affects the direction of development.

Many changes now take place almost simultaneously in a number of local contexts. Each individual organisation mainly justifies its own actions by referring to its own analyses and needs, but the occurrence of simultaneity suggests that organisational changes indeed have an element of fashion.

In the following section, we describe some important change strategies and discuss their importance for individuals. The consequences of the

development for the organisation of work are discussed first, followed by the consequences for individuals.

*Downsizing – cost reductions as a strategy*

In this new situation, the individual organisation can, as previously, try to reduce its costs or find new potential revenue. The former is referred to as “downsizing”; the business is slimmed. Lean organisations seem to be increasingly common, with more limited staffing and an increased strain on the remaining staff.

Downsizing was originally an American concept, which first cropped up when even highly successful companies began to implement substantial staff cuts in the 1980s. Of the 1,000 largest US listed companies (according to accounts in *Fortune* magazine), a full 85 per cent had various redundancy and restructuring programmes during one period. These resulted in the loss of five million jobs during the period 1987–1995 (Lennerlöf 2000).

Such staff cuts frequently give rise to a need for temporary extra resources in the form of extra overtime, temporary manpower, agency staff and consultants. The proportion of temporary employees and other temporary solutions tend then to increase at the expense of permanent manpower (Wikman 2002).

The downsizing of organisations also seems to be connected with the corporate development projects carried on by many consultancies. These change projects nearly always include an ambition to cut costs, which is presented and introduced in various ways.

In total quality management projects (TQM), the firm systematically seeks “smarter” ways of working and various options for reducing the number of staff. Work manuals are drawn up with standardised working methods, which can be implemented in the business and make it more efficient. There is also an ambition to develop methods for improved monitoring of the work, so that the staff’s work can be better controlled (Bejerot & Hasselbladh 2002).

*Outsourcing – concentration as a strategy*

A variation on the downsizing theme is to focus on those areas of the business where the firm considers itself to be most competitive; a concen-

tration on certain core areas takes place. Other operational areas are contracted and replaced by buying in goods and services. This is known as “outsourcing”. Castells (1999) highlights, among other things, this option in his review of the international literature on current organisational change. The perspectives in the literature certainly vary, but, according to Castells, a common theme is the rejection of nearly all previously cherished production concepts, including the concept of “the big company”.

A number of decades ago, the trend seemed to be towards large-scale operations and centralisation in large, vertically integrated organisations. The aim seemed to be to bring together as much as possible within the same system, in order to be able to control production from start to finish. Today, organisational practice is, however, marked by the opposite characteristic, with more emphasis on demarcation, divestment, decentralisation and various alliances. The advantages of exposure to competition and a focus on primary competence are stressed. Market forces should now have free rein.

As a consequence of these changes, the previous service and support operations within an organisation may now instead become the core businesses of its subcontractors. As a result, the exposure to competition is often greater and the demands increase. This can lead to there no longer being any “retreat positions” within the organisation. These may have existed previously, when various service functions, such as caretakers, mail distribution, staff canteen, document storage and so on, were peripheral but nevertheless internal operations.

Moreover, outsourcing of operations often leads to organisations becoming more dependent on temporary extra staff and loosely associated individuals. Certain types of temporary employment, such as employment to meet special needs and project employment, increased very significantly during the 1990s, both in Sweden and abroad. These loosely associated individuals often seem to have worse conditions than permanent employees. For example, they seem to have worse opportunities for further training provided by the employer and, on the whole, worse opportunities for gaining experience through the work (this applies at least to seasonal employees). As a result, they may increasingly lag behind others in terms of competence. There is a risk of a vicious circle, where certain individuals,

over and over again, only qualify for repeated temporary employment (see also Chapter 9 of this anthology).

The present management strategies consequently seem to result in an increased number of companies, which are often new and usually smaller than the parent organisation, and which also reduce the size of the latter. Bureaucratic relations are replaced by a more strictly commercial control of the operations. However, the extent to which these start-up companies really are independent and autonomous commercial players is uncertain. We undoubtedly see more apparently strictly commercial activities between different independent companies in market-based networks.

At the same time, the networks do not, however, comprise fully equal players with the same conditions – some are stronger than others. The original organisations may constitute residual cores and continue to have a dominant role – unless the contractors have a large number of customers to play off against each other (Sundin 2003). A majority of Swedish companies with at least 20 employees are also part of a group of companies. Many conditions for formally independent companies within groups are determined by group management decisions.

In a study carried out by the National Institute for Working Life (Arbetslivsinstitutet), it was seen that companies that supply goods and services to other companies are often strongly dependent on their biggest customers. One in four contractors reported that a certain customer dominated their relationship in such a way that they “were totally dependent” on their cooperation. One in two contractors referred to an “interdependence” (Wikman 2003). But there are, of course, also examples of subcontractors becoming strong in their own right in relation to their customers.

Some companies that are formally independent may also be strongly associated with particular organisations through franchise contracts, which may regulate the operations in detail and consequently limit the degree of freedom. These conditions may also mean that certain critical decisions are taken, and conditions determined, in completely different places than where the apparent relationships are found.

Despite formal independence, the firm may consequently be strictly limited in its real scope for action. This may lead to the employer’s responsibility towards the employees in his own organisation in fact being spread

and diluted in the overall network to which the company belongs. Particularly in the context of the work environment, it may be central to highlight arguments of this kind, as the formal work environment responsibility very clearly rests with the party that draws up the employment contracts, while “the principal players” may be found elsewhere.

### *Demarcation as a strategy*

A relatively common theme for the changes often highlighted is that organisations tend to behave more flexibly towards their traditional boundaries. The boundaries become more varied. This is often manifested in drastic reorganisation, as businesses are divested and merged in new ways, and new relationships arise.

Continuous reorganisation and gradual changes may create uncertainty as to “who will be affected next”. Anxiety and uncertainty regarding the future are created. The staff may start pondering *whether* they will have a job in the future and if so, *which* job. The changes may affect basic issues around job satisfaction and the meaning of work, as well as issues around loyalty and willingness to support the organisation’s objectives.

In a knowledge review (Barklöf 2000), Sverke and others report studies showing clear relationships between insecurity in employment and lack of commitment. If we follow Zetterberg’s (1984) argument regarding “invisible contracts”, it may be said that employers now more often seem to break these contracts, which stipulate that the employer and the employee should be willing to support each other far beyond what is regulated in ordinary wage and employment agreements. The risk is that this creates an increasingly widespread instrumental attitude to work, that is that work is seen as a way of earning money rather than as something of value in itself. In other words, work does not involve a striving towards meaningful objectives, which in themselves are worth an extra effort.

New boundaries also create changed conditions for a dialogue between individuals in different positions. When an operation is contracted out, the person really doing the work is often not employed by the company for which the work is to be carried out. Instead, he or she is employed by the contractor. The latter may also, in turn, have contracted out the work to another party, that is a subcontractor. The chain may be even longer. This may create

uncertainty as to who the actual purchaser is. The scope for negotiations and the opportunities to press demands, alone or jointly with other employees, are consequently limited. Divestment and increased commercial elements in the relationships also create worse conditions for trade union activity.

The new demarcation approach also leads to a number of other important changes. Bureaucratic relationships are replaced by strictly commercial relationships. Previously there may have been a clearer hierarchical management structure comprising a number of management levels, with each having authority over the one beneath. As a result of the commercialisation and divestment, flatter organisations may be created, with broader tasks and greater responsibility for the individual employee. This tendency towards greater and broader responsibility may increase the opportunities for the individual to see an objective and meaning in what he or she is doing and also provide greater individual scope for action.

At the same time, market exposure and some of the other changes may have the opposite effect. The individual may certainly have become less controlled by a management structure, but at the same time more dependent on a demanding customer, client, patient or another individual or group for whom he or she ultimately works. If the individual fails to deliver goods or services on time, to the right quality and to budget, there is a risk that the situation is more precarious than previously. The customer can go to another supplier instead. The customer is seen as “the employer” – and perhaps a tough one. Different perspectives on the increased role of the customer have been central in the research on organisational change (Ekstedt et al. 1994).

### *Public sector organisations*

The examples so far have mostly concerned companies and the private sector. However, internationalisation also seems to have an impact on the public sector and make it more difficult for individual countries to pursue a national policy that diverges too much from that pursued by other countries. Governments and other public bodies seem increasingly to be judged by the consequences of their stance for the country’s competitiveness. In many countries, a large budget deficit has at the same time created pressure for change, which has led to reviews of public undertakings. It has been



questioned whether activities need to be operated as they have been, whether there are alternative means of achieving the desired objectives, whether, where appropriate, public undertakings are really necessary. The discussions concern the execution and financing as well as the control of activities, and are sometimes of such a fundamental type that they concern the very basis of the public sector's nature – as well as the identity of the professions that dominate the latter.

In this context, there is an international discourse, New Public Management (NPM), which has been used as a collective term for many of the changes being implemented. The concrete meaning of the NPM concept varies. NPM often stands for demands for reduced costs, increased flexibility and more market-like conditions in the public sector, realised in a clearer division into “customer” and “contractor”, and in a clearer definition of objectives and monitoring criteria. This can in some cases, but not always, involve outsourcing assignments to private contractors and even pure privatisation. In other words, a major or minor part of the financing of the activity is transferred from the public to the private sector.

Perhaps the biggest change in the public sector is the demarcation approach itself, with its clearer definition of objectives and monitoring criteria. Furusten and Lerdell (1998) state that NPM involves:

“an increased division of public sector organisations into corporatised units, [with] more contract-based competition through the creation of internal markets and fixed-term contracts [...] explicit measurable standards for monitoring outcomes and an emphasis on the importance of controlling the organisation's output.”

When new monitoring criteria, comprising new control and supervisory systems, are introduced in the public sector, they may create conflicting demands. Previously established professional roles are challenged by the new economic discourse, which entails employees performing according to certain predetermined targets, rather than according to professional judgement. The problems are of particular importance in the care sector, where responsibility for patients or clients is clearly assumed. Moreover, the pressure on the individuals may increase, if the image given in the media of public sector employees and their tasks is constantly negative (Tullberg 2003).

The rationale for NPM is thus complicated, when it concerns typical welfare services. Many difficulties are ultimately connected with the problems of formulating simple and easily measurable objectives, and measuring quality satisfactorily. The way in which the activity is contracted out may also create problems, since the data on which decisions are based is often meagre and easily leads to not very satisfactory decisions. In procurement, it is difficult to determine whether a less expensive service undertaking is of the same quality as a more expensive one. There is a risk that the least expensive options are prioritised. A procurement procedure that mainly uses price as a criterion may be disadvantageous to tenderers, who strive to take into account everything that *really* should be taken into account. The employees' requirements for a good work environment, a reasonable workload and so on may be neglected, as a consequence of the blind pursuit of cost.

The situation may, of course, be extra precarious, if employees who were previously competent in the area have been made redundant. Moreover, finding suitable suppliers often requires long-term relationships, which may be difficult to develop, if the focus is more or less constantly placed on exposure to competition. The procurement procedure can lead to relatively frequent switching of suppliers, resulting in uncertainty for both the customer and the contractor (cf. Tillmar 2004). The formalised purchasing procedures in public procurement create particularly large problems. The formalisation may lead to soft, but important, information not being taken into account.

The parallel changes in the private and public sectors have also led to the differences between the two becoming less distinct. They now collaborate more with each other, are more interdependent and share the same characteristics to an ever-increasing extent.

### *New, old or both?*

Downsizing and outsourcing, that is cutting staff and focusing on the organisation's core business, have also occurred previously in history. Periods of downsizing have been followed by expansion, and periods of outsourcing have been followed by periods of diversification. Companies are constantly experimenting with where their own boundaries should lie (Coase 1992).

The extent to which the changes highlighted here are matched by generally occurring and basically new trends in working life is the subject of debate. Those who emphasise what is new base their argument on fairly limited observations, often perhaps of certain large companies that have been studied, and there is reason for some caution in interpreting such data. Moreover, the conclusions are often based on more or less spectacular cases. Broad statistical surveys are rare.

The rate of change can also be the subject of discussion. Has the rate of change increased compared with previously – or are we now only seeing even more clearly the effects of a continuous development process that has been going on for a long time? The analysis is, of course, further complicated in the case of Sweden by the fact that we experienced a recession in the 1990s. This was the most dramatic since the 1930s and shook up many businesses, as well as creating major budgetary difficulties, which in themselves formed the basis for many changes.

We need more representative quantitative data on various changes, which can provide information on how prominent they have been, as well as, of course, more qualitative historical information on their background.

Some researchers even consider that the very basis of the description is flawed and that *working on a project basis* has instead been the most decisive characteristic of the new order. They also consider that we should now refer to a “different production system” rather than “different companies”. Various players are temporarily linked to each other in a project organisation to solve defined problems. When the assignments have been carried out, the relationships cease and new relationships are again created. Projects can lie within one and the same organisation or include several organisations (Ekstedt et al. 1994).

Other researchers consider, as already stated, that the most major change is not fragmentation and downsizing, but rather the new demarcation approach, in other words that objectives and monitoring criteria are now more clearly defined (Rövik 2000). Objectives and monitoring criteria may concern phenomena both *within* organisations and *between* them.

Others maintain that it is often mainly the words we use that have changed – not always the work organisation as such. We therefore need

more qualitative studies, more historical analysis and more quantitative data on how prominent various changes have actually been.

### **Extent of organisational change**

At the National Institute for Working Life, we have attempted for some years to develop statistical indicators in this area. We have also carried out representative statistical surveys, which are intended to help us obtain a more accurate picture of the changes that have occurred and the rate at which they have taken place.

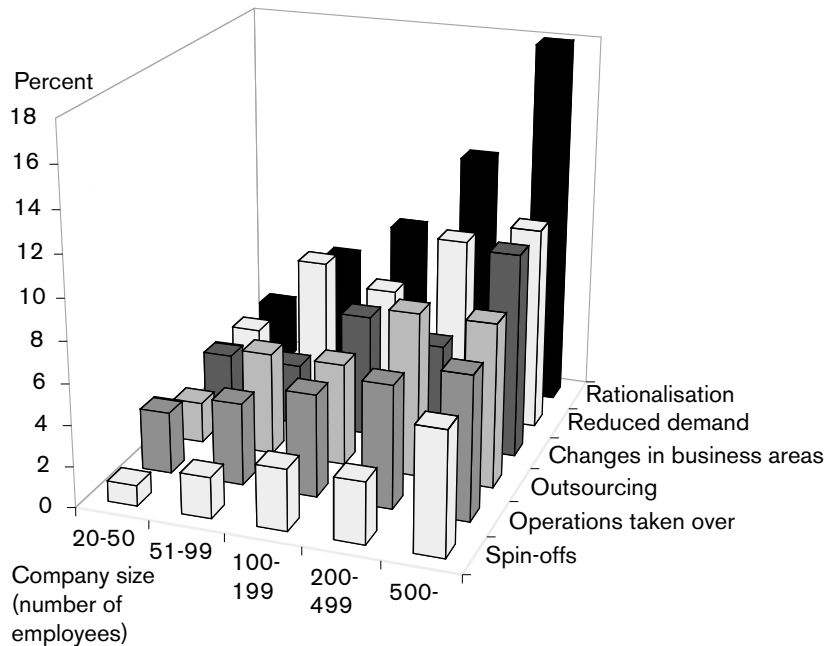
We recently carried out a study based on a sample of approximately 3,000 private companies with 20 or more employees, randomly selected from Statistics Sweden's database. The company respondents had to answer interview questions about which operations had been created, lost, cut back or outsourced during the period 1998–2000. Only changes affecting 10 per cent or more of the staff were to be taken into account. Figure 1.2 provides an overview of some results of this study.

A total of 13 per cent of the companies had cut back an operation (to the recorded extent).<sup>1</sup> However, the changes varied greatly with the size of the company. Among companies with 500 or more employees, an estimated 6 per cent had spun off an operation. For 7 per cent of these large companies, an operation had been taken over by another company; 8 per cent had outsourced an operation; 10 per cent had cut back an operation due to changes in their business areas; a further 10 per cent had cut back due to reduced demand; and 18 per cent had cut back due to rationalisation. As can be seen, the changes were considerably less common for smaller companies (Wikman 2003).

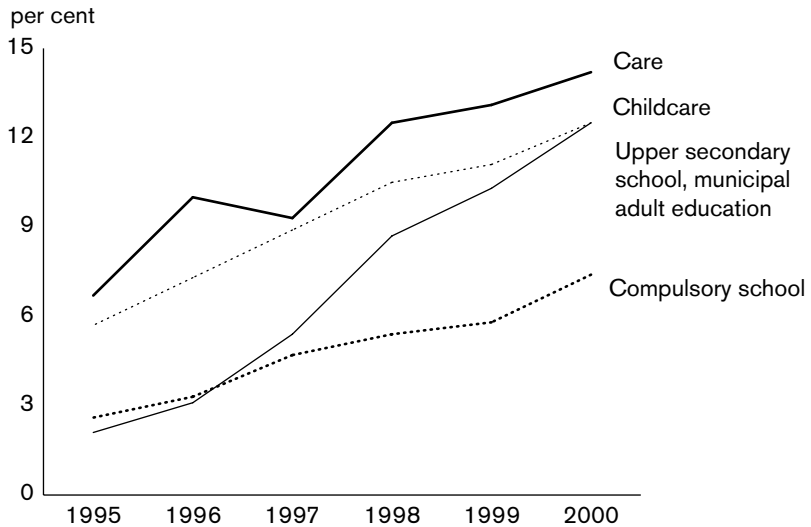
This three-year period seems to have been preceded by three-year periods of comparable or larger changes. A previous study (flex 2), which was carried out by the Swedish Business Development Agency (NUTEK), the National Institute for Working Life and others, covered the period 1995–97. This study suggested a similar pattern, even though the interview data was less detailed (Wikman 2001). Data from Statistics Sweden's database, from FAD (Demography of companies and jobs), suggests a similar pattern, although in this case even earlier. This data may even suggest a more sweeping change in previous years.

The turbulence during the first part of the 1990s seems to have left a particularly lasting impression. Taken together, various statistical data seems to provide a picture of gradual changes, which have an impact on ever-increasing areas of the corporate sector and ever-increasing proportions of employees, and which have now probably become fairly significant, at least for larger companies.<sup>2</sup>

The focus on core areas and the outsourcing of operations may take place in several stages. The process may start with simple support services, which are outsourced first, followed by increasingly production-related operations, and may eventually affect operations close to the core of the company or business. Today, these gradual processes seem to have come rather a long way. The greater part of the outsourcing recorded in the



**Figure 1.2.** The proportion of private companies, in which operations were cut back for various reasons between 1998 and 2000, by size of company in 1997. (Source: Wikman 2003.)



**Figure 1.3.** Municipal outsourcing of activities to private contractors as a proportion of operating costs. (Source: Berggren 2001.)



**Figure 1.4.** Number of employees abroad and in Sweden respectively in Swedish-owned groups with foreign subsidiaries 1990–2001. (Source: ITPS 2003.)

National Institute for Working Life's study did not concern operations of the types that are easiest to contract out, that is pure support services, but rather production operations (Wikman 2003). *In other words, a gradual increasingly complex production collaboration between companies is indicated.*

Part of the organisational change in the public sector can be followed with the aid of data from Statistics Sweden (Berggren 2001). Figure 1.3 shows the proportion of operating costs contracted out during the period 1995–2000 for certain activities. For example, expenditure on outsourcing to private contractors in the care sector rose from 6 per cent of operating costs in 1995 to 14 per cent in 2000.<sup>3</sup> Changes in the rest of the public sector also seem to be significant, even though in practice they are fairly uneven and vary with both the area of activity and regime. It is also important to note that the new contractors in the public sector's area of responsibility may be international companies as well as small local businesses.

The next diagram, Figure 1.4, describes the changes from a different angle and shows the number of employees in Sweden and abroad respectively in Swedish-owned groups. The diagram, which covers the period 1990–2003, provides a picture of dramatic differences. At first, employees in Sweden were predominant in the groups, but over time employees abroad have become predominant.

Attempts have also been made to estimate the extent of downsizing or staff cuts, which remains after deducting reorganisation in the form of outsourcing, spin-offs, changes in business areas and the like. For this purpose, Statistics Sweden has used information from the earnings and tax deduction register and from the above-mentioned FAD. In 1995, there were 60,000 workplaces with at least 10 employees, of which 14,000 seem to have cut their workforce more significantly (10 per cent or more) during the year. In 1996, 16,000 workplaces cut their workforce correspondingly (Tegsjö et al. 2000). However, it must be stressed that these statistics are difficult to utilise, since it is difficult to make totally incontestable estimates.

### **Further effects on working life and employees**

Greater mobility of operations and capital, and an increased risk of being hit by unemployment, shift the balance of power between the employer and the employee. The changes may have a *direct* impact on working life by, for

example, generating new working conditions. But they may also have an *indirect* impact on working life by, for example, creating increased insecurity and greater hesitation on the part of employees to make demands and to assert differing viewpoints.

Many employees may choose to grit their teeth and accept conditions that they would otherwise have protested against. A silence can spread, and result in improvement measures not being taken. The individual may also choose to leave a business rather than seek to influence it. To use popular terminology, “exit” replaces “voice” (Hirschman 1970).

The balance of power may also be made clear through increased wage differentials, which implies that loyalty and support are encouraged by the employer at the expense of critical questioning.

Such changes are perhaps now reflected in current statistics on spontaneous wildcat strikes. These were fairly common during the 1960s and 1970s, but have now declined and become very rare occurrences in Sweden today. In other words, employees seem not to protest as readily as previously (Wikman & Marklund 2003).

The role of the trade union has declined worldwide over the years, which has changed employees’ collective opportunities for argumentation and negotiations with their employers. In the Nordic countries, trade unionisation seems, nevertheless, to have maintained much of its previous high level, but it has still declined among young people (Kjellberg 2001).

Even the occupational health service seems to have acquired a changed role during the 1990s through the outsourcing of the firm’s internal occupational health service to external players – at the same time as the government grant for the service has been reduced. The increased dependence on customers or clients in the present commercialised relationships seems to have contributed to the occupational health service becoming a weaker voice in calling attention to poor conditions.

The systematic work environment programme (SAM), which has come into existence in recent years, was intended to include continuous systematic reviews of the work environment, with proposals for action and follow-ups. However, as yet SAM does not seem to have had the intended impact. According to the Swedish Work Environment Authority (Arbetsmiljöverket), SAM is only carried out in a satisfactory way in a minority of Sweden’s workplaces.



The changes in the business sector and working life may, of course, also have created new opportunities for influence and impact, and have perhaps also helped to resolve old deadlocks created by overly established and rigid structures.

However, changes of various types take place constantly in working life. The longer the observation period, the greater the differences that can be expected. Some researchers therefore see the majority of the changes now taking place as the effects of normal structural change. Such changes entail increased pressure on, and the exclusion of, certain businesses, and this inevitably hits certain individuals in the short term. At the same time, these researchers tend to play down the negative effects on working conditions that are connected with the increased mobility of companies and capital, of growing globalisation and so on.

Rodrik (1997) has, however, objected to such a conventional perspective and pointed out that just as it is asserted that the changes in the global economy in recent years have greatly influenced economic development, it must also be asserted that they have changed the working conditions and work situation of many individuals. Rodrik's hypothesis is, first and foremost, that groups with relatively limited qualifications have ended up in a situation where they have become more interchangeable with equivalent groups in other countries. This involves, in economic terms, a greater elasticity of demand for their services, which in turn leads to operations flowing more freely to where profitability is highest. Increased production costs have more rapid and more marked effects, when capital and operations tend to move more easily and more rapidly. According to Rodrik, greater elasticity consequently also leads to the employees themselves having to pay more of the costs required for good working conditions. This also leads to wage differentials widening compared with other groups with less elasticity. In this case there is not the same necessity for the employers to buy peace in exchange for higher wages or better conditions, when negotiating with their employees.

### *Need for knowledge in working life today and tomorrow*

In this chapter, we have mainly emphasised change. However, much work takes place, and must perhaps take place, in the same way now as previously. Irrespective of who owns the organisation and which supervisory, control

and remuneration systems are applied, old people must be fed in a similar way to previously in the care sector. The child who falls and hurts himself must be comforted as before. The restaurant customer wants to be served as previously.

Many of these “non-mobile” jobs are also “jobs with people” and are often carried out by women. Perhaps this is a contributory reason why the organisational gender structures seem so stable. The labour market’s gender segregation is stubborn, both horizontally and vertically. The segregation means that all the conditions and changes that are discussed above have a gender dimension. They do not affect women and men equally, since their initial situation is not the same. The changes in the school and care sectors affect far more women than men, while other changes perhaps mainly affect men’s labour markets and work environments. However, it is usually very difficult to try to identify either women or men as clear winners or losers. Gender is never the only decisive characteristic, but is often of major relevance beside others.

In this chapter, we have highlighted a number of possible and established consequences of the ongoing changes and restructuring. However, it must be pointed out that certain negative consequences, which at first seem evident, may prove to be temporary phenomena and stages on the way to a new changed reality, in other words, part of an adjustment process rather than a final state. On the other hand, a continuous restructuring process may in itself entail considerable stress for employees and organisations.

There is a marked need for knowledge of issues concerning what is changing for the individual employee, for groups of employees and the long-term economic and political development of working life. Some of the knowledge needed to describe, analyse and reflect on our working life has been collected in this anthology. Many of the issues discussed in the introductory chapter will be developed and discussed in depth in the following chapters.

Certain general trends in the work environment and labour market areas are described in Chapter 2, “Indicators of changed working conditions”. This chapter uses some broad statistical data available in Sweden today and provides an overview and analysis of the change over time. Chapter 3, “What do the occupational injury statistics tell us?” and Chapter 4, “Occupational diseases in Sweden in a ten-year perspective” correspondingly

provide a description of the development of occupational injuries on the basis of other available statistical data.

The following four chapters focus on various types of health problems and their connection with working life. Chapter 5, “Can the psychosocial work environment cause neck and shoulder pain?” discusses a very common and moreover growing health problem in our increasingly sedentary and service-producing working life: neck and shoulder disorders. Chapter 6, “Low mental well-being – trends in and outside the labour market” deals with the increasingly widespread tiredness and the increasing sleep problems, which are in fact not only increasing among those who participate in working life, but also constitute a growing problem for citizens in general.

Chapters 7 and 8 analyse two phenomena – increasing sickness absence and disability pensions – which have been the focus of public debate in recent years and which, apart from a great strain on the individuals concerned, their families and close relatives, also result in major losses for society in the form of lost output and so on.

Chapters 9 to 17 discuss and analyse the prerequisites for health and other aspects of quality of life in various types of organisation, and in the new work situations that are now developing. New forms of employment often entail looser and more flexible relationships with one or more employers, which is analysed in Chapter 9, “Health and development opportunities for those in fixed-term employment”. The next chapter, “A welfare state for everyone? The position of immigrants in and outside the labour market” examines whether the integration policy counteracts or strengthens the differences in living conditions between Swedish-born and foreign-born employees in working life in Sweden. The cutbacks and major reorganisation, which the school and care sectors have recently experienced in Sweden, are a recurring theme in Chapters 11 to 13. Chapter 11 focuses on the care sector, while Chapter 12 discusses the school’s work environment from the students’ perspective and Chapter 13 the working conditions of teachers.

Chapter 14 deals with a work environment, which is largely a product of the changes of the last 10 years. How the “new” work environments at call centres function in reality is a question that this chapter tries to answer, with the aid of the first Swedish research findings. Chapter 15 provides an insight

into the new situations with a risk of threats and violence, which have become part of our changing working life.

This book concludes with two chapters – Chapter 16, “Rehabilitation to work” and Chapter 17, “Work environment policy and the actors involved”, which deal with the preventive and rehabilitation work carried out daily by a large number of occupational categories and organisations in Sweden. One aim of the research presented in this book is, of course, also to contribute to this work. The human being and a dignified human life are after all both the objective and the means in working life.

## Notes

1. The companies may, of course, have simultaneously cut back some operations and increased other operations. 38 per cent mentioned an increase in operations and staff.
2. In the Confederation of Swedish Enterprise's (Svenskt Näringsliv) business survey in 2003, 33 per cent of industrial firms stated that they had outsourced an operation over the last few years, compared with 17 per cent of service companies (Svenskt Näringsliv 2003). However, it is unclear how extensive this outsourcing was, precisely which companies were included and precisely which time period the respondents referred to. Consequently, the figures are hardly comparable with those of the National Institute for Working Life.
3. During the period, changes took place in the assignment of responsibilities between the county councils and the municipalities for certain activities in the health and medical care sector and the care sector. The health and medical care activities for which the municipalities were responsible are therefore not included in this summary.

## References

- Barklöv K (ed.) (2000) *Smärtgränsen? En antologi om hälsokonsekvenser i magra organisationer. (The pain threshold? An anthology on the health consequences of lean organisations.)* Swedish Council for Work Life Research, Stockholm.
- Bejerot E & Hasselblad H (2002) *Kvalitet utan gränser – en kritisk belysning av kvalitetsstyrning. (Unlimited quality – a critical illustration of quality control.)* Academia Adacta, Lund.
- Berggren I (2001) ”Statistiska bilder av privatiseringen av välfärdstjänster” Bakgrundsfakta till ekonomisk statistik 2001:1 (“Statistical illustrations of the privatisation of welfare services.” Background facts to economic statistics 2001:1), Statistics Sweden, Stockholm.

- Björkman T (2003) "Management – en modeindustri" ("Management – a fashion industry") in Sandberg Å (ed.) *Ledning för alla. (Management for all.)* SNS, Stockholm.
- Brulín G (2002) *Faktor X – arbete och kapital i en lokal värld. (Factor X – work and capital in a local world.)* Atlas, National Institute for Working Life, Stockholm.
- Brunsson N & Jacobsson B (1998) *Standardisering. (Standardisation.)* Nerenius & Santérus, Stockholm.
- Castells M (1999) *Informationsåldern – ekonomi, samhälle och kultur. (The information age – economy, society and culture.)* Daidalos, Göteborg.
- Coase R (1992) *The firm, the market and the law.* The University of Chicago Press, London.
- Coriat B (1995) "Organisational Routines and Competitiveness in the Auto Industry: The Case of Peugeot SA" in Andreassen L E, Coriat B, Den Hertog F & Kaplinsky R (ed.) *Europe's next step – organisational innovation, competition and employment.* Cass, Portland.
- Czarniawska B & Sevón G (ed.) (1996) *Translating Organizational Change.* du Gruyter, Berlin.
- Ekstedt E, Henning R, Andersson R, Elvander N, Forsgren M, Malmberg A & Norgren L (1994) *Kulturell friktion. (Cultural friction.)* SNS förlag, Stockholm.
- Forsell A & Jansson D (2000) *Idéer som fånglar: recept för en offentlig reformation. (Fascinating ideas: a formula for public reformation.)* Liber Ekonomi, Malmö.
- Furusten S (1996) *Den populära managementkulturen: om produktion och spridning av populär "kunskap" om företagsledning. (Popular management culture: on the production and dissemination of popular management "knowledge".)* Nerenius & Santerus, Stockholm.
- Furusten S & Lerdell D (1998) "Managementiseringen av förvaltningen" ("The managementisation of public administration") in Ahrne G (ed.) *Stater som organisationer. (Governments as organisations.)* Nerenius & Santérus, Stockholm.
- Held D & McGrew (red) (2000) *The global transformations reader – an introduction to the globalization debate.* Polity Press, Cambridge.
- Hirschman AO (1970) *Exit, voice, and loyalty – responses to decline in firms, organizations, and states.* Harvard University Press, Cambridge, Mass.
- ITPS (2003) *Svenskägda koncerner med verksamhet i utlandet 2001. (Swedish-owned groups with operations abroad in 2001.)* Sweden's official statistics, Swedish Institute for Growth Policy Studies (ITPS), Östersund.
- Kitschelt H (ed.) (1999) *Continuity and change in contemporary capitalism.* Cambridge University Press, Cambridge.
- Kjellberg A (2001) *Fackliga organisationer och medlemmar i dagens Sverige. (Trade unions and members in today's Sweden.)* Arkiv förlag, Lund.
- Lennerlöf L (2000) *Avveckla eller utveckla? En antologi om verksamhetskonskvenser i magra organisationer. (Winding up or developing? An anthology on the operational consequences of lean organisations.)* Swedish Council for Work Life Research, Stockholm.

- Magnusson L (1999) *Den tredje industriella revolutionen – och den svenska arbetsmarknaden. (The third industrial revolution – and the Swedish labour market.)* Prisma, Stockholm.
- McLuhan M (1962) *The Gutenberg Galaxy. The Making of Typographic Man.* Norstedts, Stockholm.
- Piore M & Sabel C (1984) *The Second Industrial Divide.* Basic Books, New York.
- Ritzer G (1996) *The McDonaldization of Society.* Pine Forge Press.
- Rodrik D (1997) *Has globalization gone too far?* Institute of International Economics, Washington, D C.
- Rövik K A (2000) *Moderna organisationer. Trender inom organisationstänkandet vid milleniumskiftet. (Modern organisations. Trends in organisational thought at the turn of the millennium.)* Liber, Malmö.
- Sahlin-Andersson K (1996) "Innovation genom imitation. Om organisationsidéers spridning" ("Innovation through imitation. On the dissemination of organisational ideas") in Hård av Segerstad (ed.) *Idéer som styr. (Ideas that control.)* Institutet för personal- och företagsutveckling IPF (Institute for personnel and company development), Uppsala.
- Sahlin-Andersson K & Engwall L (ed.) (2002) *The expansion of management knowledge. Carriers, Flows and Sources.* Stanford University Press, Stanford.
- Stjernberg T & Werr A (2003) "Managementkonsulter – från kunskapsförmedlare till kunskapsproducenter?" ("Management consultants – from knowledge carriers to knowledge producers?) Paper presented at the 17th Nordic Business Economics Conference, The School of Economics and Commercial Law, Göteborg University.
- Sundin E (2003) "Små företag – lösning på vad och för vem?" ("Small businesses – solution to what and for whom?") in von Otter C (ed.) *Ute och inne i svenskt arbetsliv. Forskare analyserar och spekulerar om trender i framtidens arbete. (What's in and out in Swedish working life. Researchers analyse and speculate on trends in future work.)* Arbetsliv i omvandling (Working life in transition) 2003:8. National Institute for Working Life, Stockholm.
- Svenskt Näringsliv (2003) "Färre gör mer – det ekonomiska läget december 2003" ("Less is more – the economic situation in December 2003").  
www.svensktnaringsliv.se
- Scott R W (2003) *Organisations. Rational, Natural and Open Systems.* (Fifth edition) Prentice Hall, New Jersey.
- Tegsjö B, Hedin G & Eklund I (2000) *Kartläggning av magra organisationer. (A survey of lean organisations.)* Swedish Council for Work Life Research, Stockholm.
- The European Federation of Management Consultancies Associations (Feaco) (2004) *Feaco market surveys issue 2002*, <http://feaco.pixelhouse.de> (17 June 2004).
- Tillmar M (2004) *Är det möjligt? Om villkor för småföretagande inom vård- och omsorgssektorn. (Is it possible? On conditions for small enterprise in the care sector.)* R 2004:4, NUTEK, Stockholm.

- Tullberg M (2003) "Orden som förnyar" ("Innovative words"). *Nordiske Organisasjonsstudier (Nordic organisational studies)*, 4: pp 61–83.
- Wikman A (2001) *Internationalisering, flexibilitet och förändrade företagsformer. En statistisk analys av arbetsställets utveckling under 90-talet. (Internationalisation, flexibility and changed corporate forms. A statistical analysis of the development of workplaces in the 1990s)* Arbetsliv i omvandling (Working life in transition) 2001:8. National Institute for Working Life, Stockholm.
- Wikman A (2002) *Temporära kontrakt och inläsningseffekter. (Temporary contracts as bridges or traps.)* Arbetsliv i omvandling (Working life in transition) 2002:4. National Institute for Working Life, Stockholm.
- Wikman A (2003) *Indikatorer på företagens omstrukturerings – ett förslag till utbyggd omvärldsbevakning. (Indicators of corporate restructuring – a proposal for the expansion of business intelligence.)* Arbetsliv i omvandling (Working life in transition) 2003:3. National Institute for Working Life, Stockholm.
- Wikman A & Marklund S (2003) "Tolkningar av arbetssjuklighetens utveckling i Sverige" ("Interpretations of the development of occupational ill health in Sweden") in von Otter C (ed.) *Ute och inne i svenskt arbetsliv. Forskare analyserar och spekulerar om trender i framtidens arbete. (What's in and out in Swedish working life. Researchers analyse and speculate on trends in future work.)* Arbetsliv i omvandling (Working life in transition) 2003:8. National Institute for Working Life, Stockholm.
- Zetterberg H (1984) *Det osynliga kontraktet: en studie i 80-talets arbetsliv. (The invisible contract: a study of working life in the 1980s.)* SIFO Research and Consulting, Vällingby.





## CHAPTER 2

# Indicators of changed working conditions

*Anders Wikman*

The introductory chapter raises a number of questions regarding the development of conditions in Sweden's workplaces in recent years. This chapter attempts to describe how the individual's situation has changed in some central respects, using broad statistical material as a basis. Sweden has long had relatively good statistical facilities. The statistics have also been increasingly developed, which today results in fairly unique opportunities for description and analysis.

However, it must be emphasised that broad quantitative data may have its limitations, even under favourable conditions. Many details and conditions may be lost in the processing, as method problems easily create difficulties. I shall therefore begin this account with a discussion of the important phenomenon of "statistical indicators" and some associated comments on methods.

### **Need for indicators**

Using statistics on social conditions as a basis for political decisions is an old phenomenon. Swedish statistical activities began with the Table Authority (Tabellverket) as early as the mid-18th century. The Table Authority was the first public authority in the world with the ability to provide accurate statistical accounts of a country's population. At that time, attempts were made to describe, among other things, mortality in various population groups and population size and growth.

Let us take two other early examples. At the beginning of the 20th century, an ambitious, in part statistical survey was carried out, the so-called *Emigration Survey*. During the 1930s, a similar statistical effort took place to survey the population problems highlighted by Gunnar and Alva

Myrdal in their book *Crisis in the Population Question* (*Kris i befolkningsfrågan*).

The statistical accounts provided by these surveys could only partly answer the questions raised. A typical example was that the Emigration Survey had to rely largely on qualitative accounts with regard to people's living conditions. It should also be noted that the 1930s population survey failed to make a satisfactory population projection. The Swedish population estimate for 1985 was a minimum of 4.5 million and a maximum of 6 million, compared with the actual figure of 8.4 million (Eriksson 2003).

During the 1960s and 1970s, statistical work and attempts to produce better statistics on social conditions intensified. There was talk of the need for better "social indicators" to offset the perceived over-dominant economic indicators. These were considered to have created a dominance of economic perspectives on society, at the expense of social perspectives. Social indicators ought to be made as easy to handle as economic indicators, and just as natural to use in politics. On the basis of this ambition, the so-called social indicator movement developed, with the objective of developing social reporting based on quantitative data. The movement had its origin in American debate, but the statistical discussion took place in many countries.

During the 1960s and 1970s, researchers and central offices of statistics in most developed countries, as well as in many developing countries, worked on developing methods for social reporting based on various types of statistics. Large international organisations, such as the UN, the OECD and the predecessors of the EU, organised international cooperation in the field. At first, there was great optimism at the prospect of what could be achieved. New statistical surveys were also initiated. Important examples in Sweden included the Low-income Survey, the Standard of Living Survey (LNU), Statistics Sweden's (SCB) Survey of Living Conditions (ULF) and the Work Environment Survey (AMU). A number of broad international statistical summaries also began to be published, such as the UN's "Human Development Report" (UNDP 2003).

Despite all the work invested in compiling and developing indicators, no country was, however, successful in establishing social reporting that matched the original expectations. It was difficult to agree on *what* should

be measured and *how* it should be measured. Moreover, it often proved difficult to construct stringent theories that could direct the work and to state which conditions it was important to describe. Interest also faded over time and the social indicator movement ended up in a backwater.

Nevertheless, the indicator approach has returned repeatedly and has also been discussed in other contexts. During the 1990s, the corporate world and its consultants began increasingly to discuss the need for management by performance indicators – in reality much of the same indicator reasoning as previously. It was not considered sufficient to base measures solely on the financial outcome of a business. Other indicators were also needed, such as the staff's creativity, competence and working conditions. The discussion had many similarities to the old discussion about social indicators. One example was the argumentation in favour of using balanced scorecards (Olve et al. 1997).

Balanced scorecards were considered important because modern working life had become much more flexible than previously and was constantly exposed to change. Management by financial outcome, as shown in the accounts, was thought to be like steering a vehicle by means of the rear-view mirror. This was considered to provide outdated information on the actual state of the organisation.

It is easy to agree with the criticism that management by financial outcome provides an inadequate picture of the organisation's real assets and performance. However, it not as easy to see what a good alternative would be. The factual content of various performance indicators or balanced scorecards has also often been poor. Again it is easy to see a risk of overconfidence in the opportunities available. In this context, numerical data may provide a limited picture, which can be particularly problematic, if it pretends to be more complete than it really is.

The same interest in non-financial performance indicators is also seen in public administration. Today, the formulation of objectives and monitoring criteria constitutes a central element in the control of public authorities by the government and the ministries. The "central control model" is considered to be able to control activities in terms of objectives and measurable performance and effects. Activities are thought to be able to be monitored by means of various types of statistical indicators (Premfors et al. 2003). But

the problems of finding appropriate performance indicators as well as identifying causal relationships between measures and results are again considerable. Monitoring by means of performance indicators has become an extensive activity – but also one that is questionable.

### **Measurement problems and data sources**

Using an indicator entails allowing a more limited phenomenon to indicate something that is actually much broader and larger. An indicator may, for example, be one of many possible aspects that form part of the broader context. The indicator refers to this larger context through its close relationship to it. If a change takes place, the indicator also changes. If there are differences, which are contingent on geographical or population patterns, the indicator also shows these differences.

Let us take noise in the workplace as an example. There are many different ways of describing noise and measuring it. Noise measurements can express the sound level, the frequency, the exposure time, the occurrence of impulse noise and so on. A complete survey of the noise situation requires many different measurements and prolonged observations. At the same time, it is fully possible to fairly well reflect important differences in the noise conditions and their effect on the individual's work and work environment by means of a small number of measurements. This is partly due to the fact that changes often have an impact in many different ways. If, for example, there is a continuous structural change with an ever-decreasing number of blue-collar jobs and an ever-increasing number of white-collar jobs, this will be seen in the noise conditions, often irrespective of the measurement applied.

If health and safety matters are implemented through increased investments in the work environment, this will also have an impact in a multi-dimensional way on, for example, exposure to intensive noise and on the occurrence of loud impulse noise, as well as on the total exposure time.

Something similar tends to be the case, if we wish to describe the differences between population groups, such as those between blue-collar and white-collar workers. The differences are visible in various ways and can be observed, to some extent irrespective of which measurements are chosen. Since many phenomena are linked by an underlying common

context, it makes very little difference what we choose to focus on, provided we confine ourselves to such things as can be measured correctly.

Of course, the argument cannot be taken to extremes. Phenomena that only peripherally reflect a certain phenomenon also tend to be very loosely related to the latter and are also affected by much else. This is also often the situation in practical contexts, at least if the information is based on some form of administrative data.

Administrative data (register data) is often problematic because it is so clearly affected by legal, organisational and practical conditions. It has obvious validity deficiencies, if it is taken as an indicator of something underlying, such as ill health. Survey data is often superior in this respect, since it can be tailored to the current information requirements. This is also what various broad statistical studies, such as the Standard of Living Survey (LNU), the Survey of Living Conditions (ULF) and the Work Environment Survey (AMU), attempt to achieve.

Nevertheless, there are also problems in survey data. The problems in this context are mostly connected with the difficulties the respondents have, when answering questions in the questionnaire, including interpretation difficulties caused by imprecise questions. (Similarly, those analysing the questionnaires have difficulty in interpreting subjectively coloured responses.) Many problems are connected with the fact that interview and questionnaire surveys are forced to use ordinary everyday language as a carrier – the nuances of the words may vary a great deal depending on the person with whom one is talking. Ambiguities of this type can only be dealt with, if the person formulating the questions has a considerable feeling for language and aims for the greatest possible clarity in the means of expression.

Asking questions of the type: “Is it noisy in your workplace?” or “Is it noisy often, rarely or sometimes?” leads to interpretation problems for both the respondents and those interpreting the responses. On the whole, it is difficult to ask questions about noise. However, it is presumably possible to obtain interpretable responses to questions of the type: “Is it so noisy that it disturbs normal conversation tone?” or “Is it so noisy that you need to shout to make yourself heard?” In the latter cases, clarity is achieved through illustrative comparisons. Of course, it is not always as easy to find such precise wording.

To sum up, it may be said that it is misguided to criticise indicators for only touching on certain aspects of the reality in focus. It is in the nature of things that this is the case. On the other hand, they can be criticised, if they contain components, which make them reflect, in an irrelevant or misleading way, differences in time or space for the reality that is being described and analysed. The quality of the indicator is connected with the validity of its measurements, in other words, whether it really measures the intended phenomena or not. The quality is also connected with the reliability of the measurement that generated the indicator, in other words, whether the measurement contains temporary or systematic errors.

In the work environment context, we have Statistics Sweden's Work Environment Surveys (AMU), which have been tailored to produce good descriptions of current conditions (sos 2001).<sup>1</sup> The statistics take as their premise that the employee can manage to describe his or her own working conditions in relative detail, and that these descriptions (at least in part) can be made relatively easy to interpret for those studying the results. These statistics avoid assessments of "conditions" as far as possible. Information has been collected biannually since 1989. Similar survey material has been available for certain aspects since 1984. Approximately 14,000 people are interviewed on each occasion.

The Work Environment Survey is based on extensive and prolonged development work, which has aimed to find good methods for describing work environment conditions on the basis of interview and questionnaire questions. The work on methods has, among other things, consisted of a number of validation studies, in which responses to many different types of questions were compared with other information, for example technical information. This work has shown in which contexts interpretable responses to questions may be expected, and has also provided an understanding of how questions and response options should be formulated in general to obtain good-quality responses (Wikman 1991).

Information for the Work Environment Survey is collected as a supplement to the ordinary labour market statistics, LFS, the Labour Force Surveys (Arbetskraftsundersökningar, AKU). This means that background facts about how and where the employee works are known. The supplement provides information about the physical work environment and

psychosocial conditions. The latter includes concepts such as work demands or excessive demands, the ability to control one's own work situation, social support, bullying, threats and violence and much else. The supplement also includes information about various types of disorder, and contains data that can provide information about the possibilities of personal recovery.

A system has long been in place in Sweden for reporting occupational accidents and illnesses through the Information System for Occupational Injuries (ISA). Reporting to the system is affected by current rules and regulations and administrative management (sos 2003b). In order to supplement to some extent the information, which may be distorted or misleading as a result of administrative changes in the reporting of injuries, survey data has been collected annually since 1991 in the Survey of Work-related Disorders (AOB). The respondents in this survey have to assess whether "the work has caused disorders that have made it difficult to carry out household tasks or work tasks" (sos 2003a). These statistics have not mainly been produced to create comprehensive indications of occupational illness, but they are assumed to provide certain benchmark data with which the reported occupational injuries can be compared. This survey data on work-related disorders can thus help offset the obstacles to research that may arise, as a result of various administrative changes in the reporting of injuries.

Central statistical data can also be obtained from LFS (AKU). The survey not only provides information on whether people are unemployed or employed (sos 2002), but also describes how much people work, how much they are absent from work and why. This also provides a great deal of information about the situation of those outside the labour force. LFS has been carried out in Sweden since the 1960s. Today, similar surveys are carried out in many countries worldwide, and the surveys can therefore often be used for international comparisons.

Overall, these statistical sources cover central aspects of working life and how these have changed. We will therefore describe below the changes in Swedish working life over the past few years, with the aid of indicators developed on the basis of this statistical data.

## Outside and inside Swedish working life

Two types of change are usually highlighted when discussing labour market change. The first concerns the *economic cycle*, since the job supply varies over time. It is more difficult to get a job at certain times than at others. The proportion of unemployed people is a typical measure of these cyclical fluctuations. However, the fluctuations can also be seen in other ways in the statistics.

The second concerns *structural change*, which refers to a change in demand for certain jobs and certain manpower. Certain types of operations become more common over time and others less common. Certain groups then have increasing difficulty in finding work, while new opportunities open up for other groups. Certain regions may be hit, while others may benefit. The *breakdown* of employment by sector and by occupation is often used to describe central aspects of structural change.

In the broad sense of the word, structural change may also be said to refer to other general changes affecting people's work situation. It may concern changes in the age structure of the population, such as an ageing population. It may also concern changes in educational and training requirements, which means that an ever-increasing number of young people are found in education and training instead of the labour force.

However, in these and other similar contexts, we should perhaps rather discuss *a third important type of change, which concerns changes in the conditions for various population groups to participate in working life*. Such changes may also include e.g. changed pension regulations and conditions, which in turn have affected the proportion of older people in the labour force. A hundred years ago, there was no national old-age pension at all; people worked in general as long as they could. Since then, the proportion of older people in the labour force has continuously declined. Today, many countries seem to be striving to reverse this trend, not least to cope with the ageing population.

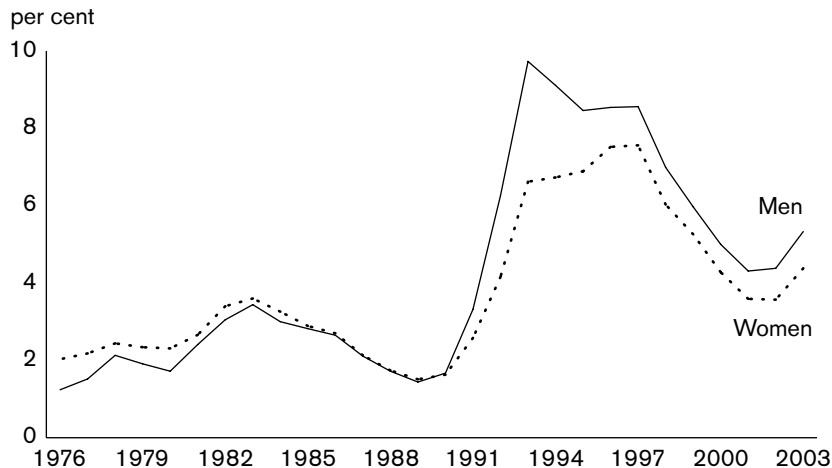
Another obvious change, which could be placed in the same category, concerns women's participation in working life. Over time, women have come to account for an ever-increasing proportion of the labour force, in both Sweden and other countries. At the same time, there are also other



changes that may affect labour force participation. For example, people now seem to leave the labour force increasingly, as a consequence of greater difficulties in physically or mentally coping with the work. Changed attitudes and priorities may, of course, also come into play in the flows into and out of working life.

### *Economic cycle*

Figure 2.1 describes the cyclical fluctuations in terms of the proportion of unemployed people in the labour force, according to LFS. The labour force comprises those who have or are looking for a job. The figure shows clear fluctuations in the proportion of unemployed people over time. It also shows the dramatic economic nosedive during the first half of the 1990s, when unemployment rose to levels not seen in Sweden since the 1930s. However, a very clear recovery can be noted over the last few years, although the level of unemployment has not fallen back to the same level as before the 1990s crisis.

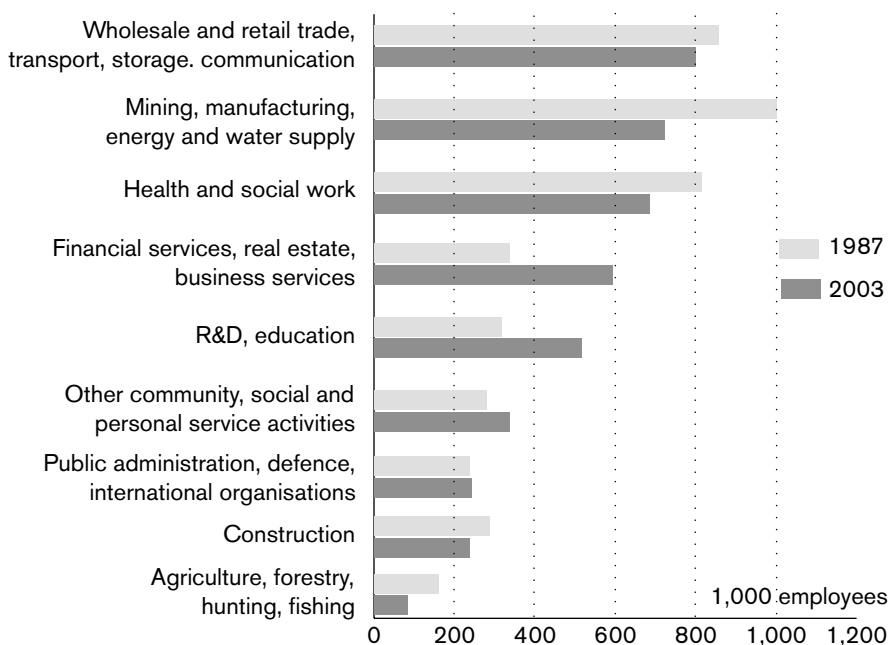


**Figure 2.1.** Unemployment among men and women as a percentage of the labour force, 1976–2003. (Source: Labour Force Survey, AKU.)

*Structural change and other changes in working prerequisites*

Certain more long-term changes are illustrated in Figure 2.2 by means of sector data from LFS. The figure shows the changes between 1987 and 2003 for the main sectors in the statistics.

Mining, manufacturing, energy and water supply experienced a substantial downturn in the early 1990s. The downturn gradually slowed, but lost positions were hardly recaptured at all. On the other hand, clear upturns are seen for various types of services operations, particularly the financial services, real estate and business services category. The manufacturing industry's downturn may, however, partly be a chimera, since certain operations may have been divested and consequently classified elsewhere in the statistics. Activities within the companies may have been contracted out to



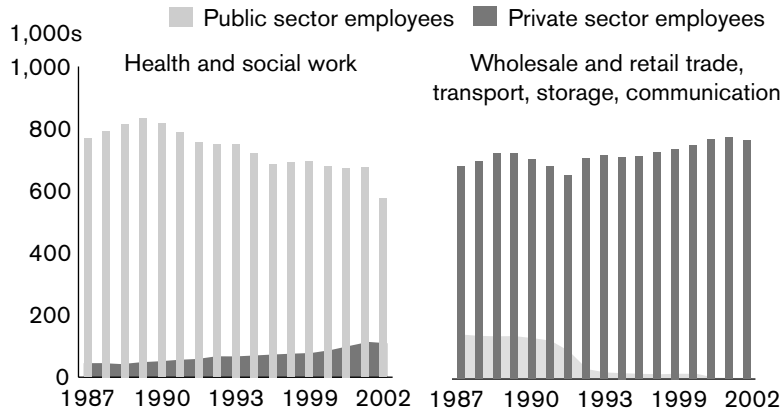
**Figure 2.2.** Number of people employed in various main sectors in 1987 and in 2003.  
(Source: Labour Force Survey, AKU.)

other companies, where they may have been classified differently and perhaps booked as business services or R&D.

The change is admittedly not entirely unambiguous and clear, but the general characteristic is probably nevertheless that the service sector is becoming increasingly prominent, while the industrial sector is becoming less and less important. Changes of this type have important implications for the skills in demand and for the ability of different individuals to support themselves.

The health and social work category also experienced a clear downturn. Reduced resources in public sector activities may have contributed to this change. At the same time, activities have been transferred from the public to the private sector.

The shifts between the public and private sector may be elucidated by two concrete examples, which are illustrated in Figure 2.3. The health and social work category declined each year from 1990 and onwards. At the same time, this category increased within the private sector, but mainly towards the end of the period. A total of 190,000 people with this type of care sector work left the public sector (down from 768,000 in 1987 to 575,000 in 2003), while 60,000 people joined the private sector. Contracting out obviously leaves a clear mark on the statistics. The total decline in



**Figure 2.3.** Examples of differences in sector development for the private and public sector. (Source: Labour Force Survey, AKU.)

care sector work is also clearly evident. Since it may be assumed that the need for care services has not declined to the same extent, the statistics reflect a marked downsizing of the activities. The decline is approximately 130,000 employees in absolute figures.

Private sector activities also increased in other ways at the expense of public sector activities. As can be seen from Figure 2.3, the number of public sector employees in wholesale and retail trade, transport, storage and communication declined radically. This change, which mainly took place in the early 1990s, resulted in general in this category disappearing as a public sector area of activity – although the services may still exist in the national economy.

### *Inflow and outflow of specific groups*

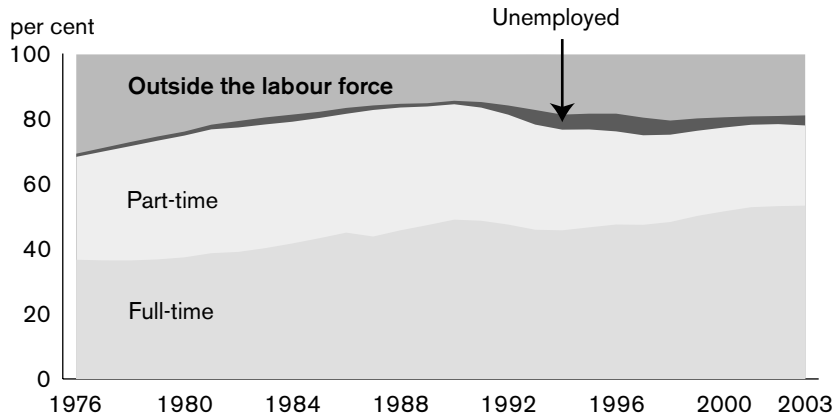
Over the long term, Sweden has seen a large inflow of women into the labour force, a trend that has had a marked impact on the total number of people in the labour market. The same type of change can also be noted in other countries, although the changes in Sweden began unusually early and are unusually advanced. The abolition of joint taxation in the 1960s is usually said to be central to the early Swedish start, as is the expansion of childcare and the favourable parental insurance. It is important to emphasise that these changes are, in fact, still ongoing, now mainly in the form of more women working full-time and fewer part-time than previously.

Since men and women historically have such different development patterns, it is natural to separate them in the account. The divergent development pattern for young people also justifies a separate account. The total period spent by young people in the education system has risen increasingly.

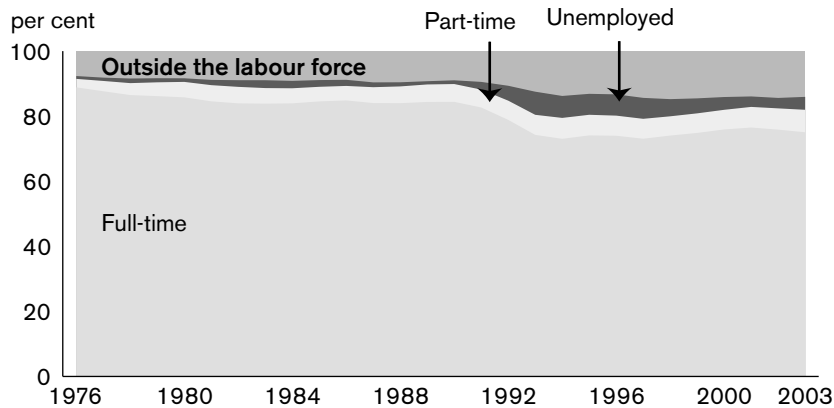
Figure 2.4 divides the female population, aged 25–64, into four groups: full-time workers, part-time workers, the unemployed and women outside the labour force. As always in LFS, the breakdown concerns the situation during a certain selected reference week, which varies from individual to individual, but in total covers the whole year. The increase in women's labour force participation can be seen most clearly up to 1990–91. The increase is mainly in the form of an ever-increasing number of full-time workers. During the first half of the 1990s, the number of women outside the labour force rose for the first time in many years. This took place at the same time as the proportion of unemployed women rose. However, the

total labour input was largely unchanged, since at the same time there was such a clear switch from part-time work to full-time work.

Men's labour input has declined clearly over the years (Figure 2.5). This has mainly taken the form of an ever-decreasing number of full-time



**Figure 2.4.** Labour force participation among women aged 25–64, 1976–2003. (Source: Labour Force Survey, AKU.)



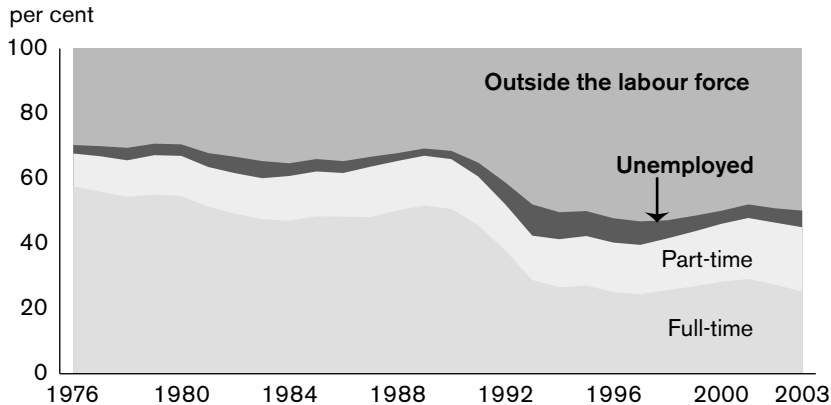
**Figure 2.5.** Labour force participation among men aged 25–64, 1976–2003. (Source: Labour Force Survey, AKU.)

workers. The change began before the crisis in the 1990s, but was strengthened by the latter. The unusually large proportion of men outside the labour force continued to be considerable even subsequently. In 1976, 8 per cent of men aged 25–64 were outside the labour force, 1 per cent were unemployed and 3 per cent worked part-time, a total of 12 per cent. In 2002, 14 per cent were outside the labour force, 4 per cent were unemployed and 7 per cent worked part-time, a total of 25 per cent.

It should perhaps be emphasised that unemployment during the reference week need not always imply long-term unemployment for a certain individual. Some of those who were unemployed on this occasion may have had work on both earlier and later occasions. On the other hand, some of those who had work during the reference week may have been unemployed earlier or later. This may have been the case for many with temporary employment. During the 1990s, the number of people with temporary employment and other loose relationships with work and the labour market rose. Above all, the number of people employed to meet special needs or on a project basis, rose. In 2003, 575,000 people had some form of temporary employment, according to the Labour Force Survey. In addition, there were an unknown number of unemployed people, who were in a gap between two temporary jobs on the occasion of the Labour Force Survey interview.

The long-term trend seems therefore to be that an ever-increasing number of people have a weaker link to working life, with more temporary employment, more unemployment and more part-time work, while an ever-increasing number of people are found totally outside the labour force.

We have elsewhere (Wikman 2004) discussed this increasingly weak link to working life, when analysing the development of sickness absence and its possible causes. The increasing sickness absence was there considered to be part of a more general trend, which results in people with ailments and disorders having increasing difficulty in remaining in working life. LFS defines an interesting group in this context, which is called “inactive and unfit for work”. The group comprises people who are not working or looking for work, and who at the same time have various long-term illnesses. This group has risen sharply over the past 15 years, from 70,000 in 1987 to 370,000 in 2002. The increase was particularly large during the worst years of the recession, but also continued afterwards. However, the



**Figure 2.6.** Labour force participation among young people aged 16–24, 1976–2003.  
(Source: Labour Force Survey, AKU.)

increase has not been as large in the very last few years as previously. Long-term sickness absence has instead risen. The majority of the long-term sick are classified in LFS as employed, but temporarily absent from their employment. Overall, a picture seems to emerge of a working life, which has less and less room for people with ailments and disorders. People with health problems increasingly end up totally outside the labour force.

For young people under 25, unemployment rose markedly during a period in the 1990s (Figure 2.6). Recently, part-time work has increased very sharply among young people, while the number of young people totally outside the labour force has risen even more sharply. The increase in temporary employment has also been particularly large among young people. Today, only a small part of this group has a strong link to working life at all.

Many young people are instead found in education and training. However, education and training do not catch all those who are now outside the labour force or loosely linked to it. For many young people, the situation is radically different from previously, with much greater exclusion from working life.

### **Indicators of changes in the physical and chemical work environment**

Sweden, together with other Nordic countries, has long been considered to be in the forefront and exemplary with regard to measures for creating

a good work environment. The tendencies towards an ever-increasing number of sick people outside working life, which are seen here, appear to be inconsistent with the notion of particularly favourable working conditions. The results raise questions as to how working life has actually developed.

The interest in work environment issues has long been considerable and large resources have been invested in research, in the development of good rules and regulations, in monitoring and control. This change programme should produce visible results. At the same time, working life may change for a number of reasons. There may be counteracting forces. Even if working conditions develop negatively, the action programme may still have had some effect. Without the action taken, the conditions might have been considerably worse. In this context, it is also important to distinguish between what has happened to the physical and the psychosocial work environment.

The Work Environment Survey contains many clear descriptions of physical and chemical conditions. For example, it asks whether there is dust, vapour or smoke that can clearly be seen in the air or smelt in the workplace. The respondents have to indicate in this case whether it is mainly inorganic dust (from metals, stones, quartz, cement, asbestos, mineral wool and the like), organic dust (from textiles, wood, flour, animals, plants and the like) or chemicals (from gases, vapours, solvents, pesticides, plastics and the like). With questions of this type, it is evident that it is certain important *actual* conditions that are described.

The responses can further gain in descriptive clarity by being compiled by industry and operation. Sector accounts facilitate clarification by focusing on what is normal and distinctive in the respective area. The interpretations may in some cases be fairly self-evident for work environment experts in the respective sector. (For example, in agriculture, organic dust should mostly result from what is produced in the activity, while in the stone industry, inorganic dust should mostly be that resulting from the stone processing and so on.)

Through a breakdown by sector, changes over time can also be interpreted more easily. It is for example easier to determine whether a change situation is due to the conditions having actually improved, or is simply a



consequence of the activities that normally generate the problems having become less common. The effects of structural change can thus be controlled in the statistical account and analysis.

Sector breakdowns are consequently central for making reasonable interpretations of how the situations have developed, at least in relation to the chemical and physical environment. The more detailed the breakdowns the better. However, too many sectors can in practice create confusing accounts. Moreover, the number of observations in the sampling limits which accounts are possible. I have here mainly focused on the following 12 main groups in the sector code system (SNI 92):

(1) Agriculture, hunting and forestry; fishing; (2) Mining and quarrying; manufacturing; (3) Electricity, gas and water supply; (4) Construction; (5) Wholesale and retail trade; repair of motor vehicles; (6) Transport, storage and communication; (7) Financial intermediation; (8) Real estate, renting and business activities; (9) Education; (10) Health and social work; (11) Other community, social and personal service activities; (12) Public administration and defence; international activities.

Moreover, I have divided manufacturing into some sub-groups. All the results will not be reported here. I shall instead focus on changes in the most exposed areas of working life, within the respective problem area.

### *Pollution situation*

People are exposed to a very large number of different substances in their daily lives. The number of new substances that are used is also increasing very rapidly.

Substances can be absorbed by the body in three main ways: through inhalation, swallowing and contact with the skin and mucous membranes. The body has a relatively good ability to protect itself from dust in the form of large particles. These can be caught by the upper respiratory tracts and coughed up. However, small dust particles are able to penetrate the bronchiole and get stuck, resulting in serious consequences, such as silicosis and asbestosis.

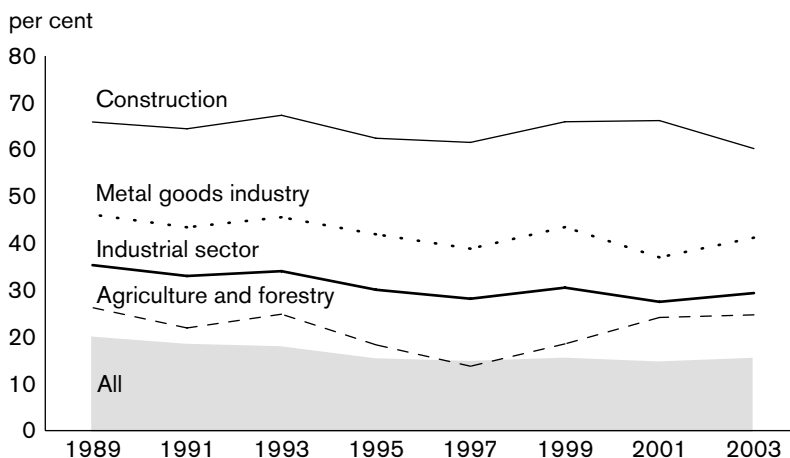
From the Work Environment Survey it is evident that in 2001, 625,000 employees saw *inorganic dust* in the air at the workplace during part of their working hours. Approximately 240,000 did so half the time or longer.

However, the trend seems, on the whole, to indicate some improvements, which can be seen from Figure 2.7.

The figure describes the trend over time in the total labour market and in areas of activity with particularly high proportions of employees affected: agriculture and forestry, construction and industry. In industry, it is mainly the metal goods industry that is affected, and it is therefore reported separately. The figure illustrates a difference between industrial operations on the one hand and agriculture, forestry and construction on the other. There are no clear improvements to be noted in the latter, while there seem to be clear improvements in the former.

A closer analysis shows that the problems in many industrial operations are mainly among those working at or with machinery. The impression is also gained that the control of dust emissions has increasingly improved at machinery. There seem to be benefits from investments in new and better equipment, in new extracting and ventilation plant and so on.

Agriculture, forestry and construction are more outdoor and more mobile activities. It is probably more difficult to control the dust in such situations.

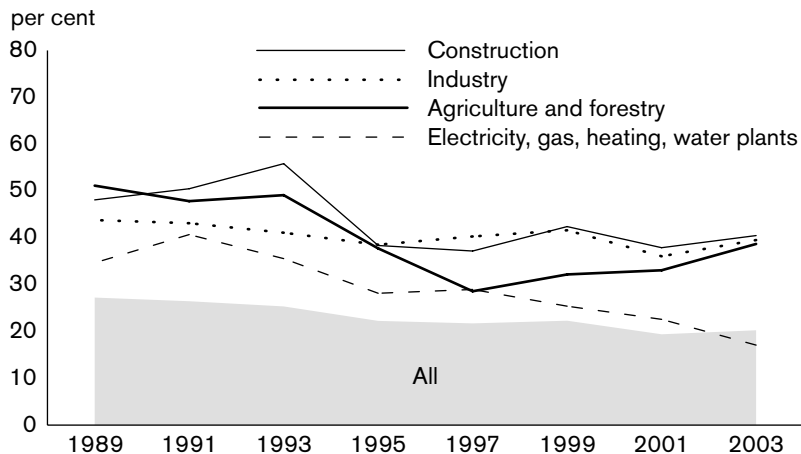


**Figure 2.7.** Proportion of workers who see inorganic dust in the air, in various sectors and in the total labour market. (Source: Adapted from the Work Environment Survey, AMU.)

In 2001, almost 1 million employees saw *organic dust* in the air during part of their working hours. Approximately 370,000 did so half the time or longer. The general trend scarcely shows any major changes over the years. The dominant sectors are naturally enough agriculture and forestry, followed by the wood products industry, the food industry and construction, which showed no major changes either. The situation appears largely unchanged over time for both the most prominent sectors and the rest. However, it should perhaps be emphasised that surveys like these only make a general picture possible. Important changes may nevertheless be found in certain sub-activities that cannot be reported separately.

In 2001, approximately 800,000 employees smelt *chemicals* in the air from gases, vapours, solvents, pesticides and plastics. Just over 200,000 did so half their working hours or longer.

Considerable problems are found particularly in construction, industry, agriculture and forestry, and electricity, gas, heating and water plants. Figure 2.8 shows that there are trends towards improvements for both working life as a whole and the most exposed sectors. The results may



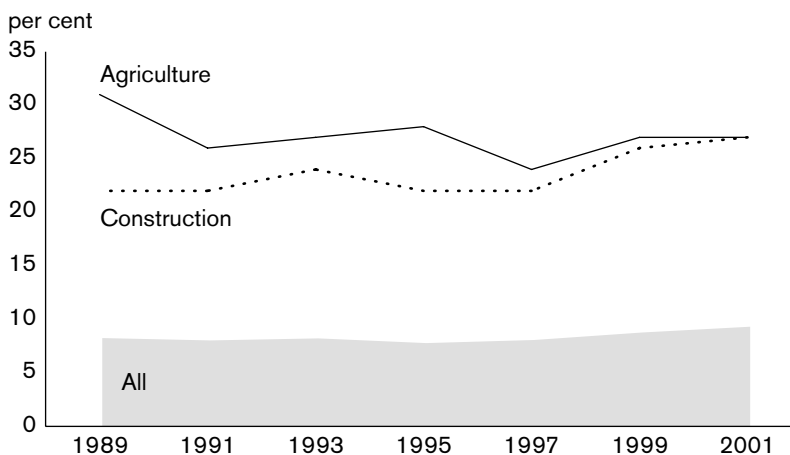
**Figure 2.8.** Proportion of workers who see chemicals in the air or smell them, in various sectors and in the total labour market. (Source: Adapted from the Work Environment Survey, AMU.)

reflect a change in the use of chemicals in agriculture, as well as improved ventilating plant and improved ventilation in manufacturing industry. Perhaps they also reflect the reduced use in construction of certain strongly smelling and problematic chemicals, such as organic solvent-based paints. (Water-based paints have come to be used increasingly over time.) The changes can perhaps be seen as a result of ongoing work environment programmes.

### *Physical problems*

Heavy work is characterised by a high level of energy consumption and a considerable strain on the lungs and heart. Energy consumption is usually measured technically by studying the individual's increased oxygen uptake. A certain picture of the increased energy output can be obtained by asking whether respiration increases, as a result of the work. The Work Environment Survey asks whether *the work causes more rapid respiration*.

In 2001, just over 500,000 employees described their work in terms of increased respiration (equivalent to heavy work) during part of their working hours. Approximately 385,000 employees had heavy work half their



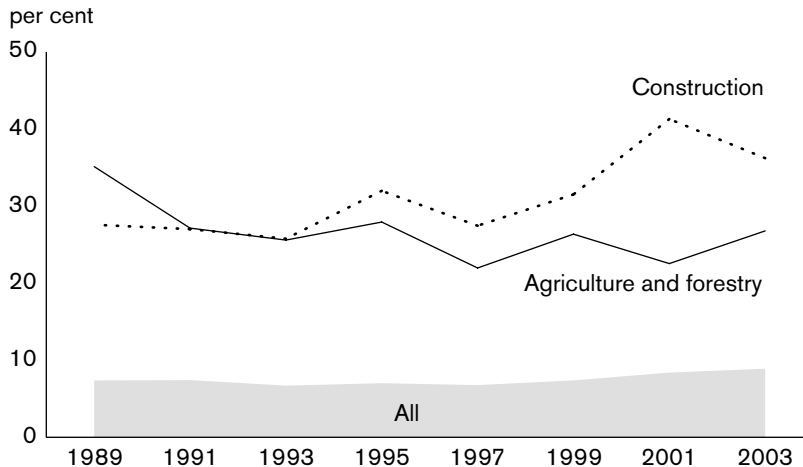
**Figure 2.9.** Proportion of workers with heavy physical work half the time or more, in various sectors and in the total labour market. (Source: Adapted from the Work Environment Survey, AMU.)

working hours or more. The same question was also asked in the 1984 survey, and there is therefore an opportunity in this context to further extend the time perspective. In 1984, 65,000 more employees had heavy work half their working hours or longer, that is 450,000 employees. However, there is no general clear downward trend over the past few years.

Figure 2.9 shows the trend for the total labour market and for the two sectors with the highest frequencies, that is agriculture and forestry, and construction, during the period 1989–2001.

Agriculture and forestry have shown a weak trend towards a reduction in heavy work since 1989. It is very likely that an increased use of machinery has contributed to the reduction in heavy work. Construction has, however, shown an increase, which may perhaps appear more puzzling. We may suspect here the effects of an increased work pace. (The increased work pace will be discussed further on in this chapter.)

The Work Environment Survey from 1999 includes responses to questions on whether the employee *lifts 25 kilos or more several times a day*. According to this definition, 8 per cent of the labour force had regular heavy



**Figure 2.10.** Proportion of workers who are exposed to vibrations one quarter of the time or more, in various sectors and in the total labour market. (Source: Adapted from the Work Environment Survey, AMU.)

lifting, equivalent to approximately 325,000 employees. Heavy lifting was most common in agriculture and forestry (22 per cent), construction (15 per cent), the food industry (15 per cent), health and social work (14 per cent) and the wood products, pulp and paper industries (12 per cent).

Employees may be exposed to *vibrations* in several ways. Vibrations may emanate from hand-held power tools, such as drilling, grinding and pneumatic machinery, power saws and the like. In this case, it is mainly the arms and hands that are exposed. Those exposed may receive injuries to the blood vessels and nerves of the hand and suffer from white finger. The Work Environment Survey asks about *vibrations from hand-held machinery*.

In 2001, approximately 825,000 employees were exposed to such vibrations. In around 185,000 cases, this applied to half the working hours or more. Vibrations are commonly found in agriculture and forestry and in construction. In the former, exposure seems to be declining gradually, which is seen from Figure 2.10. In construction, exposure seems instead to be rising. Is this perhaps the effect of the increased work pace? Has the use of vibrating tools increased? Has construction been increasingly organised so that certain groups have been allocated more one-sided jobs?

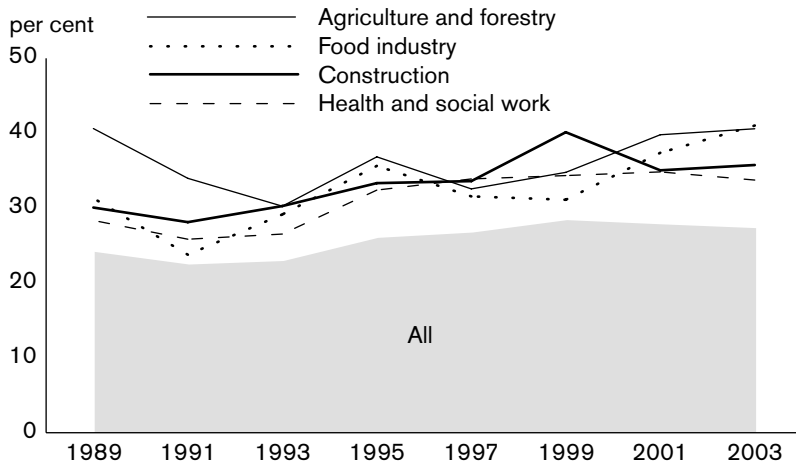
*Sound level* is normally measured in dB. A risk of hearing loss is usually said to arise, if the sound level is above 85 dB and noise exposure exceeds five hours. Consequently, 85 dB is an important limit in both Swedish and other countries' regulations. The noise level cannot, of course, be measured precisely in a survey, but an idea of the sound level can nevertheless be obtained by asking about, for example, the effect of noise on the conversation tone.

An important level is whether the employee needs to shout to make himself or herself heard (which is perhaps equivalent to approximately 85 dB or above). Another is whether the employee cannot talk in a normal voice. The Work Environment Survey asks whether *it is so noisy that the employee cannot talk in a normal conversation tone*. The noise level measured in this way does not seem to have changed very much over the years – ever since 1984, when the question was first asked. Just under one quarter of the labour force states that they experience this level of noise one quarter of the time or more. The responses are largely unchanged for both the total labour market and various sectors (not shown here in a diagram). Nevertheless, it is

possible that more intensive exposure has changed. However, any knowledge of this kind would require other questions to be asked, which define noise in a different way.

The overall impression created by these different accounts of the physical and chemical work environment is that certain improvements can nevertheless be noted, but that they do not have an impact in all areas or for all sectors. Certain problems are thought to be more difficult to overcome than others. Some technical improvements may have been implemented but there is still a lot to be done. Besides, new problems may have been added.

A picture, which to some extent complements the changes in employees' exposure, can be inferred from the responses to a question in the Work Environment Survey about whether *the employee feels physically exhausted after work*. The proportion of employees stating that they feel exhausted increases over the period (Figure 2.11). The sectors, which can mainly be identified through this question, are agriculture and forestry, construction, health and social work, as well as the food industry. For the most part, the trend is clearly negative. However, the results should perhaps not mainly be



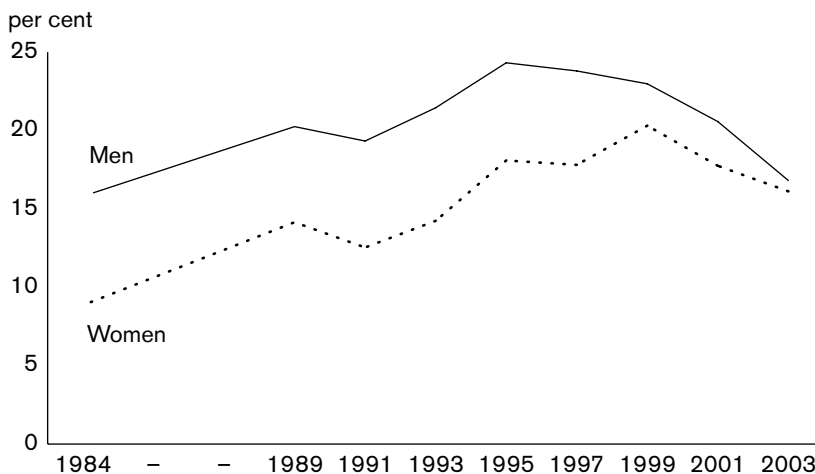
**Figure 2.11.** Proportion of workers who are physically exhausted every day or every other day, in various sectors and in the total labour market. (Source: Adapted from the Work Environment Survey, AMU.)

seen as a reflection of changes in the physical environment, but rather as a reflection of a changed and increasing work pace and a deterioration in the psychosocial environment. We shall now look at this area of the work environment.

### Indicators of the psychosocial environment

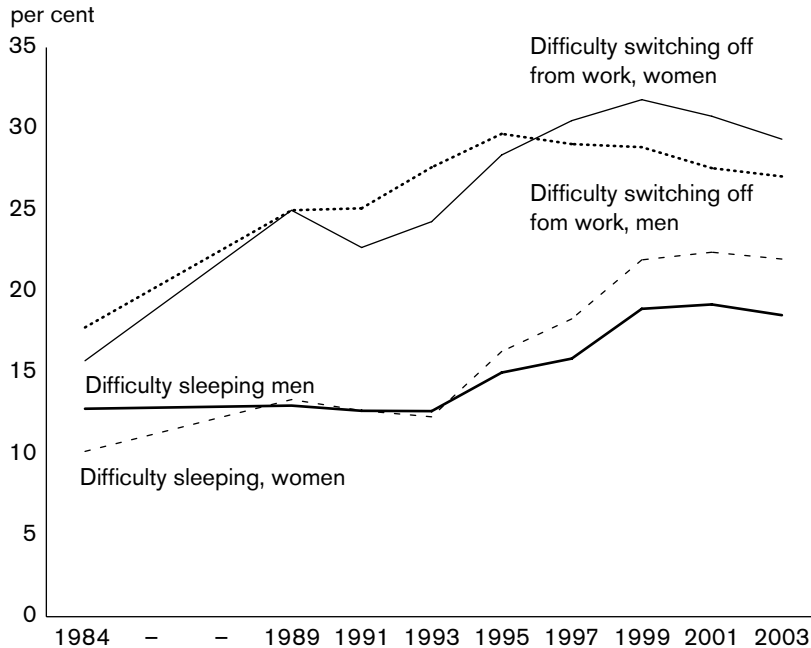
The introductory chapter discussed, among other things, the possibility that a more marked exposure to competition and more limited staffing have increased the workload for many employees. Figure 2.12 suggests just such a trend. The respondents had to answer a question concerning whether *they have so much to do that they are forced to work overtime or bring work tasks home.*<sup>2</sup> The figure indicates a rising workload during the 1990s, while the trend is broken towards the end of the decade.

The curve for women in the figure appears to be somewhat shifted relative to that for men, with a more extended period of increase. This may very well reflect the fact that women's employment is largely in the public



**Figure 2.12.** Proportion of workers who work overtime or bring work tasks home every day or every other day. (Source: Adapted from the Work Environment Survey, AMU.)



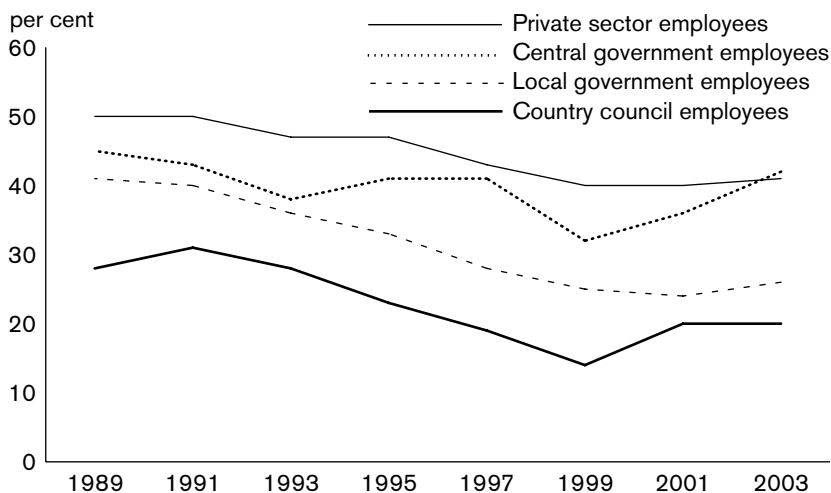


**Figure 2.13.** Proportion of workers who have difficulty switching off from work (every day or every other day) and difficulty sleeping due to work (once a week), 1989–2003. (Source: Adapted from the Work Environment Survey, AMU.)

sector, where cuts seem particularly prominent and somewhat delayed, compared with those in the private sector.

Figure 2.13 is based on two other questions. One concerns whether *the employee has difficulty in switching off from work when free*. The respondent had to choose one of the following options: every day, every other day, once a week, once a fortnight, more rarely and never. The question is intended to provide a picture of how preoccupied the individual is with work.

Over time, it seems to have become increasingly difficult to switch off from work. Work intrudes increasingly. Whether the thoughts are positive or negative is perhaps not evident from the responses to this question, but the picture becomes clearer when the responses to the second question are also included. This concerns whether *the employee has difficulty sleeping because thoughts of work*



**Figure 2.14.** Proportion of workers who state that they can determine the work pace themselves the whole time, 1989–2003. (Source: Adapted from the Work Environment Survey, AMU.)

*keep him or her awake.* Difficulty sleeping due to work has also increased. Evidently, something that is closely related to stress is described here.

A decline in control over the work pace now also seems to be characteristic. Figure 2.14 shows the responses to a question about *whether the employee is able to determine the work pace himself or herself*. The figure is broken down by sector. The proportion of employees stating that they can determine the work pace themselves the whole time is declining in almost all sectors. However, the decline is most marked in the local government sector. This also means that the decline is larger in workplaces where women constitute a majority of the employees than in workplaces with a more even gender distribution.

The Work Environment Survey contains a number of results, which point in the same direction – towards increased stress.

### *Scope for action*

In work environment research, a relatively simple basic model was long common, a model that in principle linked together two dimensions: expo-

sure and ill health. It was thought that the risk of ill health increased in a relatively unambiguous way with exposure, which was mostly thought to arise from the nature of the activity. At a certain level, the risk could be unreasonably high. It was a question of identifying this level and locating in which contexts it mainly occurred. "Risks" were mainly characterised as operational risks or occupational risks.

Partly as a consequence of the broadening of the work environment concept, research has become increasingly interested in the relationship between the organisation of work, the employees' opportunities for influence and the development of their health. A typical exponent of this latter approach is Karasek and Theorell's model, which states that ill health is not only due to excessive demands at work, but also to the individual's scope for control over his or her work (Karasek & Theorell 1990). Pressure may, it is thought, be perceived as positive and regarded rather as a challenge, if the individual feels that he or she nevertheless has control over his or her own work situation. The same pressure may, however, create negative stress, if the individual lacks this control.

Similar perspectives may also be formulated with reference to the concept of scope for action, where people are not only seen as objects that are affected by external forces, but also as subjects that strive to, and sometimes also can, handle various problems. The pressure in itself is assumed not to be the only decisive factor. It is also important which opportunities the individual has for handling difficulties of various types, when these start to become too onerous for him or her.

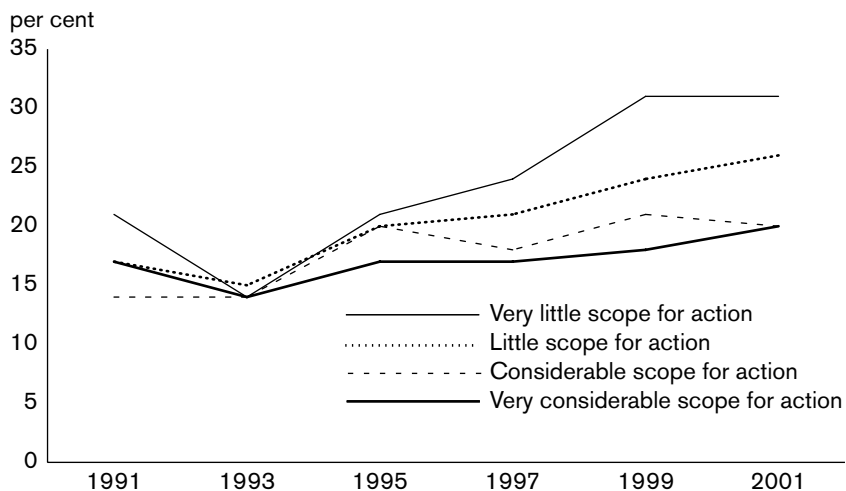
According to this perspective, employees may be able to create stability in their environment by balancing various phenomena against each other and influencing their course. Periods of tension can be followed by periods of relaxation and recovery. Peaks in the workload at certain times of day can be alternated with periods of proper breaks. On certain days peaks in the workload can be replaced by calmer periods, when neglected tasks can be caught up. When the pressure is too great, employees can help reallocate the tasks, so that a balance is achieved with regard to what the individual can manage. They can change their way of working, so that they reduce certain elements of the work and prioritise differently. If opportunities for balancing or influence of this type are removed, the situation may, however, become

problematic; the problems increase and gradually become larger and larger.

The previous question, on the ability to influence the work pace, is one of several that could be used in the Work Environment Survey to describe the employee's control over the work or the latter's own scope for action. Another question is worded: *Can you yourself determine when various tasks should be carried out, for example, by choosing to work slightly more quickly some days and taking it slightly more easily other days?* A further question is worded: *Do you take part in deciding on the organisation of your work, for example, what should be done, how it should be done or who should work with you?*

These three questions could together be used as an indicator of the scope for action and thus be utilised together to divide employees into groups on the basis of differences in ability to influence, control or scope for action. (When we did this, the responses on the respective response scale were first dichotomised and then combined in an index with four levels.<sup>3</sup>)

It appears that it is mainly the employees with the least scope for action that have found it increasingly difficult to switch off from work when they

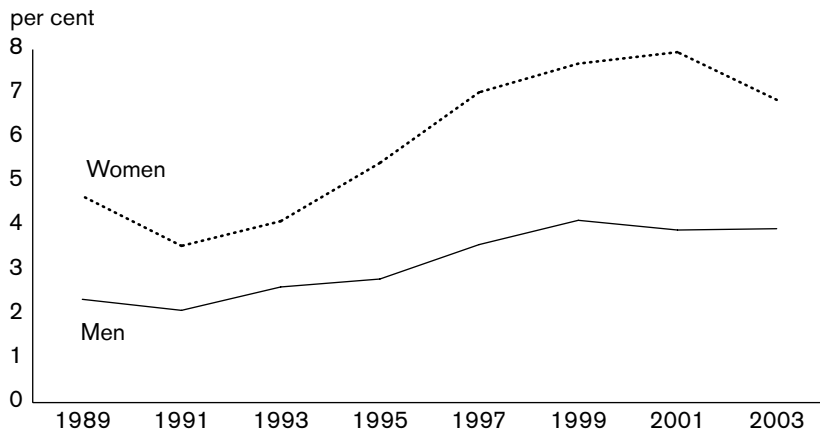


**Figure 2.15.** Proportion of sickness absence (14 days or longer) for employees with work-related disorders. Distributed by scope for action. (Source: Adapted from the Work Environment Survey, AMU, and the Survey of Work-related Disorders, AOB.)

are free. The trend over time for these employees certainly starts from a lower level, with fewer difficulties, but the curve rises monotonously the whole time and has not flattened off over the past few years.

The trend is weaker for the other groups. A clear trend over time is lacking completely for the employees with the greatest scope for action. A similar pattern is obtained, if we analyse the responses to the question about whether *the employee works overtime or takes work home*.

Sickness absence has risen in recent years. A change in sickness absence may, of course, be a consequence of an increase in ill health in the population. But it can also be a consequence of working life having changed in such a way that sick people have found it increasingly difficult to adapt the work to their personal requirements. Figure 2.15 is based on an analysis of data from the Work Environment Survey and the Survey of Work-related Disorders.<sup>4</sup> We have estimated the proportion of people with work-related disorders, who are also on sick leave 14 days or longer. If the employees are broken down by their degree of scope for action, it is seen that the increase in sickness absence is not the same for all. There is a clear relationship with the individual's scope for action.



**Figure 2.16.** Proportion of workers who cannot switch off from work when they are free and also have little scope for action. Percentage estimated for each year 1989–2003. (Source: Adapted from the Work Environment Survey, AMU.)

The increase clearly intensifies very markedly for those with relatively limited scope for action. On the other hand, there is almost no increase in sickness absence at all for those with very considerable scope for action. The pattern of the curves in Figure 2.15 may be interpreted as that something is happening to working life, which particularly employees with limited scope for action cannot handle. Certain problems combined with a lack of control seem to make it increasingly difficult to take part in working life.

In Figure 2.16, we have combined scope for action (measured as the least favourable position in our index) and a stressful work situation (measured as difficulties at least once a week in switching off from work when free). It is found that the proportion of employees with this unfavourable combination has risen over the years. The increase is seen for both men and women, but is stronger for women. The figure shows that working life is intruding increasingly, while control is declining.

### **Work content**

There are several conflicting perspectives on how the work content has changed over the years, which have also been much discussed in the literature (for reviews see, for example, Gallie 1998 and Smith 1997).

One common perspective is that work is thought to have become more complex and advanced. New organisational models are assumed to lead to fewer hierarchical levels, greater responsibility across and down organisations and increasingly broad tasks. The work is consequently also considered to be more varied and interesting. Opportunities are also thought to have been created for an ever-increasing number of employees to be genuinely engaged in their work.

Another perspective is the opposite scenario. Better opportunities are thought to have been created for carefully monitoring and controlling the individual's performance, partly due to new technical monitoring facilities, and partly due to increased market exposure and management by objectives or results. Consequently, the individual's opportunities for working on his or her own initiative are thought to have declined. The work is thus assumed to be perceived as *less* engaging.

A further perspective is based on the idea that development has been different for various areas of the labour market, so that an increased

polarisation of working conditions has been created for various groups of employees.

Using statistical data, it should be possible to illustrate in several ways how the work content has actually changed. A relatively simple account can be based on the socio-economic classification (SEI), which distinguishes between unskilled and skilled blue-collar occupations, and between three levels of white-collar jobs. Such SEI summaries seem to indicate increasingly low proportions of both unskilled blue-collar occupations and unskilled white-collar occupations (le Grand et al. 2001).

One interpretation of these differences could be that certain jobs have changed so much that they have acquired different occupational and SEI codes. However, some of these shifts could also be explained by the structural change, which has taken place and which has resulted in certain types of activities becoming more common and others being superseded. Certain activities comprising less complex jobs may have disappeared. Other more complex jobs may have been created.

However, it is difficult to say how much of explanatory value can or should be attributed to one interpretation or the other. It is therefore justified to examine changes not only between the SEI classes but also within them, in order to gain support for one perspective or the other.

The SEI classification is created, among other things, on the basis of the normal educational and training requirements that are assumed to exist for various occupations. It is therefore a matter of course that the SEI classes differ in terms of education and training. However, there is also a large variation in the competence requirements within the classes. Many or perhaps most upgrades presumably do not lead to such large changes that they create new occupational or SEI classifications.

The following account therefore focuses on changes *within* the SEI classes. It is to be hoped that we can then better control structural change and its consequences.

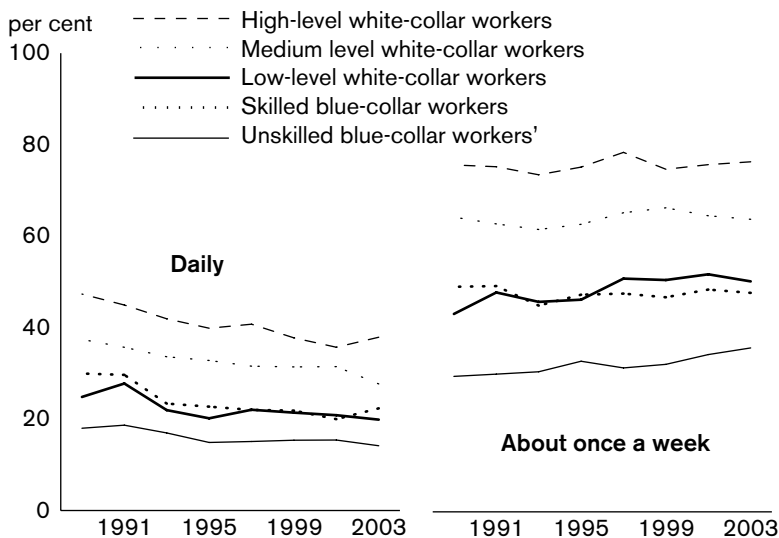
One question in the Work Environment Survey concerns whether *the work provides an opportunity for professional development*. This question should be able to reflect, to some extent, how the work content has changed. The respondent had to choose one of five options: every day, every other day, once a week, a few times a month, rarely and never. Figure 2.17 shows both

the proportion of employees that responded “daily” and those that responded “once a week or more often”.

If we confine ourselves to the *daily* opportunity for professional development, there is a negative development trend for almost all categories. However, it should be noted that this negative trend consequently mainly affects the extreme category on the response scale. For low-level white-collar workers and possibly also for unskilled blue-collar workers, a weakly positive development trend is seen, with regard to the opportunity for professional development *at least once a week*. For the others, there is hardly any change at all regarding these answer categories.

It is important to note that a majority of the low-level white-collar workers and one third of the unskilled blue-collar workers state that they have an opportunity for professional development every week.

The percentage levels are even higher for the other groups, where one third of the white-collar workers state that they have an opportunity for



**Figure 2.17.** Opportunity for professional development for various socio-economic groups, 1989–2003. (Source: Adapted from the Work Environment Survey, AMU.)

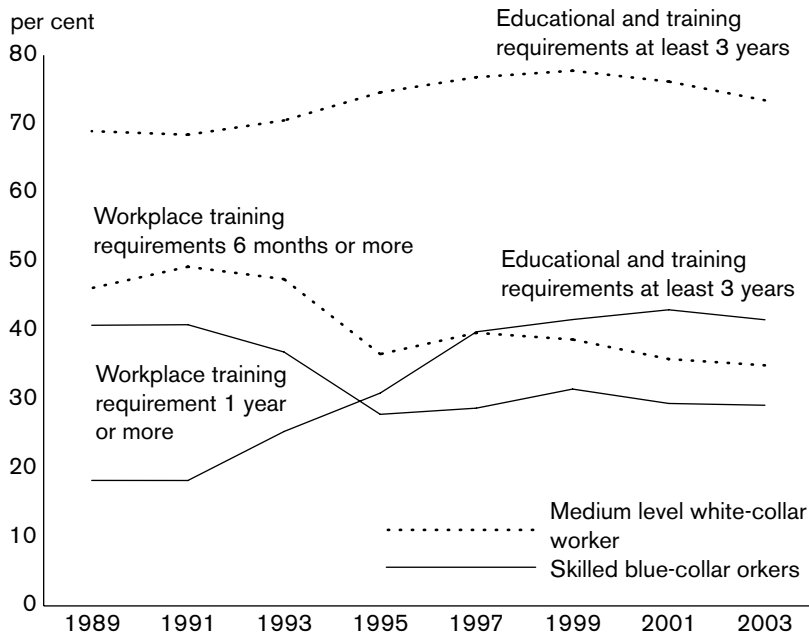


professional development daily. So, a picture of a working life with many opportunities emerges after all.

Work seems to provide an opportunity for development, but not quite to the same extent as previously – at least not for certain groups. Perhaps it is stress that intrudes and creates limitations.

### *Educational and training requirements*

Let us look at another result that concerns educational and training requirements. The SEI classes are thus defined according to the average requirements that are assumed to exist in the respective category. The responses to questions in the Work Environment Survey show, however, that the requirements, as perceived by the respondents, also change over time. Examples of questions



**Figure 2.18.** Educational and training requirements for skilled white-collar workers and medium-level white-collar workers, 1989–2003. (Source: Adapted from the Work Environment Survey, AMU.)

asked are: *How much training is required at the workplace before you can manage your tasks?* and: *What education and training (apart from compulsory school/elementary school) are required for your tasks?* In both cases, the respondents had to choose between nine options: none, only a few days, a few weeks, a few months, six months, a year, two years, three years, four years or more.

It is seen that workplace-based training has declined for all groups. This decline may give an impression that the complexity of the tasks has declined, but it is important to be clear that the educational and training requirements have at the same time risen. Above all, the total results give the impression that workplaces have become more interested in hiring fully trained manpower and in getting people rapidly into productive work. The alternative of coming up the hard way has become less natural. The results are exemplified here in Figure 2.18, with data on skilled blue-collar workers and medium-level white-collar workers.

Figure 2.19 provides supplementary information. The respondents had to express an opinion on whether *the tasks feel so difficult that they would like to ask someone for advice or help*. The options are “yes” or “no”. The “yes”



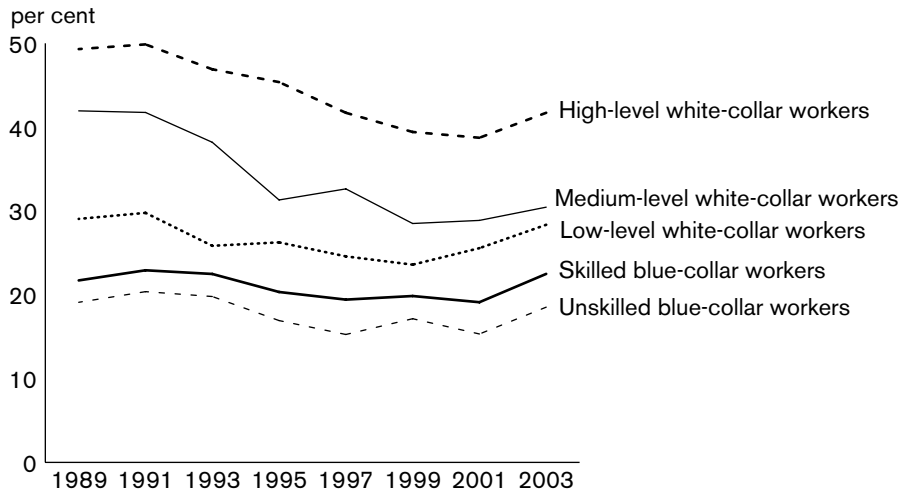
**Figure 2.19.** Proportion of workers who state that they would like to ask someone for advice concerning tasks they have one quarter of the working hours or more. (Source: Adapted from the Work Environment Survey, AMU.)

responses are followed up by the question: *What proportion of your working hours do you have such difficult tasks?* Here the results indicate increasing difficulties for all groups.

This may mean that the tasks have become more complex, but it is also possible that the results should mostly be seen as a consequence of the employees not having been given the necessary resources or the training required to manage the tasks allocated to them. It should also be noted that the changes in Figure 2.19 are particularly marked during the first part of the 1990s, in other words, during the very period when evidently much was happening to Swedish working life, according to the diagrams in this chapter. During the first part of the 1990s, many marked changes seem to have taken place, which may rapidly have changed various conditions.

### *Participation*

Figure 2.20 shows the responses to the question about *whether the employee takes part in deciding on the organisation of his or her own work (for example, what*



**Figure 2.20.** Opportunities for always taking part in deciding on the organisation of the work for various socio-economic groups, 1989–2003. (Source: Adapted from the Work Environment Survey, AMU.)

*should be done, how it should be done or with whom he or she should work*). The respondents had to choose one of four options: always, mostly, mostly not and never. The figure shows those who chose the option “always”.

It suggests that an ever-decreasing number of employees state that they take part in deciding on the organisation of the work. The decline is evident in all socio-economic groups at least up to 2001. However, it is again important to emphasise that the decline applies to the extreme position on the response scale. It is those stating that they always take part in deciding on the organisation that are declining. The decline occurs, since the option “mostly” increases at the expense of the option “always”.<sup>5</sup>

The results may be seen as a consequence of the increased work pace. The intensive work encroaches in that case on the employee’s opportunities for deciding on his or her own tasks. (It should be reiterated that there was also a decline in influence over the work pace, which was shown in Figure 2.14.)

## Summary

It seems therefore that work is becoming more monotonous over time, while the individual’s control is declining. The opportunities for professional development also seem to be limited to some extent. The changes may concern only certain areas of the work and may not entail such large differences, compared with previously. But they are notable, in view of how much has been written on the upgrading of work in recent years and how the employee’s own responsibility and area of responsibility are assumed to have increased. Perhaps Swedish working life has not undergone particularly sweeping changes concerning those aspects of qualification and complexity discussed here, but the trends we have observed are clearly mostly in a negative direction.

It is possible that this development has taken place at the same time as certain hierarchical structures have been dismantled, management levels have disappeared, organisations have flattened and influence has been broadened across organisations. At the same time, however, much else has also occurred, which has affected the development. In all probability, new requirements and an increased work pace have strongly contributed to setting narrower limits to how much the individual can control his or her working life.

A contributory factor to this development may also be that certain new opportunities for controlling the individual's job performance have arisen. Computer technology and the focus on performance indicators, objectives and monitoring criteria may have resulted in the control having become more common and more thorough, which has limited the degree of freedom. The focus on the customer and customer satisfaction may also have set new limits to the degree of freedom in the work. The individual may have become less dependent on a manager, but more dependent on a demanding customer, client, patient or someone else he or she ultimately works for. The customer may have become the "real employer" – and perhaps a tough one.

Previously in the analysis of the physical environment, we could sense the effects of increased demands and an increased rate of working. This was very marked in construction, where certain physical problems seemed to be increasing, despite the work environment programme pursued. In other contexts, however, the physical and chemical environment seemed rather to have improved over the years. One example was the occurrence of inorganic dust in industry, which had declined, as well as the occurrence of gases, vapours, solvents, pesticides and other chemicals, which are seen in the air and smelt by employees.

On the other hand, the proportion of employees who feel physically exhausted after work has risen, as well as much else indicating an increased rate of working. A picture emerges of increased overtime and employees taking work home to an increased extent. It is becoming increasingly difficult to switch off from work when free. People increasingly lie awake thinking about work, when they should be sleeping. Insomnia is increasing.

The picture is evidently that work intrudes increasingly. The trend may be linked to increased demands, reorganisation and increased responsibility, but perhaps also to increased insecurity regarding one's own future job opportunities and increased insecurity as to what might happen, if one does not show willing. There may be a risk of losing the job, of someone else getting the job instead, of the business as such closing down and being taken over by another business and so on.

It seems clear that insecurity has increased. Unemployment rose dramatically in the early 1990s and, although it has since fallen, it has never reached its previous low level. Many people have ended up outside the

labour force. Many have also ended up in insecure positions as temporary employees. The risk of the business relocating to another town or country has also become more evident. Changes of a similar type are also found in publicly financed activities. Exposure to competition has, for example, made employment generally more insecure.

## Notes

1. A more detailed account of these and other statistical sources is found, for example, in Marklund & Wikman (2000). See also Chapter 3 of this book.
2. In 1984, the question asked was: *Do you have so much to do that working hours are not sufficient and you are forced to work overtime or bring work tasks home?* In 1989–2001, the question asked was: *Do you sometimes have so much to do that you are forced to work through your lunch break, work overtime or bring work tasks home?*
3. The proportion stating that they can determine the work pace half the time or more has been placed in a separate group. The response categories “always” and “mostly” are combined, as are “mostly not” and “never” for the other two questions.
4. Employees who have stated that they have had physical disorders as a consequence of the work, disorders that they consider have made it difficult to carry out work tasks or household tasks.
5. For unskilled blue-collar workers, there is a weak increase for those who take part in deciding at least to some extent.

## References

- Eriksson R (2003) ”Svensk välfärdsforskning” (”Swedish welfare research”) *Socialvetenskaplig tidskrift* nr 2–3.
- Gallie D (1998) *Restructuring the employment relationship*. Clarendon, Oxford.
- le Grand C, Thålin M & Szulkin R (2001) ”Har jobben blivit bättre? En analys av arbetsinnehållet under tre decennier” (”Have jobs improved? An analysis of work content over three decades”) in *Välfärd och arbete i arbetslöshetens årtionde del 1. Forskarantologi från kommittén Välfärdsbokslut. (Welfare and work in the decade of unemployment part 1. Research anthology from the Welfare Accounts committee.)* sou 2001:53a, Fritzes, Stockholm.
- Olve NG, Roy J & Wetter M (1997) *Balanced scorecard i svensk praktik. (The balanced scorecard in Swedish practice.)* Liber ekonomi, Malmö.
- Karasek R & Theorell T (1990) *Healthy Work: Stress, Productivity and the Reconstruction of Working Life*. Basic Books/Harper, New York.

- Marklund S & Wikman A (2000) "Introduction" in Marklund S (ed.) *Worklife and Health in Sweden 2000*. National Institute for Working Life, Stockholm.
- Premfors R, Ehn P, Haldén E & Sundström G (2003) *Demokrati och byråkrati. (Democracy and bureaucracy.)* Studentlitteratur, Lund.
- Smith V (1997) "New Forms of Work Organization" *Annual Review of Sociology* 23:315–339.
- sos (2001) "Arbetsmiljön 2001. Statistiska meddelanden AM 68 SM 0201" ("The work environment 2001. Statistical bulletins AM 68 SM 0201") Swedish Work Environment Authority, Statistics Sweden, Stockholm.
- sos (2002) "Arbetskraftsundersökningen. Statistiska meddelanden AM 12 SM 0301" ("Labour Force Survey. Statistical bulletins AM 12 SM 0301") Statistics Sweden, Stockholm.
- sos (2003a) "Arbetsorsakade besvär. Statistiska meddelanden AM 43 SM 0301" ("Work-related disorders. Statistical bulletins AM 43 SM 0301") Swedish Work Environment Authority, Statistics Sweden, Stockholm.
- sos (2003b) "Arbetsolyckor och arbetssjukdomar" ("Occupational accidents and occupational illnesses") Swedish Work Environment Authority, Statistics Sweden, Stockholm.
- UNDP (2003) *Human Development Report 2003. United Nations Development Programme*. Oxford University Press, New York. (<http://hdr.undp.org/reports/global/2003/>)
- Wikman A (1991) "Att utveckla sociala indikatorer – en surveyansats belyst med exemplet arbetsmiljö" ("Developing social indicators – an effort using the survey method, illustrated with the example of work environment") Collection no. 21, Statistics Sweden, Stockholm.
- Wikman A (2004) "Arbetsliv och sjukfrånvaro" ("Working life and sickness absence") in Hogstedt C, Bjurvald M, Marklund S, Palmer E & Theorell T (ed.) *Den höga sjukfrånvaron – sanning och konsekvens. (High sickness absence – truth and consequence.)* National Institute for Public Health, Stockholm.





## CHAPTER 3

# What do the occupational injury statistics tell us?

*Carin Sundström-Frisk and Jan Weiner*

### **Information System for Occupational Injuries (ISA)**

In accordance with Swedish insurance legislation, the employer has a duty to report injuries, which have arisen as a consequence of an accident or other harmful influence at work, to the social insurance office. The injury is reported on a stipulated notification form. After scanning, the information is forwarded to the Information System for Occupational Injuries (ISA) at the Swedish Work Environment Authority (Arbetsmiljöverket). This information provides the basis for the official national occupational injury statistics, which are published in the Official Statistics of Sweden series. (Bengtsson 2000, Nordin and Bengtsson 2000)

The Work Injury Insurance Act, Chap. 2, Section 1 states:

Occupational injury refers in this Act to an injury as a consequence of an accident or other harmful influence at work. An injury shall be considered to have arisen from such a cause, if predominant reasons indicate this. (SFS 1976:380)

In this chapter, we shall give an account of injuries that have affected employees and the self-employed (the gainfully employed). Occupational injuries are divided into *occupational accidents* and *occupational diseases* (outcomes of other harmful influences at work).<sup>1</sup> Both injuries with and without sick leave are registered in ISA. However, we will here only describe occupational accidents with sick leave, while notified occupational diseases will be described whether or not they have led to sick leave. This is the same principle as is applied in the official statistics on notified occupational injuries.

## Occupational injuries in 2003

In 2003, 57,000 occupational injuries were notified to ISA. Occupational accidents considerably exceeded occupational diseases (see Table 3.1). The differences between the injury categories are largest for men.

The risk of injury due to accidents is considerably higher for men than for women, 8.8 cases per 1,000 gainfully employed, compared with 6.1 for women. The opposite applies to occupational diseases, where the risk is higher for women. (The time trend for occupational injuries for men and women is reported further on, in Figure 3.2.)

## Age and occupational injuries

The relation between age and occupational injuries is clearest for *occupational diseases*: the older the age group, the higher the frequency of notified cases. For the youngest men (aged 16–24), the figure is 1.8, compared with 9.1 per 1,000 gainfully employed for the oldest age group (aged 55–64).

For women, the relative frequency is 2.9 in the youngest age group, compared with 10.5 in the oldest age group. In other words, the risk of a 55-year-old woman being affected by an occupational illness is almost four times greater than for a 20-year-old.

The relationship between age and the frequency of *occupational accidents* is less clear. However, young men (aged 16–24) have a higher relative frequency than other age groups, and have for a long time been a marked high risk group. The difference between the youngest group and other groups has, however, decreased considerably since the 1980s. Among women, the youngest age group has, in principle, just as high a relative

**Table 3.1.** Notified occupational accidents and diseases in 2003. Men and women. Number of cases and relative frequency (number of cases per 1,000 gainfully employed). (Source: ISA, Labour Force Survey.)

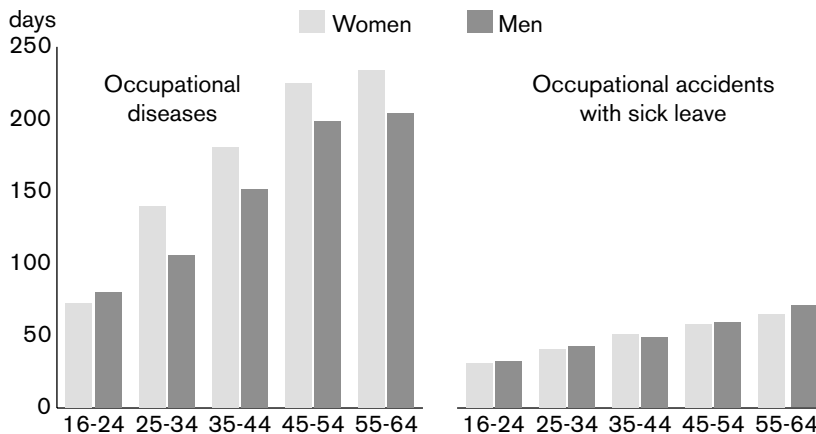
	Occupational accidents with sick leave		Occupational diseases (with and without sick leave)	
	Number	Number per 1,000 gainfully employed	Number	Number per 1,000 gainfully employed
Women	12,218	6.1	14,307	7.2
Men	19,020	8.8	11,084	5.1
All	31,328	7.5	25,391	6.1

frequency as the oldest age groups 6.6, compared with 6.8 cases per 1,000 gainfully employed.

### Length of sick leave

In order to obtain a more complete picture of the injury situation, the severity of the injuries must also be taken into account. This is expressed here in terms of the length of sick-leave. The latest available data describes the situation in 2001<sup>2</sup> and shows that occupational disease notified that year led on average to 198 sick days for women and 170 days for men. The equivalent figure for accidents was 52 sick days for both genders. Occupational diseases consequently led on average to more than three times as many sick days as accidents.

The relationship between age and the length of sick leave period is very clear for both accidents and occupational diseases. The older the individual, the longer the sick-leave for both genders. Among women, occupational diseases led on average to 72 sick days for the youngest age group, compared with 233 days for the oldest group (Figure 3.1).



**Figure 3.1.** Notified occupational accidents and diseases. Average number of sick days. Distribution by age group. Men and women 2001. (Due to matching problems, information on sick days is lacking for 24 per cent of the cases.)

With regard to the number of accidents, we stated above that the youngest men had the most accidents. If we instead consider the severity of the accidents, the picture is different. Young men are certainly affected by more accidents than older men, but the older men's injuries lead, on the other hand, to considerably longer periods of sick leave.

### **Fatal occupational accidents**

Of the 56 fatal accidents that occurred at work in 2003, 54 involved men and two women. Of these, 49 were employees and seven self-employed. The most common types of accident were vehicle accidents and falls. The construction sector was hardest hit (ten fatalities), followed by the manufacturing industry and the transport sector with nine cases each. In the defence sector, eight fatal accidents occurred in 2003, of which five were in connection with a single helicopter crash.

If we look back in a longer perspective, fatal accidents among employees have fallen dramatically from 425 cases in 1955 to 49 in 2003.

### **Common types of occupational accidents**

Among men, the most common type of event preceding the injury in accidents is a movement which involves physical overstraining, and which in turn results in an injury to muscles, connective tissue or tendons, such as a dislocation, sprain or strain.

This is followed by falls, which are divided into two types: falls at the same level and falls from a height. The former occur in many sectors and occupational groups, while the latter are most common in the construction sector. Falls result in sprains or strains, but also in fractures and skeletal injuries. Fractures are slightly more common in falls from a height. Other common types among men are vehicle accidents and accidents involving machinery and tools. The latter usually result in wounds or other superficial injuries.

Among women, injuries in connection with physical overstraining and falls (at the same level, not from a height) are also most common, followed by accidents in connection with physical violence. Occupations affected by the latter type of accident are mainly found in the care sector.

With regard to the type of injury, injuries to muscles, connective tissue or tendons, as well as wounds or other superficial injury, account for more than 50 per cent of the cases. The distribution by type of injury is as follows:<sup>3</sup>

- 30 per cent are a dislocation, sprain or strain
- 27 per cent are wounds or other superficial injuries
- 13 per cent are fractures or other types of skeletal injuries
- 7 per cent are concussions or other types of internal injuries
- 2 per cent are burns, chemical burns or frostbite
- 2 per cent are associated with a traumatic shock experience
- 2 per cent are multiple injuries
- 1 per cent are a loss of body part
- 15 per cent are other or unspecified injuries

A sprain or strain is the most common injury for women, while a wound is the most common injury for men. In other respects, the differences between the genders are small, except for the traumatic shock category, which was noted for 4 per cent of the cases among women, compared with 1 per cent among men. An example of such an injury is the trauma experienced by an underground train driver, who runs over and injures an individual.

### **Serious accidents: occupational groups affected**

The notification form has a box where the probable absence as a consequence of the occupational injury is stated.<sup>4</sup> This information has been used to estimate the proportion of serious accidents.

Among accidents with sick leave in 2003, 37 per cent led to *more than 14 days absence*.<sup>5</sup> From here on in this section, the account will be limited to these serious accidents.

Among men, the occupational groups with the *highest risk* of serious occupational accidents are foundry workers, process and machine operators in a number of industries, roofers and concrete workers (see Table 3.2).

If we instead look at the *number* of accidents, the highest figures among men are found in the occupations of truck driver (592 cases, relative frequency = 9.8) and carpenter/joiner and others (530 cases, relative frequency

= 9.6). This data is not found in Table 3.2, since the latter only includes the ten occupational groups with the highest relative frequency.

To sum up, men in the manufacturing industry, the construction industry and the transport sector are most affected by serious occupational accidents.

Among *women*, the occupational groups with the *highest risk* of serious occupational accidents are truck drivers, train guards and others, as well as machine operators, particularly in the wood product industry (see Table 3.3).

Among *women*, the occupational groups with the highest *number* of cases of serious occupational accidents are assistant nurses/hospital orderlies and others (789 cases, relative frequency = 4.8), care assistants/personal assistants and others (685 cases, relative frequency = 5.8), as well as hotel and office cleaners and others (279 cases, relative frequency = 4.2). There were also more than 100 notified cases in the occupations of childcare assistants and others, pre-school teachers/youth recreation leaders, care workers, kitchen and restaurant staff, and compulsory school teachers.

**Table 3.2.** Occupational groups\* with highest relative frequency of notified occupational accidents with more than 14 days sick leave in 2003. Men. Only occupations with 20 or more notified cases have been included. (Source: ISA, Labour Force Survey.)

Occupation	Number of cases per 1,000 gainfully employed	Number of notified injuries
Foundry workers	45.9	62
Machine operators, stone, cement and concrete goods	31.5	51
Process operators, fibreboard industry	26.3	22
Machine operators, wood products industry	20.7	142
Roofers	17.6	32
Concrete workers etc.	17.1	116
Sawmill workers	17.0	126
Machine operators, meat and fish processing	16.3	49
Slaughterers, butchers etc.	15.4	83
Fitters, wood products etc.	14.6	33
<i>All gainfully employed men</i>	3.9	8,718

\* Occupational classification in accordance with the 4-figure level in the Swedish Standard Classification of Occupations 1996.

**Table 3.3.** Occupational groups\* with highest relative frequency of notified occupational accidents with more than 14 days sick leave in 2003. Women. Only occupations with 20 or more notified cases have been included. (Source: ISA, Labour Force Survey.)

Occupation	Number of cases per 1,000 gainfully employed	Number of notified injuries
Truck drivers	20.4	23
Train guards etc.	15.9	28
Machine operators, wood products industry	13.8	22
Bus and tram drivers	10.5	41
Vehicle assembly workers, machine fitters etc.	9.5	51
Newspaper distributors, catering workers etc.	9.2	37
Security guards etc.	8.9	37
Landscape gardeners etc.	8.2	22
Other machine operators and fitters	7.6	41
Tool and machine operators	6.8	45
<i>All gainfully employed women</i>	<i>2.4</i>	<i>4,835</i>

\* Occupational classification in accordance with the 4-figure level in the Swedish Standard Classification of Occupations 1996.

Thus, there are *high risks* of serious accidents among women, particularly in occupations in the transport sector and the manufacturing industry. The *number* of accidents is highest in occupations in the care sector.

Among men in high-risk occupations, the most common serious accident occurs when control of a machine, tool or some other object is lost. Other common types are falls and injuries caused by physical overstraining. Among women, accidents due to physical overstraining are predominant, followed by accidents due to falls and injuries as a consequence of violence or threats.

### Self-reported causes of occupational diseases according to ISA

As previously mentioned, occupational diseases are the injury category leading to the longest sick leave. The underlying causes of these diseases are the subject of lively debate and are discussed in Chapter 2 of this book. We shall here give an account of the causes stated on the notification form.

The person notifying can choose between *seven fixed causes* on the notification form. Table 3.4 shows the four most frequently stated of the

**Table 3.4.** The four most frequently stated causes of notified occupational diseases in 2003. Number of men and women. (Source: ISA.)

Stated cause	Women	Men	All
Ergonomic musculoskeletal factors	8,255	6,599	14,854
Psychosocial or organisational factors*	3,997	1,740	5,737
Chemical or biological substances	1,302	1,052	2,354
Noise	378	1,304	1,682
Other	375	389	764
Total	14,207	11,084	25,391

\* The exact wording of this response option is: Psychosocial or organisational causes (e.g. reorganisation, high workload, conflict, bullying, stressful client contact).

seven options. The heading Other in the table includes the three remaining causes, which are infection, other physical factor (than noise) and Other.

In 2003, ergonomic musculoskeletal factors still remained the most frequently stated cause of notified occupational illness. Causes summarised under the heading Psychosocial or organisational factors came second. During the latter part of the 1990s, this category overtook chemical and biological factors by a wide margin. The upward trend began somewhat earlier for women than for men. More than twice as many women as men notify occupational illness caused by psychosocial or organisational factors.

### **What is included in psychosocial or organisational factors?**

In addition to choosing between seven fixed options on the form for stating the underlying cause of the disease, the person notifying can also describe the causes in more detail in his or her own words. This so-called free text offers an opportunity for a more detailed analysis of what specific work environment conditions the person notifying associates with each of the seven different causes.

The content of the free texts was coded for 2002 by ISA, in accordance with a classification system stipulated by Eurostat. Table 3.5 shows the results of the classification for the option Psychosocial or organisational factors. The working conditions included in this option can consequently be identified here.

Predominant working conditions mentioned in the free text as causes of stress-related problems were high work pace, too much work and reorganisations. The category Problems in relationships includes bullying



**Table 3.5.** Most frequently stated work environment conditions\* in the free text descriptions, in notified occupational diseases caused by psychosocial or organisational factors in 2002. Men and women. Per cent. n = 1,431 (men) n = 3,348 (women). (Source: ISA.)

Work environment conditions	Women	Men	All
Too much work	30	30	30
Very high work pace	32	25	27
Reorganisation, transfer, bankruptcy	15	19	18
Problems in relationships with superiors	14	14	14
Problem in relationships with colleagues	8	15	13
Unclear demands	11	14	13
Staff shortage/temporary staff shortage	9	15	13

\* Up to five work environment conditions and exposure factors can be coded for the same case.

and cooperation problems. In 2002, 1,250 women and 394 men notified occupational illness caused by problems in personal relations.

### **Occupational diseases caused by psychosocial or organisational factors: occupational groups affected**

The occupational groups with the highest *relative frequency* of occupational illness caused by psychosocial or organisational factors are ranked in Tables 3.6 and 3.7. Among men, occupations involving contact with vulnerable and

**Table 3.6.** Notified occupational diseases caused by psychosocial or organisational factors. Occupational groups\* with highest relative frequency in 2003. Men. (Source: ISA, Labour Force Survey.)

Occupation	Number of cases per 1,000 gainfully employed	Number of notified cases
Policemen	6.3	86
Social workers and welfare officers	4.2	22
Treatment assistants etc.	4.1	23
Care workers etc.	3.5	48
Compulsory school teachers	2.6	55
Caretakers etc.	2.3	22
Servicemen	2.0	20
Graduate mechanical engineers	1.7	23
Bus and tram drivers	1.6	31
Care assistants, personal assistants etc.	1.5	35
<i>All gainfully employed men</i>	<i>0.8</i>	<i>1,715</i>

\* Occupational classification in accordance with the 4-figure level in the Swedish Standard Classification of Occupations 1996.

**Table 3.7.** Notified occupational diseases caused by psychosocial or organisational factors. Occupational groups\* with highest relative frequency in 2003. Women. (Source: ISA, Labour Force Survey.)

Occupation	Number of cases per 1,000 gainfully employed	Number of notified cases
Policewomen	10.8	28
Jobcentre staff and employment counsellors	10.3	26
Health care managers	7.1	21
Managers in care sector	6.4	46
Nurses, psychiatric care	6.2	20
Social workers and welfare officers	5.3	121
Treatment assistants etc.	4.3	54
Managers in education	4.2	30
Care workers etc.	4.2	168
Teachers, special educational needs etc.	3.9	57
<i>All gainfully employed women</i>	<i>1.9</i>	<i>3,958</i>

\* Occupational classification in accordance with the 4-figure level in the Swedish Standard Classification of Occupations 1996. Only occupations with 20 or more notified cases have been included.

excluded people top the list, such as policemen, social workers and treatment assistants.

Risk occupations have been ranked in the tables by relative frequency. If ranking were instead based on the *number* of notified cases, the ranking order would be somewhat shifted. Policemen also top the list here, followed by compulsory school teachers, care workers and others.

Among women, policewomen also have the highest risk of being affected by occupational illness caused by psychosocial or organisational factors. Jobcentre officers/employment counsellors have the second highest risk, followed by a number of occupations in the care sector. If we look at the *number* of notified cases, the occupations that top the list among women are assistant nurses/nursing auxiliaries (412 cases, relative frequency = 2.5), care assistants/personal assistants (362 cases, relative frequency = 3.0), and pre-school teachers/youth recreation leaders (238 cases, relative frequency = 3.2).

Other occupations with more than 150 notified cases are teachers in compulsory schools, childcare assistants and care workers.

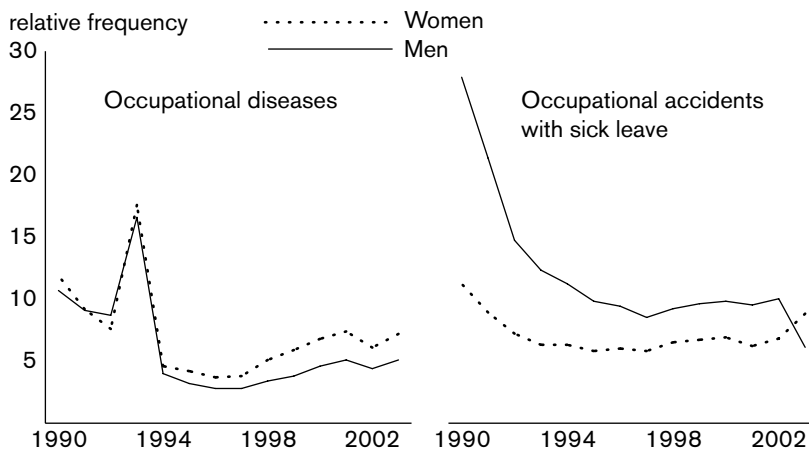
Overall, a high risk and a large number of notified cases occur, to a great extent, for both men and women in occupations which are typical in

the care and school sectors. However, policemen and policewomen run the highest risk.

### Trend in previous years according to ISA

In 2002, a reorganisation of the collection procedures and the classification system for ISA was implemented. The classifications were adapted to Eurostats recommendations. The reorganisation has made it difficult to comment on trends in the occupational injury statistics in the early 2000s. Moreover, data collection for occupational accidents has not yet been completed for 2003.<sup>6</sup> We shall therefore not make a detailed analysis of the trend over the past few years. However, the statistics that are available so far do not indicate any dramatic changes.

Figure 3.2 shows that notified occupational diseases declined in the early 1990s, reached their lowest level around 1996–97, and then rose again. The increase began in 1997 for women and in 1998 for men. We shall disregard the marked peak in 1993, which was related to transitional rules in connection with the amendment of the Act that came into force in 1993.<sup>7</sup>

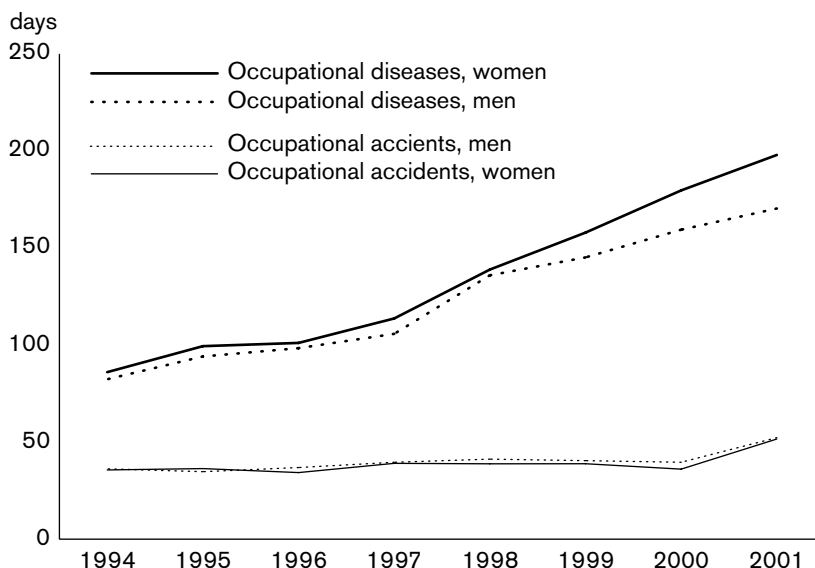


**Figure 3.2.** Notified occupational injuries per 1,000 gainfully employed (relative frequency). Men and women 1990–2003. (Source: ISA.)

A similar trend is noted for occupational accidents. However, the decline in the early 1990s was, in terms of the number of cases, sharper than for occupational diseases; the increase in the latter part of the decade was, on the other hand, more moderate.

Compared with the situation in the early 1990s, the number of notified cases in 2000 was considerably lower for both accidents and diseases. However, it is very difficult to point to a single reason for the decline. The explanation lies in the interaction between a number of different, simultaneously operating causes, such as changed compensation rules, a more stringent assessment of occupational injuries, a sharp recession and so on.

There was a steep incline in the length of sick leave period in notified occupational injuries during the latter part of the 1990s and up to 2001 (see Figure 3.3). The average number of sick days due to occupational diseases



**Figure 3.3.** Average number of sick days for notified cases of occupational accidents and diseases. Distribution by gender 1994–2001. (Information on the number of sick days was obtained from the National Social Insurance Board. Due to matching problems, information on sick days is lacking for 24 per cent of the cases in the years in the figure. These cases are not included in the calculation.) (Source: ISA, National Social Insurance Board.)

more than doubled between 1994 and 2001. In 2001, the figure was approximately 200 days for women and 170 days for men.

The average number of sick days due to occupational accidents was relatively constant approximately 40 days between 1994 and 2000, when there was a certain upturn. It is too early to say whether this indicates a break in the trend.

If we look at both the number of notified cases and the average number of sick days, we get a measure of the *total number of sick days*. These increased dramatically for occupational diseases between the mid-1990s and 2001. In 1994, the figure for women was approximately 700,000 sick days.<sup>8</sup> In 2001, the figure was approximately 3 million days. The equivalent figures for men were approximately 600,000 sick days in 1995 and approximately 1.9 million days in 2001.

As can be seen, the increase is both a consequence of an increased number of notified cases and a sharp increase in the average length of sick leave period.

### **Time trend according to the Surveys of Work-related Disorders**

Statistics Sweden (scb) is commissioned by the Swedish Work Environment Authority to carry out an annual Survey of Work-related Disorders. A random sample of the gainfully employed section of the population is interviewed in connection with the ordinary Labour Force Survey. This survey provides an additional picture of the occupational injury situation.

The strength of these statistics on work-related disorders is that they are not as sensitive to political decisions on benefit levels and changes in the concept of occupational injury as the statistics on notified occupational injuries (ISA). We have therefore used data from the Surveys of Work-related Disorders, in order to supplement the occupational injury picture provided by ISA and to describe the trend after 2001.

At the beginning of each interview about work-related disorders, two similar questions are asked. The first question concerns physical disorders, while the second concerns non-physical disorders. The first question is worded as follows:

Have you at any time during the past 12 months experienced physical disorders as a result of the work, which have made it difficult for you to

carry out work tasks or daily household tasks? Think about disorders caused by an accident at work, the conditions at work or an accident on the way to or from work.

The survey's second question is largely identical, but concerns non-physical disorders. It should be noted that disorders that the respondent has experienced during the past 12 months may stem from an injury sustained long before. This is a difference compared with ISA, which only registers *new* occupational injuries.

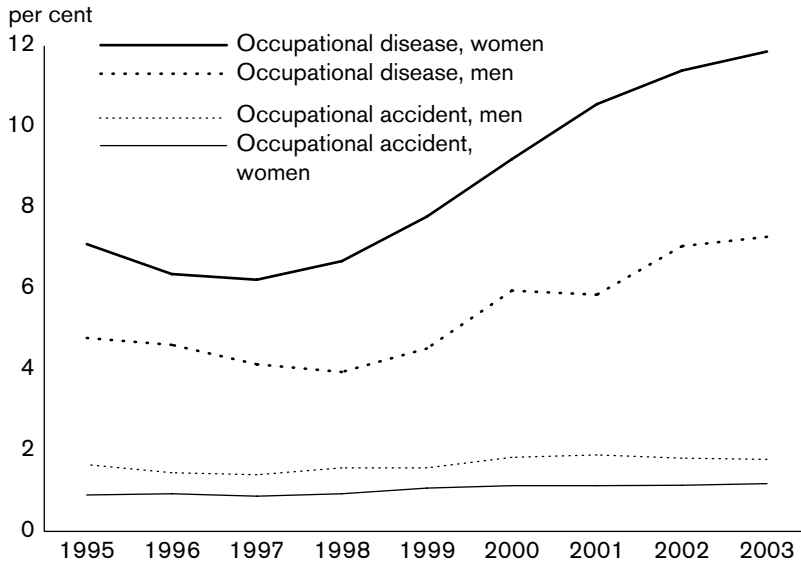
Those responding yes to any of these questions are then asked a number of further questions about the reported disorders. For example, they are asked to state whether or not the disorders have led to sick leave, the type of disorder concerned, and whether the disorders were caused by an occupational accident or occupational disease.

Types of disorder are thus classified into *physical* disorders and *non-physical* disorders. Of the women who reported disorders leading to sick leave, 53 per cent stated that the disorders were physical, 21 per cent that they were non-physical and 26 per cent described them as both. Among men, 70 per cent of the disorders were stated to be physical, 15 per cent non-physical and 15 per cent both.

Disorders are also classified into two main groups with respect to how they have arisen: the first group comprises disorders caused by an occupational accident, while the second group comprises disorders caused by other conditions at work. The latter category is more or less equivalent to the concept of occupational diseases used in ISA. To make it less confusing for the reader, we shall, in this section, use the concept disorders caused by occupational illness synonymously with disorders caused by other conditions at work than an accident.

We have chosen to describe only those disorders that result in sick leave. The figures describe the percentage of employed people who have reported disorders during the past 12-month period.

Figure 3.4 shows that the prevalence of *disorders with sick leave caused by occupational diseases* rose very sharply between the mid-1990s and the most recent survey in 2003. A certain slowdown in the rate of increase can perhaps be seen from 2001.



**Figure 3.4.** Work-related disorders with sick leave during the past 12 months. Proportion of employed people 1995–2003. Distribution by gender and type of injury. (Source: Survey of Work-related Disorders.)

The trend is the same for both men and women, but the curves are at different levels. In 2003, almost 12 per cent of the women reported disorders with sick leave caused by an occupational disease. The equivalent figure for men was just over 7 per cent.

The survey is carried out during the first quarter of each year and concerns disorders during the previous 12-month period. Consequently, it describes, in effect, the situation during the immediately preceding calendar year. If this is taken into account, the increase is largely simultaneous with the equivalent increase in the number of notified occupational diseases, according to ISA (see Figure 3.2).

Disorders caused by an occupational accident also show a relatively small but nevertheless an increase during the 1990s. In the most recent survey in 2003, just under 2 per cent of the men and just over 1 per cent of the women reported disorders with sick leave due to occupational accidents.

Those reporting disorders in the Survey of Work-related Disorders are also asked to choose from a list what they perceive to be the cause of the disorders. The most frequently stated causes are ergonomic musculo-skeletal strains (heavy lifting, short repetitive tasks and awkward working postures), as well as stress and other mental strains. Disorders of both types have risen since the mid-1990s. The largest increase is in disorders due to stress and other mental strains.

### **Summary of occupational injury statistics**

Both the statistics on notified occupational injuries (ISA) and the Survey of Work-related Disorders indicate a marked increase in work-related ill health in the late 1990s. Both the number of notified occupational injuries and the average length of sickness absence in connection with these (mainly occupational diseases) have increased. Total sick-leave for notified occupational diseases has consequently more than tripled during the second half of the 1990s and up to 2001. The reorganisation of the collection procedures for occupational injury notifications, which was implemented in early 2002, has meant that the trend in the early 2000s cannot be described exactly. However, the Survey of Work-related Disorders indicates that the increase in work-related ill health has continued up to at least 2003.

Notified occupational accidents exceed notified occupational diseases, but occupational diseases lead, on the other hand, to considerably longer sick-leave than accidents. Women notify occupational diseases to a greater extent than men. Physical musculoskeletal factors are still the most frequently stated cause of notified occupational diseases.

Occupational diseases with a psychosocial or organisational background are the fastest-growing illness category. The most frequently stated explanation for these diseases is a high workload. High risks and a large number of notified cases of occupational illness with a psychosocial or organisational background are seen among women, particularly in occupations in the care and school sectors.

The Surveys of Work-related Disorders show the same picture; work-related ill health, which was considered to be due to stress and a high workload, has increased the most. But work-related disorders caused by physical strain have also risen, still being the most common cause of work related disorder.



Today the number of fatal accidents only amounts to just over one-tenth of the number in the 1950s. This positive trend can be attributed to an interaction between structural changes, a decline in the number of people employed in high-risk activities, successful preventive initiatives and more effective medical care.

Occupational accidents are notified to a greater extent by men than women. In the case of accidents leading to more than 14 days sickness absence, high risks and a large number of notified cases are noted among men, particularly in occupations in the manufacturing and construction industries, but also in the transport sector.

The ongoing transition from an industrial society to a service society has resulted in a shift from chemical and physical exposure factors to mental and social factors. However, the problem of more traditional occupational injuries remains. Occupational diseases caused by physical strain still account for the majority of notified occupational injuries, even though occupational diseases caused by psychosocial and organisational factors have today come to dominate the debate on occupational injuries. A high workload and stress may also be important contributory factors even in the case of injuries caused by physical strain.

Although occupational accidents today account for a smaller proportion of sickness absence caused by occupational injury than occupational diseases, this proportion is not negligible from either an economic or a humanitarian perspective.

### **Reliability of the statistics**

The purpose of occupational injury statistics is to provide a basis for prioritising and planning preventive initiatives. However, all statistical sources have deficiencies, even though the nature of the problems may vary (Backlund et al. 1988, EU 2003). In order to minimise the risk of drawing false conclusions from statistical data, it is therefore important to be aware of these weaknesses as far as possible.

The statistics on occupational injuries are also used for evaluating implemented work environment initiatives and for research purposes. Since they are not structured for these purposes, a knowledge of the quality of the statistics is necessary to avoid false conclusions.

A basic problem for occupational injury statistics is that of *under-reporting*. This can be of two types: random or systematic. Random under-reporting is assumed to be evenly distributed across injury categories, age groups, occupational groups and so on. It creates a numerical shortfall, which leads to a general underestimate of the injury problem. A systematic shortfall means that under-reporting is more common for certain types of injuries and injury processes, for certain groups and so on. This may result in a misconception of the problem profile and may consequently lead to a misallocation of resources between different types of risks and risk groups.

When the time trend for occupational injuries is studied, problems arise in determining whether the picture that the statistics show over time reflects a real trend for injuries or whether changes have arisen due to changes in the willingness to report injuries. An attempt to describe the under-reporting in ISA, with the aid of the Surveys of Work-related Disorders, is reported below.

### **Difficulty in defining the concept of occupational injury**

In Sweden, the employer has a duty to notify occupational injuries. There are no financial incentives for the employer in connection with fulfilling this duty.

If an injury has resulted in, or could be expected to, result in a right to medical expenses allowance, sickness benefit or rehabilitation benefit, it should also be notified. The same goes for a case when the injury has caused or may be assumed to cause pain, suffering, disability or other permanent injury (Ordinance on Work Injury Insurance and National Personal Injury Insurance, SFS 1977:284).

However, employers have nothing to notify, if they have not in their turn been informed or otherwise made aware that an injury has occurred. Consequently, they are in many cases dependent on the employee informing them of the injury. The critical question is then what the employee himself regards as an injury, in other words, a personal definition of occupational injury.

Where is the dividing line between a disorder and an injury? How much pain and suffering is needed for an injury to be perceived as a reportable case? Severe injuries that can be observed by others can be defined relatively easily. For mild injuries, the assessment is, however, entirely up to the injured person.

Consequently, the same disorder may be classified as an occupational injury by one person, but not by another. Since mild injuries are in most cases self-reported, this subjective and varying dividing line between injury and non-injury means that the same phenomenon may or may not be reported.

In an American study (Weddle 1996), 39 per cent of those injured at work during a 12-month period had notified the employer. The most common reason for not reporting was that the injury was considered trivial despite the fact that 64 per cent of the non-reported injuries had required medical treatment and 44 per cent had resulted in absence from work.

### **Willingness to notify**

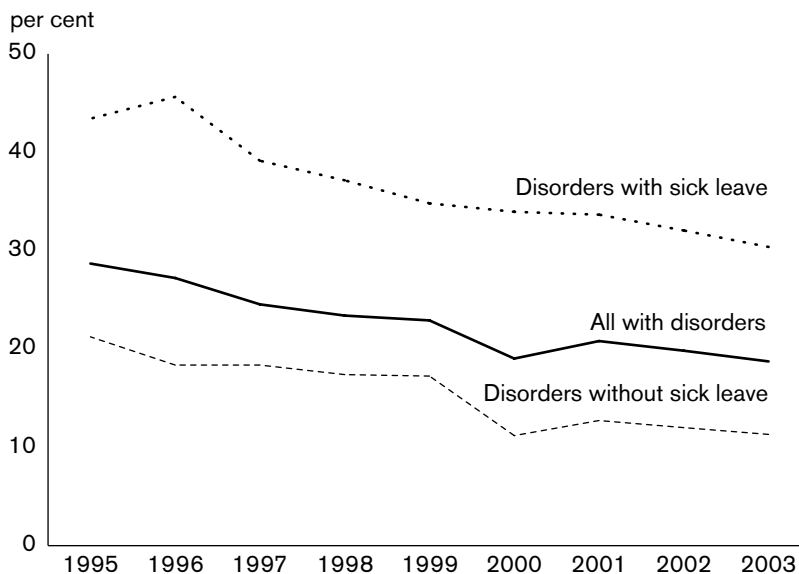
Even though the individual perceives that he or she has an occupational injury, he or she may refrain from notifying the injury for various reasons. A strong incentive for reporting is the link with compensation. Reporting is thus dependent on the design of insurance systems. If occupational injury statistics over time are studied, it is clearly seen that changes in occupational injury insurance affect the level of notified occupational injuries.

In Sweden in contrast to many other national systems the injured person automatically receives sickness benefit, which is independent of whether or not an occupational injury is notified. Today compensation besides sickness benefit is mainly paid, if the occupational injury leads to invalidity and a subsequent permanent reduction in capacity to support oneself. The current situation consequently entails a relatively weak link between notification and compensation.

Willingness to notify an injury is also affected by practical circumstances, such as the company's reporting procedures and rules for what is to be reported.

### **Notification rate according to the Surveys of Work-related Disorders**

In the Survey of Work-related Disorders, a direct question is asked as to whether or not reported disorders have been notified as an occupational injury. We can consequently obtain a figure for the proportion of reported work-related disorders that have also been notified to the social insurance



**Figure 3.5.** Proportion of work-related disorders notified as an occupational injury, according to information from the respondents in the Survey of Work-related Disorders. Trend 1995–2003. (Source: Survey of Work-related Disorders.)

office. Notification may have occurred during the previous 12-month period or earlier.

Figure 3.5 shows that the notification rate for work-related disorders has dropped steadily in recent years from approximately 28 per cent in 1995 to 18 per cent in 2003. The trend is the same for both disorders with and without sick leave. The curves consequently indicate that the motivation to report has decreased. Higher requirements on evidence for an injury to be approved, and consequently a reduction in compensation benefits, may have contributed to this gradual decline.

### Factors affecting the notification rate

Using the data from the 2003 Survey of Work-related Disorders, the importance of a number of factors that may be thought to affect the notification rate has been analysed.

The notification rate for disorders caused by *occupational accidents* differs considerably from the rate for disorders caused by *occupational diseases*. Sixty-seven per cent of disorders due to occupational accidents with sick leave had been notified, while the equivalent figure for occupational diseases remained at 23 per cent. The difference is probably connected with the ability to determine whether or not the disorders are work-related, but also with local cultural norms for what should be reported.

If we then look at the type of disorders in all cases resulting in sick leave, *physical* disorders are notified to a considerably greater extent than *non-physical* disorders, 36 per cent compared with 12 per cent. Non-physical disorders may be more difficult to relate solely to the work environment and are perhaps more often attributed to problems outside work or to individual weaknesses; in 2003, these are probably still regarded as more shameful than physical disorders. However, the notification rate for non-physical disorders has increased continuously from 4 per cent in the 1995 survey.

The notification rate also varies with a number of background factors, such as gender, age and so on.

The relationship between the notification rate and various background data in the Surveys of Work-related Disorders has been tested in a multivariate model.<sup>9</sup> The analysis only includes work-related disorders with sick leave. This restriction was adopted in order to minimise uncertainty as to whether the disorders were of such a nature that they should be regarded as, and notified as, an occupational injury. In order to obtain good statistical reliability in the conclusions, the data for whole period 1995–2003 has been used.

The results of the analyses show that:

- trade union members notify disorders to a greater extent than non-trade union members, 37 per cent compared with 26 per cent
- men notify more than women, 40 per cent compared with 33 per cent
- older people (aged 55–64) notify more than younger people (aged 16–24), 44 per cent compared with 27 per cent
- people in northern Sweden notify more than those living in southern Sweden, who in turn notify to a greater extent than those living in metropolitan areas, 39 per cent compared with 37 per cent compared with 33 per cent

- permanent employees notify to a greater extent than the self-employed, who in turn notify to a greater extent than temporary employees, 37 per cent compared with 31 per cent compared with 28 per cent.

According to the multivariate analysis all these background variables showed a statistically significant relationship with the notification rate. An additional background variable nationality, with the categories Swedish or non-Swedish citizen, was also included in the analysis; no relationship was shown with the notification rate.

### **Self-reported reasons for non-notification of disorders**

As shown above in Figure 3.5, only approximately one fifth of all work-related disorders have been notified to the social insurance office as occupational injuries in recent years. The majority of disorders are consequently not notified.

In the Surveys of Work-related Disorders for 1995–2000, those who had reported a disorder but *not* notified an occupational injury were asked an open follow-up question about why they had not done so. The responses have been registered with a text line of a maximum of 80 characters. The content of these text lines was analysed as part of a collaboration project between the Swedish Work Environment Authority (Arbetsmiljöverket) and the National Institute for Working Life (Arbetslivsinstitutet). A total of 7,626 responses from the years 1995 and 1998 were studied and categorised (Sundström-Frisk et al. 2001).

The ten categories covering almost all stated reasons (99 per cent) for non-reporting are listed below.

The categories are shown here in ranking order; in other words, category one is the numerically largest. However, we have chosen not to state exact percentages, since only the first spontaneous response given was registered and no follow-up questions were asked.

Spontaneously stated reasons for non-notification:

1. Lack of knowledge and uncertainty as to which disorders should be notified. and at what severity level.
2. Perception that there is no point in notifying. Too little chance of getting the injury approved or attended to, or of getting compensation.

3. The respondent has not even reflected as to why. I really dont know. It didnt occur to me.
4. Likely to notify.
5. Lack of knowledge and uncertainty as to the procedure for occupational injury notification.
6. The procedure is perceived as too difficult, complicated and time-consuming.
7. The problem is a thing of the past. The disorder has disappeared or action has already been taken.
8. Special employment conditions.
9. Afraid of losing the job.
10. Ambiguous responses or responses that are impossible to interpret.

Category ten contains responses where the meaning was ambiguous or impossible to interpret, such as: "Not relevant at present". This category contained 10 per cent of all responses.

The largest category category one contains responses that show that what is regarded as a notifiable occupational injury is largely determined on the basis of the severity of the disorder. But this category also contains responses that indicate the importance of other peoples views, and current norms about what is seen as reportable at the workplace. In other words, what disorders or stressors should be tolerated as a normal condition in certain occupations and what should be reported.

The second largest response category clearly shows that the weak link with the compensation system reduces the motivation to notify. The whole category two, No point in notifying , concerns the futility of trying to get an injury approved or of trying to get any extra compensation besides the ordinary sickness benefit even if the individual himself considers that the disorder was caused by the working conditions.

Category four, Likely to notify, includes people who may notify, but have not yet decided, since they are awaiting the progress of the disorder or a medical investigation. It also contains people who say they have decided to notify, but have not yet got round to it for various practical reasons.

The purpose of occupational injury statistics is to obtain a basis for preventive measures. In order to achieve this purpose, it is important that

harmful conditions can be identified. The responses in category seven the individual has not notified, since action has already been taken indicate that many people in the workplace are unaware of and unmotivated by the preventive purpose of the statistics. If the problem is no longer relevant for the individual since the injury or the disorder has healed, the individual has changed tasks, or action has been taken in the workplace no point is seen in notification (which could have drawn attention to problems of a similar nature in other workplaces). There are also a remarkable number of people who were advised against notifying by staff in the occupational health service or other forms of health care. This means that even these professional groups are not always fully aware of the preventive purpose.

Response categories five and six concern procedural questions in connection with notification. Here the individual is unaware that the injury should be notified or thinks that it is too complicated.

Category eight, Special employment conditions, includes those who stated as a reason for non-notification that they were self-employed, a trainee or a temporary employee.

Analyses of the responses to the open question about why disorders had not been notified consequently generated a number of reasons for non-notification. These were later reduced into five main categories. Since 2003 these five categories have been used as fixed response options to the question about reasons for non-reporting, in the Survey of Work-related Disorders. This has made it possible to quantify the proportion of answers in each category. The distribution of the responses between the five categories in the survey of 2003 is shown in Table 3.8.

One third of the respondents, 31 per cent, did not consider the disorders serious enough to be regarded as an occupational injury to be notified, despite the disorders having led to sickness absence (cf. Weddle 1996). The difficulty of determining what should be classified as an occupational injury even though it has led to sickness absence is thus the most common explanation for non-notification. The second most common reason concerns a lack of knowledge about the notification procedure. The third largest category concerns the weak link with compensation and the difficulty of getting an injury approved.



**Table 3.8.** Stated reason for non-notification of work-related disorders with sick leave as an occupational injury. Distribution between five fixed response options, n = 2,684. (Source: Survey of Work-related Disorders 2003.)

Stated reason for non-notification of disorders	Per cent
Disorders of a mild nature	31
Did not know that occupational injuries should be notified	18
No point in notifying	15
Afraid of annoying the employer	2
Other reasons or does not know	34

To conclude, we will return to the previous statement that all statistical sources have their deficiencies, even though these may be of various kinds. A recurrent problem is under-reporting or other types of bias, where data is generally difficult to obtain.

We have attempted to describe the non-reporting and thus the quality deficiencies in one statistical system (ISA), with the aid of another statistical system (the Surveys of Work-related Disorders), in which the quality deficiencies are not fully known either. However, we have considered the data from the Surveys of Work-related Disorders to be sufficiently reliable for the purpose of our study, since it is based on a large random sample and the response rate in the telephone interviews is high.

### Summary of reporting to ISA

On the basis of the comparisons between ISA and the Surveys of Work-related Disorders, we can state that a large number of disorders, even those leading to sick leave, are not notified as an occupational injury. The notification rate has continuously declined since the mid-1990s. This decline may be due to a decline in the motivation to report, or an increase in the proportion of disorders not regarded as worth reporting. However, the latter may only be part of the explanation, since the notification rate has also declined for disorders leading to sick leave which should have been reported.

Furthermore, there is a systematic distortion of which disorders are notified as occupational injuries. Disorders caused by occupational accidents are notified to a much greater extent than disorders associated with occupational diseases.

Physical disorders are notified to a much greater extent than non-physical disorders. However, the notification rate for non-physical disorders has gradually increased over the past decade, in contrast to the notification rate for physical disorders.

The notification rate also differs systematically between gender, age group, form of employment, trade union membership and place of residence. These differences mean that disorders affecting non-union members, women, younger age groups, temporary employees and people in metropolitan areas are under-represented to various extents in ISA.

The most common *self-reported* reasons for non-notification of work-related disorders as an occupational injury are that the disorders are not regarded as an occupational injury, that the link with the compensation system is weak, and that the individual is unaware that the disorder should be notified and why.

## Notes

1. There are additional groups whose injuries are registered in ISA, such as military servicemen, participants in labour market programmes and some students. The injuries of these groups are not reported here. Accidents on the way to and from work are also registered in ISA. These commuting accidents will not be discussed in future.
2. The Swedish Work Environment Authority obtains information on the length of sickness absence for notified occupational injuries by matching against the National Social Insurance Boards (Riksförsäkringsverket) register. This information lags behind in the statistics, since a large number of notified cases are associated with long-term sickness absence, which means that it takes a long time before the total sickness absence associated with an occupational injury can be determined, and since the matching process against the Boards register takes time.
3. The figures refer to 2002, as the type of injury was not coded in 2003.
4. The information from the notification may, however, be amended, as a result of supplementary information on sickness absence from the National Social Insurance Board.
5. In 2003, a further 27,387 occupational accidents without sickness absence were notified for men and 21,729 for women, which are not included in the account in this chapter.

6. Changes in collection procedures and transitional rules in connection with this have affected the number of occupational injury notifications for 2001 and 2002. The changes have affected the statistics on both occupational accidents and occupational diseases. The effect is presumably greater on occupational diseases. It has been estimated that the number of occupational diseases for 2002 has been underestimated, while the number for 2001 has been overestimated by 510 per cent. Further information on the reorganisation and its effects is available from the Swedish Work Environment Authority (2003). The figures for the number of occupational accidents with sickness absence are incomplete for 2003. These are estimated to rise by a maximum of 10 per cent as more notifications are received.
7. The amendment of the Act, which came into force in 1993, entailed a tightening of the concept of occupational injury, which may be an explanation for the decline that occurred subsequently. However, practice had moved towards a tightening of the concept even before the Act was amended, which could be an explanation for the decline beginning before 1993. The peak in 1993 can be explained by the fact that cases notified before 30 June 1993 were to be assessed, in accordance with the old, more generous definition of occupational injury.
8. For approximately 24 per cent of the notified occupational diseases, information is lacking on the total number of sick days. It has been assumed in the calculation that the average number of sick days is the same for these as for injuries where the information is verified.
9. The multivariate analysis, logistic regression, means that the relationship between the notification rate and each of the variables listed below, such as age, is studied, while the effect of the other variables is held constant.

## References

- Arbetsmiljöverket & SCB (1995) *Arbetsorsakade besvär 1995. (Work-related disorders 1995.)* Official Statistics of Sweden, Statistical Bulletins AM 43 SM 9501.
- Arbetsmiljöverket & SCB (2003) *Arbetsorsakade besvär 2003. (Work-related disorders 2003.)* Official Statistics of Sweden, Statistical Bulletins AM 43 SM 0301.
- Arbetsmiljöverket (2003) *Arbetskador 2002. (Occupational injuries 2002.)* Preliminary Data, Official Statistics of Sweden, Report 2003:1.
- Backlund AM, Björnstig U, Pilch J & Larsson TJ (1988) *Arbetsolycksfallens lokala epidemiologi tre sätt att mäta arbetsskadeproblemet. (The local epidemiology of occupational accidents three ways of measuring the occupational injury problem.)* IFAO Factum, Stockholm.
- Bengtsson B (2000) ISA – The Swedish Information System for Occupational Accidents and Work-Related Diseases – scope, content and quality. Swedish Work Environment Authority report 2000:16.

- Nordin, H & Bengtsson B (2000) Occupational Accidents and Work-Related Diseases in Sweden. Swedish Work Environment Authority 2000:15.
- EU (2003) "A review and analysis of a selection of OSH monitoring systems", Working Paper, Report Issue 406, European Agency of Occupational Safety and Health.
- Sundström-Frisk C, Weiner J, Kjellberg A & Broberg E (2000) "Anledningar att inte göra en anmälan", intern PM ("Reasons for Non-notification", internal memo), National Institute for Working Life, Stockholm.
- Weddle M (1996) "Reporting Occupational Injuries: The First Step", *Journal of Safety Research*, 27, pp. 217–223.

PART 2

WORK-RELATED  
HEALTH CHANGES AND  
THEIR INDICATORS



## CHAPTER 4

# Occupational diseases in Sweden in a ten-year perspective

*Bengt Järnholm*

Changes in the risks associated with working life over the past ten years are often described in terms of a decline in classical risks and the appearance of new ones, primarily diseases caused by stress and other psychosocial factors. One of the aims of this chapter is to see whether there is any evidence for the assertion that classical occupational diseases are declining as a result of reduced exposure to risk factors.

All diseases have a number of causes, not all of which are always known. This also applies to diseases usually described as occupational diseases. Typical for occupational diseases is that they are caused by exposure, the nature or level of which is almost entirely confined to working life, and where the causal link is well established. Examples are silicosis resulting from exposure to silica dust, lead poisoning and “vibration white finger” caused by vibrating hand-held tools (Westerholm 2002).

If the causes of a disease are known, various steps are taken to try to reduce the risk of its occurring. This is usually called primary prevention, and examples include limiting the use of certain chemical substances, improving how they are handled or raising people’s awareness of the risks.

Factors causing occupational disease are affected by the decisions of public authorities, the actions of employers and employees, and various global circumstances. Changes in the incidence of ill health can be brought about by changes in the risk factors, for example through altered production methods and various preventive measures, and we can follow trends in occupational diseases to gain an understanding of the overall effect of these changes in production methods and preventive measures. If the *incidence* of ill health is to be used to assess whether preventive measures have been effective, then we must also be able to assess how changes in production have affected the presence of these risk factors.

This chapter reports trends for some occupational diseases in Sweden over a ten-year period. The diseases are selected on the basis of two criteria: a) they are regarded by the medical profession as traditional occupational diseases and b) they can be studied through registers. The object is to try to answer the question of whether it is in fact true that the risk of “traditional” occupational diseases has fallen steeply or has in fact disappeared.

The diseases discussed are ones that have been known for a long time, such as:

- lung fibrosis (the increase of connective tissue in the lungs with consequent breathing difficulties) due to exposure to silica dust or asbestos
- diseases caused by noise
- diseases caused by vibration
- brain damage caused by organic solvents
- poisoning caused by heavy metals (such as lead, cadmium and mercury).

In addition, I will be discussing two types of chemical exposure that attracted a good deal of media attention and became subject to inspection and legislation in the 1990s:

- exposure to diisocyanates and asthma,
- exposure to acrylates in dental care and allergic eczema.

Trends in work-related cancers are also described. In these cases, however, it is often harder to establish links, and the period between exposure and disease can be very long. Injuries due to stress of the musculoskeletal system are not discussed, since these are dealt with in other chapters in the book. The selection is intended to reflect how successful the preventive work has been, but can also be regarded as a test of how well our statistics systems manage to monitor trends and provide a basis for definite conclusions.

## **Registers used**

Two main registers were used:

- The Work Environment Authority’s register of reported occupational accidents and work-related diseases (ISA)
- The AFA register of occupational diseases (referred to here as the TFA).



Both registers are based on occupational injury reports submitted to the Social Insurance Offices. The ISA records cases reported to the Social Insurance Office in which an occupational disease is suspected. In many cases, the strength of the link between the disease and the reported cause(s) has not been investigated, nor is there any information about the degree of severity of the disease (see also Chapter 3).

The TFA register is based on the diseases reported to the AFA, which receives reports of all occupational injuries that have been approved as such by the Social Insurance Offices.

For the TFA to pay compensation, the disease must have caused permanent injury (disability). Each sickness case in the TFA provides information about the degree of permanent injury. The advantage of the TFA, then, is that it only contains cases that have been judged to be work-related by experts, and detailed information is available about the degree of severity of the disease. For some diagnoses, the register also provides the stated cause after investigation by the AFA. Information from the TFA register used to be published to a very limited extent compared to that from the ISA register. Data used here from the TFA concerns people who were aged between 15 and 65 at the time of the injury, and who sustained some degree of permanent injury, unless otherwise stated.

One problem of the TFA register is that there is a considerable lag in registration. This is described in more detail in an appendix to this chapter. The quality of the ISA has been discussed earlier (Chapter 3).

Reports to the ISA and TFA are regulated by the rules governing compensation. Legislation, and the terms of collective agreements, underwent change in 1993. Data from 1992 have generally been included in the analysis of the TFA so that the reader can form his or her own opinion on what significance the change in regulations had. It is already known that there was a surge in reporting to the ISA in the first half of 1993, so data from the ISA is generally reported from 1994 and onwards.

The total number of injuries in which the work environment is a significant factor may be considerably higher than those reported in the ISA or TFA. According to the ISA and TFA respectively, between 100 and 200 people per year are injured by vibrations (see below). An interview of a random selection of the population in 2001, on the other hand, disclosed

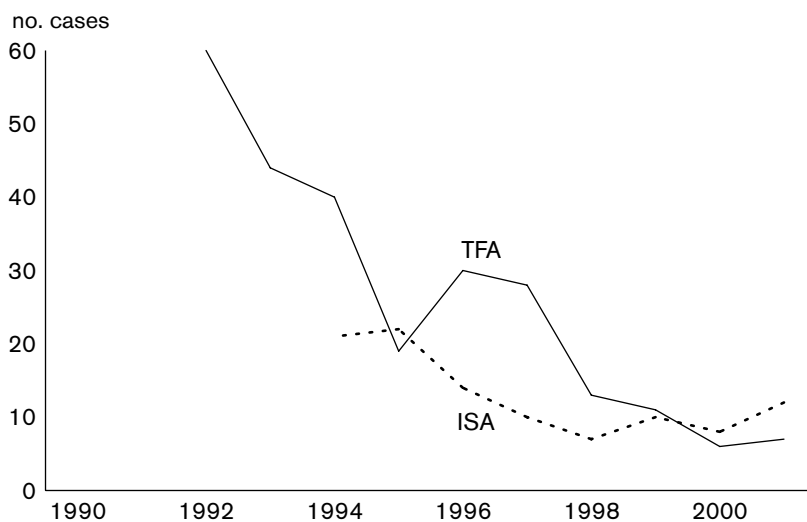
that about 3,200 people in Sweden (95 per cent confidence interval 2,100–4,500) had taken sick leave in the past 12 months because of problems caused by vibrations (Work Related Health Problems 2001).

From a preventive perspective, the goal should be that as few people as possible are afflicted with an occupational disease. The number of afflicted persons is therefore reported. However, it is very difficult to obtain information about the total number of those exposed, which is necessary if relative numbers are to be reported.

### Organic solvents

Organic solvents can give rise to permanent injury to the central nervous system, normally known as psychoorganic syndrome. The injury can vary in severity and appears only after many years of high exposure. According to both the TFA and the ISA, the number of people with such injuries has fallen steeply over the past ten years (see Figure 4.1).

The steep fall since the 1980s was probably due to measures such as a transition to water-based paints, more stringent legislation and inspection

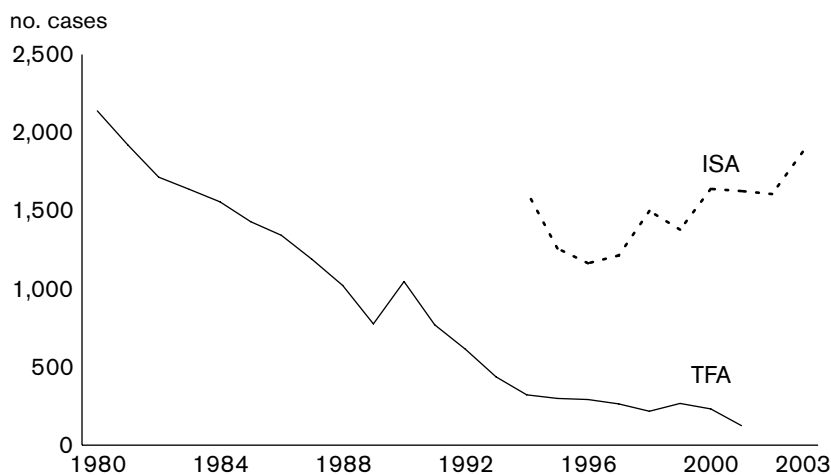


**Figure 4.1.** Number of cases of psychoorganic disease as a result of exposure to solvents, reported to the ISA and TFA.

of the use of organic solvents, and greater awareness among employers and employees (Järvholm 2000). There is probably also some lag in the diagnosis, so that injured people are not investigated and do not receive a diagnosis until several years have passed. The statistics indicate that the corrective measures have significantly reduced the risk of psychoorganic syndrome caused by organic solvents. Because of the lag in diagnosis, it is not possible to determine whether there are still work environments in Sweden in which people still suffer this injury.

## Noise

Loud noise can damage hearing, and a limit of 85 db(a) has been in place for some time. The number of people who think that they are affected by noise is substantial and has not changed significantly since 1984 (see Chapter 2). The number of registered noise injuries in the TFA that resulted in permanent injury has fallen steeply since the early 1980s, and there has also been a clear ongoing fall since the early 1990s (Figure 4.2). It is hard to make any judgements about changes since the late 1990s, however, because of the lag in reporting (see Appendix).

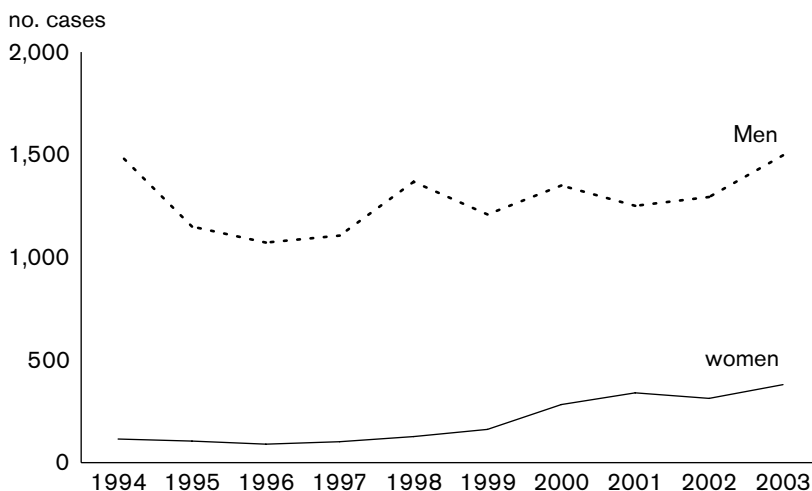


**Figure 4.2.** Number of cases of noise injury reported to the ISA and TFA, respectively.

According to the ISA, there was an increase in the number of reported cases in the late 1990s (Figure 4.2). The increase is most pronounced for women and in the years after 2000 (Figure 4.3), above all in women working in childcare and schools (Table 4.1). This increase could be explained by:

- an increased risk of injury to hearing in these professional categories due to an increase in noise levels
- greater awareness of the risk, resulting in more people reporting their injury to the ISA
- women in general being more willing to report to the ISA.

On the basis of existing statistics, it is not possible to reach any definite conclusions about what the correct explanation(s) might be. Even if we are to believe that the propensity to report has increased, we can say that any such increase varies among professional categories. In 1997–98, 20 per cent of reports came from professional categories in childcare and schools, while the corresponding proportion in 2000–2003 was around 50 per cent. The difference is statistically significant ( $p < 0.05$ ).



**Figure 4.3.** Number of cases of noise injury reported to the ISA, by sex.

**Table 4.1.** Distribution by professional category that has reported noise injury to the ISA 1997–98, 2000, 2001, 2002, and 2003, women only. Per cent.

Professional category	Industry code	1997–98 (n = 229)	2000 (n = 283)	2001 (n = 340)	2002 (n = 313)	2003 (n = 380)
Teacher, compulsory and upper secondary school	2300–2399	10	17	18	18	15
Nursery teacher, child minder	3310, 5131	18	28	33	32	37
Industrial workers etc.	7000–8999	19	10	11	13	9
Others		53	45	38	38	39
<i>Total</i>		<i>100</i>	<i>100</i>	<i>100</i>	<i>101</i>	<i>100</i>

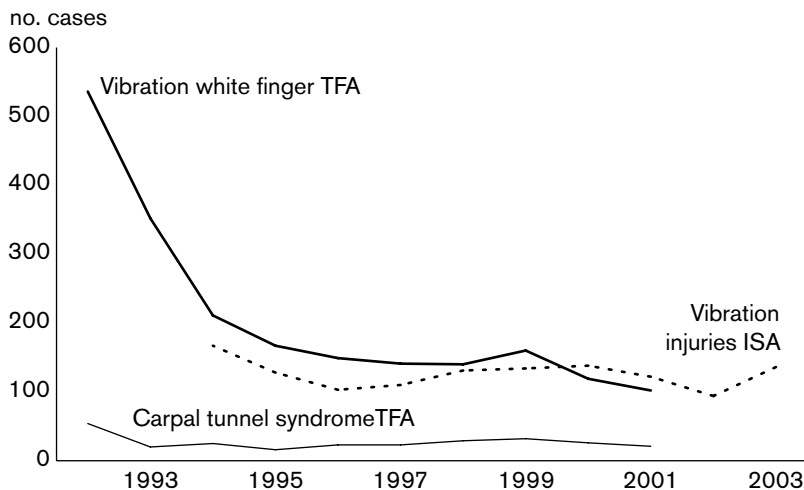
Noise injury can occur after a short period of time, for example tinnitus after loud noise at a concert, or after a long period of time, for example permanent hearing impairment after loud industrial noise. Noise can also lead to discomfort and stress even if it is not directly injurious to hearing. The downward trend in the TFA statistics since the early 1980s should reasonably be interpreted as meaning that there has been a reduction in noise that causes hearing injury in this period. This reduction is probably due to measures implemented in the 1960s and 1970s. Since these injuries have been thoroughly investigated and assessed in the TFA statistics, we can take this to mean that the preventive work of reducing noise that is injurious to hearing has been highly successful. At the same time, the ISA-statistics indicate that since the turn of the century there has been an increase in experienced problems with noise in schools and childcare. It is not possible to draw any definite conclusions from the statistics as to what the actual health problem is.

## Vibration

Vibrations from hand-held tools can lead to “vibration white finger”, i.e. nerve damage in the small nerves in the fingers, affecting sensation, as well as effects on nerves in the wrist, known as carpal tunnel syndrome (Nilsson 2002).

Whole-body vibration can lead to back problems and can occur for example in heavy vehicles being driven over uneven surfaces.

According to the Work Environment surveys, many people say that they are subjected to vibrations in their work (825,000 in 2001). The numbers



**Figure 4.4.** Number of cases of vibration injury reported to the ISA and number of cases of vibration injury of the type vibration white finger and carpal tunnel syndrome, registered in the TFA.

are falling in some industries, such as agriculture and forestry, but seem to be on the increase in others, such as construction (see Chapter 2).

The ISA statistics do not allow us to draw any definite conclusions about the type of injury, or about what types of vibration are suspected of causing the reported injury. The frequency of reporting has remained unchanged from the mid-1990s until 2003 (Figure 4.4).

The TFA divides up the injuries into vibration white finger, carpal tunnel syndrome and injuries due to whole-body vibration (neuromuscular damage and skeletal changes). There are about 25–30 cases of carpal tunnel syndrome with permanent injury per year, and the number shows no signs of falling (Figure 4.4). Nor does the registered number of cases of vibration white finger seem to be on the decline. The slightly lower number of cases in 2000 and 2001 must primarily be interpreted as a lag in registration.

According to the TFA register, the number of registered cases of permanent injury due to whole-body vibration remained low throughout the 1990s at between one and four cases a year. In the ISA, we cannot see which

body part was injured by vibrations. On average, one case a year over the past ten years was reported to affect the back (not including the vertebrae of the neck). There is thought to quite strong evidence that lumbar pain can be caused by whole-body vibration (Hansson 2001), which probably means that compensation for permanent injury should have been paid more often. Against this background, it is striking that the number of cases reported to the ISA and the TFA is so low. Internationally, too, it has been noted that few cases are reported, despite the fact that whole-body vibration is a known cause of some back problems (Hulshof et al. 2002).

There are, then, no signs that preventive measures over the past ten years have reduced ill health due to vibrations, despite the fact that the causal links are well established.

### **Silica dust and asbestos dust**

For many decades, it has been known that an increase in the infiltration of connective tissue in the lung (lung fibrosis) is a risk of high, long-term exposure to silica or asbestos dust. These conditions are known as silicosis and asbestosis (Larsson 2002). There is considerable variation in the degree of severity of the disease. More severe cases can lead to drastic reduction in lung function and early death. Silica and asbestos dust can also lead to other diseases, including cancer. We only report on risk factors for lung fibrosis here.

Exposure to silica dust today primarily occurs during mining and quarrying work, for example in mines and gravel crushing pits, in the construction industry and in foundries. Requirements for measurements, special measures to reduce dust and health controls have been in place for several decades.

Looking at the period from 1980 and onwards, it can be seen that the number of cases of silicosis is falling, regardless of the register source. According to the TFA, no new cases of permanent injury were registered after 1998. A total of four cases of permanent injury were registered between 1994 and 1998. According to the ISA, twelve cases of silicosis have been reported since 1994, most of them from 1999 and onwards. Of the 22 cases reported since 1992, 14 were younger than 60 at the time of the report.

In recent years, the number of deaths from silicosis has been between five and ten (source: Causes of Death Register). Since the period that elapses between clinical discovery and death is often long, deaths in 2000 can reflect exposure that occurred in the 1970s and 1980s. It is remarkable, however, that in 2001 one person aged 50–54 died of silicosis. For a total of nine men and four women, silicosis was recorded as the primary cause of death, according to the Causes of Death Register. Of the deaths, one was a woman aged 65–69 at the time of death, and the other men and women were 75 or older at the time of death.

Exposure to asbestos has a special position among chemical substances in working life. Extensive restrictions have been applied to the use of the substance since the late 1970s.

The number of deaths from asbestosis has in fact increased somewhat in recent years, and has been about ten cases a year since the turn of the century. Of the 14 people – 13 men and one woman – who died of asbestosis in 2001, one was a man aged 60–64 at the time of death and the others were all aged 75 or more when they died. All 14 of these cases were of working age in the 1960s when Swedish annual imports of asbestos were at their peak. The number of new cases of asbestosis with permanent injury reported to the TFA has been four cases or less per year since the mid-1990s, with no signs of an increase.

An analysis of the TFA shows that up to 2001 all cases of silicosis and asbestosis with permanent injury involved people born in 1954 or earlier. This means that they could have begun work in the early 1970s or earlier. Without access to further information not in the register, it is impossible to say whether work conditions in the 1990s were significant in their disease.

In the author's own clinical experience there have been cases of silicosis in Sweden that were due to exposure to silica dust in the 1990s.

## **Isocyanates**

The risks of exposure to isocyanates attracted a good deal of attention in the 1990s. Diisocyanates are heavily used in pigments, glue and the manufacture of plastics, including polyurethane. Diisocyanates can lead to asthma, and people who contract this type of asthma become hypersensitive to diisocyanates, and experience problems even at very low doses. Examples of



**Table 4.2.** Number of cases of asthma caused by isocyanates reported to the ISA.

Year	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	Total
Women	1	0	1	0	0	0	2	1	2	0	7
Men	2	3	2	8	4	7	9	15	18	17	85
Total	3	3	3	8	4	7	11	16	20	17	92

common diisocyanates are toluene diisocyanate (TDI) and methylene diisocyanate (MDI).

Monoisocyanates can occur as raw materials in the chemicals industry, but are also formed when many substances are heated. One example of a monoisocyanate is methyl isocyanate, the substance that caused the Bhopal disaster in India in 1984. Monoisocyanates have not been shown to cause asthma in the same way as diisocyanates, but they have been studied to a lesser extent (Montelius 2002).

The reports to the ISA stating isocyanates as the cause of asthma primarily involved male sufferers. There has been an increase in the number of reported cases since the mid-1990s (Table 4.2). The ISA has also registered reports of respiratory problems due to isocyanates, but not classified as asthma. For 2000, there were 37 such cases and for 2001, 28. No more information is available about what diagnosis these people had.

The TFA register contains information about whether asthma was caused by isocyanates. During the 1992–1997 period, there was an increase in the number of cases of permanent injury (Table 4.3). The fall after this may be due to a lag in the register (see Appendix). No reason is given for just over 70 per cent of the asthma cases in the TFA.

Overall, the results could be due to an increase in asthma caused by isocyanates in the 1990s. One probable explanation for the increased frequency of reporting in recent years, however, is increased awareness of the risks.

**Table 4.3.** Number of cases of asthma with permanent injury caused by isocyanates reported to the TFA.

Year	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	Total
Women	1	1	2	0	1	1	0	0	2	0	9
Men	1	0	2	8	6	7	5	1	4	4	46
Total	2	1	4	8	7	8	5	1	6	4	55

**Table 4.4.** Number of injuries caused by lead, cadmium and mercury reported to the ISA.

Year when injury presented	1994	1995	1996	1997	1998	1999	2000	2001
Lead	1	10	4	2	8	4	17	11
Cadmium	1	2	2	7	1	0	2	2
Mercury	5	5	9	5	9	3	7	6

## Heavy metals

We can obtain information from the ISA about how many cases were reported as occupational disease due to certain metals. The TFA has not classified the cases in a way that enables such information to be extracted. The number of cases in the ISA in which lead is reported to be a significant factor has varied between 1 and 17 cases per year (Table 4.4). The number of cases in which cadmium was given as the reason was lower. The number of cases in which mercury was given as the reason averaged six per year with no tendency towards change.

Metals and metal alloys, such as amalgam, are suspected to cause disease, but the link is hard to prove. This makes it difficult to assess whether, and in that case to what extent, cases reported to the ISA can be linked to exposure in working life. A review was carried out of the individual cases that looked at injury, occupation, industry and stated exposure, to see whether they occurred in occupations and industries that previous experience has linked to such poisoning, for example lead poisoning in people working in scrap yards who inhale welding fumes from steel with red lead paint. The analysis indicates that it is improbable that any of the cases in which mercury was given as a reason really was a case of “classical” industrial poisoning. No cases of cadmium poisoning have been reported to lead to kidney damage.

The reported cases of lead poisoning are more difficult to assess. In 1995, three cases were reported in recycling workers; in 1998 one case each in foundry workers, battery workers and metalworkers; and in 2001 one case in a glass painter. All of these cases could be consistent with occupational lead poisoning.

## Chemical compounds and hand eczema

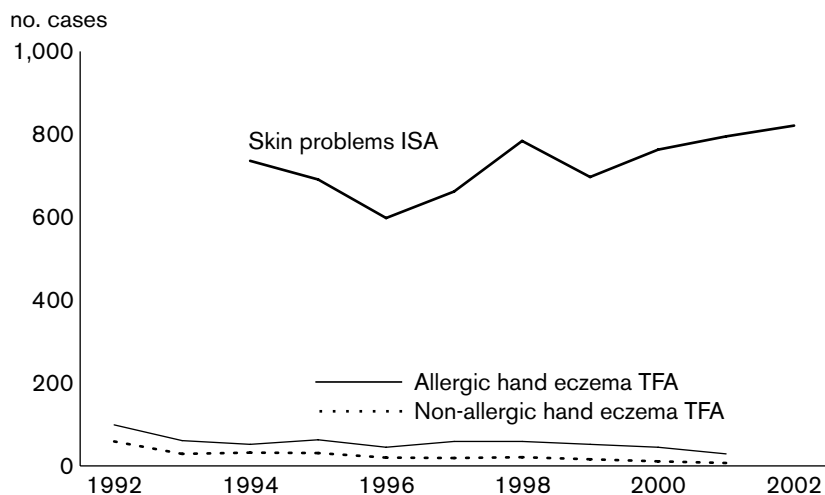
Work is often an important factor in adult hand eczema. Eczema can be the result of an allergy to a certain factor (allergic contact eczema), or the result

of excessive wear and tear on the skin caused by water or mechanical effects. Population studies have shown some fall in the rate of hand eczema in Sweden between 1983 and 1996 (Meding & Järvholm 2002). In 1983, 11 per cent reported that they had suffered hand eczema in the past twelve months, while the corresponding prevalence in 1996 was 9.7 per cent ( $p < 0.01$ ). The reduction is primarily explained by lower occupational risk, perhaps largely due to the fall in numbers of people doing wet work.

About sixty cases of allergic eczema with permanent injury were reported to the TFA each year, and about twenty of non-allergic eczema (Figure 4.5). The TFA register also shows the causes of some allergic eczemas. Of the 126 cases that occurred between 1999 and 2001, half consisted of allergy to rubber, cobalt, chromium or nickel.

The ISA does not report hand eczema as a separate category. Figure 4.5 shows the number of reported cases with skin problems, regardless of situation and diagnosis.

Reports to the TFA do not reflect any clear signs of a reduced occurrence of eczema in the 1990s, particularly with a view to the lag in reporting (see

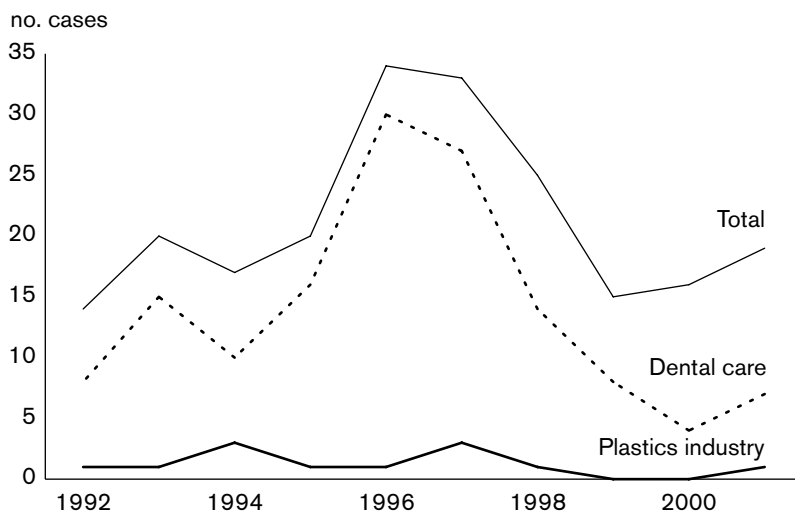


**Figure 4.5.** Number of cases of reported hand eczema in TFA (allergic and non-allergic) and number of cases of skin problems reported to ISA.

Appendix), and the trend in the isa is actually rising towards the end of the 1990s (Figure 4.5).

In the 1980s, it was discovered that acrylates were associated with a risk of allergic contact eczema on the skin, for example in the furniture industry. Acrylates began to be heavily used in dental care when amalgam began to be replaced by other dental filling materials, and eczema was described among dental care staff. On account of this issue and others, regulations were issued on hard-setting plastics that introduced requirements for handling, training and health checks (AFS 1996:4). Figure 4.6 shows that the vast majority of cases of injury due to acrylate reported to isa occur among dental care staff. The number of reports seems, however, to have fallen towards the end of the 1990s, which could be interpreted to mean that the measures introduced were effective. Only a few cases a year are reported from the plastics industry.

A study of the cases reported to the isa in 2000–2001 (35 in total) shows that eleven came from the dental services (two dental technicians, two dentists and seven dental nurses), and that according to the register, all



**Figure 4.6.** Number of cases of injury due to acrylates reported to the ISA.

except one had suffered skin injuries. Skin disease was reported in a further five cases, of which three were among nail constructors/manicurists and two cases among repairmen/assembly workers. Since the number of manicurists in the country ought to be quite small, this study indicates that skin injury from acrylates is a risk worthy of attention here. Thirteen cases of problems from the respiratory organs had been reported, of which seven were asthma cases. In the scientific literature, asthma caused by acrylates has been reported relatively recently (Torén 2002). Of the seven asthma cases, three were assembly workers, one a painter and three worked in the plastics industry. In its statistics, the TFA has not noted which cases were caused by acrylates.

## Cancer

Several types of cancer have appeared to be linked to various factors in working life (Gustavsson 2002). It has been estimated that the number of work-related cancer cases in Sweden could amount to a few hundred a year (Järvholm 2000).

The number of cancer cases reported to the ISA has remained quite constant in recent years at just over 100 a year (Table 4.5). Fewer cases have been registered in the TFA than in the ISA, around 30 cases a year. The difference between the number of reported cases and the number of estimated cases may be due to many cases occurring at such an advanced age that they are not reported as occupational disease because no compensation will be paid. Another reason might be that the sufferer does not suspect, or is not told, that his or her tumour might be work-related.

The TFA only registers tumours that are deemed to be work-related, while the ISA registers all reported tumours. This means that the distribu-

**Table 4.5.** Number of cases of cancer reported to ISA and TFA, respectively.

Year	1994	1995	1996	1997	1998	1999	2000	2001
<i>ISA</i>								
Women	10	15	16	10	18	17	16	23
Men	104	95	90	104	87	84	76	105
<i>TFA</i>								
Women	2	2	0	0	2	0	0	1
Men	56	45	61	46	53	26	33	21

tion of types of tumour differs between the registers. According to the TFA, 40 per cent of the registered tumours are mesotheliomas; the corresponding figure for the ISA is 21 per cent. The number of cancer cases in the lungs and respiratory tract is 34 per cent in the TFA and 26 per cent in the ISA. In the TFA, 9 per cent are lymphomas and leukaemia, while these diagnoses constitute 23 per cent in the ISA.

Mesothelioma is a serious consequence of asbestos exposure and can arise even after quite short-term and low-grade asbestos exposure. Mesothelioma is registered in the cancer register. In spite of the steep fall in asbestos use in the mid-1970s, the number of cases of pleural mesothelioma increased steeply up to the early 1990s and then plateaued. About 90 cases in men and 15 cases in women have been reported to the cancer register each year since the turn of the century. Of these cases, at least 80 per cent are deemed to be caused by exposure to asbestos at work.

## Discussion and summary

In a more long-term perspective of 20–30 years, there are clear indications of a reduced risk of noise injury (Figure 4.2.), vibration injury (Figure 4.4) and silicosis. In a ten-year perspective, from 1994 and onwards, however, there is no clear downward trend. The picture here is rather more mixed.

This review shows two occupational diseases with a clearly falling trend over the past ten years:

- brain damage caused by organic solvents
- eczema due to the use of methacrylates in dental care.

The downward trend probably has a number of explanations. The decline in injuries due to organic solvents is probably largely due to a reduction in use, although controls and measures to reduce exposure have been important. Methacrylates have a widespread and growing use in dental care, since they are included in many products that have replaced amalgam as tooth filling material. Despite this, the number of injuries in dental care is falling, largely due to safer handling (including improved packaging) and greater awareness of the risks.

The review also shows increased risks in some cases that may become the subject of action and further investigation:

- increased reporting of noise injuries in childcare and schools
- skin injury, probably allergic contact eczema, caused by acrylates in manicurists.

There are potential sources of error. Both the ISA and TFA registers are dependent on cases being reported, and a rise or fall might be due to an increased or decreased propensity to report. Even if the injuries in the TFA register undergo thorough investigation of the links, a report is necessary if they are to be investigated at all. A reasonable explanation for the rise in the number of reported cases of asthma due to isocyanates is that the risk itself has attracted more attention. Another possibility is that immigrants have been exposed in their home countries and then suffer an occupational disease in Sweden. Silicosis, for example, is much more common in many other countries than it is in Sweden. It is hard to completely rule out these possible explanations. The statistics do not contain any such information, but for compensation to be paid, the exposure must have occurred in Sweden. The cases in the TFA, then, largely reflect exposure that has occurred in Sweden.

Regarding the reporting of injury due to noise, vibrations, isocyanates, chemical factors causing hand eczema and asbestos, there is no clear downward trend in the last ten years. There are several possible explanations for this:

- Greater awareness of the risks means that more incidents are reported. There is really a downward trend, but this is counteracted by greater discovery, which is actually a good thing.
  - This is a possible explanation for the fact that no reduction is seen in the frequency of asthma due to isocyanates.
- The preventive methods used are traditional ones, and work well to reduce levels from the considerably higher levels of the 1970s, but these methods are not very effective in modern working life. One reason is that risks are present in situations and companies that are not reached by much information or inspection.
  - This is a possible explanation for the fact that there is no decline in reported injuries due to vibrations and chemical factors causing hand eczema.
- There are new risk factors that have not been noted or dealt with.

- This is a possible explanation for the fact that there is no decline in reported noise injuries, and is further underlined by the increasing frequency of reported noise injury in childcare and schools.
- A very long time can elapse between exposure and disease, which means that the occupational disease can “increase”, despite the fact that exposure has stopped or fallen drastically.
  - Asbestos fibres can remain in the body for a person’s entire life, even if the person is no longer exposed to asbestos. This is the most probable explanation for the increase in mesothelioma in the 1980s, and primarily reflects the fact that the use of asbestos increased in the 1950s and peaked in the 1960s. What is rather more surprising is that new cases of asbestosis are still occurring, as is apparent in the reports to both the ISA and the TFA.

In a couple of cases, the review shows that the register sources used have such weaknesses that they are not helpful in studies of changes over time.

- It is difficult to draw any conclusions about injuries from the heavy metals lead, cadmium and mercury from the information in the ISA. In some cases, the reports are probably due to anxiety and a suspicion that cannot be proved. A more thorough description of the injuries and their origin is required if we are to be able to assess whether the links are likely or not. It would probably be easy to find effective measures if such risks could be discovered.
- There are indications that silicosis occurs in Sweden due to modern work environments, but it is difficult to confirm this from the existing registers. Information about when exposure took place would easily remedy this problem. Despite the fact that the risks associated with silica dust have been known for a long time and action has been taken, this may have been insufficient to reach some risk groups, for example one-person businesses or employees in companies with a low level of awareness of the risks. It may also be the case that the rarity of exposure has meant that there is less inspection, since work environment inspectors and corporate health care personnel are less attentive to this factor. Silicosis is a disease that presents only after a very high dose, and it should be possible to “exterminate” it in Sweden.



**Table 4.6.** Summary of the most important results and their probable explanations.

Factor	Tendency of reported ill health over the past ten years	Explanation(s)
Organic solvents	Falling	Reduced use, increased awareness of the risks and other preventive measures
Noise	Increasing	Increasing risk in some environments (school and childcare)
Vibrations	Unchanged	Unchanged activity of the preventive work
Silica dust	Unchanged	The risk of silicosis is partly due to exposure in the distant past (the 1970s or earlier). New cases can also occur due to current exposure but they are difficult to find in the statistics.
Asbestos	Unchanged/increasing (asbestosis) Unchanged (mesothelioma)	Long time between exposure and effect. Exposure for most people probably stopped in the mid-1970s
Isocyanates	Unchanged/increasing	Greater awareness leads to greater frequency of reporting
Heavy metals	Unchanged	Unclear whether many cases really are linked to exposure to heavy metals
Chemical compounds – hand eczema	Unchanged	Unchanged activity with regard to preventive work
Acrylates – hand eczema	Falling in dental care	Preventive work where ill health has decreased despite increased use

A reduced level of a disease or risk factor can mean, from a socio-economic perspective, that the number of people exposed is falling. Despite this, the risk for those who are exposed can be the same or even higher. This review has largely had a socio-economic perspective. The findings are summarised in Table 4.6. In summary, there is evidence that the “classical” occupational diseases are falling in only a couple of the cases studied over a ten-year perspective. Conversely, in other cases, there is evidence of a somewhat greater risk. It is possible that the picture would be different in a more long-term perspective.

It is reasonable, however, to expect some effects of measures in a ten-year perspective. If a reduced risk cannot be demonstrated, the reasons may for example be based on:

- lack of interest in prevention in these areas
- the unreliability or non-specificity of available statistics
- the methods used not having been adapted to current conditions.

## References

- Gustavsson P (2002) "Cancer och exponeringar i arbetsmiljön" ("Cancer and exposure in the work environment") pp. 107–152 in Westerholm P (ed.) *Arbetsjukdom – skadlig inverkan – samband med arbete. Ett vetenskapligt underlag för försäkringsmedicinska bedömningar (sju skadeområden). (Occupational disease – injurious effect – links with work. A scientific basis for medical insurance assessments (seven areas of injury)).* Second extended and revised edition. Arbete och Hälsa (Work and Health) 2002:15, National Institute for Working Life, Stockholm.
- Hansson T (2001) "Ländryggsbesvär och arbete" ("Lumbar problems and work") pp. 19–70 in Hansson T & Westerholm P (ed.) *Arbete och besvär i rörelseorganen. En vetenskaplig värdering av frågor om samband. (Work and problems in the musculoskeletal organs. A scientific evaluation of issues of relationships.)* Arbete och Hälsa (Work and Health) 2001:12, National Institute for Working Life, Stockholm
- Hulshof CTJ, Van der Laan G, Braam ITJ & Verbeek JHAM (2002) "The fate of Mrs Robinson: criteria for recognition of whole-body vibration injury as an occupational disease" *Journal of Sound and Vibration*, 2002; 253: pp. 185–194.
- Järholm B (2000) "Occupational diseases – occurrence and severity" pp. 239–251 in Marklund S (ed.) *Worklife and Health in Sweden 2000*. National Institute for Working Life and Work Environment Authority, Stockholm.
- Larsson S (2002) "Pneumokonioser" (Pneumoconioses) pp. 59–102 in Westerholm P (ed.) *Arbetsjukdom – skadlig inverkan – samband med arbete. Ett vetenskapligt underlag för försäkringsmedicinska bedömningar (sju skadeområden). (Occupational disease – injurious effect – links with work. A scientific basis for medical insurance assessments (seven areas of injury)).* Second extended and revised edition. Arbete och Hälsa (Work and Health) 2002:15, National Institute for Working Life, Stockholm
- Meding B & Järholm B (2002) "Hand eczema in Swedish Adults – changes in prevalence between 1983 and 1996" *Journal of Investigative Dermatology*, 2002; 118: pp. 719–723.
- Montelius J (2002) *Vetenskapligt underlag för hygieniska gränsvärden 23. (Scientific basis for hygienic limit values 23.)* Arbete och Hälsa (Work and Health) 2002:18, National Institute for Working Life, Stockholm
- Nilsson T (2002) "Arbete med handhållna vibrerande maskiner och skadlig exponering" ("Work with hand-held vibrating machinery and injurious exposure") pp. 245–272 in Westerholm P (ed.) *Arbetsjukdom – skadlig inverkan – samband med arbete. Ett vetenskapligt underlag för försäkringsmedicinska bedömningar (sju skadeområden). (Occupational disease – injurious effect – links with*

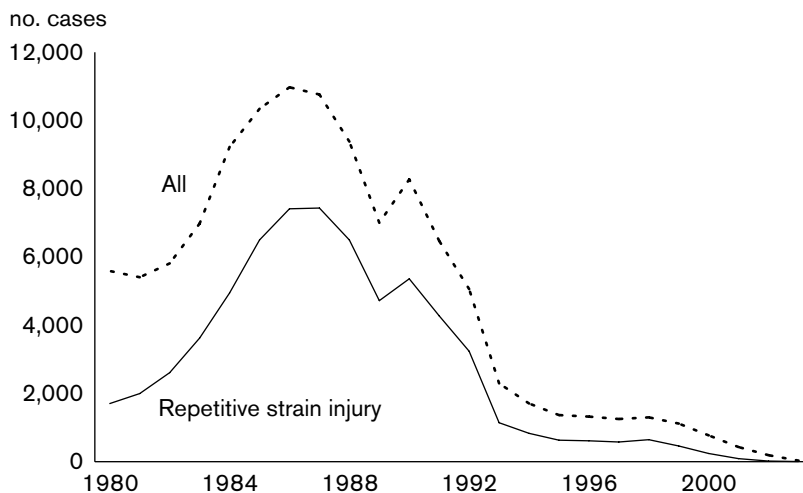
- work. *A scientific basis for medical insurance assessments (seven areas of injury).*) Second extended and revised edition. Arbete och Hälsa (Work and Health) 2002:15, National Institute for Working Life, Stockholm
- Torén K (2002) "Asthma och arbete" ("Asthma and work") pp. 59–78 in Westerholm P (ed.) *Arbetsjukdom – skadlig inverkan – samband med arbete. Ett vetenskapligt underlag för försäkringsmedicinska bedömningar (sju skadeområden).* (*Occupational disease – injurious effect – links with work. A scientific basis for medical insurance assessments (seven areas of injury).*) Second extended and revised edition. Arbete och Hälsa (Work and Health) 2002:15, National Institute for Working Life, Stockholm
- Westerholm P (ed.) (2002) *Arbetsjukdom – skadlig inverkan – samband med arbete. Ett vetenskapligt underlag för försäkringsmedicinska bedömningar (sju skadeområden).* (*Occupational disease – injurious effect – links with work. A scientific basis for medical insurance assessments (seven areas of injury).*) Second extended and revised edition. Arbete och Hälsa (Work and Health) 2002:15, National Institute for Working Life, Stockholm

## Appendix

To receive compensation from the AFA, the injury must have been approved by the Social Insurance Board or be listed by the ILO. Most injuries considered by the AFA have been approved by the Social Insurance Office as occupational diseases. The AFA carries out a thorough investigation of each case, and compensation is primarily paid to those who have a permanent functional impairment. The impairment is graded in per cent, and only those with a disability – which is to say a permanent impairment above zero – have been included in this analysis.

It is clear that there is some lag in the TFA register, since the cases as a rule must first be dealt with and considered by the Social Insurance Board, and thereafter by the AFA. Since it often takes a long time before the degree of invalidity can be determined, there is a delay before a case comes into the register. One problem of using the TFA register is therefore its substantial lag.

For each case, the year the injury presented is noted. An injury that has appeared to perhaps be permanent in nature is confirmed five to ten years later, and is entered into the register at that point. The AFA statistics show that after eight years, only 80 per cent of those who will finally receive compensation for permanent disability have come into the register. The lag is due to the fact that the medical disability is what remains, once the



**Figure 4.7.** Number of cases of permanent injury in the TFA register due to all occupational diseases and repetitive strain injury, respectively.

healing process and medical treatment are regarded as being over. This lag presents special difficulties in interpreting whether there have been changes over the past five years, since only a small number of the cases can be assumed to have come into the register.

Figure 4.7. shows all registered occupational diseases in the TFA register, and by comparison, the number of cases of permanent injury due to diseases of the musculoskeletal system. Just as in the ISA, a steep decline in the number of cases was seen in 1993, probably due to changed rules. Repetitive strain injury has in any case constituted a smaller proportion of all cases in recent years, which may mean that it takes longer for these cases to have their degree of injury established. The number of cases of mental or psychosomatic illness is much lower; between 1993 and 2000, these varied between 13 and 37 cases a year.

## CHAPTER 5

# Can the psychosocial work environment cause neck and shoulder pain?

*Bo Melin and Ewa Wigaeus Tornqvist*

In many occupational groups, musculoskeletal ache and pain constitute the greatest obstacle to realise the vision of “a sustainable working life for everyone”. This type of ill health is the most common cause of long-term sickness absence, disability retirement and reported occupational disease, and constituted 38 per cent of all sickness absences lasting 60 days or more in 1999–2002 (see Chapter 8); 39 per cent of all granted disability retirements and sickness benefits in 2002; and 61 per cent of all reported occupational diseases in 2001 (Work Environment Authority and Statistics Sweden 2003, National Social Insurance Board 2004).

It has not been possible to empirically establish a unidimensional model to account for the origin of aches and pain in the musculature of the upper back. This has resulted in the presentation of a number of “multifactorial” models, where the empirical basis often consists of statistical analyses showing significant correlations between a number of physical and mental factors, and aches and pain in the neck and upper back. One expression of this broader approach is the WHO’s description of musculoskeletal conditions as having multifactorial causes, with risks related to the work environment and performance of work being important contributing factors, although individual, lifestyle and sociocultural factors also play a role.

While the multifactorial models summarise statistical links, the more mechanism-oriented biopsychosocial approach emphasises various processes that lead to ill health. A basic assumption underlying the biopsychosocially-oriented models is that all change is due to interactions between biological, psychological and social factors, which contribute in varying degrees, duration and patterns, and finally lead to the development of ill health in, for example, the neck and shoulder region.

For preventive work to succeed, it is essential to expand our knowledge and understanding of how various factors interact, insofar as working life essentially never consists of physical, mental or social factors alone. The working situation of a checkout assistant might at first glance appear physically demanding, since she is lifting and pulling goods – but she is also mentally stressed by the fact that she has a queue of waiting and impatient people, feels rushed, and in some cases also finds the work monotonous. She may also be thinking about concerns she has regarding a teenager at home ... So, she is working in an organisational system that challenges both her biological and her cognitive systems, which then interact with each other. In addition, her social life at home also interacts with her thoughts at work. Work at a call centre, on the other hand, may seem very mentally challenging with its steady flow of incoming calls to a person sitting relatively still in his or her chair. But in this environment, the constant handling of the computer mouse also contributes physical load. This interaction between physical and mental factors is best understood from a biopsychosocial perspective. A central objective of this chapter is to attempt to describe something of what we know about how physical, mental and social factors may interact to produce, maintain or exacerbate neck and shoulder pain.

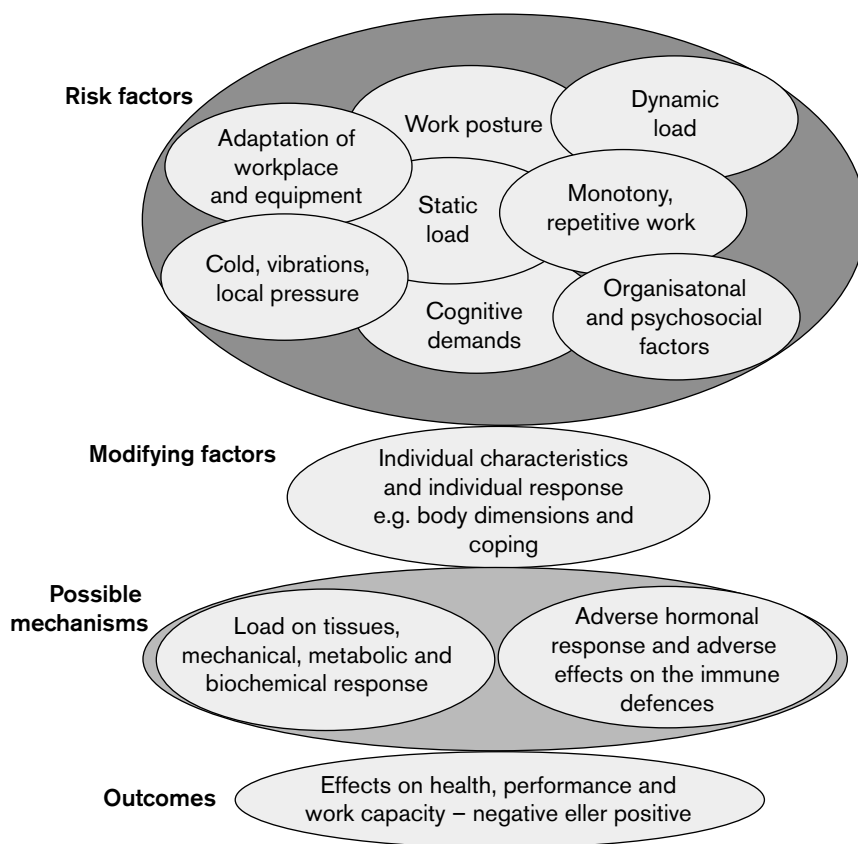
### **Models for origins of ill health in the musculoskeletal system**

The musculoskeletal system comprises the muscles, tendons, the skeleton, joints and peripheral nerves, and pain can arise from one or more of these structures and tissues. A model (Figure 5.1) described by Hagberg and others (1995) emphasises that risk factors in the work environment can have their source in the tasks and their performance, as well as the organisation of the work and the physical and psychosocial work environment.

Classification of risk factors into general groups, as below, is useful in explaining the links to the work and the possible and probable biological causal mechanisms. There is some overlap in the grouping of risk factors – for example, a workplace that is not well-adapted to the individual and the task will result in uncomfortable posture and unnecessary long-term static load. Organisational and psychosocial factors influence several other risk factors. The organisation of the work, for example, can influence the

prevalence of monotony and repetitive work, but is also presumed to exert a direct influence, for example through stress mechanisms.

Whether a certain factor exerts a negative or positive effect depends both on which body part or tissue is involved and the degree of exposure. This can apply to the level, duration and frequency of exposure as well as individual factors. For some risk factors, the link between exposure and



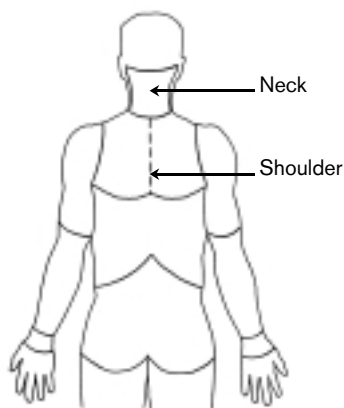
**Figure 5.1.** Model of factors influencing health and performance in the musculoskeletal system. (modified from Hagberg et al. 1995.)

effect is “U-shaped”, meaning that a certain level of exposure might be necessary to maintain health and work capacity, while too high and too low exposure levels both have adverse effects.

### Ill health in the neck and shoulders

Pain in the neck and shoulder region constituted 33 per cent of all reported work injuries, due to musculoskeletal illness, in 2001 (30 per cent for men and 36 per cent for women) and was the most common problem area, followed by the back at 22 per cent (25 per cent for men and 20 per cent for women) (Work Environment Authority and Statistics Sweden 2003). The 2001 Work Environment Survey reported that 32 per cent of the population had neck-upper back pain at least once a week. This was the most common site of pain, followed by problems in the shoulders-arms at 29 per cent (Work Environment Authority & Statistics Sweden 2002).

A review of various statistical sources and scientific studies of neck-shoulder pain and disorders unfortunately reveals differences as regards which anatomical regions are included in the term “neck and shoulders”. Sometimes, for example, the shoulder joint is included in the term shoulder, but other times not, and sometimes it is not clear which specific regions are being referred to. The term neck-shoulder region often refers to the bodily



**Figure 5.2.** The figure illustrates in overview the regions referred to in this chapter as neck and shoulders.



region corresponding to the approximate extent of the trapezius muscle. In this chapter, the shoulder joint and upper arm are *not* included in the term neck-shoulder region (see Figure 5.2).

### Prevalence and changes over time of neck-shoulder pain in women and men

The prevalence of neck and shoulder pain, meaning pain in the upper back and neck, at least once a week, increased by 30 and 27 per cent among male and female employees respectively between 1989 and 2001. This is a greater increase than that observed for lower back problems, which was 12 per cent for men and 22 per cent for women (see Table 5.1) (Work Environment Authority and Statistics Sweden, 2002).

Most studies show that pain in the neck-shoulder region is more common in women than in men. According to the 2001 Work Environment Survey (Table 5.1), 24.5 per cent of men and 40.4 per cent of women had pain in their neck-shoulder region every week. The differences seem only partly explainable by the gender-segregated labour market, with a higher proportion of women in jobs where exposure to repetitive work is common, such as cashiers, telephone operators, hairdressers and cleaners (Work Environment Authority and Statistics Sweden 2002).

There are, however, also large differences within occupational groups (Table 5.2). Some of the differences can probably be explained by the fact that men and women in some occupational groups can have different tasks, but there are also observable differences in occupational groups in which men and women do what appears to be exactly the same work, such as the

**Table 5.1.** Prevalence (per cent) of aches/pain in the neck and shoulder (upper back/neck) and the lumbar region (lower back) each week. (Source: Work Environment Authority and Statistics Sweden, 2002.)

	1989	1991	1993	1995	1997	1999	2001
<i>Neck/shoulder</i>							
Men	18.9	18.7	19.6	21.1	22.0	24.0	24.5
Women	31.8	32.3	32.4	36.4	38.1	42.1	40.4
<i>Lower back</i>							
Men	20.4	19.7	19.4	21.9	21.6	21.2	22.8
Women	23.8	22.5	22.0	25.4	25.8	28.5	29.0

call centre sector (Work Environment Authority and Statistics Sweden, 2002, Karlqvist et al. 2002, Punnett & Bergqvist 1997).

These differences can probably be partly explained by the fact that women have more responsibility for the home and household, and perhaps by constitutional and physiological differences between the sexes. For example, higher levels of unsuitable work posture and greater muscular activity have been observed in women than in men working with a mouse and trackball (Karlqvist et al. 1998, 1999). Furthermore, both subjective and objective measurement methods have demonstrated greater sensitivity to pain in women than in men (Hallin 2003, Hellström & Lundberg 2000). This greater sensitivity to pain seems partly associated with phases in the menstrual cycle.

### **Prevalence of neck-shoulder pain in various occupational groups**

The occupational groups that report the highest prevalence of pain in the neck-shoulder region often do heavy manual work that can involve high load to the neck and shoulder region and in which poor posture and monotonous repetitive movements are common. Examples of this are tradesmen working in construction and manufacturing, machine operators and transport workers, and service jobs with no special training, such as postal delivery (Table 5.2.) (Work Environment Authority & Statistics Sweden, 2002). At the same time, it is worth noting that the prevalence of neck and shoulder problems is equally high in some sedentary jobs, such as various types of customer service work.

Among female customer service staff, pain in the neck and shoulder region makes up a considerably higher proportion (49 per cent) of all reported work injuries, due to musculoskeletal illness, than among female employees as a whole (36 per cent). Female customer service staff are even more heavily afflicted than female employees in other more physically demanding jobs, such as craft and related trade workers (37 per cent) and plant and machine operators and assemblers (37 per cent, unpublished data from 2001, from Robert Linder, ISA, Work Environment Authority 2004).

Unfortunately, comparisons of developments within various occupational groups can only be made before and after the 1997 work environment

**Table 5.2.** Prevalence in per cent of pain/ache every week in the neck/shoulder region (combined data from 1997–2001). Occupational groups in which at least 40 per cent of the men or the women, or both sexes taken together, report pain/ache. No value is given for groups containing fewer than 100 people. (Source: Work Environment Authority and Statistics Sweden, 2002.)

Occupational category	Percentage proportion of those with problems, 1997/2001		
	Men	Women	Total
<b>All groups</b>	23.5	40.2	31.5
Writers and creative or performing artists		42.5	32.2
Public service administrative professionals		42.7	35.2
Life science technicians			40.0
Customs, tax and insurance officials		53.6	47.1
<i>Clerks</i>	28.9	43.4	39.5
Office clerks etc.	27.3	42.1	37.6
Office secretaries and data entry operators		41.5	41.2
Numerical clerks		41.3	40.7
Stores and transport clerks	20.9	44.8	26.0
Mail carriers and sorting clerks	41.3	60.8	48.8
Other office clerks	31.7	40.7	39.6
Customer service clerks		47.0	46.1
Cashier, tellers and related clerks		48.3	46.4
Client information clerks		46.2	45.9
<i>Service workers and shop sales workers</i>	22.2	42.5	38.0
Personal and protective services workers	23.3	43.2	39.8
Houskeeping and restaurant services workers		47.6	45.1
Personal care and related workers	24.1	42.2	40.3
Other personal services workers		57.0	55.6
<i>Craft and related trades workers</i>	28.6	47.2	29.8
<i>Plant and machine operators and assemblers</i>	27.9	46.6	31.4
Machine operators and assemblers	23.7	46.6	30.4
Assemblers	20.0	48.4	30.4
<i>Elementary occupations</i>	27.5	46.1	40.0
Sales and services elementary occupations	26.4	44.7	39.5
Helpers and cleaners		44.8	42.9
Helpers in restaurants		46.4	44.2

studies, because the system of occupational classification was changed in the 1997 study. In the working population as a whole, the proportion reporting pain in the neck-shoulder region has grown by a couple of percentage points between 1997 and 2001 for both men and women (Table 5.1). If the increase in individual occupational categories is compared, the biggest

increase – of almost 15 percentage points – is seen in female *customer service staff* (from 37.8 to 52.5 per cent).

### **Physical risk factors for neck-shoulder pain**

Our current knowledge is fairly good concerning physical risk factors in qualitative terms. However, the situation is significantly less favourable regarding *limit values* in quantitative terms, and regarding our understanding of interactions (and any synergistic effects) between different risk factors.

Conclusions about the importance of various work-related risk factors for the origin of pain in the neck-shoulder region depend on the strictness of the criteria used to evaluate the results of different studies. The criteria used are therefore important in conclusions about the strength of the evidence for various cause-effect relationships. It should be emphasised that practical prevention work should not, of course, be based on the same strict criteria and high evidence threshold required for the approval of an occupational injury in insurance medicine. Several literature reviews of epidemiological studies have been published in recent years that have evaluated the scientific basis of links between various types of work-related physical exposure and pain in the musculoskeletal system (Bernard 1997, Hagberg et al. 1995), Hansson 2001, Sluiter et al. 2001, Wigaeus Tornqvist et al. 2002).

These literature reviews reveal relatively strong scientific support for the view that *static and extreme positions (such as working in a twisted posture, working stooped without support or working with raised arms), heavy physical work with a high degree of load on the neck and shoulders and repetitive neck and shoulder movements* are risk exposures for neck and shoulder problems.

### **Prevalence and change over time of physical risk factors in working life**

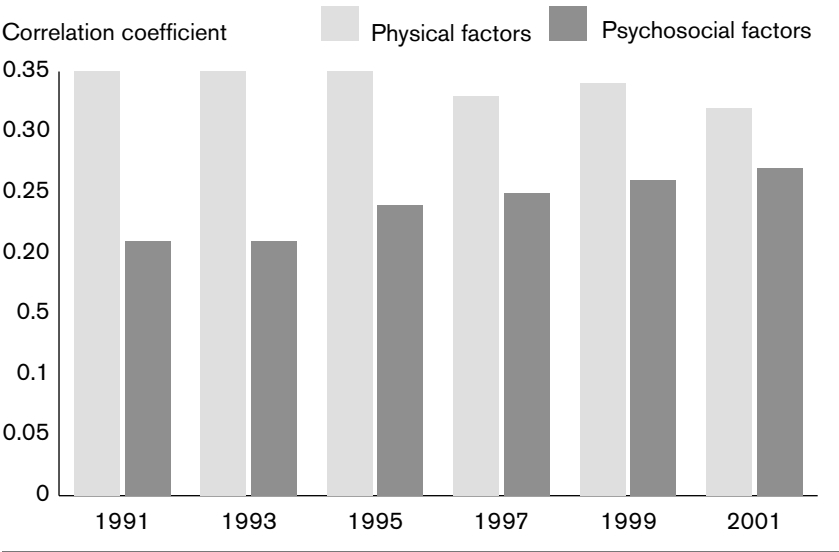
The prevalence of physical risk factors examined in the work environment studies has generally not changed in the 1989–2001 period. These are *work in twisted postures, working stooped without support or with raised arms, being forced to bend and turn often in the same way, repeating the same movement many times an hour*; and *heavy physical work*. However, the proportion reporting that they work at least half of their time at VDUS increased between 1989 and 2001, from 8 to 33 per cent of men, and from 12 to 36 per cent of women.

In customer service work, where the greatest increase in pain has been shown in recent years, *long hours in front of VDUs* and *repetition of the same movement many times an hour* is very common.

**Intensified focus on psychosocial factors**

Upon multiple correlation analysis, the above-mentioned physical risk factors demonstrate a clear covariance with the presence of pain in the neck and shoulder region (Figure 5.3). After 1995, however, there is a downward trend in covariance between physical risk factors and pain in the neck-shoulder region, while a continual increase is observed for covariance with psychosocial risk factors. The results indicate that the importance of psychosocial risk factors for pain in the neck and shoulders has increased.

The psychosocial factors included in the correlation analysis are *overtime work*, *little influence over the pace of work*, *extra stressful work situation*, *difficulty sleeping because of thoughts of work* and *difficulty in not thinking about work when not working*.



**Figure 5.3.** Statistical associations in multiple correlation analysis between physical and psychosocial risk factors and the prevalence of pain in the neck and shoulders. (Source: Statistical processing of raw data from Work Environment studies 1991–2001.)

Exposure to multiple risk factors is common among employed people in the general population, and the combination of more than one risk factor quite naturally increases the propensity to seek medical attention for pain in the neck-shoulder region (Grooten et al. 2004, Wigaeus Tornqvist et al. 2001). Exposure to a lot of VDU work in combination with “high-job strain” involving high demands and low control, has been observed to lead to a significantly higher risk of pain in the neck and shoulders among working women in the general population (Wigaeus Tornqvist et al. 2001).

Many workplaces are characterised by increasing monotony as well as a lack of physical and mental variation and natural breaks. Examples of such workplaces are the fast-growing call centre industry (Norman et al. 2001, Toomingas et al. 2003), see also Chapter 4. In a study of professional computer users in different occupations, there was a higher prevalence of aches/pain in the neck and shoulder region among call centre employees than in any other occupational category (Karlqvist et al. 2002, Norman et al. 2001). Call centre employees are usually classified into the occupational group “customer service staff” or more specifically telephone operators (Work Environment Authority 2003). The number of reported occupational diseases for telephone operators has more than doubled between 1997 and 2000. The rate of increase in reported occupational disease is also greater in the occupational group office service, which includes customer service staff, than in other sectors (Work Environment Authority 2003).

There is a pronounced lack of longitudinal and intervention studies that focus on the importance of the relationship between work and breaks, physical and mental variation and psychosocial work conditions. This has entailed shortcomings in the basis for prevention and evaluation of the risk of work-related musculoskeletal pain in occupational groups with long-term, low-intensity monotonous load compared with that for occupational groups with heavy physical jobs. There is therefore a greater need to pay particular attention to the role of psychosocial factors for the increasing prevalence of neck and shoulder pain that we now see in these low-intensity monotonous load groups.

## Psychosocial factors and pain in the neck and shoulders

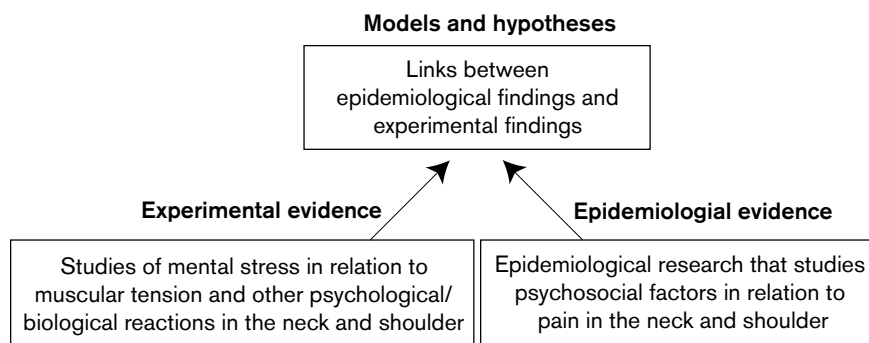
The physical load levels in many occupations have diminished dramatically in recent decades.

Despite this, the prevalence of neck, shoulder and lower back problems has grown over recent decades. The biomechanical models remain highly relevant, but supplementary models tied to a psychosocial stress perspective have made inroads in connection with attempts to account for the origin and persistence of pain in physically less demanding jobs.

The expression "psychosocial factors" in this part of the chapter refers to those psychological and social processes that are important in muscle tension and muscular pain. Psychosocial factors are also used in a narrower sense to refer to mental stress or cognitive strain that affects muscle tension and metabolic changes in the trapezius muscle, which could potentially generate or perpetuate aches/pain.

The reason for this division into a broader and narrower perspective is that experimental research examines mechanisms for how mental stress or cognitive strain can lead to muscular tension, among other things, while epidemiological research directly links psychosocial factors in a broad sense to the presence of pain.

This part of the chapter is divided up (Figure 5.4) as follows: first, we briefly describe the epidemiological support that exists for links between pain in the neck-shoulder region and psychosocial factors. Thereafter, we



**Figure 5.4.** How the various parts of the rest of the chapter relate to each other.

give a more detailed description of experimental research that concerns mental and cognitive stress and its effect on the neck and shoulders, particularly the trapezius. Finally, we present four models that provide possible links between the epidemiological and experimental findings; these models may improve understanding of the role of psychosocial factors in pain in the neck and shoulders.

### **Epidemiological findings**

Pain from the musculoskeletal apparatus must be felt by the individual in order to exist. This means that if pain is experienced, then we can measure its prevalence, intensity and duration, all of which are decisive in epidemiological studies. The initial important question, then, is whether it is possible to use epidemiological methods to show links between pain in the neck and shoulders and psychosocial factors. A complete account of scientific production in the field cannot be given in this chapter.

There have however been few reviews focusing specifically on the neck and shoulders. The exceptions are an American survey in the mid-1990s (Bernard 1997) and above all a thorough review by Bongers et al. in 2002. Both reviews say that the quality of the studies included varies, and that there is a clear lack of longitudinal studies.

Bongers, however, has done an excellent job in her review, using pre-defined criteria for scientific quality and level of evidence. She shows that a majority of both high- and low-quality studies demonstrate a link between experienced work-related stress and upper back pain. Despite difficulties in defining and distinguishing the various psychosocial factors from each other, there is a clear majority of studies showing a positive correlation between *high workload*, *high intensity of work*, *high demands in the work*, *monotonous work*, and *a low degree of social support* and *dissatisfaction with the work*, all related to neck-shoulder problems. Less clear, but positive, correlations are also reported between low control at work and problems in the neck and shoulder region.

### **Experimental findings**

Another important issue is whether mental stress has any effect at all on our upper back musculature, particularly the trapezius muscle. In a more



overarching stress perspective, the American physiologist and stress research pioneer Walter B Cannon held the view early in the last century that muscle tension in the body is an appropriate reaction when we are subjected to stress and threats, since this muscle reaction enables greater preparedness when danger threatens. As early as the 1930s, experimental studies were carried out that studied muscle tension in relation to mental stress, using the techniques of the time. These studies included “focused attention studies”. This could mean that individuals were asked to imagine that they were lifting various objects. Increased muscle tension could then be registered in those muscles that were involved in the lifting the person imagined him/herself doing. One such study demonstrated a dose-response relationship – the heavier the object the person imagined lifting, the greater the muscle tension.

Working from a hypothesis that deaf people who use sign language would have greater activity in the muscles of the hand than hearing people during “non-verbal” problem-solving tasks, it was found, using methodology that was modern at the time (calculated action potentials), that this was in fact the case. A more detailed review of these early studies, which demonstrated that mental stress and activity affect muscle tension, is available in Melin and Lundberg (1997).

### *Modern stress research*

Today, we know that our emotions, our muscular system and our posture are intimately interlinked via several high-order centres in the central nervous system. When we are fearful and afraid, our bodies are alert and tense, and when we are depressed, our movements are often slower. Muscular tension and muscular pain are common in many patients with other primary problems, such as anxiety and depression.

Modern stress research emphasises that the body can be pushed hard for a relatively long time, but that the resources called upon must ultimately be restored if ill health is to be avoided. In other words, it is not necessarily acute stress that causes injury, but long-term stress and the lack of recovery that it involves. According to the allostatic load theory described by Sterling and Eyer (1988) and developed by McEwen (see e.g. 1998), overactivity and underactivity in the allostatic systems (meaning the cardiovascular, endocrine, metabolic, immune and other systems) due to adverse mental stress is

a health risk, while normal activation and recovery of these systems aids adaptation and the survival of the organism during various types of demands and stress.

Like earlier stress models, McEwen's model emphasises that the mobilisation of energy is healthy and normal in situations that require energy, and focuses on the fact that problems arise first when energy is mobilised continually, without any recovery periods. Perhaps the individual works hard for months or years without recovering properly. Allostatic load, then, concerns the internal conflict between energy mobilisation and reconstruction that occurs during long-term stress (Lundberg & Wentz 2003). If we simply use up energy and have no chance to heal and recover, various organs will eventually be damaged. The allostatic model describes several different results of stress provocation that are relevant to recovery. We describe, in rough terms, two possible results below.

a) A dynamic or normal stress reaction consists of rapid activation of the allostatic systems or the biological responses provoked by stress, with rapid deactivation and recovery when the provocation is over. This dynamic stress response is regarded as an effective physiological response and a healthy way of handling stress. It is an "economical" use of bodily resources.

b) A mobilised response that does not stop and return to equilibrium after the stressor is gone, leads to accumulated stress and affects the total "wear and tear" on the biological system. Increased muscle tension that is of long duration and physically unmotivated can thus be regarded as an "uneconomical" reaction.

Mental stress is not always clearly delimited in time and space. This type of stress is normally more prolonged over time than physical stress, which means that the biological systems, like elevated muscular tension, are not necessarily activated at a high level but remain activated for long enough to prevent recovery and healing. It is largely through the allostatic load theory, with its emphasis on the negative consequences of long-term stress, that the link between psychosocial factors and neck and shoulder pain can be understood.

### *Newer experimental studies*

Below, we will use the abbreviation EMG. This denotes electromyography, a catch-all term used to describe measurements in which the electrical activity

of muscles is registered. Links between mental stress and muscular activity have been examined in several studies using EMG. The activity registered could be described simply – even if this is not the whole truth – as a measure of how tense a muscle is. Most studies described below have used EMG technology in which the muscular activity is registered via a sensor at the surface of the skin covering the muscle in question (SEMG). An intramuscular technique (IEMG) has also been developed in recent years. The technology involves the insertion into the muscle of very fine needles or threads with sensors on their ends to enable registration from very specific areas of a muscle.

### *Mental stress in the absence and presence of physical load*

It is not really possible to achieve a complete absence of tension in muscles without resorting to very drastic methods. It is more reasonable to think of an absence of physical load in terms of the individual resting as much as possible and not experiencing any other load than e.g. sitting. There have been some studies that have attempted to study whether mental stress generates tension in a relatively relaxed muscle. McNulty and co-workers (1994), who were among the first to study mental stress in relation to activity in the trapezius using EMG technology, compared activity in this muscle in the presence and absence of a mental calculation task. The mental task resulted in increased activity in the muscle compared with rest. Similar reactions, measured using SEMG, have been observed in female cashiers (Lundberg et al. 1994).

Since work in itself always involves some muscle tension due to physical effort, it is perhaps more interesting to examine whether mental stress contributes to tension in the trapezius over and above that which is caused by already present physical load. This has been examined in several studies. Weber and co-workers (1980) tried to keep the physical load constant during two different experimental situations while adding a stressful mental calculation task into one situation. The constant physical load consisted of the subjects moving not very heavy balls between two containers. The muscle tension measured using SEMG showed a great increase in the activity in the trapezius (75 per cent increase) in the combination move balls plus mental calculation, compared with the one in which the balls were moved alone.

Similar, but less strong, increases in activity have been measured in other studies. Comparisons have been made between training sessions and shooting competitions among pistol shots. In this case the weight of the pistol constitutes the constantly maintained physical load, the shooting competitions represent the higher mental stress level, and the training session a lower mental stress level. High activity was generated in the trapezius both before and during the competition. Lower activity was generated during the practice round. It has also been demonstrated in female cashiers that mental stress combined with physical stress resulted in higher muscle tension than mental or physical stress alone. Some studies have shown that the higher the degree of difficulty of computer work, the higher the muscle tension.

A common way of studying cognitive degree of complexity is by using a test called the Stroop test. The test gives conflicting information that generates stress in the subjects, and has been shown in several studies to lead to SMEG greater than that generated by relatively low physical load (see, for example, Laursen et al. 2002). Studies that have examined anxiety in real social situations (oral presentations) have shown similar reactions. Greater muscle tension was seen a long time before the actual presentation; anxiety about what was to happen led to greater muscle tension.

At the same time, there are at least three published studies, such as the one by Blangsted and co-workers (2004), that have not shown any extra effect of mental stress on muscular tension over and above the effect of physical load alone.

*Does the trapezius muscle have a unique reaction pattern that does not exist in other muscles?*

This is an interesting question, and one which is not easily answered. Compared with all other muscles in the body, the trapezius is probably the muscle in which we experience pain most often. Like our face muscles, the trapezius muscle is important in our emotions. In some laboratory experiments, the EMG was measured in various muscle groups while the subjects were being exposed to emotional influences, and it was found that the trapezius and the face muscles were more involved than other muscles.

With respect to the musculature of the back in particular, McNulty and co-workers for example (see previous description of the study) found that

the only muscle that seemed to react to the mental stressor was in fact the trapezius muscle – other back muscles remained “silent”. Another study using SEMG-monitored biofeedback technology has found similar unique reaction patterns in the trapezius compared with other back musculature (Palmerud et al. 1995). It is therefore possible that the trapezius muscle is relatively unique in its reaction pattern compared with the other muscles of the back. Seen from an evolutionary perspective, too, many species have developed and perhaps survived by using these muscles in emotional contexts. In many species, a common expression of emotion is, for example, that of raising the shoulders, beating the wings or bristling (Lundberg & Wentz 2003).

At the same time, it should be emphasised that cognitive stress seldom occurs separately from emotional aspects of our everyday lives. In a number of the above studies cognitive stress has been used as though the phenomenon were devoid of emotional colouration. The experience of “time pressure” is unique to beings who have the cognitive capacity to perceive time. Humans have the ability to grasp the concept of “clock time”, i.e., a purely cognitive capability. On the other hand, time pressure is more than just that; it is an experience of difficulty in accomplishing something important in a given time frame. Time pressure thus becomes an emotionally charged stressor as well.

Time pressure can thus not simply be understood as a purely cognitive stressor, but also as a strongly emotionally coloured one, which is why many of the studies described above can partly be assumed to have studied aspects of emotional stress, not simply cognitive ones.

### **Models that link epidemiological and experimental findings**

To understand the development of pain in the neck-shoulder region in physically light work, several relatively new models have been presented that are in line with a psychosocial stress perspective. Four such models are described below. One model discusses the altered composition of the blood as a result of a respiratory pattern affected by stress, and what this results in. Another model emphasises that the muscles of the neck region are particularly rich in muscle spindles, and focuses on stress as a possible cause of disturbances in and between these spindles. A third model describes the origin of work-related muscle pain in physically light work, through studies

of how motor units in the trapezius muscle behave during stress. In a fourth model, recently presented, the development of pain in the trapezius is thought to be associated with the same type of mechanisms as those that trigger migraine attacks.

A common feature shared by all four explanatory models to varying degrees is the assumption that mental stress exerts an influence on the mechanism in question. The models further imply that very low but long-term static load levels (cf. allostatic load), in some cases only 2–5 per cent of maximum muscle strength, can give rise to injurious changes in the musculature. Mental or cognitive stress is assumed to be able to generate such low but prolonged loads, principally through activity induced via the sympathetic nervous system.

### *The Cinderella model*

The "Cinderella hypothesis" or "Cinderella syndrome" is based on earlier laboratory research about stereotypical recruitment patterns in motor units in the musculature, and has been formulated into an interesting model in stress ergonomics by Hägg (1991). Metaphorically, the Cinderella hypothesis refers to the fact that Cinderella had to get up first of anyone in the morning and go to bed last. In the same way, particularly sensitive motor units, Cinderella units, would be recruited first of all during load, kept going over time and "shut down" last, when the stress stopped. Cinderella had to keep going for a long time, just as these sensitive or low-threshold units do.

A motor unit consists of a motor nerve cell in, for example, the spinal cord, and the muscle cells with which it is in communication. The individual motor units that form a muscle are activated, in the theory, in a determined or hierarchical order. Small and particularly sensitive units are activated first, and remain active until the muscle is once again completely relaxed, while larger units with higher thresholds are only activated during more powerful muscular contractions. Long-term activation of the small low-threshold units can be assumed to cause disturbances in, among other things, intramuscular metabolism.

According to this hypothesis, then, injury, inflammation and pain arise from long-term activation without sufficient time for rest and recovery in these small low-threshold muscle units (cf. allostatic load). Through inflam-

mation and nerve signals, pain conditions can spread within the muscle and also to other muscles. Conditions of “fatigue” in individual units have been described in the form of a reduced distribution speed in the fibres in long-term activation. Researchers showed in the early 1980s that low-threshold units are characterised by a lower frequency of repetition and slower speed of contraction, but greater endurance, than the high-threshold ones. The muscle fibres in these Cinderella units are thus regarded as having stamina, but it is probable that there is a limit to how long they can be active without becoming injured. According to the theory, the muscle fibres in the units far down the hierarchy only rest during complete relaxation, and there is thus no safely non-injurious load level other than total rest.

At the same time, there are interesting findings that partly argue against long-term activity in individual muscle units being possible at all. Studies in which intramuscular techniques are used indicate that longer-term physical and mental load leads to the shutdown of low-threshold units in the trapezius, and that other previously “silent” and inactive units with higher thresholds are recruited instead. This alternation between motor units means that individual units are not recruited for a particularly long time; after a certain amount of time, they return to a resting state.

This phenomenon (the substitution hypothesis) appeared in experiments by Westgaard and De Lucas in 1999, after only five minutes’ load. These findings are reasonable in many ways, since from an evolutionary perspective, we ought to be constructed so that if one muscle fibre or group of fibres becomes fatigued, the non-fatigued fibres would swing into action to maintain the activity of the muscle. The question however is whether this alternating function can be disordered by long-term stress or in an already injured muscle.

### *Hyperventilation*

It is well known that mental stress can lead to exaggerated breathing. As early as 1978, David Hasset wrote in his book *A Primer of Psychophysiology* that breathing and breathing patterns were the most underestimated parameter in the entire field of psychophysiology. Respiration has attracted more attention in recent years within psychophysiology oriented working life studies. Both mental stress and pain itself can lead to altered breathing

patterns, with hyperventilation as a result. Hyperventilation means that the individual is breathing much more than is necessary for normal gas exchange in the lungs. As a result of increased breathing, so much carbon dioxide is removed from the blood that its carbon dioxide level falls and the pH of the blood changes – it becomes more basic, or alkaline. This condition is known as respiratory alkalosis and leads to contractions in the blood vessels in for example the skin, brain and heart, whose blood flows are heavily reduced. This change also directly affects blood levels of calcium ions, which can disturb muscle function.

The psychologist Lawrence Schleifer (1994, 2002) studied tidal volume, which is the volume of air pulled in and pressed out of the respiratory channels in each breath, and changes in the carbon dioxide level of expelled air in people doing computer input work. Schleifer found that this mentally stressful and monotonous work leads to breathing that exceeds metabolic needs. Working from a hyperventilatory stress model, Schleifer presented a need for research, rather than a full model, regarding stress-induced effects on respiratory patterns, metabolic changes and disordered microcirculation in the musculature, and their consequences for, among other things, muscular tension and the development of pain. Schleifer's model could be linked to the Cinderella hypothesis, but is above all related to earlier knowledge of reduced blood circulation as the critical factor behind muscle pain. It is also related to the ideas of Knardahl (2002), presented below.

### *The migraine hypothesis*

One alternative to the assumption that pain is caused by muscle tension has been presented by Knardahl (2002). The model is primarily oriented towards explaining the origin of pain in association with long-term mental stress, in jobs with low physical load. Knardahl emphasises that the relationship between the development of pain and heavy physical labour has other mechanisms and thus other explanatory models. The hypothesis implies reciprocal action between sensory nerves and blood vessels, without any direct involvement of the muscle fibres. In his view, this interaction between sensory nerves and blood vessels, which excludes the muscle fibres, results in a dilation of the blood vessels that is similar to that seen in migraine attacks. The sensory activity can be triggered by mental stress.



In this process, substances that contribute to pain can be excreted, and inflammatory processes can contribute to a further increase in sensitivity to pain. Knardahl gives three possible mechanisms for this reciprocal action of nerves and blood vessels: 1) Arterial vasodilatation, which is to say that the walls of the blood vessels are extended and the tissues stretched, resulting in mechanical activation of nerve endings. 2) Vascular production and triggering of pain-inducing substances, both via innervation of the blood vessels and because the blood vessels themselves produce substances that increase sensitivity to pain and irritability. 3) When inflammation has occurred, several factors increase the permeability of the vessels. This increased permeability can lead to leakage of pain-inducing substances that in their turn can increase sensitivity towards pain.

### *The muscle spindle hypothesis*

This model is based on the fact that injuries to the trapezius can arise during static monotonous muscular work, and that stress at work increases sensitivity to load and vice versa. This reciprocal effect is due to the fact that the body's defence against monotonous movements is linked to the body's stress management system. Muscle spindles play an important role in this interaction. All the body's muscles contain muscle spindles: small receptors that feel the length of the muscle and changes in its length, and are very important for our sense of our joints and muscles. This sense is constantly informing our brains about the position and movements of body parts, and it does it so well that we know without looking where our arms and legs are and how they are moving in relation to each other. With its complex system of joints and muscles, the neck is a link between the head and abdomen, and the muscles of the neck, such as the trapezius, in fact have many muscle spindles and sense, among other things, the movements of the head in relation to the abdomen.

The muscle spindles regulate the power required to extend the muscle to a certain length and are thereby very important in our coordination and fine motor movements. The spindles are linked via nerve fibres to each other and the spinal cord, using them to transmit impulses. In the model, a central factor in pain development (see Johansson et al. 1999, Johansson & Soika 1991) is that muscle cells in for example long-term static load form acid

substances as metabolites. These substances excite the nerve cells that control the muscle spindle system. The muscle then reflexively tenses even more. In that situation, the blood flow in the muscle falls and the metabolites are not transported away by the blood. A vicious circle arises. The nerve cells are excited even more and the spindles tense the muscle even more, resulting in chronic pain.

This feedback system or vicious circle can, after a while, affect nearby muscles too – and the pain becomes more widespread. Recent research implicates a sympathetic innervation at muscle spindle level, so interest in the model is accentuated in a psychosocial perspective. It is therefore possible that mental stress has an almost direct effect on the ability of the muscle spindles to sense, for example, fine motor demands. The effects of long-term stress could thus lead to poorer sensory ability in regard to movement, to stiffer muscles and to reduced ability to be aware of position, speed and so on.

The model thus implies that muscle pain develops via disorders in the proprioceptive system. This system is very important in controlling our movements and helps them to be energy-saving, precise and coordinated. Consequently, if we keep working or are under stress with a reduced sense of position and movement, this could lead to poorer cooperation between the muscles and increase muscle tension. In the long run, this can cause muscle pain and occupational injury. The findings are based on many animal studies, but also on studies of the sense of position of the shoulder, for example in healthy subjects. Current research has shown that those who did repetitive arm work for a long time developed a clear deterioration in their proprioception and felt tired for a long time afterwards. At the same time, there are studies by, for example, Matre and Knardahl (2003) showing that the sympathetic nervous system activity has no effect on proprioception. Thus, further research is needed to underpin the model.

## Conclusions

In the light of the important work of preventing injury rather than from an insurance medicine perspective, we find that there is today quite good knowledge of physical risk factors for pain in the neck and shoulder in qualitative terms. On the other hand, the situation is considerably worse

with respect to quantitative limit values and knowledge of coordination and synergy effects between the *various* risk factors. Conclusions about the importance of various physical risk factors in the origin of neck and shoulder aches/pain are determined by the strictness of the criteria used in various studies to assess results; these, then, are very important in drawing conclusions about various causal relationships. Several literature reviews have been published in recent years of epidemiological studies that evaluate the scientific basis of links between various work-related physical exposures and pain in the musculoskeletal system. There is relatively strong scientific support for the hypothesis that static and extreme working positions; heavy physical work with high load on the neck and shoulders; and repetitive neck and arm movements constitute risky exposures for neck and shoulder problems.

On the other hand, there is less clear scientific evidence for the role of psychosocial factors. We find support in epidemiological research for links, in some cases strong links, between several psychosocial factors and pain in the neck and shoulder region. Unfortunately, there is a pronounced lack of studies that follow individuals over time. At the same time, we can see that experimental research has shown quite clearly that mental stress generates muscle tension in the trapezius muscle, and that this type of stress also seems able to increase tension more than is motivated by the physical demands. The trapezius seems to be part of our stress mobilisation system, at least sometimes and in certain situations.

We also seem to use this muscle without its being physically justified at all. Perhaps the response of the trapezius to mental stress is unique, since several other muscles in the back seem unaffected by mental stress. But we have to say that few studies have been carried out of the possible unique nature of the trapezius. There is, then, scientific evidence that mental stress leads to muscle tension, measured using EMG technology. However, muscle tension is not the same thing as pain, and we therefore briefly presented the allostatic load model. It is to be understood in the light of the fact that an injury caused by stress does not at all have to arise after acute and strong stress.

It is rather long-term stress, and lack of recovery, that constitutes a risk of injury. So, can long-term muscle tension, even if it is at a low level, lead to

disorders or injury resulting in pain? We described four relatively new models that support the psychosocial stress perspective and that could explain why pain arises during low-level but long-term stress.

One model discusses the altered composition of the blood as a result of an affected respiratory pattern caused by stress, and the results of this. Another model emphasises that the muscles of the neck region are particularly rich in muscle spindles, and focuses on stress as a possible disturbant in and between these spindles. A third model illuminates the origins of pain in light physical work, through the behaviour of motor units in the trapezius muscle during stress. The model assumes that motor units are recruited in a stereotypical hierarchical order, which means that those muscle fibre units that are recruited first during activation are also the last to return to a resting state. There is thereby a risk that early recruited, low-threshold units are “switched on” for much longer periods without intermittent rest. In a fourth model, development of pain in the trapezius is thought to be due to the same type of mechanisms as are seen in migraine.

What the four explanatory models have in common, if in differing degrees, is the assumption that mental stress has an effect on each mechanism. The models also indicate that very low but long-term static load levels, in some cases only 2–5 per cent of muscle strength, can give rise to injurious changes in the musculature. Mental or cognitive stress is assumed to be able to lead to this low-grade but long-term stress, primarily through activity induced via the sympathetic nervous system.

## References

- Bernard BP (ed.) (1997) *Musculoskeletal disorders and work place factors*. National Institute for Occupational Safety and Health, USA.
- Blangsted AK, Sogaard K, Christensen H & Sjogaard G (2004) “The effect of physical and psychosocial loads on the trapezius muscle activity during computer keying tasks and rest periods” *European Journal of Applied Physiology*, March; 91(2–3): pp. 253–258.
- Bongers PM, Kremer AM & ter Laak J (2002) “Are psychosocial factors risk factors for symptoms and signs of the shoulder, elbow, or hand/wrist? A review of the epidemiological literature” *American Journal of Industrial Medicine*, May; 41(5): pp. 315–342.
- Grooten WJA, Wiktorin C, Norman L, Josephson M, Wigaeus Tornqvist E & Alfredsson L (2004) “Seeking Care for Neck/Shoulder Pain: A Prospective

- Study of Work-Related Risk Factors in a Healthy Population" *Journal of Occupational and Environmental Medicine*, 46(2): pp. 138–146.
- Hagberg M, Silverstein B, Wells R, Smith MJ, Hendrick HW, Carayon P & Pérusse M (Kuorinka I & Forcier L ed) (1995) *Work related musculoskeletal disorders (WRMDs): A reference book for prevention*. Taylor and Francis, London.
- Hallin RG (2003) "Smärta mer smärtsamt hos kvinnor. Genusperspektivet eftersatt i forskning om smärtans biologiska mekanismer" ("Pain is more painful for women. The gender perspective is missing from research on the biological mechanisms of pain") *Läkartidningen*, 2003; 100(46): pp. 3738–3741.
- Hansson T (2001) "Nackbesvär" (Neck problems) pp. 71–96 in Hansson T & Westerholm P (ed.) *Arbete och besvär i rörelseorganen. En vetenskaplig värdering av frågor om samband. (Work and problems in the musculoskeletal organs. A scientific evaluation of issues of relationships.)* Work and Health 2001:12, National Institute for Working Life, Stockholm
- Hasset J (1978) *A Primer of Psychophysiology*. Freeman & Company, New York.
- Hellström B & Lundberg U (2000) "Pain perception to the cold pressor test during the menstrual cycle in relation to estrogen levels and a comparison with men" *Integrative Physiological and Behavioral Science*, 2, pp. 132–141.
- Hägg G (1991) "Static work loads and occupational myalgia: A new explanation model" pp. 141–144 in Anderson PA, Hobart DJ & Danhoff JV (ed.) *Electromyographical kinesiology*. Elsevier Science, North Holland.
- Johansson H, Sjölander P, Djupsjöbacka M, Bergenheim M & Pedersen J (1999) "Pathophysiological mechanisms behind work-related muscle pain syndromes" *American Journal of Industrial Medicine*, September; suppl 1: pp. 104–106.
- Johansson H & Sojka P (1991) "Pathophysiological mechanisms involved in genesis and spread of muscular tension in occupational muscle pain and in chronic musculoskeletal pain syndromes: A hypothesis" *Medical Hypotheses*, 35, pp. 196–203.
- Karlqvist L, Bernmark E, Ekenvall L, Hagberg M & Isaksson A (1998) "Computer mouse position as a determinant of posture, muscular load and perceived exertion" *Scandinavian Journal of Work, Environment & Health*, 24(1): pp. 62–73.
- Karlqvist L, Bernmark E, Ekenvall L, Hagberg M, Isaksson A & Rostö T (1999) "Computer mouse and track-ball operation: Similarities and differences in posture, muscular load and perceived exertion" *International Journal of Industrial Ergonomics*, 23(3): pp. 157–169.
- Karlqvist L, Wigaeus Tornqvist E, Hagberg M, Hagman M & Toomingas A (2002) "Self-reported working conditions of vdu operators and associations with musculoskeletal symptoms: a cross-sectional study focusing on gender differences" *International Journal of Industrial Ergonomics*, 30: pp. 277–294.
- Knardahl S (2002) "Psychophysiological mechanisms of pain in computer work: the blood vessel-nociceptor interaction hypothesis" *Work & Stress*, 2, pp. 179–189.
- Laursen B, Jensen BR, Garde AH & Jorgensen AH (2002) "Effect of mental and physical demands on muscular activity during the use of a computer mouse and

- a keyboard" *Scandinavian Journal of Work, Environment & Health*, (4): pp. 215–221.
- Lundberg U, Kadefors R, Melin B, Palmerud G, Hassmén P, Engström M & Elfsberg Dohns I (1994) "Psychophysiological stress and EMG activity of the trapezius muscle" *International Journal of Behavioral Medicine*, 1, pp. 354–370.
- Lundberg U & Wentz G (2003) *Stressad hjärna, stressad kropp. (Stressed brain, stressed body.)* Wahlström och Widstrand, Stockholm.
- Matre D & Knardahl S (2003) "Sympathetic nerve activity does not reduce proprioceptive acuity in humans" *Acta Physiologica Scandinavica*, July; 178(3): pp. 261–268.
- McEwen BS (1998) "Stress, adaptation and disease: Allostasis and allostatic load" *New England Journal of Medicine*, 840, pp. 33–44.
- McNulty WH, Gevirtz RN, Hubbard DR & Berkoff GM (1994) "Needle electromyographic evaluation of trigger point response to a psychological stressor" *Journal of Psychophysiology*, 31, pp. 313–316.
- Melin B & Lundberg U (1997) "A biopsychosocial approach to work-stress and musculoskeletal disorders" *Journal of Psychophysiology*, 11: pp. 238–247.
- National Social Insurance Board (2004) [www.rfv.se](http://www.rfv.se)
- Norman K, Toomingas A, Nilsson T, Hagberg M & Wigaeus Tornqvist E (2001) "Arbetsförhållanden och upplevda besvär hos kvinnliga och manliga arbetstagare på ett callcenter" ("Work conditions and experienced problems in female and male call centre employees") Arbetslivsrapport 2001:5, National Institute for Working Life, Stockholm.
- Palmerud G, Kadefors R, Sporrang H, Järvholm U, Herberts P, Hogfors C & Peterson B (1995) "Voluntary redistribution of muscle activity in human shoulder muscles" *Ergonomics*, 38(4), pp. 806–815.
- Punnett L & Bergqvist U (1997) *Visual display unit work and upper extremity musculoskeletal disorders. A review of epidemiological findings.* Work and Health 1997:16, National Institute for Working Life, Stockholm
- Schleifer L & Ley R (1994) "End-tidal pCO<sub>2</sub> as an index of psychophysiological activity during VDT data-entry work and relaxation" *Ergonomics*, 1994 (2): pp. 245–254.
- Schleifer SJ, Bartlett JA, Keller SE, Eckholdt HM, Shiflett SC, Delaney BR (2002) "A hyperventilation theory of job stress and musculoskeletal disorders" *American Journal of Industrial Medicine*, May; 41(5): pp. 420–432.
- Sluiter JK, Rest KM & Frings-Dresen MHW (2001) "Criteria document for evaluating the work-relatedness of upper extremity musculoskeletal disorders" *Scandinavian Journal of Work, Environment & Health*, 27 (Suppl 1): pp. 3–102.
- Sterling P & Eyer J (1988) "Allostasis: a new paradigm to explain arousal pathology." pp. 629–649 in Ficher S & Reason J (ed.) *Handbook of Life Stress, Cognition and Health*. Wiley, New York.
- Toomingas A, Hagman M, Hansson Risberg E & Norman K (2003) "Arbetsförhållanden och hälsa vid ett urval av callcenterföretag i Sverige" ("Working

- conditions and health at a selection of call centres in Sweden”) Arbetslivsrapport 2003:10, National Institute for Working Life, Stockholm.
- Weber A, Fassler C, O'Hanlon JF, Gierer R & Grandjean E (1980) “Psychophysiological effects of repetitive tasks” *Ergonomics*, 23, pp. 1033–1046.
- Westgaard RH & De Luca CJ (2001) “Motor Control of low-threshold motor units in the human trapezius muscle” *Journal of Neurophysiology*, (4): pp. 1777–1781.
- Wigaeus Tornqvist E, Kilbom Å, Vingård E, Alfredsson L, Hagberg M, Theorell T, Waldenström M, Wiktorin C & Hogstedt C (2001) “The influence on seeking care because of neck and shoulder disorders from work-related exposures” *Epidemiology*, 12(5): pp. 537–545.
- Wigaeus Tornqvist E, Kindenberg U & Schærström A (2002) *Arbetsrelaterat? Skador i nacke-skuldror-armar. (Work-related? Injuries to the neck, shoulders and arms.)* SALTSA Report 2002:2, National Institute for Working Life, Stockholm.
- Work Environment Authority (2003) *”Arbetsmiljö i callcenter. 3:e delrapporten från Arbetsmiljöverkets tillsynsprojekt”* (“Work environment in call centres. The 3rd report from the Work Environment Authority’s inspection project”) Work Environment Authority, Stockholm.
- Work Environment Authority & Statistics Sweden (2002) *”Arbetsmiljön 2001”* (“The working environment in 2001”), Official Swedish statistics, Statistics bulletins, Work Environment Authority & Statistics Sweden, Stockholm.
- Work Environment Authority & Statistics Sweden (2003) *”Arbetsjukdomar och arbetsolyckor 2001”* (“Occupational disease and occupational injuries in 2001”), Official Swedish statistics, Work Environment Authority & Statistics Sweden, Stockholm.





## CHAPTER 6

# Low mental well-being – trends in and outside the labour market

*Lennart Hallsten, Ingvar Lundberg and Kerstin Waldenström*

Since the mid-1990s, mental ill health and low mental well-being have been in the limelight in Sweden, perhaps mainly due to their relationship with increased long-term sick leave. Sickness absence and disability retirement caused by mental problems and disorders have risen markedly (see Chapters 7 and 8). Concepts such as burnout, depression and chronic fatigue syndrome have been used increasingly in the media and are now part of everyday language.

These phenomena are probably the result of prolonged stress processes, and the biological and medical risks of prolonged stress have been highlighted recently (Lundberg & Wentz 2004). Signs of reduced mental well-being therefore deserve attention, since they may develop into serious health risks in the long term. But it may be important to pay attention to mental symptoms for other reasons as well. Apart from personal strain on the individual and negative economic consequences for society, low mental well-being can also make it more difficult for people to get or hold down a job (Hallsten & Isaksson 2000). Work and functional capacity may also be reduced (National Board of Health and Welfare 2004).

The changes in working life since the early 1990s have been considered an important underlying source of the reduced mental well-being and stress-induced illnesses. The effects of the structural and cyclical changes on working conditions discussed in Chapters 1 and 2 have also been significant, which can be seen from the regular publications by the Swedish Work Environment Authority (Arbetsmiljöverket) and Statistics Sweden (scb) on work environment conditions and work-related disorders.

However, the impact of these social changes on the health of groups outside the labour market, such as students, housewives/husbands, pension-

ers and children, is more uncertain, and this issue has not been discussed in particular detail in the literature. Information on mental well-being among groups in and outside the labour market may, however, provide a perspective on, and a better understanding of, the development of health and its causes. Such data will be presented here.

## Issues and data sources

This chapter describes the prevalence of low mental well-being in terms of a number of mental symptoms. The symptoms mainly concern mild forms of mental ill health, but people with anxiety and depressive disorders can also be expected to present these symptoms. The development trends for mental well-being are focused on, rather than differences in levels between groups on a specific occasion. Particular attention is paid to two questions:

- How has mental well-being developed since the mid-1980s, for the adult Swedish population in general, and for various groups in and outside the labour market?
- How can these development patterns be explained?

In order to study the development of mental well-being, indicators from Statistics Sweden's Survey of Living Conditions (ULF) will mainly be used. ULF began in the late 1970s and is carried out annually by Statistics Sweden, based on a sample of the Swedish population aged 16 to 84. Approximately 6,000 people are interviewed on each occasion, and the questions vary slightly from year to year. (For a more detailed description of ULF, see, for example, Vogel et al. 2000). Data from Stockholm County Council's public health survey for the years 1994, 1998 and 2002 are also presented.

The ULF material consists of time series data from repeated cross-sectional surveys. The data from year to year show net changes in the population as a whole or in certain population groups. Consequently, a change in, for example, sleeping problems for employed people between two survey occasions shows that the *proportion* with sleeping problems in the employed group has changed between the survey occasions, not that the sleeping problems for the individuals have changed since the previous survey occasion. However, certain opportunities for studying individual change are available, since a small group (just under 20 per cent) of the

survey participants, so-called panel groups, are interviewed again every eight years. Longitudinal panel data are used here for a complementary analysis.

Three mental symptoms or indicators of low mental well-being from ULF, which concern fatigue, sleeping problems and anxiety, are used here.<sup>1</sup> The question on fatigue was: "Have you often felt tired during the past 14 days?" to which the response options were "yes" and "no".<sup>2</sup> Another question was: "Have you had difficulty sleeping during the past 14 days?" to which the options were also "yes" and "no". The third question was: "Have you suffered from anxiety during the past three months?" to which there were three options: "no", "yes, mild" and "yes, severe". The two latter categories, which showed a similar development over time, have been combined here in a single response category, "yes".

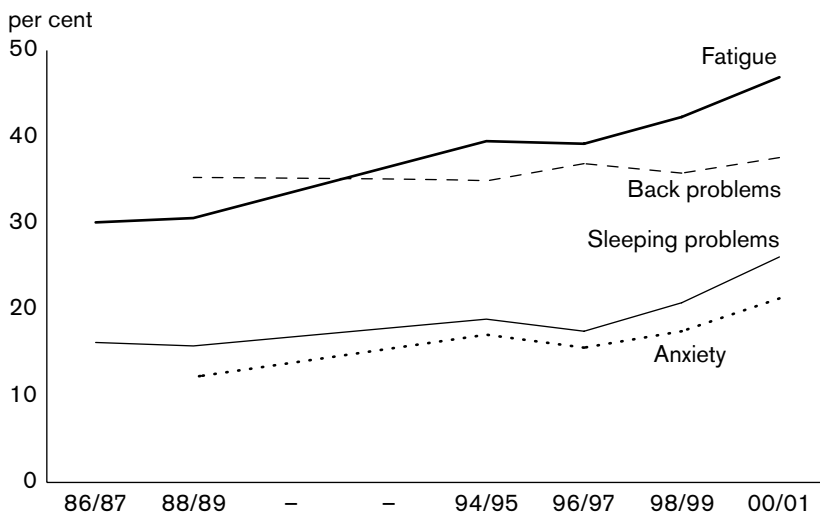
The covariance between the responses to these three questions was moderate, and they are therefore treated separately in this study. The questions on fatigue and sleeping problems were first asked in 1986, while the question on anxiety was first asked in 1988. During the period 1990–1993, these questions were not included in ULF, but they were included again in 1994 and in each subsequent survey. The study periods concerned are therefore 1986–2001 for fatigue and sleeping problems, and 1988–2001 for anxiety. In order to increase the reliability of the data, two years have been combined. So, for example data from 1986 and 1987 have been combined into one survey occasion, 1986–87, and so on.

The participants in ULF are divided into seven groups on the basis of their labour market position on the interview occasion: employees, students, housewives/husbands, old-age pensioners, disability pensioners, the short-term unemployed and the long-term unemployed. The employee category comprises the self-employed, farmers and full-time and part-time employees, including those on leave of absence or parental leave, but excluding the short-term unemployed. Housewives/husbands are people whose main activity is carrying out household duties at home or elsewhere without an employment contract. Students are people studying in basic adult education, upper secondary schools, colleges and universities as well as participants in labour market training programmes. Old-age pensioners are people receiving a pension, as a result of reaching retirement age or as a

result of an employment contract, while disability pensioners are people, who have retired early as a result of ill health or who receive a temporary disability pension. The short-term unemployed and the long-term unemployed are defined as people who were unemployed during the reference week, and who have been continuously unemployed for less than or more than six months, respectively. Military servicemen are not included in the study.

### Development of mental well-being since 1986–87

Figure 6.1 describes the development from 1986–87 to 2000–01 for the three symptoms of fatigue, sleeping problems and anxiety, using information from all the ULF data, namely people aged 16 to 84 living in Sweden who were employed or non-employed on the interview occasion. The development of reported back problems, which are often related to heavy physical work, is also presented for comparison. The figure shows the percentages that responded “yes” to the questions (see also the last column

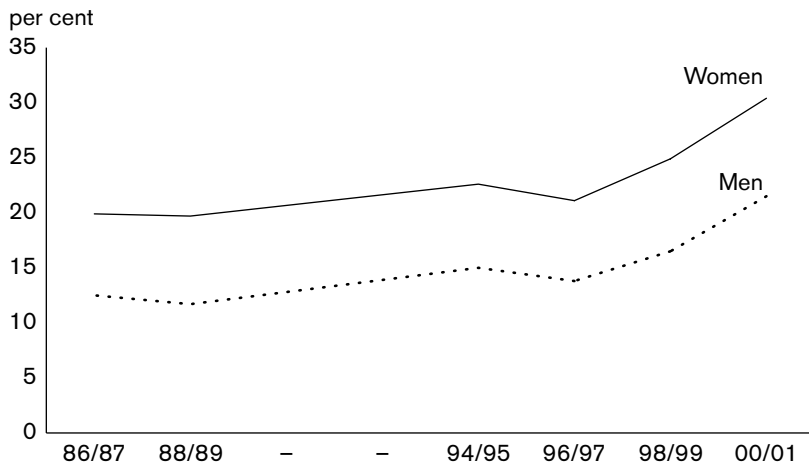


**Figure 6.1.** Development of fatigue, back problems, sleeping problems and anxiety from 1986–87 to 2000–01. Data lacking for the years 1990–93. (Source: ULF)

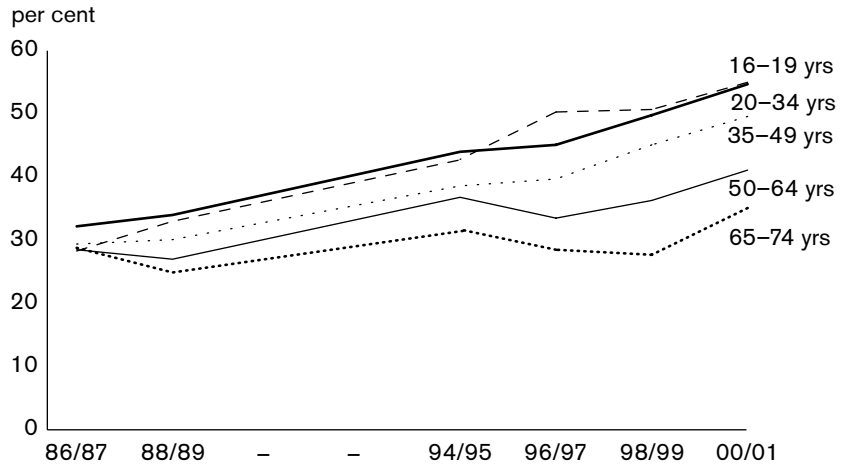
of Table 6.1). The data are based on approximately 70,000 individuals in the case of fatigue and sleeping problems, and approximately 58,000 individuals in the case of anxiety and back problems. Approximately 12,000 individuals responded in each pair of years.

As can be seen, fatigue, sleeping problems and anxiety have increased during the study period. In 1986–87, approximately 30 per cent reported fatigue, while the equivalent proportion was 47 per cent in 2000–01, an increase of just over 50 per cent. Sleeping problems rose from 16 per cent to 26 per cent, while anxiety rose from 12 per cent to 21 per cent, also increases of more than 50 per cent. The increases in symptoms were most marked between 1996–97 and 2000–01. However, back problems showed no clear increase over the period (up from just over 35 per cent to just under 38 per cent).

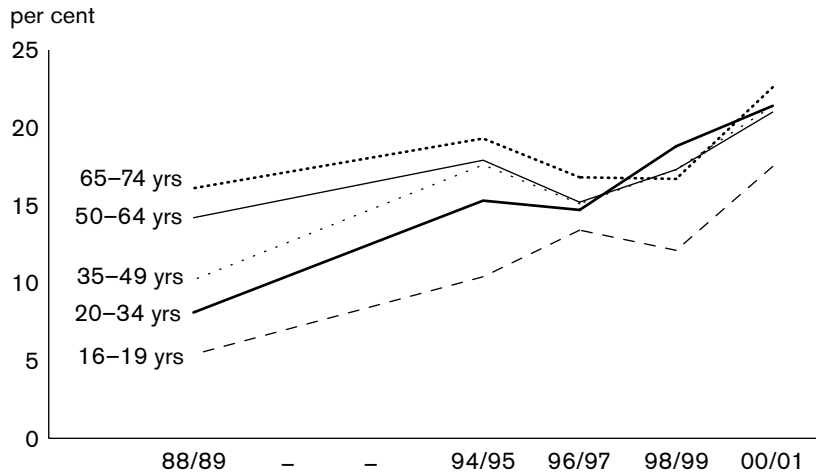
The decline in mental well-being has been similar for men and women, which is illustrated in Figure 6.2. In general, women reported more fatigue, sleeping problems and anxiety than men, but the curves follow one another over the period.



**Figure 6.2.** Development of sleeping problems for men and women from 1986–87 to 2000–01. Data lacking for the years 1990–93. (Source: ULF.)



**Figure 6.3a.** Development of fatigue for various age groups from 1986-87 to 2000-01. Data lacking for the years 1990-93. (Source: ULF.)



**Figure 6.3b.** Development of anxiety for various age groups from 1988-89 to 2000-01. Data lacking for the years 1990-93. (Source: ULF.)

The development patterns for the three symptoms have also been similar for various socio-economic groups (high-level, medium/low-level white-collar workers and blue-collar workers), family types (combinations of cohabiting and single people with and without children) and for those with or without a foreign background.

On the other hand, mental well-being, particularly fatigue, seems to have developed more negatively for younger people than for older people, which can be seen from Figure 6.3a. At the end of the study period, the age groups have become more dissimilar with regard to fatigue. The opposite applies to sleeping problems and anxiety, where the age groups have gradually converged at a higher symptom level (see Figure 6.3b). By comparison, it may be mentioned that back problems have not changed at all for these age groups between 1988–89 and 2000–01.

The central question is how mental well-being has developed for the various labour market positions. This is described in Table 6.1, where the results are shown for employees, students, housewives/husbands, old-age pensioners, disability pensioners, the short-term unemployed and the long-term unemployed.

For almost all positions, the symptom levels were significantly higher at the end of the study period than at the beginning. The exceptions were old-age pensioners in the case of fatigue and sleeping problems, where no significant upward trend was observed – and even a downward trend for sleeping problems. The increases in anxiety among disability pensioners and the long-term unemployed, who had high initial levels, were not significant either. Fatigue showed a more gradual, monotonous increase over the period than sleeping problems and anxiety, which can be seen from the rank correlations  $r_s$ . For the latter two symptoms, a plateau could be observed in the mid-1990s. A detailed examination of the trends suggests a stepped change over the study period. Between 1988–89 and 1994–95, practically all positions showed an increase in symptoms, followed by a stabilisation or a weak downturn for the majority of positions up to 1996–97, even for fatigue, before rising again together up to 2000–01. Between 1998–99 and 2000, the symptoms rose clearly ( $p < 0.001$ ), even for old-age pensioners.

Throughout the study period, fatigue rose most for students, in both absolute and relative terms (up from 29 per cent to 54 per cent). The long-term unemployed showed a similar increase (up from 30 per cent to 52 per

**Table 6.1.** Development of fatigue, sleeping problems and anxiety from 1986–87 to 2000–01 for seven labour market positions and for the total group. The figures show the proportions in per cent,  $r_s$  denotes the rank correlation with year, and  $n_{\min}$  and  $n_{\max}$  denote the minimum and maximum number of people in the positions for which the percentages are estimated.

	Employees	Students	House- wives/ husbands	Old-age pensioners	Disability pensioners	Short- term un- employed	Long- term un- employed	Total
<i>Fatigue</i>								
1986–87	29.2	28.5	32.6	30.5	45.5	29.8	29.7	30.1
1988–89	29.5	35.2	32.7	25.0	45.9	32.1	37.5	30.6
1994–95	39.0	43.7	45.8	31.2	55.0	37.0	31.7	39.5
1996–97	38.2	49.9	40.0	28.4	53.0	39.5	39.8	39.2
1998–99	43.0	50.1	48.5	27.0	52.4	45.5	39.7	42.3
2000–01	47.5	53.9	51.2	34.5	57.4	47.5	52.1	46.9
$r_s$	0.13***	0.16***	0.14***	0.02	0.07***	0.11***	0.12***	0.12***
$n_{\min}/\text{year}$	6,442	807	215	1,191	367	212	48	11,342
$n_{\max}/\text{year}$	7,752	1,233	417	1,935	458	660	337	12,515
<i>Sleeping problems</i>								
1986–87	11.6	6.9	23.1	29.5	40.1	14.0	16.9	16.2
1988–89	11.4	8.0	20.2	24.5	36.9	17.5	25.0	15.8
1994–95	15.2	12.0	17.0	27.9	42.0	19.0	19.2	18.9
1996–97	13.9	13.6	20.8	20.8	36.9	22.2	25.5	17.5
1998–99	17.2	16.5	27.8	21.1	45.1	25.2	28.6	20.8
2000–01	22.4	21.8	31.6	29.9	51.5	27.6	33.7	26.1
$r_s$	0.10***	0.14***	0.06*	-0.03*	0.08***	0.10***	0.11***	0.08***
$n_{\min}/\text{year}$	6,440	807	215	1,191	367	212	48	11,340
$n_{\max}/\text{year}$	7,754	1,233	416	1,935	458	659	337	12,516
<i>Anxiety</i>								
1986–87	-	-	-	-	-	-	-	-
1988–89	8.5	8.0	16.0	16.3	32.2	17.5	29.2	12.2
1994–95	13.9	14.7	19.3	19.2	38.9	23.1	26.7	17.1
1996–97	11.3	16.3	22.1	17.6	32.3	23.7	28.4	15.6
1998–99	14.7	16.8	27.0	16.6	36.9	23.6	28.2	17.6
2000–01	17.7	22.8	31.6	22.4	40.0	32.2	36.1	21.3
$r_s$	0.08***	0.11***	0.13***	0.04**	0.04	0.08***	0.05	0.02***
$n_{\min}/\text{year}$	6,444	902	215	1,192	388	211	48	11,342
$n_{\max}/\text{year}$	7,746	1,232	312	1,593	458	659	337	12,515

\* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$



cent). For housewives/husbands, the short-term unemployed and employees, an increase of around 18 percentage points was reported in all three groups (see also Figure 6.4).

Sleeping problems rose on average by around 10 percentage points during the study period and became more frequent for all positions, except for old-age pensioners.

Among employees, sleeping problems rose from 12 per cent to 22 per cent, almost a twofold increase. The short-term unemployed and the long-term unemployed showed a similar increase, but had higher sleeping problem levels, in general, than employees. Students showed the largest relative increase, just over a threefold increase from 7 per cent to 22 per cent, while housewives/husbands showed a moderate increase. Disability pensioners had the highest levels of sleeping problems.

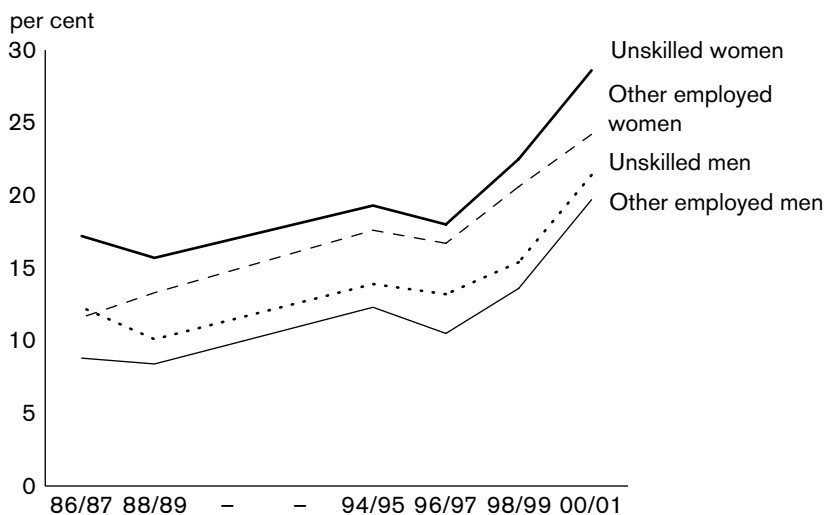
Anxiety rose significantly over the period for all groups, except for disability pensioners and the long-term unemployed. Even though the increases in percentage points were relatively small for anxiety (up from 12



**Figure 6.4.** Development of fatigue for four positions in and outside the labour market from 1986–87 to 2000–01. Data lacking for the years 1990–93. (Source: ULF.)

per cent to 21 per cent for the total group), the relative increases were noteworthy. Among employees, housewives/husbands and the short-term unemployed, around twice as many reported anxiety at the end of the study period as at the beginning. Among students, the proportion almost trebled. The increase for the total group was 9 percentage points (up from 12 per cent to 21 per cent).

Thus, the decline in mental well-being, in terms of fatigue, sleeping problems and anxiety, between the end of the 1980s and 2000–01 was observed not only for the employees, but also for the groups outside the labour market, with the exception of old-age pensioners. The largest relative deterioration in well-being was observed for the student group. The changes were similar irrespective of the students' gender and previous educational level, while the deterioration tended to be slightly clearer for the youngest student group. The increase in mental symptoms was in no respect most marked for employees. Neither were there any clear differences within this group in the rate of increase between men and women,



**Figure 6.5.** Development of sleeping problems for unskilled men and women, compared with other employed men and women, from 1986–87 to 2000–01. Data lacking for the years 1990–93. (Source: ULF.)

between labour market sectors, (private, central government, local government and county council sectors) or between socio-economic groups. This is illustrated in Figure 6.5. As for the total group, a larger deterioration in mental well-being was observed for the younger employees. In general, mental symptoms were more common in the lower socio-economic groups. The increase in these symptoms over the period studied was, however, similar in various socio-economic groups.

One question raised is whether the negative trend, e. g. for students may be a consequence of the lower age among students than among employees.<sup>3</sup> This has been tested by multiple logistic regression analyses for the seven positions and for each symptom with control for age and gender. Moreover, differences in average symptom levels over the period for the labour market positions were controlled. The probability of reporting fatigue, sleeping problems and anxiety in 2000–01, compared with the first survey occasion (1986–87 for fatigue and sleeping problems, and 1988–89 for anxiety), was estimated for the seven positions.

It was found that the increase was significantly larger for students than for employees for all three symptoms (between 33 per cent and 66 per cent), despite age and gender being controlled. It was also seen that the increase was smaller for old-age pensioners than for employees for all three symptoms, and it was also smaller for disability pensioners with regard to fatigue and sleeping problems. Hence, the higher rate of increase in symptoms for students and the lower rate of increase for old-age pensioners cannot be explained by age or gender. Housewives/husbands and the unemployed showed a roughly similar increase in symptoms between 1986–87 and 2000–01 compared with employees.

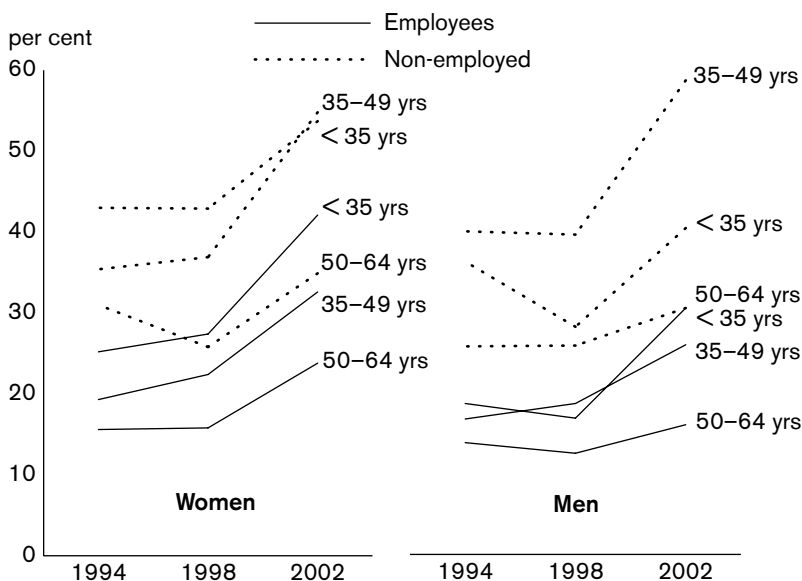
### **Development trends for other indicators of low mental well-being**

The trends described above could be a consequence of the specific questions included in ULF. In order to test this possibility, the results are compared with those from Stockholm County's public health survey (Stockholm County Council 1999), which used an internationally well-established questionnaire for mental well-being, the General Health Questionnaire (GHQ-12) (Banks et al. 1980, Goldberg 1972). This questionnaire was sent to a sample of

Stockholm County's population in 1994, 1998 and 2002. New random samples of different sizes were used on each occasion ( $n = 8,432$ ,  $2,398$  and  $25,410$ ). Moreover, the sample used for the 1994 questionnaire received a new questionnaire in both 1998 and 2002.

The GHQ scale contains 12 questions about, among other things, symptoms of depression and anxiety. The risk of a psychiatric diagnosis increases with the number of affirmative answers. Two affirmative answers or more are considered to be indicative of low mental well-being.

Figure 6.6 shows the development of low mental well-being between 1994, 1998 and 2002 in two random sub-samples: employees (including the self-employed) and others (including old-age pensioners), divided by age and gender. These results confirm the results from ULF: the symptoms rose more in younger than in older age groups. The increase was roughly of the



**Figure 6.6.** Development of low mental well-being measured using GHQ-12 between the years 1994, 1998 and 2002 for employees and the non-employed. (Source: Stockholm County Council's public health survey.)

same size irrespective of labour market position, and was largest between 1998 and 2002.

### Individual changes from longitudinal data

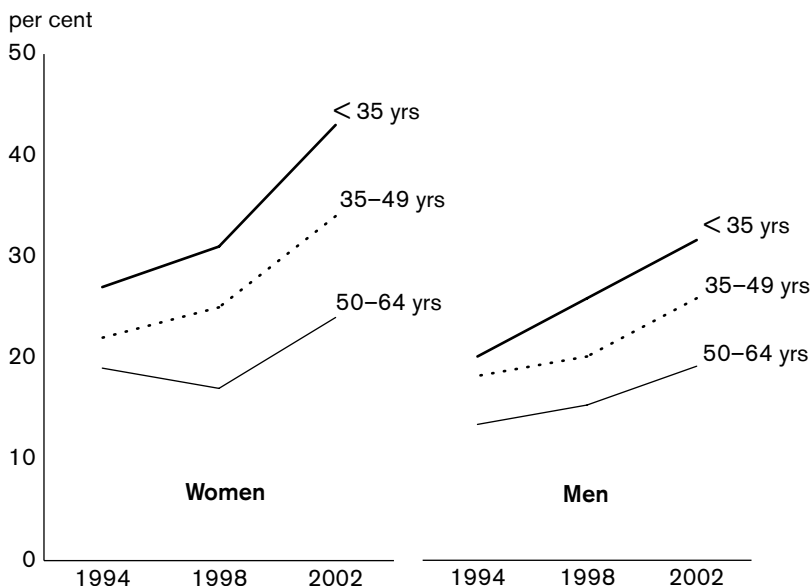
The net changes in low mental well-being over the period, which were found in the repeated cross-sectional surveys, can also be compared with longitudinal data, which describe individual changes in mental well-being over the period. Similar development trends in the cross-sectional data and the longitudinal data indicate that the changes in the cross-sectional data are not due to generation differences or to changes in group composition on separate survey occasions.

As mentioned previously, sub-groups of former ULF-participants (the panel group) take part in the surveys eight years later. Such longitudinal data for the three symptoms were collected in 1988–89 and 1996–97. Table 6.2 shows the results for both the cross-sectional participants in these years and the corresponding panel participants, who answered the questions on two occasions, and who remained in the same labour market positions.

Certain differences in level between the cross-sectional data and the panel data can be observed on both survey occasions, but the essential thing is that the cross-sectional data and the panel data show the same upward and downward trends in symptom level. The individual changes and the net changes were consequently in the same direction and of the same size, apart from fatigue among old-age pensioners, where the panel group reported a considerably larger increase. The longitudinal GHQ data from Stockholm

**Table 6.2.** Proportions in per cent that reported fatigue, sleeping problems and anxiety among employees and among old-age pensioners in the ordinary ULF sample and in the panel group for the years 1988–98 and 1996–97. n denotes the number of people.

	Employees				Old-age pensioners			
	Year 1988–89		Year 1996–97		Year 1988–89		Year 1996–97	
	Cross-section	Panel	Cross-section	Panel	Cross-section	Panel	Cross-section	Panel
Fatigue	29.5	28.7	38.2	36.4	25.0	22.3	28.4	39.8
Sleeping problems	11.4	9.4	13.9	14.0	24.5	26.2	20.8	24.3
Anxiety	8.5	6.8	11.3	10.9	16.3	11.7	17.6	15.5
n	7,752	2,442	6,442	2,442	1,594	103	1,208	103



**Figure 6.7.** Development of low mental well-being measured using GHQ-12 between the years 1994, 1998 and 2002 for employed men and women of various ages, who responded on all three survey occasions. (Source: Stockholm County Council's public health survey.)

County's public health survey also demonstrate a correspondence with data from the repeated cross-sectional surveys. Figure 6.7 shows the incidence of symptoms in all respondents, divided into three age groups, among those who answered all three questionnaires in 1994, 1998 and 2002 ( $n = 4,893$ ). The number of people who were not employed was too small for a separate analysis. As can be seen, a marked individual increase in symptoms over time was found; this was largest in the youngest age groups (defined in 1994).

The results from the longitudinal data in both these surveys consequently indicate that the changes noted for successive cross-sectional data cannot primarily be interpreted as a result of changes in the groups' composition. Another conclusion is that the mental symptoms included in ULF cannot be regarded only as non-specific symptoms lacking relevance for mental ill health.

## Some explanations for the deterioration in mental well-being

The question is then, what has contributed to the increase in mental symptoms for all groups in and outside the labour market, with the exception of old-age pensioners. A number of possible explanations for the deterioration in mental well-being are discussed below. One of these (hypothesis 1) concerns methodological deficiencies, while another explanation (hypothesis 2) is of a partial nature, requiring complementary ones. The last three explanations (hypotheses 3, 4 and 5) refer to general conditions that may have contributed to reduced mental well-being in all labour market positions.

### *Hypothesis 1: Changes of position and after-effects*

This hypothesis concerns methodological difficulties in the analyses, since the labour market positions or the employments that participants had on the interview occasion may be short and transient. This may particularly apply to some of the positions outside the labour market, such as students, housewives/husbands and the unemployed. The effects observed on well-being could consequently be seen as the after-effects of previous positions.

The development of mental well-being among students could, for example, be a consequence of experiences of previous employment or unemployment, and experiences of previous unemployment could, for example, affect employees. Hypothesis 1 can, however, only be tested for employees.

ULF asks the employed individuals about previous experience of unemployment during the past five years. Sixteen per cent of the employees had such previous experience of unemployment. In the case of fatigue and sleeping problems, there were no clear signs of different development patterns for employees with or without previous experience of unemployment. In the case of anxiety, a weak trend was observed towards a slightly larger rate of increase for those with experience of unemployment than for those without. However, anxiety rose markedly during the period, even among those without previous experience of unemployment.

The hypothesis on the after-effects from other positions is consequently of limited explanatory value for the increase in symptoms among

employees. Nor can the increase for the 16–19 age group be explained by change in position and after-effects. The relatively stable symptom levels for old-age pensioners do not appear particularly consistent with this hypothesis either.

*Hypothesis 2: Selection effects into and out of the labour market*

The competition for jobs in the labour market can lead to what is usually called health-related selection for work (Hallsten 1998). In other words, people are selected to and from the labour market, greatly depending on their health. All else being equal, the development of health should consequently be more favourable for employees than for groups outside the labour market. The fairly similar development of mental well-being for employees and various groups outside the labour market means that the selection hypothesis must be complemented by other ones, in order to explain the trends for well-being.

*Hypothesis 3: More unfavourable conditions in and outside the labour market*

According to this hypothesis, the reduced mental well-being is due to concrete, contextual and directly activity-related conditions encountered by people in their everyday life. This is the current explanation for the declining well-being among employees, with increased mental demands, less control, less support and less job security.

A similar causal hypothesis for those outside the labour market entails an assumption that the environmental conditions among groups such as students, housewives/husbands and the unemployed, have developed in a similar way to those of employees. For example, both work life and the social conditions for students, may have become tougher. Similarly, the demands on job seekers may have increased, with new or different competence requirements, in order to find and get a job.

This hypothesis is important but difficult to test at present, due to the lack of data for other groups than employees. Information equivalent to that found in the Work Environment Surveys and the Surveys of Occupational Injuries is required for the other areas of activity, in order to confirm or reject this hypothesis.



*Hypothesis 4: Changes in family and private life*

One cause of the mental well-being trend may be connected with changed commitments and a deterioration in the interaction with family and friends during the period studied. A study of burnout (Hallsten et al. 2002) has shown that demands of housework and relations between family members may have strong links with mental well-being. Difficult relationships within the family were found in this study to be the single most important factor, more important than individual working conditions, in explaining burnout among employees.

However, there is no data indicating that family relationships or living patterns have deteriorated or increased in importance for people's well-being in recent years. Other family circumstances of potential importance for the development of mental well-being are the housing situation, concerns regarding children's development and future, the care of elderly parents, more active leisure, the double demands of work and family and the like.

Some of these variables are included in ULF and the effects on the development of the symptom levels were analysed using multiple logistic regression. Control for family type (combinations of single and cohabiting people with and without children living at home), cash margin, payment difficulties, overcrowding and social isolation did not, however, reduce the development of symptoms over time. Information about possible difficulties in balancing the demands of work and home is lacking in both ULF and the Work Environment Surveys.

*Hypothesis 5: Social, cultural and political changes*

Finally, we look at an explanation concerning the influences of general, social, cultural and political conditions that are neither mainly channelled nor have an impact through work, studies or other areas of activity. This primarily concerns changes in power and collective support structures as well as media influence and public debate, which may affect people in their roles as citizens and members of society.

The 1990s have involved an increased market orientation and globalisation, with consequences for public welfare systems and the balance of power between, for example, the business sector and politics, and between employers and trade unions. Public sector organisations have come under increasing

pressure to manage and balance targets and budget ceilings, which has not infrequently resulted in a reduction and deterioration in service. Today, the individual has to invest more time and energy in planning for welfare and care – both for him/herself and for his/her immediate family. In addition, expectations are rising with regard to being enterprising, versatile and capable of development, in order to avoid marginalisation. The combination of more options and demands for personal choice in unpredictable circumstances may be perceived as opportunities by some people, but as a source of insecurity by others. The latter view could be a reason for the reduction in well-being.

The importance of the media for people's views, awareness and knowledge has increased, and the growing media attention paid to mental problems and stress-related illness may have had an impact on people in at least two ways. The increased information and discussion about mental ill health may remind people of, and draw their attention to, their own mental state, so-called priming (Solomon et al. 1998). A number of studies have, for example, suggested that burnout and emotional exhaustion can be "contagious", as a result of discussion and conversations about problems in the workplace (Bakker & Schaufeli 2000).

Information about sick leave due to mental ill health may also have contributed to a normalisation and a reduced stigmatisation of mental problems. Willingness to recognise the occurrence of such mental problems and related phenomena in oneself may have consequently increased. For example, it is possible that the increase in symptoms for all groups between 1998–99 and 2000–01, which was observed even for old-age pensioners, could at least partly be such a communications and media effect.

The importance of the media for shaping psychosomatic problems has also been emphasised by Shorter (1992), who has attempted to explain changes in psychosomatic problems and illnesses, such as paralysis, hysterical reactions and neurasthenia, since the 18th century. Psychosomatic problems, which are assumed to be due to deep dissatisfaction and discontentment, are thought to arise as a result of people subconsciously "picking symptoms from a symptom pool". The symptoms chosen are determined and shaped by the culture and spirit of the times. While doctors were previously the main cultural carriers in these processes, this role has increasingly been transferred to the media.

Media reporting on mental problems and their presumed causes would consequently have an impact on people's experiences and accounts of illness. The extensive and rapid growth in fatigue and exhaustion could, for example, be explained by Shorter's theory. The relationship of the symptoms with social events and transformations, such as staff cuts, redundancy notices and reorganisations, is not, however, taken into account by Shorter.

The media report daily on social problems, fuelling fears and anxiety. Some of these sources of anxiety are included in ULF. It may be assumed that anxiety regarding unemployment and personal finances could be fairly general sources of anxiety in a society with increased unemployment, insecure employment conditions and demands for flexibility. Analyses of the effects of these sources of anxiety showed, however, that they could not explain the increase in symptoms throughout the study period.

### Comments and conclusions

While other public health data, such as life expectancy and functional capacity, have shown improvements in recent years (National Board of Health and Welfare 2004), mental well-being has deteriorated considerably over the study period for all groups in and outside the labour market, except for pensioners. This was found in both repeated cross-sectional and longitudinal data, as well as using different tools. Aronsson (2004) has also demonstrated similar development patterns for people in and outside the labour market with regard to morning, daytime and evening fatigue. Young people and students showed the worst development of mental well-being. The trends were similar for people with different demographic characteristics, but it should be mentioned that somewhat deviant development trends can be observed in more detailed analyses.

For example, *severe* anxiety has developed more negatively over the period for single mothers. It should further be noted that data is lacking for the years 1990 to 1993, and it cannot therefore be determined whether the deterioration has been continuous or not. Neither can it be determined whether the development of symptoms described is unique to Sweden, as there are no equivalent data for other countries.

Mild mental ill health in Sweden seems, then, on the whole to show a similar trend to that of long-term sickness absence due to stress or mental

problems. The same causes may underlie these trends, and mental symptoms may be early signs of long-term sick leave.

The differential symptom increase rate for young and older people is also consistent with sickness absence data. According to data from a Swedish Insurance Company (Alecta), the proportion of private sector white-collar workers under the age of 35 who were absent more than 90 days due to a mental diagnosis (reactions to severe stress, depression and burnout), was almost nine times larger in 2003 than in 1998. Among white-collar workers over the age of 35, just over four times as many were absent due to a mental diagnosis in 2003 compared with 1998.

Signs of reduced mental well-being have also been reported among younger people in a broad study of the health development of schoolchildren (Danielson 2003). The study clearly shows that mental and psychosomatic symptoms have risen among 11-, 13- and 15-year-olds between the years 1986 and 2001, and that schoolwork has increasingly been experienced as stressful in recent years (from 1997 to 2001). The study forms part of a WHO study, which includes data from a number of western countries. No international longitudinal development data have been presented as yet, but it is evident from cross-sectional data from 1997 that the symptom levels for Swedish children have not in any way been extreme (Currie et al. 2000).

The consistent and broad trend towards a deterioration in mental well-being since 1986 among people under the age of 65 is both thought-provoking and disquieting. Generally, the explanation for reduced mental well-being has been sought in the changed demands and resources in working life during the 1990s. But the reported results indicate that the reasons for the similar deterioration over time are not solely based on direct experiences of increasingly stressful work situations.

Changes over time, in most cases, require other explanations than differences between groups on the same occasion. In the latter case, differences can often be explained with reference to relatively stable conditions, such as gender, ethnicity, occupation and so on. Such conditions are, however, not sufficient for understanding and explaining changes over time, which also means that it can be more difficult to find explanations for such trends.

Five hypotheses or types of explanation for the deterioration in well-being have been discussed, but there was no substantial empirical support for any of them, partly as a result of a lack of relevant data. The widespread deterioration in mental well-being thus remains largely unexplained – and this applied to employees even after the inclusion of a couple of stress-related work environment variables. The latter results are consistent with those that Bäckman (2001) found for the development of certain work-related symptoms (anxiety and fatigue or exhaustion) between 1991 and 1999, based on the Work Environment Surveys. Various work environment variables, such as high demands and low control, explained part but not the whole of the increases in symptoms over the period. The work environment seems consequently to have had some importance, though limited, for the development of mental well-being over the period among employees. However, it should be remembered that work environment conditions can probably explain a significant part of the stable differences in mental well-being that have been found between groups in working life (see, for example, Figure 6.5).

The lack of clear empirical support for one or more of the explanations for the general increases in symptoms indicates that the reasons for the development of mental well-being are complex, or that there is a lack of data on central conditions of decisive impact. It is important to find out what these reasons may be, and the absence of data on demands and resources in other areas of activity than employment is an obvious deficiency in this context.

Moreover, it ought to be possible to make direct comparisons regarding the conditions for people in and outside the labour market. For example, control and demands among students, housewives/husbands, pensioners and the unemployed could be measured in the same terms as for employees. Such a survey could be based on Warr's vitamin theory (Warr 1987, 1994), which explains mental health with reference to nine "vitamins" in the environment, which are assumed to be common to people in and outside the labour market.

## Notes

1. There is comprehensive literature on the definition and measurement of mental well-being and mental health, as well as on the contributory factors. See, for example, Ryff & Singer (1998) and Warr (1990).
2. Fatigue may be seen as an indicator of both physical and mental well-being. However, fatigue is regarded here as a mental symptom, since it has clear relationships with a number of psychosocial conditions.
3. It is not meaningful to report age-standardised data for the seven labour market positions, due to too few observations ( $n < 15$ ) for certain positions, age groups and year pairs – even if old-age pensioners are excluded from the standardisation. It was only possible to implement age standardisation for four positions (students, housewives/husbands and the short-term unemployed, with employees as a reference) and then only for two age groups: 16–34 and 35–64. This produced results that were very similar to those in Table 6.1. For example, the following age-standardised fatigue levels were obtained for students for the years 1986–87 to 2000–01 (compare with the data in Table 6.1): 33.1, 36.2, 44.6, 49.2, 54.8 and 56.6 per cent.

## References

- Aronsson G (2004) "Ett tröttare folk – utvecklingen 1986–2001" ("A more tired population – development 1986–2001" pp. 50–61 in Gustavsson B (ed.) *Om trötthet. (On fatigue.)* Swedish Council for Working Life and Social Research, Stockholm.
- Bakker A B & Schaufeli W B (2000) "Burnout contagion processes among teachers" *Journal of Applied Social Psychology*, 30(11), pp. 2289–2308.
- Banks M H, Clegg C W, Jackson P R, Kemp N J, Stafford E M & Wall T D (1980) "The use of the General Health Questionnaire as an indicator of mental health in occupational studies" *Journal of Occupational Psychology*, 53, pp. 187–194.
- Bäckman O (2001) "Med välfärdsstaten som arbetsgivare – arbetsmiljön och dess konsekvenser inom välfärdstjänsteområdet på 1990-talet" ("The welfare state as an employer – the work environment and its consequences in the welfare services sector in the 1990s") pp. 189–238 in Szebehely M (ed.) *Välfärdstjänster i omvandling. (Welfare services in transformation.)* soU 2001:52, Fritzes, Stockholm.
- Currie C, Hurrelmann K, Settertobulte W, Smith R & Todd J (ed.) (2000) *Health and health behaviour among young people*. WHO, Copenhagen.
- Danielson M (2003) *Svenska skolbarns hälsövanor 2001/02. (The health habits of Swedish schoolchildren 2001/02.)* Report 2003:50, National Institute of Public Health, Stockholm.
- Goldberg D P (1972) *The detection of psychiatric illness by questionnaire*. Oxford University Press, Oxford.

- Hallsten L (1998) *Psykiskt välbefinnande och arbetslöshet. Om hälsorelaterad selektion till arbete. (Mental well-being and unemployment. On health-related selection to work.)* Arbete och Hälsa (Work and Health) 1998:7, National Institute for Working Life, Stockholm.
- Hallsten L, Bellaagh K & Gustafsson K (2002) *Utbränning i Sverige – en populationsstudie. (Burnout in Sweden – a population study.)* Arbete och Hälsa (Work and Health) 2002:6, National Institute for Working Life, Stockholm.
- Hallsten L & Isaksson K (2000) "Unemployment, Precarious Employment and Psychological Ill-health" pp. 215–238 in Marklund S (ed.) *Worklife and Health in Sweden 2000*. Swedish Work Environment Authority and National Institute for Working Life, Stockholm.
- Lundberg U & Wentz G (2004) *Stressad hjärna, stressad kropp. Om sambanden mellan psykisk stress och kroppslig ohälsa. (Stressed mind, stressed body. On the relationships between mental stress and physical ill health.)* Wahlström & Widstrand, Stockholm.
- National Board of Health and Welfare (2004) *Folkhälsa och sociala förhållanden. Lägesrapport 2003. (Public health and social conditions. Progress report 2003.)* National Board of Health and Welfare, Stockholm.
- Ryff C D & Singer B (1998) "The contours of positive human health" *Psychological Inquiry*, 9(1), pp. 1–28.
- Shorter E (1992) *From paralysis to fatigue. A history of psychosomatic illness in the modern era*. The Free Press, New York.
- Solomon A, Haaga D A F, Brody C, Kirk L & Friedman D G (1998) "Priming irrational beliefs in recovered-depressed people" *Journal of Abnormal Psychology*, 107(3), pp. 440–449.
- Stockholm County Council (1999) *Stockholms läns arbetshälsorapport. Om samband mellan arbetsvillkor och ohälsa i Stockholms län. (Stockholm County's occupational health report. On relationships between working conditions and ill health in Stockholm County.)* Stockholm County Council, Stockholm.
- Warr P (1987) *Work, unemployment and mental health*. Clarendon Press, Oxford.
- Warr P (1990) "The measurement of well-being and other aspects of mental health" *Journal of Occupational Psychology*, 63, pp. 193–210.
- Warr P (1994) "A conceptual framework for the study of work and mental health" *Work and Stress*, 8(2), pp. 84–97.
- Vogel J, Häll L, Johansson S E & Skjöld C (2000) *Äldres levnadsförhållanden 1980–1998. (The living conditions of older people 1980–1998.)* Statistics Sweden, National Board of Health and Welfare and Ministry of Health and Social Affairs, Stockholm.





## CHAPTER 7

# Sickness absence in Sweden

*Ulrik Lidwall, Staffan Marklund and Peter Skogman Thoursie*

Sickness absence in Sweden has varied enormously over time, particularly over the last two decades. There are many reasons for this, and research can be divided into two main categories. In one, researchers use information about the individual in an attempt to find the factors that explain why an individual or group of individuals is absent due to illness. These factors might be work-related, family-related or reflect differences in attitudes and health. The advantage of this type of study is that it is possible to establish what individual-related factors increase or reduce the risk of sick leave, while the disadvantage is that many socioeconomic factors that influence sickness absence are difficult to discern using individual data. This applies, for example, to changes in regulations and in the state of the economy.

In the other category, aggregated information at various points in time is used instead. This might be information about municipalities, about the whole of Sweden or about another given unit. Using such information, it is possible to examine how, for example, variations in sickness absence are related to various types of socioeconomic changes, and why some municipalities have high levels of sickness absence while others have low levels. One weakness of studies based on aggregated information is that it is difficult to make statements about causal relationships. At best, one can establish links in the form of correlations, but seldom about what the causal direction is. The ideal situation is one where studies based on individual data can confirm the results of studies of more aggregated data.

This chapter primarily uses aggregated data to assess which structural relationships might be correlated with rises and falls in sickness absence. Trends are analysed using sickness absence statistics from the National Social Insurance Board (RFV) and statistics from the Labour Force Survey (LFS, Statistics Sweden) about absence and labour market conditions. The

aim is to try and identify factors that might be important in understanding the time variation in short- as well as long-term sickness absence. The focus is primarily on changes in regulations, labour market factors, demographic factors, mortality and alcohol consumption. An important question is to try to assess whether factors that determine sickness absence in general, and long-term sickness absence in particular, differ to some extent. The analyses were carried out in the same way as those in the study previously published in *Worklife and Health in Sweden 2000* (Lidwall & Skogman Thoursie 2000). Here, however, we examine a number of other additional factors, and the data extends to 2002, which increases the certainty of the conclusions.

### **How do we measure the sickness rate and self-reported sickness absence?**

The sickness rate (sjuktalet) is defined as the number of days in a year in which sickness benefit was paid per insured person in a given year (until 1998, per insured person of all ages, and from 1998 per insured person aged 16–64 years, not including those with a full permanent or temporary disability pension). All days are counted as paid sick days regardless of whether a whole or partial day was taken. With the introduction of the 14-day sick pay period in 1992, the sickness rate no longer includes sick days for sickness absence that ends within the sick pay period. Sickness rates before and after the introduction of the sick pay period are therefore not entirely comparable. Apart from the fact that the sick days in the sick pay period are no longer reported in the sickness rate, the denominator of the sickness rate – the number of people insured for sickness benefit – has changed. Since 1992, the insured have no longer needed to report their qualifying income for sickness benefit to the Social Insurance Office unless they take sick leave. The effect of this is that the sickness rate during the years 1992–1997 was about one day higher than would have been the case using the previous method of calculation. To correct this, since 1998 the number of sick days has been related to the number of insured persons aged 16–64. Changes in the statistics however do not affect the visible trends in sickness absence. Despite the fact that the sickness rate is not perfectly measured, it still works as a gross indicator of the extent and trends of sickness absence over time. Since the sickness

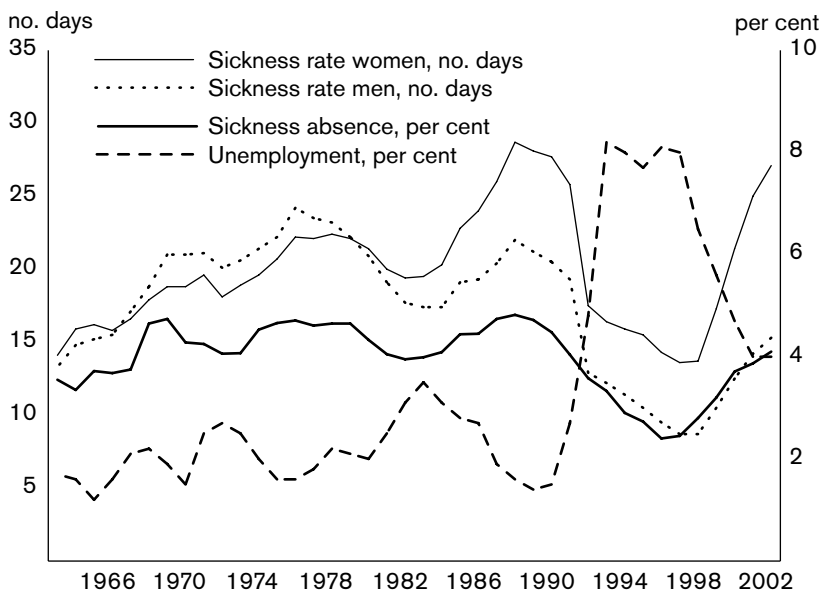
rate is an insurance-based measure, it also illustrates all the implemented changes in sickness insurance regulations.

The Labour Force Survey (LFS) uses another method of defining sickness absence. There, 'self-reported sickness absence' is measured over a reference week, regardless of who pays for it. This means that qualifying days and sick pay periods are counted, as is sickness absence for which no compensation is made. In the LFS, sickness absence is shown in per cent of the employed. One advantage of the LFS is that it provides a measure of sickness absence regardless of the body of regulation, by counting the sick pay period and sickness absence not reported to an employer or the Social Insurance Office. The LFS statistics however are poor at noting the steep increase in the length of much long-term sickness absence in recent years.

### **Trends in sickness absence – gender differences, economic cycles and changes in regulations**

As Figure 7.1 shows, the sickness rate according to RfV and self-reported sickness absence according to the LFS are generally similar. It is also clear that sickness absence is high when unemployment is low and that there is a large – and widening – gap in sickness absence between women and men. The sickness rate for women has been somewhat higher than for men for a number of years. However, between the years 1967 and 1978 the sickness rate for men was higher than for women. The sickness rate for women has been higher than for men since 1980. The gap has widened over the past 20 years and in 2002 the sickness rate for women was 77 per cent higher than for men.

Over a few years in the early 1980s sickness rates for both women and men fell. This took place during times of increasing unemployment and economic recession. After this, there was a very sharp increase in the sickness rate, which reached its peak in 1988 with 22 days for men and 29 for women. During the same period, unemployment fell to an all-time low. A sickness benefit reform was implemented in December 1987, which meant that compensation levels generally became 100 per cent. Between 1989 and 1991, the sickness rate then fell by about three days for both women and men. In the early 1990s, the economic boom turned into a deep recession and several changes in regulations made sickness insurance much more



**Figure 7.1.** Sickness rate for women and men and sickness absence for the whole reference week and unemployment according to the LFS 1963–2002. (Source: National Social Insurance Board annual statistics and Statistics Sweden/LFS.)

Note: There is a break in the sickness rate series in 1992 because of the introduction of the sick pay period. The definition of the sickness rate was changed in 1998 when the denominator changed. The number of insured persons was replaced by registered insured persons aged 16–64, not including insured persons with full permanent or temporary disability pensions.

restrictive. In March 1991, for example, the level of compensation was lowered for the first three days of the period of sickness absence. The extensive sick pay reform of 1992 meant that employees were paid sick pay by their employers for the first 14 days of the sick period. After this change, the sickness rate continued to fall gradually. Apart from the sick pay period, compensation levels were also reduced for long-term sickness absence in 1992. Sickness insurance in the 1990s was characterised by many wide-ranging changes in the regulations, primarily in the levels of compensation. Table 7.1 shows the most important changes.

At the time of the introduction of the sick pay reform, unemployment also increased dramatically from 2.7 per cent in 1991 to 8.2 per cent in 1992.

**Table 7.1.** Total level of compensation on sickness for employed persons (compensation from the social insurance system or from the employer, and supplement from contracts, per cent of salary), length of sick pay period and other changes in the sickness insurance regulations.

Sick-day	Before 8712	8712–9102	9103–9112	9201–9303	9304–9306	9307–9512	9601–9612	9701–9712	9801–9803	9804–0306	0307
1	0	90+10	65+10	75*	0*	0*	0*	0*	0*	0*	0*
2–3	90	90+10	65+10	75*	75*	75*	75*	75*	80*	80*	80*
4–14	90	90+10	80+10	90*	90*	90*	75*	75*	80*	80*	80*
15–21	90	90+10	80+10	80+10	80+10	80+10	75+10	75*	80*	80+10	80*
22–28	90	90+10	80+10	80+10	80+10	80+10	75+10	75*	80*	80+10	77.6+10
29–90	90	90+10	90+10	80+10	80+10	80+10	75+10	75+10	80+10	80+10	77.6+10
91–365	90	90+10	90	90	80	80	75	75	80+10	80+10	77.6+10
366–	90	90+10	90	90	80	70	75	75	80+10	80+10	77.6+10

Note: Non-employees, e.g. the unemployed, do not receive sick pay and have no contract supplements, and thus usually have a level of compensation that is 10 percentage points lower than that of employees. As of July 2003, the level of compensation for the unemployed for days 2–21 is 77.6 per cent of the qualifying income. In the table, the contract supplements give the general compensation level on the Swedish labour market. There are exceptions.

\* Sick pay period: Before January 1992: No sick pay period. January 1992–December 1996: 14 days. January 1997–March 1998: 28 days. April 1998–June 2003: 14 days. July 2003–: 21 days.

Other important changes in the regulations: October 1995: New regulations on decisions, investigation requirement etc. January 1997: More rigorous medical requirements. January 2002: The 'in-depth assessment' of the right to sickness benefit ends. July 2003: The size of sickness benefit on unemployment is not to be higher than the highest possible compensation level from unemployment insurance.

Several studies have shown that sickness absence in Sweden falls in times of recession and increases in times of economic prosperity (see e.g. Bergendorff et al. 2002, Henrekson & Persson 2004, Johansson & Palme 1996, Lantto & Lindblom 1987, Marklund & Lidwall 1997 and Wikman & Marklund 2003).

Two main explanations have been presented to interpret the link between economic cycles and sickness absence. One interpretation is that higher unemployment has a disciplining effect on the behaviour of the workforce: a greater risk of unemployment reduces the propensity to take sick leave because people are afraid of losing their jobs. Higher unemployment, in this interpretation, would reduce sickness absence in the group still in work. The other interpretation is that higher unemployment leads to the exclusion of people with higher levels of sickness absence from the workforce, which reduces sickness absence. A third explanation might also

be that the pace of working life increases during an economic boom and that more employees cannot keep up and so take sick leave. The correlations are primarily judged to apply to short-term sickness absence (Wikman & Marklund 2003). For long-term sickness absence, on the other hand, there may be a positive correlation. Increased unemployment involves a health risk that can lead to exclusion from the labour market and an increase in long-term sickness absence and disability pensions.

### The sickness rate in different age groups

In addition to the great differences between women and men, there are great differences between the various age groups. Much of this is of course due to well-known age differences in ill health and mortality (Marklund & Toomingas 2000). Table 7.2 shows developments over the past few years for various age groups for women and men. It is clear that the sickness rate climbs with advancing age. The increase between 1999 and 2002 is steep in all age groups but the greatest increase has taken place in younger age groups. It is remarkable, too, that the differences in women's and men's sickness rates are clearly visible in the youngest age groups. At age 16–19, the sickness rate for women is already 50 per cent higher than men's. The differences between women's and men's sickness rates are highest in the 25–29, 30–34 and 35–39 age groups, which is to say during the period in life

**Table 7.2.** Sickness rate in 2002 and changes in the sickness rate 1999–2002 by sex and age group. (Source: National Social Insurance Board annual statistics.)

Age group	Sickness rate 2002			Changes in sickness rate, 1999–2002, %	
	Women	Men	Ratio women/men	Women	Men
16–19	0.6	0.4	1.50	100	100
20–24	7.3	4.3	1.70	87	87
25–29	15.3	7.0	2.19	68	59
30–34	23.0	10.0	2.30	65	47
35–39	28.3	13.4	2.11	69	49
40–44	31.7	16.5	1.92	69	53
45–49	34.7	19.3	1.80	54	46
50–54	39.6	23.2	1.71	43	40
55–59	45.2	28.9	1.56	35	27
60–64	42.4	31.1	1.36	57	39
All	27.1	15.3	1.77	57	46

when many women give birth to children, and so the difference is partly explained by pregnancy-related sickness absence. Women also use part-time sickness absence to a greater extent than men, something that also applies to women in full-time employment (Eklund et al. 2004). The explanation for these large gender differences probably lies in a complex mesh of biomedical, socioeconomic and work-related factors (Hemström 1998, Voss 2002).

### **Explanatory factors for changes in sickness rate (1955–2002), and changes in sickness absence (1963–2002)**

The aim here is to explain the great fluctuations in the sickness rate that have occurred over the past decades and the steep increase that occurred in the late 1990s. Changes in regulations and economic cycles have already been discussed, and several studies have shown that both of these factors are significant in variations of sickness absence over time (Arai & Skogman Thoursie 2004, Bergendorff et al. 2002, Bäckman 1998, Henrekson & Persson 2004, Johansson & Palme 1996). Compared to previous studies of the sickness rate using shorter time periods, this study includes the entire 1990s and early 21<sup>st</sup> century in its analysis. The analysis of sickness absence is also undertaken using both LFS and RFV data to determine whether the correlations are data-sensitive. Apart from changes in regulations and economic cycles, the importance of changes in the labour force rate (activity rate), the ageing of the workforce, the mortality of the population and alcohol consumption are also examined. These two last factors have only to a small extent been the subject of scientific study.

The study is carried out using linear regression analysis in which the significance of a number of factors for the changes in sickness absence is studied. The method allows the analysis of how an individual factor such as a change in unemployment affects the sickness rate, given that the other factors included in the model are held constant. The results then show the effect of a single unit increase in one factor on the sickness rate. The results show, for example, how much a one per cent increase in unemployment affects the sickness rate, all other things being equal. A number of “dummy” variables are used to study the various changes in regulations that are implemented over a year. The results of these are interpreted as the possible change in the level of the sickness rate at the time (the year) of the change. It

is not possible to distinguish the effects of several different changes in regulations that were implemented in one and the same year. The analysis covers the sickness rate during the period 1955–2002 and self-reported sickness absence according to the LFS for the period 1963–2002. Table 7.3 summarises the results.

### *Changes in regulations*

Of the reforms in the 1960s and 1970s, it was mainly the abolishment of two qualifying days and the increase in the level of compensation in 1967 that increased the sickness rate. Increased levels of compensation and the removal of the qualifying day in 1987 also increased the sickness rate. In the 1990s, the number and extent of the changes in regulations make it more difficult to draw any definite conclusions about the effect of any one regulation change. The introduction of the sick pay period in 1992 and the fact that sickness absence periods shorter than 14 days were no longer included in the sickness rate make it more difficult to distinguish statistical change from the effects of the sick pay reform itself. According to the analysis of the sickness rate, it fell by 3.7 days in 1992.

The reduced compensation levels in 1991 have no confirmed significance but the introduction of the qualifying day in 1993 somewhat surprisingly increases the sickness rate. After 1992, the sickness rate only includes sickness absence longer than 14 days, and it is reasonable to assume that the introduction of the qualifying day primarily reduced short-term sickness absence. At the time of the introduction of the qualifying day, however, the sick leave was already at a low level, most likely as a result of previously reduced compensation levels, the introduction of the sick pay period, and high unemployment. This probably led to a situation where sickness absence was increasingly due to more serious conditions. The more restrictive sickness insurance of the early 1990s, then, together with a harsher labour market, probably led to an increase in the length of sickness absence once it was begun, which could explain an increase in the sickness rate after the introduction of the qualifying day.

With the data available, the changes in regulations throughout the later part of the 1990s can hardly be expected to give significant results in the analyses. The changes were implemented in such rapid succession that it is



**Table 7.3.** Linear regression analysis for the sickness rate and sickness absence throughout the entire reference week, LFS, annual data.

Variable	Model	
	Sickness rate 1955–2002	Self-reported sickness absence, LFS 1963–2002
(Constant)	-17.4	-3.2
2-year upper limit for the length of the sickness absence abolished and the level of compensation raised in 1963	0.9	–
Two of three qualifying days abolished and the compensation level raised to about 80% in 1967	2.7**	0.6**
Sickness benefit becomes tax-liable and pension-entitling and compensation level raised to 90% in 1974	0.6	-0.2
Qualifying day abolished and compensation level raised in 1987	2.0**	-0.1
Compensation level reduced in 1991	0.3	-0.1
14-day sick pay period introduced in 1992	-3.7*	0.4
Qualifying day introduced in 1993	4.0**	0.7**
Compensation level reduced in 1996	-1.0	-0.4*
Sick pay period extended to 28 days in 1997	-0.5	0.1
Compensation levels raised and sick pay period shortened to 14 days in 1998	-1.0	-0.1
Unemployment rate, LFS	-1.6***	-0.4***
Mortality per 1,000 individuals	2.6**	0.6***
Alcohol sales <sup>a</sup>	1.4**	0.2
No. observations	48	40
R2 (adj)	0.92	0.91
Mean value for the period	17.7	4.0

\*\*\* Significant at 1-per-cent level, \*\* at 5-per-cent level, \* at 10-per-cent level. a. Litres of 100% alcohol per capita aged 15 years and over. (Source: National Institute for Public Health.)

difficult to distinguish the significance of any one particular change in the regulations. Nor were they as extensive as the changes made early in the decade. The changes in regulations that took place in 1996, 1997 and 1998 have however had a consistent effect in the expected direction, but are not statistically significant. Generally, however, this study confirms that changes in the regulations affect the sickness rate, and the results agree with those of previous studies.

The 1967 reform increased sickness absence by 0.6 percentage points according to the LFS. The 1993 introduction of the qualifying day also seems to have increased sickness absence with duration of at least one week.

This lends further credence to the interpretation that the introduction of the qualifying day may well have reduced short-term sickness absence with duration less than one week, but that it instead increased sickness absence that lasts longer. Analyses within the framework of the Swedish Long-Term Survey also indicate that economic incentives for those on sick leave to return to work are generally relatively weak (sou 2004:2, appendix 14).

### *Unemployment*

The studies referred to earlier estimated that the sickness rate falls by between 1.0 and 1.7 days in the event of an increase in unemployment by one percentage point. Here, the effect is estimated at a reduction of 1.6 sick days for each percentage point rise in unemployment. Separate analyses carried out by sex have shown that unemployment reduces the sickness rate for both women and men, but that the effect is greater for women. In the LFS model of absence due to illness, there is also a negative correlation between sickness absence and unemployment.

As previously mentioned, one of the two main explanations for the effect of unemployment on sickness absence is that those with the highest levels of sickness absence are the first to lose their jobs when unemployment rises. The easier it is for individuals with poorer health to find a job, the greater the likelihood that they will be active in the labour market. The consequences of a greater activity rate could be higher sickness absence and a higher sickness rate. In analyses of the 1964–2002 period, not reported here in detail, the significance of changes in the labour force rate were also studied separately for women and men. An increase in the activity rate by one percentage point increases the sickness rate by 0.3 days for women, but has no significance for men. Thus, a higher activity rate seems to increase sickness absence, in agreement with the hypothesis. However, a study by Arai and Skogman Thoursie (2004) also supports the discipline hypothesis in the Swedish labour market by showing that people with temporary jobs, even after controlling for age, take less sick leave than those with permanent employment.

### *Other factors*

Mortality as a measure of the health of the population and its correlation with sickness absence has been the subject of a small number of studies

(Bäckman 1998, Voss 2002). Higher total mortality in the population as a whole covaries with an increase in the sickness rate. It is of course possible to imagine reverse causality – that it is ill health, expressed in the sickness rate, which affects mortality (Lindholm & Fredlund 2004). Positive covariance can however be expected between the sickness rate and mortality. The results of these analyses also show a positive correlation between mortality and sickness rate. The effect is estimated at 2.6 sick days for an increase in mortality of one per thousand. Bäckman (1998) estimated the effect at 1.9 sick days. The effect of increased mortality on the LFS self-reported sickness absence is also significant. In analyses by sex, it appears that mortality has considerably stronger covariance with the sickness rate for men than for women. The reason for this difference can be differences between the sexes in mortality patterns and causes of death (Hemström 1998, Lindholm 2002). It should be pointed out however that the correlation between mortality and sickness absence primarily applies up to the mid-1990s and that a lower mortality rate after that covaried with increased sickness absence.

Alcohol consumption increased markedly in the late 1990s in Sweden (Leifman & Gustafson 2003). Greater alcohol consumption can also be a significant factor in increased sickness absence. Previous studies using individual data indicate that a high level of alcohol consumption can increase the risk of ill health and sickness absence (Hensing 1997, Lidwall 1997, Upmark 1999). When alcohol sales are used as an approximation of alcohol consumption, increased alcohol consumption in the population is a significant factor in the increase in the sickness rate, see Table 7.3. In analyses by sex for the period 1964–2002, however, a significant effect of increased alcohol consumption is only seen in men's sickness rate.

It is also reasonable to suppose that the proportion of older workers in the workforce can be significant in trends in the sickness rate. Surprisingly, analyses carried out but not reported in detail show that the changes in the proportion of older workers aged 45–64 in the working-age population is not significant. Previous studies however have indicated that an older workforce is a significant factor in the sickness rate, above all for men (Lidwall & Skogman Thoursie 2000, sou 2002:62). For long-term sickness absence in particular, the ageing workforce – over 55 years of age – seems to

be a significant factor in the increase among both women and men in the late 1990s (Lidwall & Skogman Thoursie 2000).

The analysis shows that increased unemployment is associated with a clear fall in sickness absence, while a fall in unemployment covaries with a higher level of sickness absence. This covariance is stronger for women than for men. The correlation is stable even when the activity rate, the proportion of older workers, mortality and alcohol consumption are brought into the analysis. As expected, a higher activity rate also leads to an increase in the sickness rate but this only applies to women. Greater mortality and greater alcohol consumption increase the sickness rate, but the effects are only clear for men. One possible interpretation of these gender differences is that men's sickness rate is more affected by changes in general health and living conditions while women's sickness rate is more affected by altered conditions on the labour market. Changes in regulations are also significant factors in the sickness rate, primarily those reforms that brought about great changes in the structure of compensation, with the removal of qualifying days in 1967 and 1987. The significance of changes in regulations in the 1990s is more difficult to distinguish because of the number and extent of the changes.

### **Trends in long-term sickness absence**

As already mentioned, it is not obvious to assume that the same socio-economic conditions that influence sickness absence in general also have specific significance for long-term sickness absence. This applies to the correlations with unemployment and work environment exposure as well as that with changes in the regulations. There are various definitions of what constitutes long-term sickness absence. One assumption is often that sickness absence that is regarded as long-term also involves a health condition that is more serious, and that the work capacity is more permanently reduced. Those on long-term sick leave also have other characteristics than those on short-term sick leave. The length of the sickness absence is affected by, among other things, age, sex, level of education, and profession (Andrén 2001).

Women's long-term sickness absence has been at a much higher level than that of men since the early 1980s, regardless of whether we look at medium-

term or very long-term sickness absence. Trends are the same for both sexes however and follow the pattern previously described for the sickness rate: a marked increase in the late 1980s that turned into a steep decline in the first half of the 1990s, followed by another very steep increase in the late 1990s and early 21<sup>st</sup> century. At the end of 2002, the number of ongoing sickness absences 60 days or more in duration was around 160,000 for women and just over 90,000 for men. This is higher – for women, considerably higher – than the high levels of long-term sickness absence in the 1980s.

It is a well-known pattern that long-term sickness absence increases with increasing age. Table 7.4 shows that at the end of 2002, there were 48 long-term sickness absences per 1,000 men and 68 per 1,000 women in the 55–64 age group. Among men, the age pattern is more pronounced with increasing proportions in older age groups. Among women, long-term sickness absence reaches its peak as early as the 45–54 age group. The fall-off in numbers of long-term sickness absences in the 55–64 age group is partly explained by the fact that many of those who were previously in the workforce have now left it, for example with a disability pension. Apart from the obvious fact that younger people are physically healthier, the low number of long-term sickness absences in the youngest age group is ex-

**Table 7.4.** Ongoing long-term sickness absence, 60 days or more, per 1,000 registered insured persons in December 1998–2002, by sex and age group (Source: own calculations using data from the STORE databank, National Social Insurance Board.)

Sex/age group	1998	1999	2000	2001	2002	Change 1998–2002 %
<i>Men</i>						
16–24	2.8	3.4	4.3	5.5	5.7	102
25–34	11.4	13.8	16.6	19.0	20.1	76
35–44	18.9	23.0	27.7	31.7	33.3	76
45–54	28.8	35.2	41.3	46.4	47.6	65
55–64	32.0	38.1	44.0	48.0	48.4	51
16–64	18.9	23.0	27.3	30.9	31.9	69
<i>Women</i>						
16–24	4.6	5.7	7.3	9.3	10.0	116
25–34	21.7	27.5	35.7	43.0	45.1	108
35–44	34.1	43.4	55.5	65.1	69.0	102
45–54	47.6	60.5	74.0	82.3	83.6	76
55–64	42.0	52.0	62.3	67.8	67.6	61
16–64	30.7	39.0	48.7	55.6	57.3	86

plained by their having a relatively low level of participation in the workforce. Like trends in the sickness rate in recent years, however, the rate of increase in long-term sickness absence in young people is worryingly high, with the number of long-term sickness absences more than doubling.

### **Explanatory factors for long-term sickness absence (1992–2003)**

In the following, long-term sickness absence is defined as sickness absence that has lasted for 60 days or more. Here, ongoing sickness absence spells are analysed at the turn of every month during the period December 1992 to September 2003. Along with the sickness rate, this is one of the few time series of sufficient length to enable an analysis of developments over time. The analysis is focused on trying to explain the great fluctuations in long-term sickness absence in the 1990s, and particularly the substantial upswing in the late 1990s. The dependent variable is the number of long-term sickness absences per 1,000 individuals in the 16–64 age group. Men and women are analysed separately. In the first place, we examine the significance of changes in regulations, unemployment, activity rate, and age distribution of the labour force.

The results of the analysis are presented in Table 7.5. The monthly variation is not reported in the table for reasons of space, but we can mention that seasonal variations are considerably more pronounced for women than for men. There are more long-term sickness absences during the winter time, and they fall sharply during the summer. This cannot be explained by, for example, influenza epidemics during the winter, since these are sickness absences that exceed two months. It is possible that holidays and other types of leave from work in the summer months function as a buffer for those with reduced work capacity, and that this way of managing reduced work capacity is more common in women than in men.

#### *Unemployment, activity rate and the ageing workforce*

The correlation between long-term sickness absence and unemployment might be a positive one, unlike the negative correlation for sickness absence in general. A study by Marklund and Lidwall (1997) has shown that the risk of long-term sickness absence increases in times of higher unemployment in the municipality. These differences in the direction of the correlation for

**Table 7.5.** Linear regression analysis of long-term sickness absence (ongoing sickness absence benefit cases, 60 days or more). Monthly data December 1992–September 2003.

Variable	Model	
	Women	Men
(Constant)	-167.3***	-76.0***
Qualifying day introduced in 1993	-0.0	-2.2*
Compensation levels to those on long-term sickness absence reduced in July 1993	-2.2*	-3.1***
New regulations on decisions and investigation requirement introduced in October 1995.	-2.0***	-3.8***
Compensation levels reduced in January 1996	-0.7	-1.7***
More stringent medical requirements introduced and sick pay period extended to 28 days in January 1997	-1.3**	-1.8***
Compensation levels raised in January 1998	-0.8	-0.3
Compensation levels raised and sick pay period shortened to 14 days in 1998	0.2	0.8
Size of sickness benefit for unemployed limited in July 2003	-3.5***	-2.7***
Proportion of the workforce aged 55–64 (for men and women, respectively)	8.4***	4.6***
Labour force rate, LFS (for men and women, respectively)	0.9***	0.4**
Unemployment rate, LFS (for men and women, respectively)	-1.2***	0.4***
No. observations	130	130
R2 (adj)	0.99	0.97
Mean value for the period	35.2	22.2

\*\*\* Significant at 1-per-cent level, \*\* at 5-per-cent level, \* at 10-per-cent level.

The model also controls for calendar month.

the different types of sickness absence can probably be explained by whether the consequences of unemployment are dependent on the business cycle, or are structural. The effects on short-term sickness absence can primarily be interpreted as a more short-term business cycle effect, while the effect on long-term sickness absence could be a more long-term structural unemployment effect. The business cycle effect expresses itself as those in jobs reducing their sickness absence, at the same time as those with the highest levels of sickness absence lose their jobs when unemployment climbs. The structural effect arises when those who have become surplus to the labour market, and who have varying degrees of health problems and work incapacity, leave the workforce permanently through various types of alternative support. The possibility that unemployment in itself leads to health problems and gives rise to more long-term sickness absence cannot be excluded

either. A higher activity rate (labour force rate) is expected to increase long-term sickness absence in the same way as it does the sickness rate. The hypothesis is based on the assumption that the higher the activity rate, the greater the probability that individuals with poor health will participate in working life, which in the long run can lead to more long-term sickness absence and a higher sickness rate.

The changes in unemployment and activity rates that have occurred in the period have had clear consequences for long-term sickness absence. A higher activity rate has increased long-term sickness absences, particularly among women. This might be because groups with poorer occupational health entered the workforce in the late 1990s. For men, the unemployment rate has the expected positive effect that increasing unemployment has increased long-term sickness absence. This lends support to the thesis that long-term sickness absence functions to some extent as an employment policy pressure valve for men. Among women, however, the correlation is negative. This indicates that this, like the case of the activity rate, is an expression of the fact that those women who have the poorest health and the highest rate of sickness absence move out of the workforce in times of higher unemployment, which reduces long-term sickness absence. It is also possible that long-term sickness absence falls among those women who are able to keep their jobs, at least in the short term.

The number of older workers in the workforce is also expected to lead to a higher number of long-term sickness absences. Previous studies have shown that both ill health (Marklund & Toomingas 2000) and the risk of long-term sickness absence (Marklund & Lidwall 1997) increase with increasing age. It is also fair to assume that the older workforce will be more sensitive to structural change in the labour market. The structural consequences of higher unemployment are then reinforced by the fact that the proportion of older workers in the workforce is high at the same time.

The analysis shows that the ageing workforce has led to a great increase in long-term sickness absence, which is confirmed by previous studies (Lidwall & Skogman Thoursie 2000, *sou* 2002:62). An increase in the proportion of older workers, 55–64 years of age, by one percentage point increases long-term sickness absence among men by just under five absences per 1,000 individuals. Among women, the increase is even steeper with an



effect of over eight sickness absences per 1,000 individuals. Between the autumn of 1997 and the autumn of 2003, the 55–64 age group as a proportion of the group aged 16–64 increased from around 16 to 20 per cent.

It is probable that some of the estimated effects of the ageing workforce can be related to other factors, such as changes in the conditions of working life or other changes in the labour market in the same period. The combination of an increased proportion of older workers and ever-greater demands in working life can have led to an increased number of long-term sickness absences (Wikman & Marklund 2003). A previous study, for example, showed that the number of actively employed people with jobs involving high psychological demands and a high degree of control over their work, known as active jobs, increased substantially between the end of the 1990s and the early 21<sup>st</sup> century (Lidwall 2003). Such jobs have appeared to increase the risk of long-term sickness absence among women, but not among men. The proportion with low-stress jobs, meaning those with low psychological demands and a high degree of control over their work, has fallen correspondingly as active jobs have increased. During the same period, the proportion of high-stress jobs, with high psychological demands and a low degree of control over the work, has increased. It is well known that high-stress jobs increase the risk of various disorders as well as sickness absence.

### *Changes in regulations*

The analysis also takes into account the large number of changes made to the body of regulations up to and including September 2003. Since many people with a disability pension are on long-term sick leave before they receive disability pension, more restrictive regulations for disability pensions lead to a reduction in the outflow from long-term sickness absence. This can increase the number of ongoing long-term sickness absences. Conversely, a relaxation of the regulations creates a greater outflow from long-term sickness absence and long-term sickness absences fall, all other things being equal. A more detailed description of changes in disability pensions is found in the next chapter.

As expected, the restrictive changes in the regulations implemented in the 1990s led to a smaller increase in the number of long-term sickness absences than would probably otherwise have been the case. The results of

the changes in regulations were greater for men than for women. The increases in levels of compensation in 1998, however, have not entailed more long-term sickness absence according to the analysis.

### The diagnoses of those on long-term sick leave

There are no annual comparable figures for the distribution of long-term sickness absences by diagnosis. To study diagnoses among those on long-term sickness leave, the RFV has carried out selective studies covering the periods 1979–1994 and 1999 and onwards, which enable a description of the distribution of diagnoses for various time periods.

Table 7.6 shows the results of the diagnoses underlying sickness absence for men and women over the past decades. The biggest diagnosis group, and the one that has shown the greatest increase in numbers of long-term sickness absences, is musculoskeletal disorders. The increase stopped in the early 1990s however and for women the numbers have fallen. The proportion with musculoskeletal disorders is nowadays the same for men and women. Among women, the proportion of pregnancy complications in-

**Table 7.6.** The distribution of long-term sickness absence (90 days or more) by diagnosis for various time periods 1979–2002. (Source: National Social Insurance Board)

	1979–1985	1986–1991	1992–94	1999–2002
<i>Women</i>				
Psychiatric disorders <sup>a</sup>	15.9	12.7	16.9	28.1
Disorders of the circulatory organs	4.4	4.4	4.2	3.5
Pregnancy-related complications	6.5	8.9	9.8	5.0
Musculoskeletal disorders	35.6	44.4	39.4	37.4
Symptoms and incompletely described cases	7.6	4.3	1.5	3.3
Injuries and poisoning	8.4	5.4	9.3	5.9
Other disorders	21.6	19.9	18.9	16.8
No. cases in the study (n)	1 340	1 695	1 570	11 230
<i>Men</i>				
Psychiatric disorders <sup>a</sup>	19.0	19.2	18.0	23.1
Disorders of the circulatory organs	12.3	11.3	13.6	8.8
Musculoskeletal disorders	30.4	37.9	36.7	37.5
Injuries and poisoning	14.7	11.8	14.3	9.9
Other disorders	23.6	19.8	17.4	20.7
No. cases in the study (n)	1 399	1 318	1 203	6 389

a. Burnout (Z73.0) is classified as a psychiatric disorder.

creased at the end of the 1980s and the beginning of the 1990s, partly due to a high birth rate during this period. Long-term sickness absence for pregnancy-related complications fell heavily, as did birth rates, towards the end of the 1990s. There has also been a fall in the proportion of women in the category symptoms and incompletely described cases. This is partly due to the fact that fibromyalgia has been able to be diagnosed more consistently and is now classed as a musculoskeletal disorder. In recent years, however, symptom diagnoses have increased again, which might partly be related to the increase in stress-related problems.

The clearest change is that which has taken place for psychiatric disorders. There has been a sharp increase in the proportion of those on sick leave for psychiatric ill health. This increase is clear for both sexes but is much greater for women than for men. During the 1979–1994 period, the proportion of men on long-term sick leave for psychiatric ill health was greater than for women on long-term sick leave. This increase is primarily related to an increase in numbers on long-term sick leave for depression, anxiety syndromes, stress reactions and burnout conditions. The proportion of severe psychiatric disorders is on the other hand constant, and constitutes a relatively small proportion of sickness absences (Lidwall 2002).

## Summary

Variations in sickness absence over the past twenty years can largely be explained by expansive or restrictive changes in regulations and by economic cycles. Expansive changes in regulations have often been implemented in times of economic prosperity, and restrictive ones in times of economic recession, further enhancing the cyclical pattern of sickness absence. Sickness absence increases when unemployment decreases, and falls when unemployment increases. The increasing unemployment in the early 1990s reduced sickness absence. The introduction of the sick pay period in 1992 and the greater cost liability of employers may also have reduced sickness absence. After the introduction of the qualifying day in 1993, sickness absence fell further, but the smaller number of sickness absences became more long-term in nature. This could be explained by the fact that only more severe disorders led to sickness absence after the introduction of the qualifying day. However, it cannot be discounted that the changed

compensation rules after the introduction of the qualifying day were also significant.

These results can be interpreted as meaning that the high "excess" in the sickness insurance system for short-term sickness absence creates strong financial incentives to avoid sickness absence. When sickness absence has begun, however, there are no strong financial incentives for many wage earners to return to work quickly. According to the above analyses, the sharp increase in the sickness rate since 1997 can primarily be explained by reduced unemployment, but other social factors such as increased alcohol consumption might have been significant in the Swedish context.

The longer-term sickness absences fell heavily between 1990 and 1997 apace with a more restrictive attitude in the sickness insurance system. They fell in all age groups, but most markedly in the age groups with weaker positions in the labour market, which is to say the youngest and the oldest. The reason for this is probably that the harsh labour market in the first half of the 1990s made it harder for younger people to establish themselves on the labour market and become entitled to sickness benefit, at the same time as older people left the labour market through disability pensions and other means.

Since the middle of 1997, however, long-term sickness absences have increased very dramatically. The economic upswing with falling unemployment can have had a suppressant effect on long-term sickness absence among men. For women, who work to a great degree within the public sector, the economic prosperity of the late 1990s had no suppressant effect, but rather increased long-term sickness absence. A higher activity rate also increases long-term sickness absence for both women and men. According to the analysis, the effects of changes in employment and the activity rate are overshadowed by the fact that the workforce has become older, which has substantially increased long-term sickness absence among both women and men. This increase is particularly steep for women.

The increase in stress-related disorders and psychiatric problems can be seen as a sign of a tougher climate in working life. The negative consequences of a faster pace in working life are probably reinforced by the fact that the workforce is getting older and might find it more difficult to keep up. The great difference between the sickness absence of women and men also shows that the conditions of working life are markedly different for

women and for men. Women's participation in working life is still to a great extent determined by the demand for labour in the public sector and by the ability to combine work with responsibility for the home and family.

## References

- Andrén D (2001) *Work, sickness, earnings and early exit from the labor market*. Thesis, Ekonomiska studier no. 107, Göteborg University.
- Arai M & Skogman Thourise P (2004) "Incentives and Selection in Cyclical Absenteeism" in press, *Journal of Labor Economics*.
- Bergendorff S, Berggren S, Cohen Birman M, Nyberg K, Skogman Thoursie P & Söderberg J (2002) *Svensk sjukfrånvaro i ett europeiskt perspektiv. (Swedish sickness absence in a European perspective)* RFV analyserar 2002:11, National Social Insurance Board, Stockholm.
- Bäckman O (1998) *Longitudinal Studies on Sickness Absence in Sweden*. Swedish Institute for Social Research, Dissertation series no. 34, Stockholm University.
- Eklund M, von Granitz H & Marklund S (2004) "Deltidssjukskrivning – individ, arbetsplats och hälsa" (Part-time sickness absence – the individual, the workplace, and health) in Hogstedt C, Bjurvald M, Marklund S, Palmer E & Theorell T (eds.) *Den höga sjukfrånvaron – sanning och konsekvens. (High sickness absence – truth and consequence)*. National Institute for Public Health, Stockholm.
- Hemström Ö (1998) *Male Susceptibility and Female Emancipation – Studies on the Gender Difference in Mortality*. Thesis, Stockholm Studies in Sociology No 7, Almqvist & Wiksell International, Stockholm.
- Henrekson M & Persson M (2004) "The Effects on Sick Leave of Changes in the Sickness Insurance System", in press, *Journal of Labor Economics*.
- Hensing G (1997) *Sickness Absence and Psychiatric Disorder*. Medical Dissertations No 521, Linköping University.
- Johansson P & Palme M (1996) "Do economic incentives affect work absence? Empirical evidence using Swedish micro data" *Journal of Public Economics*, 59, pp. 195–218.
- Lantto K & Lindblom E (1987) "Är arbetslösheten hälsosam?" (*Is unemployment healthy?*) *Ekonomisk debatt*, 1987:4, pp. 222–336.
- Leifman H & Gustafson NK (2003) *En skål för det nya millenniet. En studie av svenska folkets alkoholkonsumtion i början av 2000-talet. (Here's to the new millennium. A study of Swedish alcohol consumption in the early 21st century.)* Research Report 11, Centre for Social Research on Alcohol and Drugs (SORAD), Stockholm University.
- Lidwall U (1997) "Friskskrivning, förtidspensionering och sammansatta riskfaktorer" (Return to health, disability pension and composite risk factors) in Marklund S (ed.) *Risk- och friskfaktorer – sjukskrivning och rehabilitering i Sverige. (Risk and health factors – sick leave and rehabilitation in Sweden)*. RFV redovisar 1997:6, National Social Insurance Board, Stockholm.

- Lidwall U (2002) *Långtidssjukskrivningar för psykisk sjukdom och utbrändhet – Vilka egenskaper och förhållanden är utmärkande för de drabbade? (Long-term sickness absence for mental illness and burnout– what characteristics and circumstances define sufferers?)* RFV analyserar 2002:4, National Social Insurance Board, Stockholm.
- Lidwall U (2003) *Psykosocial arbetsmiljö och långvarig sjukskrivning. (Psychosocial work environment and long-term sickness absence)*, RFV analyserar 2003:3, National Social Insurance Board, Stockholm.
- Lidwall U & Skogman Thoursie P (2001) "Sickness absence during the last decades", pp. 81–100 in Marklund S (ed.) *Worklife and Health in Sweden 2000*, National Institute for Working Life, Stockholm.
- Lindholm C (2002) *Socio-economic Consequences of Longstanding Illness*. Thesis, Karolinska Institutet, Stockholm.
- Lindholm C & Fredlund P (2004) "Dödlighet i arbetande åldrar bland sjukskrivna och förtidspensionärer" (Mortality in working age people on sick leave and with disability pension) in Hogstedt C, Bjurvald M, Marklund S, Palmer E & Theorell T (ed.) *Den höga sjukfrånvaron – sanning och konsekvens. (High sickness absence – truth and consequence)* National Institute for Public Health, Stockholm.
- Marklund S & Lidwall U (1997) "Vilka blir långvarigt sjukskrivna?" (Who ends up on long-term sick leave?) in Marklund S (ed.) *Risk- och friskfaktorer – sjukskrivning och rehabilitering i Sverige. (Risk and health factors – sickness absence and rehabilitation in Sweden)* RFV redovisar 1997:6, National Social Insurance Board, Stockholm.
- Marklund S & Toomingas A (2001) Age differences in employment, work environment and health, pp. 155–174 in Marklund S (ed.) *Worklife and health in Sweden 2000*, National Institute for Working Life, Stockholm.
- sou 2002:62 *Kunskapsläge sjukförsäkringen. (What we know about sickness insurance)* Fritzes, Stockholm.
- sou 2004:2 *Långtidsutredningen, bilaga 14 Vem tjänar på att arbeta? (Swedish Long-Term Survey appendix 14. Who gains by working?)* Fritzes, Stockholm.
- Upmark M (1999) *Alcohol, sickness absence and disability pension*. Thesis, Karolinska Institutet, Stockholm.
- Wikman A & Marklund S (2003) "Tolkningar av arbetssjuklighetens utveckling i Sverige" (Interpretations of trends in occupational illness in Sweden) pp. 21–56 in von Otter C (ed.) *Ute och inne i svenskt arbetsliv ). Forskare analyserar och spekulerar om trender i framtidens arbete. (What's in and out in Swedish working life. Researchers analyse and speculate on trends in future work.)* Arbetsliv i omvandling (Working life in transition) 2003:8 National Institute for Working Life, Stockholm
- Voss M (2002) *Work and Health – epidemiological studies of sickness absence and mortality*. Thesis, Karolinska University Press, Stockholm.

## CHAPTER 8

# Trends in new disability pensions

*Peter Skogman Thoursie, Ulrik Lidwall and Staffan Marklund*

Disability pension is one of the systems designed to support people of working age who are more or less permanently unable to work for health reasons. Until 2002, disability pensions could be awarded to insured people whose work capacity was permanently reduced for health reasons by at least a quarter. If work capacity was not regarded as being permanently reduced, but as reduced for a significant length of time, then a temporary disability pension was granted. This compensation, temporary in nature, leads in most cases to a permanent disability pension and is therefore often discussed in the same context. The following discussion includes these temporary disability pensions, which represented just over 14 per cent of the total number of disability pensions (permanent + temporary) paid at the end of 2002. The disability pension system was amended in January 2003 and the term disability pension was replaced by the terms sickness compensation and activity compensation. These are no longer regarded as part of the pension system, but as benefits payable in the event of ill health. Activity compensation applies to those under 30, while sickness compensation applies to other age groups. This section deals with the pre-2003 disability pension system.

Among those who leave the workforce before normal retirement age, people on disability pensions are the single largest group. Other groups are people who take out their old age pension early or who have collectively agreed occupational pensions, private pension insurance or other means of support. Almost 60 per cent of both men and women in the 60–64 age group have some type of permanent pension. Among women, 30 per cent had a disability pension and 23 per cent a collectively agreed occupational pension, while the corresponding figures for men were 26 and 24 per cent

(Bäckbro et al. 2002). In 2002, just over 488,000 people – or just over 427,000 recalculated as full-time equivalents – had a permanent or temporary disability pension. This means that more than 10 per cent of those under retirement age are outside the workforce within the framework of the disability pension system. Extremely few people with disability pensions return to gainful employment. Instead, the disability pension, in various combinations with sickness absence and unemployment, is the most common exit route from working life (Hemmingsson 2004, Palme & Svensson 2004).

In recent years, the rise in the cost of disability pensions has been steeper than the rise in numbers of people on disability pensions, primarily because there is a steeper increase among the young and the middle-aged: people who will remain in the system for a longer period of time. Costs have been affected by some shift towards groups with somewhat higher incomes and consequently higher disability pensions (Stattin 2003). The object of this chapter is to identify which factors may be significant in explaining fluctuations in the level of disability pensions over time.

### **Trends in new disability pensions**

As is the case with sickness absence, numbers of newly granted disability pensions show large fluctuations over time. Figure 8.1 describes trends in terms of full-time equivalents, which means that partial disability pensions are added together to make full ones. During the 1971–1978 period, an average of just over 20,000 disability pensions a year were granted to women, and around 27,000 to men. After a fall in the early 1980s, the number climbed steeply for the rest of the decade. Until 1985, more men than women were granted disability pensions, but the number of women has been consistently higher since then. In recent years, gender differences have been further accentuated and those with disability pensions have also tended to be younger in recent years and a higher proportion have immigrant backgrounds (Stattin 2003).

There was no clear downward trend in new disability pensions in the early 1990s, as was the case for sickness absence. There was a fall between 1989 and 1991, but this was followed by a steep rise in 1992 and 1993, after which the number of new disability pensions fell to levels which were very low from a historical perspective, only to show a new marked increase in the



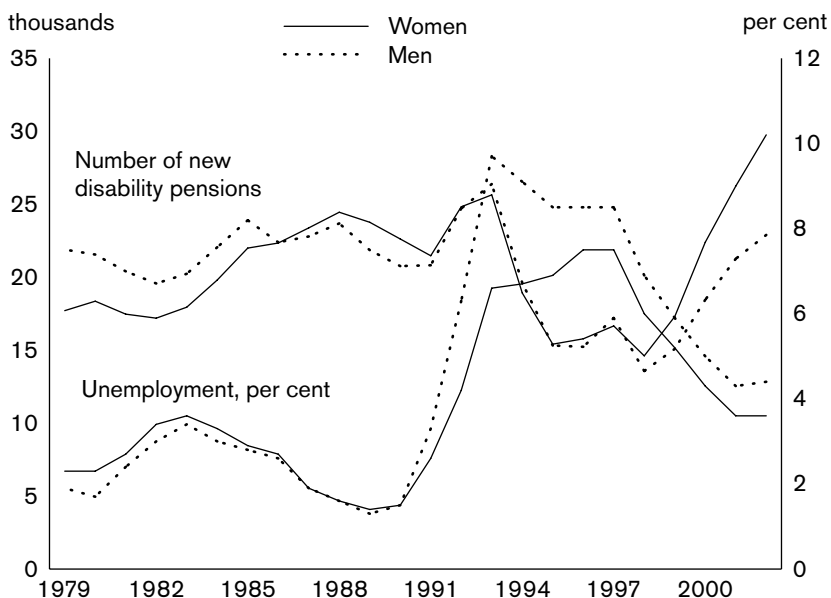
early 21st century. In 2002, just under 30,000 disability pensions were granted to women and almost 23,000 to men.

There is a close correlation between the upward trend in disability pensions in the 1980s and the steep rise in long-term sickness absence in the same period. The marked fall in disability pensions in the years 1994 and 1995 can be explained by the fact that the really long-term sickness absence cases that could have been converted into disability pensions had already been granted such pensions in 1992 and 1993. The number of ongoing long-term sickness absences also continued to fall in 1994 and 1995. The rise in sickness absence and long-term sickness absence since 1997 has led to increased pressure on the disability pension system in the early 21st century, something which is also reflected in the figures for the numbers of new disability pensions.

Unemployment does not follow trends in disability pensions in the same clear way as it does with sickness absence, even if there does seem to be some negative correlation here too. Figure 8.1 shows unemployment levels for women and for men. The number of new disability pensions increased during the economic recession in 1982–84, but the increase was also pronounced during the start of the economic upswing and up to 1988. The steep increase in 1992 and 1993 took place at the same time as unemployment was climbing steeply.

As already mentioned, trends in numbers of new disability pensions have been strongly influenced by changes in the regulations and benefits in the system. Table 8.1 reports the most important changes. Until 1 October 1991, it was possible for older employees to get a disability pension for labour market reasons, and until 1997 it was possible for people aged 60 and above to be granted a disability pension for labour market reasons, where the requirement for a medically verified reduction in work capacity was somewhat less stringent than for younger people.

In 1995, the rules were tightened when reconsideration of the disability pension was made possible. The pension was not necessarily regarded as permanent. The criteria for the right to a disability pension were made less stringent in 1999, when working capacity was to have been reduced by at least seven-eighths instead of being completely absent, as was required before the change in the regulations. Some changes have also been imple-



**Figure 8.1.** Number of new temporary or permanent disability pensions (FTEs) and unemployment levels for women and men 1979–2002. (Source: National Social Insurance Board and Labour Force Survey.)

mented in the compensation level. In 1993, the base amount, used in calculating the size of the disability pension, was slightly reduced. On 1 July 1993, 25 per cent and 75 per cent disability pensions were introduced, at the same time as the two-thirds pension level was abolished.

The question of what role the generosity of compensation plays in the level of disability pensions is also closely related to that of alternative means of support. The well-being of the individual is dependent on a number of things, including income if (s)he remains in work or leaves the workforce. People might thus be more prepared to apply for a disability pension if it is easier to get a more favourable level of compensation. Since it is impossible to make a perfect measurement of an individual's degree of reduction in working capacity, there is always some room for interpretation when a decision is made about someone's right to a disability pension.

**Table 8.1.** Changes in regulations that have affected the right to a disability pension.  
(Source: Lidwall & Skogman Thoursie 2000 and Skogman Thoursie 1999.)

Period	Medical reasons	Labour market reasons	Medical/labour market reasons combined
Pre-1970	Yes	No	No
1970–72 (July)	Yes	No	Yes, 63–66 yrs
1972–74 (July)	Yes	Yes, 63–66 yrs	Yes, 63–66 yrs
1974–76 (January)	Yes	Yes, 60–66 yrs	Yes, 63–66 yrs
1976–1991 (July)	Yes	Yes, 60–64 yrs	Yes, 60–64 yrs
1991–97 (October)	Yes	No	Yes, 60–64 yrs
1997 – (January)	Yes	No	No

*Other important changes in regulations:*

1977: Disability pension available for those who had reduced work capacity because of alcohol or drug abuse.

1993 (July) More stringent examination of work capacity, which must be entirely absent for full disability pension to be granted. Previously, a reduction in work capacity of at least 5/7 was required.

1995 (October): Right to reconsider disability pension introduced (in the form of a medical certificate, rehabilitation measure etc.) when the disability pension was granted.

1999 (January): To get a full disability pension, it was necessary that work capacity was 'entirely or almost entirely absent'. Previously, entirely absent work capacity was required.

2003 (January): Temporary and permanent disability pension replaced by sickness compensation and time-limited sickness compensation for persons aged 30–64. For 19–29 year-olds with reduced work capacity, activity compensation can be granted. Activity compensation is always temporary.

The criteria for a disability pension were made less rigorous in a number of stages during the 1970–1990 period. This trend was reversed in the early 1990s when the rules for the award of a disability pension were made more rigorous and the level of compensation was reduced through the reduced base amount. The changes in the system coincide well with trends in the numbers of new disability pensions. The numbers of new disability pensions increased during the 1980s apace with more generous regulations. The '58.3' pensions reinforced this trend. This system involved a planned early pension, through which people who had been made redundant could receive unemployment benefit for 450 days at the age of 58 and three months, after which they could be given a disability pension for labour market reasons at the age of 60. These disability pensions interacted with company personnel policies (Wadensjö & Sjögren 2000). The cost of these

pensions increased throughout the 1980s, but fell steeply when disability pensions for labour market reasons were abolished in 1991.

### **Explanatory factors for changes in numbers of new disability pensions in 1979–2002**

There are a number of reasonable explanations for variations in the number of people with disability pensions over time. As already mentioned, several studies have shown that unemployment is a factor in a number of ways. For individuals with previous experience of unemployment, individuals who are unemployed and ill, and individuals who live in areas of high unemployment, there is generally a higher risk of receiving a disability pension (Marklund 1992, 1994, Lidwall 1997). Profession, age, ethnic origin and gender also play a determining role (Cohen Birman et al. 2004, Stattin 2003).

Our primary focus of examination is correlations between disability pensions and unemployment, region, gender and age. The analysis covers the period 1979–2002, and the data consists of statistics of newly granted permanent and temporary disability pensions per 1,000 registered insured persons per year. The newly granted disability pensions are divided up by year, county, sex and age group. The level of unemployment according to the LFS is linked to the data for each year, county, gender and age group, to examine whether unemployment levels are a significant factor in the risk of disability pension.

As has already been noted, there were large changes in the 1979–2002 period in both unemployment levels and the regulations in the disability pension system. To investigate this, we will look separately at different periods. The first, 1979–89, covers most of the period during which disability pensions were granted under more generous rules, primarily in that older people were able to get a disability pension for labour market reasons. Unemployment was low during this period. The second period, 1990–98, was almost entirely a period of more restrictive regulations in which the disability pension for labour market reasons was abolished, and also a period in which unemployment was considerably higher in some years. The third period, 1999–2002, was marked by stability in the body of regulation and some downward trend in unemployment.

## *Unemployment*

Unemployment in the area where a person lives or the region in which (s)he works can affect the disability pension in several ways. When unemployment climbs in the region, competition for jobs increases, which can result in more applications for a disability pension from people with limited work capacity so that they can secure future income or avoid later unemployment. Increasing unemployment, then, is assumed to have a more long-term structural effect because more of those with limited work capacity are unable to support themselves in the labour market. Increased unemployment can also lead to poorer health in both the employed and the unemployed, which in turn could lead to more people on disability pensions.

Previous research has not yielded any clear-cut results (Berglind 1977, Grape & Lindqvist 1997, Lidwall 1997, Marklund 1994, Wadensjö 1985). One reason why different studies have come to different conclusions is that different time periods have been studied, different methods have been used and problems have been specified in different ways.

Table 8.2 shows the number of newly granted disability pensions and unemployment levels for women and men, distributed by age group. One factor that pushed up the average numbers for the 1990–98 period was the steep increase in newly granted disability pensions in 1992 and 1993.

**Table 8.2.** Number of new disability pensions (in per cent of workforce) and unemployment (in per cent of workforce) by sex, age and period.

	1979–1989		1990–98		1999–2002	
	New dp's	Unemployment	New dp's	Unemployment	New dp's	Unemployment
<i>Women</i>						
16–29	0.1	4.6	0.1	9.3	0.2	6.7
30–49	0.5	1.6	0.7	4.4	0.9	3.6
50–59	2.1	1.4	2.2	3.2	2.3	2.8
60–64	4.3	4.4	4.6	5.7	4.0	6.3
<i>Men</i>						
16–29	0.1	4.4	0.1	11.5	0.2	7.4
30–49	0.3	1.4	0.4	5.4	0.5	4.1
50–59	2.1	1.4	1.8	4.7	1.5	4.0
60–64	5.7	3.7	5.5	7.0	3.4	7.4

On average, unemployment was much higher in the youngest and oldest age groups than in the two middle age groups. Unemployment was also generally higher during the 1990–98 period than in the other two periods. Unemployment in the early 1990s affected young people more than it did middle-aged people, and affected men more than women. If we compare the final period to the middle period, unemployment had fallen for all groups apart from men in the highest age group, in whom some increase was seen.

One way of more closely studying the correlation between disability pensions and unemployment, while controlling for the influence of other factors, is to use logistic regression. Results are presented in terms of odds ratios that show the relative risk of disability pension for a certain group in relation to a reference group. Unemployment is divided into different classes, in which unemployment levels of 0–2 per cent are used as a reference category with which the others are compared. The analyses are done separately for women and men since there may be gender differences, depending for example on sensitivity to economic cycles in the sectors in which men and women are most often employed.

Table 8.3 presents the results for women and men for the three different periods and includes unemployment class, county, age group and year as explanatory variables. It is clear that higher unemployment entailed a significantly greater risk of disability pension for both women and men in the first two periods. Unemployment primarily showed a significant effect on disability pensions at very high levels of unemployment, over 6 per cent. In the final period, 1999–2002, unemployment appeared to be significant only at levels over 10 per cent, and even then the increased risk was not substantial, around 6 per cent for women and about 9 per cent for men.

The results show that differences in unemployment levels do influence the risk of disability pension, controlling for age, year and county, and that the effect varies with the period, and to some extent, gender. During the first period, in which a disability pension could be granted to older workers for labour market reasons, the unemployment level was highly significant. This is reasonable and to be expected. During the 1990–98 period there was a similar pattern, but it must be remembered that unusually high numbers of people were granted a disability pension in the years 1992 and 1993, to

reduce the numbers of those on long-term sick leave at the same time as unemployment was climbing steeply. The correlation between newly granted disability pensions and unemployment, then, might mask an administrative effect for this period. Alternatively, the 'age rules' may have been important. The 'age rules' meant that for people over 60 it was possible to take the labour market situation into account. During the final period, the correlation with all levels of unemployment, apart from very high levels, vanished. This is an indication that the disability pension is no longer granted for labour market reasons, except at very high levels of unemployment when all other alternatives to the disability pension have been exhausted. The long-term effect of the legislator's attempts to gradu-

**Table 8.3.** Relative risk of disability pension among women and men. Logistic regression (non-significant results are in italics,  $p > 0.05$ ).

	1979–1989	1990–98	1999–2002
<i>Women</i>			
<i>Unemployment classes (%)</i>			
under 2.1	1.00	1.00	1.00
2.1–4.0	0.98	1.06	<i>1.01</i>
4.1–6.0	<i>1.02</i>	1.16	<i>1.01</i>
6.1–10.0	1.12	1.11	<i>1.01</i>
over 10	1.25	1.15	1.06
<i>Age groups</i>			
16–29	1.00	1.00	1.00
30–49	4.20	5.15	3.88
50–59	19.65	17.79	10.42
60–64	40.11	37.41	18.57
<i>Men</i>			
<i>Unemployment classes (%)</i>			
under 2.1	1.00	1.00	1.00
2.1–4.0	1.06	<i>1.01</i>	<i>1.01</i>
4.1–6.0	1.08	1.08	<i>1.01</i>
6.1–10.0	1.29	1.03	<i>1.03</i>
over 10	1.37	1.06	1.09
<i>Age groups</i>			
16–29	1.00	1.00	1.00
30–49	3.00	3.49	2.37
50–59	19.23	15.25	7.24
60–64	54.43	47.90	16.25

The models also control for year and county.

ally reduce the risk that the disability pension system will function as an unemployment system is thus the intended one.

### *Age*

Age is another highly determinant factor in the risk of disability pension. This has its root cause in the fact that age is very significant in many forms of ill health as well as in long-term sickness absence. The risk is particularly high in the oldest age group. The risk for women in the oldest age group was about 40 times that of the youngest age group in the first two periods. For men, the corresponding risk was about 50 times higher, up to the end of the 1990s. For the 1999–2002 period, there was a significant fall in these risks, once again confirming the fact that numbers of new pensions have increased among the younger age groups at the same time as they have fallen among the older ones. This is also partly an effect of the abolition of the above-mentioned age rules. At the same time, it might indicate that it has become more difficult, relatively speaking, for younger people to get a foothold in the labour market. One indicator of this is that very long-term sickness absence has increased in all age groups.

### *Unemployment in different age groups*

An important question is whether the significance of unemployment in disability pensions varies for the different age groups. There is conflicting evidence for this. Since a disability pension for labour market reasons could be granted to older people, and since it used to be the case that the labour market situation was to be taken into account in the decision on a disability pension, one hypothesis is that unemployment is more of a significant factor for older age groups. On the other hand, young people in general have less secure employment terms and become unemployed more often than older employees. This would lead to a stronger correlation for younger people than for older people. Therefore, we will examine whether unemployment affects the risk of disability pension in different ways for different age groups.

Table 8.4 reports the relative risk of disability pension at unemployment levels over 3 per cent separately for each age group. The relative risk is always compared to a baseline case in which unemployment is 3 per cent or



**Table 8.4.** Relative risk of disability pension at various levels of unemployment for various age groups and periods. (non-significant results are in italics,  $p > 0.05$ .)

Unemployment classes (%)	16–29 years	30–49 years	50–59 years	60–64 years
1979–1989				
under 3	1.00	1.00	1.00	1.00
over 3	1.12	0.88	0.92	1.15
1990–1998				
under 3	1.00	1.00	1.00	1.00
over 3	1.51	1.29	1.03	0.93
1999–2002				
under 3	1.00	1.00	1.00	1.00
over 3	1.05	0.91	1.02	1.07

The models also control for sex, year and county.

lower for the same age group. Here, we present an analysis of women and men in a common model. It should be mentioned that when women and men are analysed at the same time, we find that women have a lower relative risk than men of receiving a disability pension during the 1979–1989 period. The corresponding relative risk was higher however for the two later periods, and women's higher risk of disability pension relative to men's has shown a particularly marked increase during the 1999–2002 period.

During the 1979–89 period, unemployment levels over 3 per cent increased the risk of disability pension for the oldest age group and the youngest one. For the youngest group, the risk of disability pension was 12 per cent higher at unemployment levels over 3 per cent than the situation with under 3 per cent unemployment. The corresponding figure for the oldest age group is 15 per cent. On the other hand, the correlation between the disability pension and unemployment for the 30–49 and 50–59 age groups is negative during this period.

For the 1990–98 period, the correlation vanishes for the oldest age group while the positive correlation is strengthened for the youngest age group and also becomes positive for the 30–49 age group. For the 1999–2002 period, there are no significant effects, indicating that the abolition of the regulation on labour market reasons had effect.

The fact that there is a correlation for the younger group during the 1990–98 period can be a sign that the extremely high unemployment early

in the decade led to long-term exclusion of a number of young people from the labour market. A significant number of the youngest people on a disability pension also have severe disabilities and have great difficulty entering the labour market when unemployment is high, which is why they are given a disability pension at a young age. However, the result can be interpreted as meaning that in times of economic prosperity, there is a long delay in granting a disability pension to younger people, while at high levels of unemployment no other route is found than a disability pension. It should be added here that younger people are often awarded a temporary disability pension rather than a permanent one, and that the group is relatively small.

In summary, the analysis has shown that higher unemployment levels increased the risk of a disability pension up to 1999. This applies to both women and men. The analysis has also shown that at unemployment levels over 3 per cent, both younger and older age groups were more likely to receive a disability pension during the 1980s, but that this correlation vanished for the older groups after this period. On the other hand, the correlation was very strong among young people in the 1990s. After 1998, the level of unemployment does not seem significant in any age group. The ambition of the legislator to break the link between unemployment and the disability pension seems, then, to have been successful.

### **The diagnoses of new disability pensions**

Unlike the situation for the sickness insurance system, diagnoses in disability pensions have been registered for many decades in Sweden. The distribution by diagnosis type is of interest for a number of reasons. One is that it provides information about what medical obstacles exist to gainful employment, and how these change over time. Another is that the underlying diagnoses of disability pensions can be an important indicator of changes in the labour market or in the characteristics of the labour force.

Trends in the six largest diagnosis groups for women and men during the 1979–2002 period are shown in Table 8.5. The dominant diagnosis group for both women and men during the entire period is musculoskeletal disorders. This diagnosis group climbed steeply throughout the 1980s and up to the 1992–94 period, and then fell steeply up to 2002.

The second largest diagnosis group, psychiatric disorders or symptoms, has shown a more even trend compared to musculoskeletal disorders. There was an increase in this diagnosis group too, however, during the years 1992–1994, at the time of the deep recession and the extensive conversion of long-term sickness absence into disability pensions, and it has continued to rise ever since.

‘Labour market reasons’ was previously reported as a diagnosis group because these cases did not require the disability pension to be on medical grounds (Andersson 2003). Newly granted disability pensions for labour

**Table 8.5.** New disability pensions for women and men, by diagnosis group, for various periods. Per cent.

	1979–1985	1986–1991	1992–94	1995–98	1999–2002
<i>Women</i>					
Psychiatric disorders	16.5	14.3	16.6	19.9	24.8
Disorders of the circulatory organs	9.0	6.0	5.8	6.0	4.8
Musculoskeletal disorders	38.0	51.7	55.3	47.7	44.5
Injuries and poisoning	3.0	2.5	3.2	4.2	5.0
Disorders of the nervous system and eyes/ears	5.0	4.4	5.4	6.6	6.3
Disorders of the respiratory organs	2.7	2.5	2.6	2.8	1.9
Labour market reasons	13.4	9.5	0.5	0.0	0.0
Other	12.5	9.1	10.6	12.9	12.8
<i>Average no. of new disab. pensions per year</i>	21 400	26 600	29 100	20 300	29 900
<i>Men</i>					
Psychiatric disorders	16.7	16.4	19.3	21.9	27.2
Disorders of the circulatory organs	19.8	15.1	14.4	14.5	12.2
Musculoskeletal disorders	29.7	37.6	41.6	35.9	32.3
Injuries and poisoning	4.0	3.6	4.4	5.4	6.2
Disorders of the nervous system and eyes/ears	4.8	4.7	5.7	6.7	7.2
Disorders of the respiratory organs	3.9	3.6	3.2	3.0	2.3
Labour market reasons	11.1	10.5	0.9	0.0	0.0
Other	10.0	8.5	10.5	12.5	12.6
<i>Average no. of new disab. pensions per year</i>	23 800	24 700	27 400	18 200	22 500

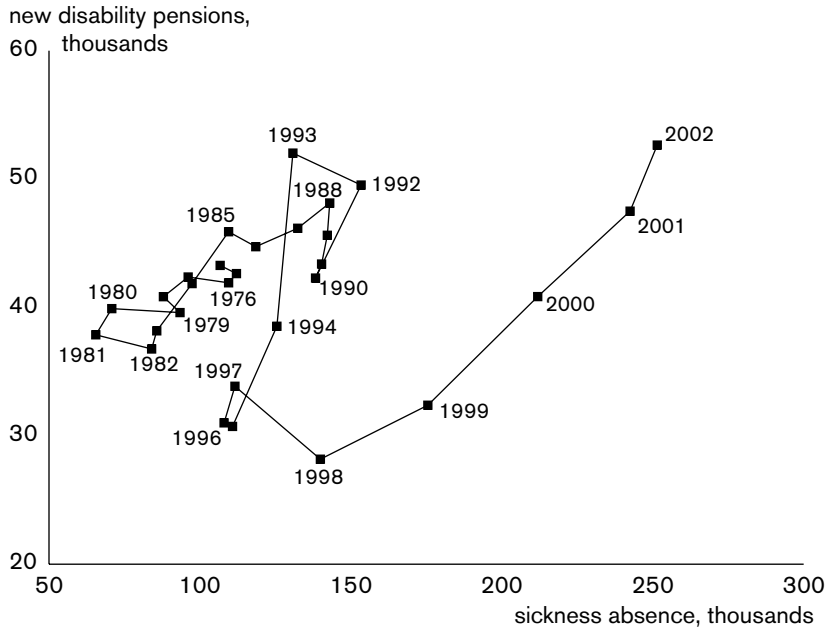
market reasons climbed steadily after the 'age rules' were introduced in 1970. After 1995, there were in principle no disability pensions for labour market reasons.

### **The correlation between long-term sickness absence and the disability pension**

An important question in the variation of disability pensions over time is the degree of correlation with variations in long-term sickness absence. Compensation levels in the sickness insurance system can, for example, affect the number of newly granted disability pensions. Even though the rules for the granting of a disability pension were made more restrictive in the 1990s, compensation levels within the disability pension system remained relatively favourable, and lower levels of compensation within the sickness insurance system would thus increase the propensity to transfer to a disability pension from long-term sickness absence. Permanent and temporary disability pensions are to a great extent preceded by long-term sick leave. Changes in the propensity to grant a disability pension to people on long-term sick leave therefore directly affect the number of ongoing long-term sickness absences. In future studies, it is therefore important for several reasons to make a more in-depth study of the whole process from short-term and long-term sick leave to temporary and permanent disability pension.

The relationship between the number of ongoing long-term sickness absences and the number of newly granted disability pensions is illustrated in Figure 8.2. It shows the trend in long-term sickness absences and temporary or permanent disability pensions during the 1974–2002 period. It is possible to see a relatively clear correlation during the years 1974–1988, with a large number of newly granted temporary and permanent disability pensions during the years in which the number of ongoing long-term sickness absences was substantial. In the years 1989–1991, the number of new disability pensions fell, while there was a steep rise in 1992 and 1993. The pattern that appears in the figure is the same for women and men, and applies both to shorter-term sickness absence of at least 30 days' duration and to very long sickness absence that has lasted for over a year.

Developments from 1994 onwards can be regarded as a deliberate attempt by the government to weaken the link between long-term sickness



**Figure 8.2.** Number of periods of sickness absence (60 days or more) and number of new temporary or permanent disability pensions (in full-time equivalents) 1974–2002. (Source: National Social Insurance Board.)

absence and premature permanent departure from working life. At the same given level of long-term sickness absence, the number of new disability pensions that had to be granted was to decrease, and a greater return to work would occur instead. This is visible in the figure as a shift of the correlation between sickness absence and disability pensions downwards and to the right. The number of newly granted disability pensions also fell steeply in 1994 and 1995, and then remained at a low level for the remainder of the decade. Since 1999, however, the number of newly granted disability pensions has shown a marked increase at the same time as the number of long-term sickness absences has continued to rise. The most recent developments indicate that the correlation is now returning to the form it had in the 1970s and 1980s.

## Summary and conclusions

The number of *new disability pensions* has shown large variations over the past two decades. Numbers of new disability pensions were at relatively high levels throughout the 1980s up to a peak in 1993, after which they fell drastically throughout the 1990s. There are several possible explanatory factors for these developments. Changes in regulations within the disability pension system clearly influence how many new disability pensions are granted. This conclusion can be drawn from studies of actual trends in new pensions, and from research that has studied the importance of changes in benefits and rules within the disability pension system.

The ageing workforce also leads to an increase in newly granted disability pensions in general terms, both directly and indirectly: directly because the risk of disability pension rises with increasing age, and indirectly since the proportion of people on long-term sickness absence climbs with increasing age, and many of these cases of long-term sickness absence end in a disability pension. There is a clear correlation between the number of long-term sickness absences and the number of newly granted disability pensions. There has also been a clear shift in the diagnoses behind new disability pensions. Although musculoskeletal disorders is still the largest diagnosis group for both men and women, psychiatric diagnoses have climbed steeply in the last two decades. This might reflect changes in how diseases are diagnosed, but is also linked to the fact that the increase in disability pensions has been steeper in white-collar than blue-collar professions. This particularly applies to women.

Previous studies have found some correlation between unemployment and disability pensions. Unemployment has a positive, but relatively small, significance in relation to other factors. These analyses have produced a positive correlation, in that there is a significant increase in numbers of newly granted disability pensions at higher unemployment levels. The strength of the correlation seems to vary however in different time periods. It seems to have been more significant in the 1980s compared to the 1990s, above all at high unemployment levels. The correlation is weaker for women than for men. This can be interpreted as a direct consequence of the fact that the body of regulation no longer allows a disability pension to be granted with

reference to the labour market situation. Additionally, the positive link between the disability pension and unemployment has been particularly prominent in the 16–29 age group in the 1990s. This is a sign that the disability pension is in fact granted for labour market reasons in these age groups. Developments in recent years are characterised by the fact that the trend in the new disability pensions corresponds to that of sickness absence, in which the increase primarily applies to women in the younger age groups.

A positive sign is that sickness absence has fallen somewhat in 2004, but disability pensions remain at a high level and have in fact increased. From a historical perspective, there is nothing to indicate that the Swedish labour market in future will be spared great fluctuations in sickness absence and disability pensions. If no significant structural changes take place in the sickness insurance and disability pension systems or in the labour market, it is also reasonable to expect an upward trend in the numbers of people who are excluded from working life on a short-term or long-term basis and instead are supported by the compensatory systems for ill health within the social insurance system.

## References

- Andersson B (2003) *Nybeviljade förtidspensioner och psykisk ohälsa – ålder, kön och diagnos. (Newly granted disability pensions and mental illness – age, sex and diagnosis)* RFV redovisar 2003:1, National Social Insurance Board, Stockholm.
- Berglind H (1977) "Förtidspension eller arbete? En studie av utveckling och regionala variationer" (Disability pension or work? A study of developments and regional variations) in *sou 1977:88 Förtidspensionering (Disability Pensions)*. Fritzes, Stockholm.
- Bäckbro K, Holmgren N & Lundqvist L (2002) *Äldres utträde ur arbetskraften nu och i framtiden. (The elderly leaving the workforce, now and in the future)* RFV analyserar 2002:3, National Social Insurance Board, Stockholm.
- Cohen Birman M, Nyberg K & Skogman Thoursie P (2004) *Nybeviljande av förtidspensioner – utveckling av riskfaktorer under 1990-talet. (Newly granted disability pensions – development of risk factors in the 1990s)* RFV analyserar 2004:1, National Social Insurance Board, Stockholm.
- Grape O & Lindqvist R (1997) "Förtidspensioneringens dynamik" (The dynamics of disability pensions) in Lindqvist R (ed.) *Medikalisering, professionalisering och hälsa. Ett sociologiskt perspektiv. (Medicalisation, professionalisation and health. A sociological perspective)* Studentlitteratur, Lund.

- Hemmingsson T (2004) "Samband mellan sjukskrivning och arbetslöshet?" (Links between sickness absence and unemployment?) in Hogstedt C, Bjurvald M, Marklund S, Palmer E & Theorell T (eds.) *Den böga sjukfrånvaron – sanning och konsekvens. (High sickness absence – truth and consequence)*. National Institute for Public Health, Stockholm.
- Lidwall U (1997) "Friskskrivning, förtidspensionering och sammansatta riskfaktorer" (Return to health, disability pension and composite risk factors) in Marklund S (ed.) *Risk- och friskfaktorer – sjukskrivning och rehabilitering i Sverige. (Risk and health factors – sickness absence and rehabilitation in Sweden)* RFV redovisar 1997:6, National Social Insurance Board, Stockholm.
- Lidwall U & Skogman Thoursie P (2001) "Sickness absence during the last decades" pp. 81–100 in Marklund S (ed.) *Worklife and Health in Sweden 2000*. National Institute for Working Life, Stockholm.
- Marklund S (1992) "Vilka långtidssjuka blir förtidspensionerade?" (Which long-term sickness absence cases go on to disability pension?) in Marklund S (ed.) *Rehabilitering i ett samhällsperspektiv (Rehabilitation in a socioeconomic perspective)* Studentlitteratur, Lund.
- Marklund S (1994) "Vilken roll spelar individförhållanden, konjunkturer och strukturförhållanden för förtidspensioneringen?" (What is the role of the individual, the economic cycle and structural factors in the process leading to disability pension?) in sou 1994:148 *Förtidspension – en arbetsmarknadspolitisk ventil? (Disability pension – a labour market safety valve?)* Fritzes, Stockholm.
- Palme M & Svensson I (2004) "Income Security Programs and Retirement in Sweden" in Gruber J & Wise D (eds.) *Social Security and Retirement Around the World*. University of Chicago Press, Chicago.
- Skogman Thoursie P (1999) *Disability and Work in Sweden*. Swedish Institute for Social Research (sofi), Dissertation Series No 39, Stockholm University.
- Stattin M (2003) "Förtidspensionering 1988–1998" (Disability pensions 1988–1998) in Valfärd och ofärd på 90-talet (Welfare and problems in the 1990s). Living Conditions, Report 100, Statistics Sweden, Stockholm.
- Wadensjö E (1985) "Disability Pensioning of Older Workers in Sweden. A Comparison of Studies Based on Time-Series and Cross-section Data" Working Paper 15/1985, Swedish Institute for Social Research (sofi), Stockholm University.
- Wadensjö E & Sjögren G (2000) *Arbetslinjen för äldre i praktiken. En studie för Riksdagens revisorer. (The work line principle for the elderly in practice. A study for the Riksdagen's auditors.)* Swedish Institute for Social Research (sofi), Stockholm University.



PART 3

WORK-RELATED ILL HEALTH  
IN VARIOUS ORGANISATIONS  
AND GROUPS



## CHAPTER 9

# Health and development opportunities for those in fixed-term employment

*Gunnar Aronsson*

Fixed-term employment is by no means a new phenomenon. In the days when life and working life were more governed by seasonal changes, seasonal employment was the norm. In the post-war period, however, the Swedish model of the welfare state brought about a change that meant that permanent employment became the norm. During the past decade this trend has been broken and fixed-term employment has started to become more common in Sweden and in many other countries. Companies have usually claimed that their principal motive is to increase their flexibility in an increasingly changing world. The changes they refer to include competitive conditions, structural changes, company mergers, shorter product life cycles and unstable labour markets. Management strategies aiming towards greater flexibility see fixed-term employment as a tool in this process. As is often the case with changes in working life, the principal explanations can be divided into two main approaches. Some researchers focus on structural changes, while others see fluctuations in the economy as the principal motive for fixed-term employment (for an academic discussion of this issue, see Beck 2000, Colbjørnsen 2003, Holmlund & Storrie 2001).

There are many possible approaches to studying the phenomenon of fixed-term employment, for example by studying the driving forces behind it or how it affects the community, the company or the individual. The following study focuses mainly on the consequences for individuals, in particular regarding health and the opportunities for personal development. In spite of all the attention that has been paid to fixed-term employment and so-called “flexible work”, not many reliable studies have been made in this area. Before we discuss the consequences for individuals, however, we would like to briefly examine fixed-term employment in a wider context.

One approach to studying fixed-term employment is to examine its development and context from the perspective of the centre and the periphery. Many philosophies of business leadership aim to spread the sources of uncertainty and unpredictability in an organisation, even though this may not be explicitly expressed. This principle is most evident in periods of extreme instability in the business world. In more general terms, one can say that the centre in an organisation or network uses its position of power to increase its own stability and control, by spreading uncertainty in the peripheral parts of the organisation, for example to subcontractors and their subcontractors, and to those with fixed-term employment contracts. By creating a work force composed of a core group of employees with long-term contracts, and a peripheral group with fixed-term contracts, the company endeavours to balance its need for stability and control, with its need for flexibility and the ability to reorganise itself.

The centre-periphery perspective and the current trend towards an increasing number of people with fixed-term employment has made the concept of control increasingly relevant in research on working life, and has given it a broader significance. Insecurity and a lack of control have been identified as important factors in explaining people's stress reactions and ill health (Karasek & Theorell 1990, Näswall et al. 2003, Sverke et al. 2002). Control not only provides the individual with a degree of predictability, but also with expectations of what might occur in the future, which allows the individual to minimise, or at least limit, the risks and uncertainty in their situation. The individual's terms of employment can also be viewed and analysed from the perspective of control. In this case, control is not only about direct control over the way in which work tasks are performed, but also includes the individual's control over his/her working life, including his/her terms of employment (Aronsson 1989, Aronsson et al. 2002).

As mentioned before, there is a trend towards an increasing prevalence of fixed-term employment both in Sweden and internationally, even if the pattern is not universal (Felstead & Jewson 1999, OECD 2002). Influential actors have declared that flexibility and numerical flexibility are the key to success and growth for a company (SAF 1992). As early as 1993, the EU declared in a policy document that fixed-term employment had come to stay, and that it had an important role to play in the economy (Blainplain

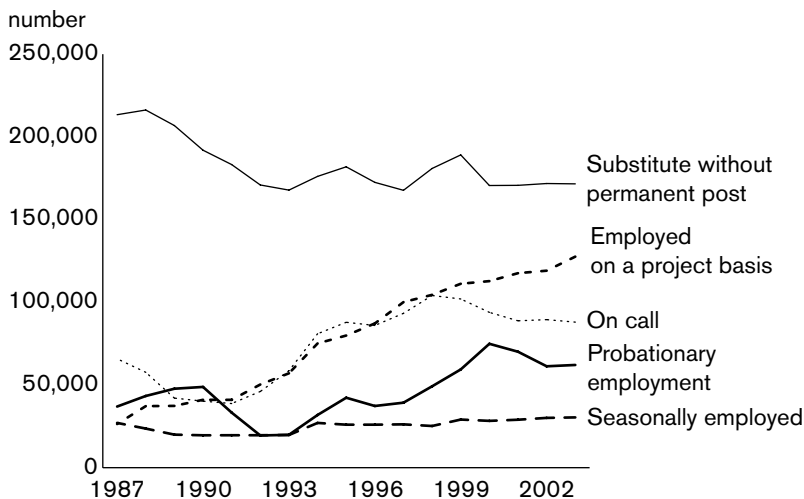
1993). There is great variation in the proportion of fixed-term employment between different countries in the EU (these statistics cover the period before the incorporation of the East European countries). The highest proportion is found in Spain, where in 2002 almost 35 per cent of women and almost 31 per cent of men had fixed-term employment, according to Eurostat (Storrie 2003). The other extreme is found in Austria, where only 7 per cent have fixed-term employment. Sweden is just over the average in the EU. There is also great variation in the length of the term of employment involved. Not all fixed-term employment is short-term employment. In 2000, for example, 16 per cent of all men and 10 per cent of all women with fixed-term employment in the EU had been employed in their jobs for over three years. In Spain the equivalent percentages were 2 and 3 per cent respectively. In Sweden the figures are close to the average for the EU. It should also be noted that in Great Britain, Ireland and Denmark job security is almost non-existent, which means that the concept of fixed-term employment means very little in reality (Storrie 2003).

Structurally and quantitatively Sweden can be described as follows: in the centre or core of the labour market are those in permanent employment. This group comprises approximately four million employees. Around this core there is an outer ring of people in different types of fixed-term employment, who give companies flexibility in relation to fluctuations in production. There are approximately 600,000 people who have fixed-term employment. This figure is based on the latest survey of the labour market by Statistics Sweden (scb), which covers one particular week. Taken over a whole year, it is therefore possible that many more people have had fixed-term employment. From the beginning of the 1990s to the present day, fixed-term employment has increased from approximately 10 per cent to approximately 16 per cent of the work force in Sweden.

However, the picture is not as simple as this with regard to working conditions or the terms of employment within the above-mentioned structures. Structural change and other changes give rise to insecurity in employment, even for those in permanent employment. The ideal job, where the demands of the job and control over one's situation are in balance, and where ample opportunities are provided for personal development and

learning at work (Karasek & Theorell 1990), is still a far cry from the reality, even for this core group with permanent posts. There is also a lack of mobility within the core group. Having permanent employment in a profession or at a workplace that is not of one's choice gives a feeling of having limited opportunities for development, and is often related to a lack of support from the management and a high frequency of self-reported ill health (Aronsson & Göransson 1999, Aronsson et al. 2000a). Approximately 20 per cent of those in permanent employment report that their situation is similar to that described here. There is almost no research on how the prevalence of employees with temporary employment affects those with permanent posts.

The most usual type of fixed-term employment included in Statistics Sweden's Labour Force Surveys are substitutes, seasonal workers, and those employed on a project basis or to meet a special need (on call) or in probationary employment. Figure 9.1 shows the quantitative changes in these types of employment during the period 1987–2003, which is the time



**Figure 9.1.** The number of fixed-term appointments in Sweden 1987–2003. (Source: Labour Force Surveys, compiled by Aronsson and Gustafsson.)

period in which Statistics Sweden has measured these groups. The most notable change is the marked increase in those employed on a project basis and employed on call. Or to meet a special need. During this period the percentage of those in fixed-term employment has increased in total from 10 to 15 per cent of the labour force.

The motives for using the various types of fixed-term employment differ. The most usual type of fixed-term employment, substitutes, is generally based on the needs of those with permanent posts for different types of leave, for instance parental leave, leave to study etc, rather than the company's need for a differentiated work force. The employment of substitutes can, however, also be steered by the company's interests, for instance when they choose not to appoint substitutes when the permanent staff take leave. The employment of substitutes has decreased in recent years.

Employment on call is related to understaffing and usually occurs in periods of increased demand in organisations that have been slimmed, resulting in low internal staffing flexibility.

Employment on a project basis is related to modern organisational principles, such as management by objectives and the need for interdisciplinary skills for specific tasks. Management by objectives means that it can be difficult to restrict working hours to a normal working day or a normal working week, which can give rise to a time conflict between the individual's work role and other roles in private life. One can wonder whether this time collision means that women find it harder or are reluctant to compete for jobs that are on a project basis. Employment on a project basis and on call has increased continuously during the period, even during the period of recession in the first half of the 1990s, when there was a marked drop in permanent employment.

Fixed-term employment is characterised by marked divisions according to gender. The notable over-representation of women in the two most problematic types of fixed-term employment, namely on call employment and substitutes, and their under-representation in the more advantageous types, namely employment on a project basis, indicates that there are clear gender and equality aspects to the on-going changes in the labour market (more about this later in the chapter).

## **Approaches to and problems in studies of fixed-term employment**

In spite of all the attention that the increase in fixed-term employment has attracted, surprisingly few studies have attempted to make a serious analysis of the working conditions involved or the consequences of this form of employment. However, a number of studies have been made in the last few years that have greatly increased the information available regarding this issue. Two questions, closely related to one another, have emerged, namely: a) Is there a relationship between type of employment, opportunities for personal development and health? and b) If so, what are the psychosocial risk factors and mechanisms that give rise to this relationship?

Some examples of the sort of factors that can be involved are the feeling of job security, the workload and the rewards of the job (income, social relationships, education and training, personal development). In order to provide reliable answers to these questions, further follow-up studies of health consequences would be necessary, i.e. studies of the long-term risks to individuals who are in insecure forms of employment.

There are also grounds for presuming that those in fixed-term employment are at greater risk of being involved in accidents at work, as accidents can be avoided if the employee is familiar with the risks at their workplace. A longitudinal, register-based study made in France indicated a correlation between fixed-term employment and a greater risk of injury through accidents, both regarding the frequency of accidents and the degree of seriousness of injuries (Francois 1991). This study shows that the greatest risk of accidents occurs in the first months of employment.

One of the reasons that research can provide so little information about the long-term consequences of insecure types of employment is the methodological difficulties involved in collecting data regarding people whose employment and exposure to different work environments is constantly changing (Aronsson 2001). An example of the problems involved in studying the work environment of those in short-term employment is the difficulty in finding a suitable unit of measurement for exposure to the work environment, which can be related to long-term processes, such as the development of some sort of ill health. Large quantities of exposure meas-



urements would need to be collected for those who have frequently changed their employment and workplace. Furthermore, there is no methodology for converting this type of information into an overall measurement. These problems mean that it is difficult to make longitudinal studies that follow the movement of individuals between various workplaces and types of employment. The research that is currently available is, therefore, generally based on cross-sectional studies.

A further methodological problem is the difficulty involved in isolating the effects of the conditions of employment from other variables, as there are grounds for presuming that there is a covariance between the type of employment terms and the nature of the employment.

It is also difficult to make international comparisons, or to make generalisations from one country to another, based on the results, as employment concepts vary so much between different countries. The effects of insecurity are also related to the welfare system, for example unemployment pay, which also varies greatly between different countries. Research has not as yet found concepts and categories that make comparisons meaningful. The results of a study in one country cannot, therefore, be transferred uncritically to another country and be expected to apply to the situation there.

Nevertheless, we should start by referring to a major study of 15 Western European countries, based on "The second survey of working and living conditions" (Benavides & Benach 1999). The objective of the study was to examine whether self-employed people, those with small enterprises and those in fixed-term employment suffered from more health problems than those in permanent employment, and whether this relationship still persisted after adjustment for a number of structural, physical and psychosocial variables. The study bracketed those in fixed-term employment together with those employed by manpower agencies and put them into the category "precarious work". The results of the study show that this group, which in Swedish terms most closely resembles those in fixed-term employment, reported more dissatisfaction with their work situation than those in permanent employment.

Stress levels were found to be higher among those in permanent employment, the self-employed and those with small enterprises, than among those with precarious work. The latter, however, reported tiredness more

often than those in permanent employment. Backache was more common amongst those employed by manpower agencies and the self-employed, while aching muscles were more usual in all types of precarious employment. The relationship between the type of employment and the health-related outcomes remained almost the same when other work environment variables were tested, which indicates that the type of employment has an independent effect on health. The study also examined the effects of the contextual conditions in each country such as the GNP, level of unemployment and social security system, but no more than a marginal change in the basic relationships was shown here either.

In their evaluation of the study, the authors refer to the difficulty in comparing different types of employment internationally, as the content of the various forms of employment varies from country to country. Felstead and Jewson (1999), who have made an international survey, have come to the same conclusion, and claim that there is general confusion over the concepts involved. Similar working conditions are described using different terms and one term can be used to describe differing conditions.

Michael Quinlan et al. (2001) have made a comprehensive inventory of all the academic publications dealing with the health and security effects of precarious employment, which includes outsourcing, reductions in staffing, part-time work and fixed-term employment. They have identified 93 studies on this matter, of which 24 deal with fixed-term employment. Of these 24 studies, 14 show negative consequences regarding health and security. Two studies showed no correlation and eight studies had results that were difficult to interpret.

This summary of research results focuses on Swedish studies. We employ a broad definition of health, which apart from health-related outcomes also includes working conditions related to health and personal development. The latter can also be referred to as "conditions that stimulate personal development" (Aronsson et al. 2002). The primary examples of such conditions are: the possibility to influence one's work, the existence of social support and opportunities for competency development. These conditions are seen as crucial to success at work, and protect individuals from losing their jobs or being excluded from working life. In the long term, opportunities for training, development and learning, as well as being able

to influence decision-making, give the individual improved work tasks, higher wages and a broader range of choice. It is therefore a question of the distribution of risks and opportunities. Working conditions that stimulate personal development are related to a larger question, of primary importance for policy making, i.e. whether fixed-term employment is a dead end, or whether it can act as a bridge to more secure employment or a permanent job. We will come back to this issue further on in this chapter.

### **The differences between various types of fixed-term employment**

What the various types of fixed-term employment have in common is greater insecurity and unpredictability. In 1995, a study based on a representative sample of the labour force asked the respondents whether they preferred fixed-term or permanent employment. Very few, only 4 per cent, preferred fixed-term employment. Regardless of how the data was divided up, into age groups or according to other criteria, more than 90 per cent always preferred permanent employment (Berlin 1995). Finnish studies of people with fixed-term employment gave similar results (Nätti 1993, Suzela et al. quoted in Virtanen 2003).

However, it should be noted that a number of studies show that the working conditions and work environments of those in fixed-term employment are so heterogeneous that further differentiation into sub-groups is necessary (Aronsson & Göransson 1998, 1999, Aronsson et al. 2002). In this introductory section about the results of previous research, we have therefore focused on the differences between the various types of fixed-term employment, and we will also refer to these differences in the following sections, if the data available makes this possible.

A major Swedish study, including approximately 2,800 respondents, approximately 1,600 of whom had fixed-term employment, examined general working conditions, health and working conditions that stimulate personal development. Comparisons were made between those in various types of fixed-term employment and also with those in permanent employment (Aronsson et al. 2002). An attempt was made to use the results of this study to put the various types of employment into a centre-periphery model. The basic data were collected by Statistics Sweden in connection

with their survey of the labour force. The division into different types of employment is based on Statistics Sweden's terminology for the classification of types of employment. It would also have been interesting to be able to compare those in fixed-term employment with unemployed people. However, no Swedish study making such a comparison is available. The study showed the following:

*Employment on a project basis:* is the group of fixed-term employees who have working conditions that are the most similar to the working conditions of the core group in permanent employment. They report a higher degree of influence over decision-making than other groups and, together with those on probationary employment, they have the best opportunities for learning at work and for personal development. Complex, demanding work tasks mean that these employees have a correspondingly large influence on their work, and that they are involved in a learning process. With regard to symptoms of ill health, these employees are more likely to suffer from tiredness and listlessness than those in permanent employment. It is mainly men that are recruited for employment on a project basis, and men are in the majority of the employees in this group. Those employed on a project basis have a higher level of education than the equivalent group of employees with permanent posts. They are also more broadly distributed amongst different sectors than those in other forms of fixed-term employment.

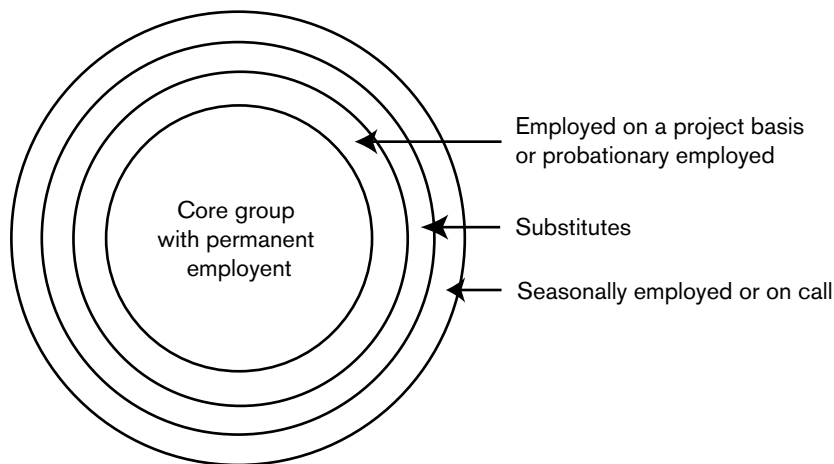
*Probationary employment:* can be classed as number two in a centre-periphery model. This is the group with the lowest average age and it is dominated by men. This type of employment is primarily found in trade and industry.

*Employment as a substitute:* has an intermediate position in the centre-periphery model. Substitutes report that they have less influence on the way their work is organised than permanent members of staff. The vast majority of this group are women. The group of substitutes includes a large proportion (two thirds) who left school after compulsory education or a short upper secondary school programme. This type of employment is most often found in the social sector and in the health and care sector.

*Seasonal employment:* is a relatively small group today, consisting of slightly more men than women. Characteristic features of seasonal employment are limited learning experiences and few opportunities for personal

development. Seasonal workers have the lowest number of training days, during paid working hours, in excess of five working days, and of all the fixed-term employed, they are the group that reported the least opportunities to learn new skills and develop as individuals through their work. Seasonal workers have the lowest level of formal education of all the groups studied. This type of employment is most common in the building and construction sector, the agricultural sector, and the hotel and restaurant sectors.

Among those *employed on call* there is a larger percentage than in any other category that do not receive any training during paid working hours. They are also worst off as regards opportunities to learn new skills, and have little chance of personal development through their work. Those employed on call report that they have little influence on how their work is organised. In addition to having fewer opportunities to participate in activities that give rise to personal development, those employed on call also run a higher risk of ill health. Women are strongly over-represented among those employed to meet special needs. This type of employment is found primarily in



**Figure 9.2.** Different types of employment organised in a centre-periphery model based on the degree of permanence, the opportunities for learning, in-service training, the ability to influence decision-making, support from superiors and health risks. (From Aronsson et al. 2002.)

different types of social work, the health and care sector, the retail trade and in the hotel and restaurant sector. In the centre-periphery model, those employed on call constitute the category whose working conditions are farthest from those of the core group.

We have already seen in Figure 9.1 that on call employment is the type of fixed-term employment that, together with those employed on a project basis, has increased most in Sweden in the twentieth century. The number employed to meet special needs has doubled and now amounts to more than 100 000 people.

Figure 9.2 summarises the results of the study. The various types of employment are presented in a centre-periphery model based on degree of permanence, opportunities for learning, education and training, influence on decision-making, support from superiors and health risks.

### **Financial stress and health of those employed on call**

In spite of all the attention that has been paid to the working conditions of those in fixed-term employment and the debate that has arisen on this subject, only one study has been made of the financial stress caused by precarious work (Aronsson et al. 2005). Two main questions were examined. The first was how people in this type of employment are treated in various situations in connection with financial matters, for instance when they want to obtain a lease on a property, a mortgage or borrow money etc. The other was whether there is a relationship between financial constraints and stress, and the risk of ill health. The study is based on cross-sectional data, which means care must be taken in interpreting any type of causal relationship. For example, health selection can influence the results.

The responses to the questions about how this group were treated showed that many of those that had been in the situation of having their finances assessed felt that their type of employment had made it more difficult. This was especially the case for those who had tried to obtain a lease or borrow money. Questions about financial constraints showed that almost 60 per cent of the group studied had had to borrow money in order to cover their costs of living. Almost the same number had been unable to pay their bills in time, and almost half said that they had had to manage without things such as a television and a daily newspaper in order to make

ends meet. There was a marked polarisation in the group studied, regarding to what extent the respondents had found themselves financially constrained. The group was therefore divided into an extremely poor, a poor and a “norm group”, where the latter consisted of individuals who had never or only occasionally found themselves financially constrained. The results of the norm group regarding psychological ill health (according to the Swedish version of the General Health Questionnaire GHQ) were close to the results of a representative sample of young people in Sweden, while the poor and extremely poor groups had significantly higher results, or in other words, a more negative psychological health status.

There was a clear, separate relationship between those that had been in a financially constrained situation and were worried about their personal finances, and many of the symptoms of ill health measured in the study. Amongst both men and women the likelihood of ill health was several times greater for those who often worried about their financial situation than for those who seldom worried. The relationship was clearest amongst the men, although the difference between the sexes was not significant. The poorest men were over fifteen times as likely to suffer from psychological ill health as men in the norm group. There were also strong combined effects. The extremely poor, who often worried about their financial situation, were thirteen times as likely to suffer from psychological ill health. Even the non-psychological, factual questions about their financial situation showed a close correlation to the results of the GHQ.

A basic question in research on financial stress is how the results should be interpreted, i.e. how financial stress leads to ill health. When a division was made between the more objective variable, *financial constraints*, and the more psychological aspects, *worry about one's financial situation*, the results indicted that both psychological and more concrete, practical mechanisms are involved. A psychological interpretation is that financial stress and financial constraints are both connected to feelings of insecurity and a lack of control over one's own life, i.e. conditions that, in research on working life, are recognised as strong stress factors, though, in that case, usually related to control over one's work situation. An alternative or complementary interpretation is that constrained personal finances are related to poor nutrition and eating habits and a low standard of housing, which in them-

selves are related to ill health, and can to some extent be considered independently from working conditions.

### **Permanent employment in manpower agencies compared with fixed-term employment**

Another Swedish study compared those in short-term employment with people employed by manpower agencies (Isaksson et al. 2001). The majority of the manpower employees had permanent posts. Both groups, therefore, moved between various workplaces, but they had different terms of employment. The similarity in their situation was, therefore, that they often changed workplace, bosses and workmates because of their short-term placements. The aim of the study was to examine whether the difference in their employment contracts had any effect on the way they saw their work situation.

Those who applied for short-term employment and those who were employed by manpower agencies differed with regard to certain background factors. The percentage of women was higher in the manpower group. Their average age was higher and it was more usual that they had children. The group with short-term employment was much more heterogeneous than the manpower group with regard to age, length of employment and level of education. The conclusion reached by the researchers is that the slightly more secure contract offered by manpower agencies attracts those who probably have a greater need for stability, as they have dependent children.

The percentage that would have liked to have a permanent post at one workplace, rather than one that involved moving from workplace to workplace, was more or less the same in both groups. About three out of four in both groups made this prioritisation. The difference in the number of hours per week that they would choose to work was not great either, but there was considerable variation as regards whether or not their wishes could be fulfilled. Being employed by a manpower agency appeared to greatly reduce the risk of working fewer hours than one would wish. On the other hand, there was a tendency for manpower employees not to be able to refuse to work overtime.

Unwelcome overtime or over-employment (more working hours than wished for) hardly existed amongst those in the study with short-term



employment. In this group there was a much greater risk of being under-employed or part-time unemployed.

The groups differed greatly regarding how they experienced their working situation and their health. Those in fixed-term employment experienced greater job insecurity and a lower degree of social support at work. The difference remained even when differences in the individuals' backgrounds were taken into account. A conclusion of this study and other studies is that if people are able to choose freely how they are employed, this seems to be an important factor, affecting whether they feel that their job security is satisfactory, and also the occurrence of certain types of health problems.

### **Silence at the workplace**

Two studies have been made of large representative samples to examine whether those in fixed-term employment think that they are well informed about the work environment and what status they feel they have at their workplace. The first study (Aronsson 1999), based on over 1,500 respondents, of whom almost half were in fixed-term employment, showed that the majority of this group reported that they were badly informed regarding the work environment. They said that they were not included in important training courses, and that because they had fixed-term employment it was harder for them to criticise the work environment, or to make their voices heard in this matter. Women in fixed-term employment were even more likely to be left out of discussions about the work environment and to feel that they could not influence it.

In a follow-up study, also with a large representative sample of respondents, these results were confirmed and further analysed (Aronsson & Göransson 1999). Those employed as substitutes or to meet a special need were shown to be in the worst position, and were those who felt most strongly that they would risk their position if they expressed criticism of their workplace. About 25 per cent of this group said that they always or usually refrained from expressing criticism. There was also a general tendency for temporary employees to feel that it was difficult to make their voices heard. There was a statistically significant difference regarding those who were employed to meet special needs. Type of employment indicates the indi-

vidual's position in the labour market power structure, and the connection between this position and whether it is possible to express one's views is confirmed by these studies.

### **A dead end or a bridge?**

In the introduction to this chapter, a question of primary importance from the perspective of policy-making was mentioned, namely: is fixed-term employment a dead end or a bridge to reach more stable conditions and permanent employment? The conclusions for policy-making will naturally differ if it is the same people that keep on moving between insecure short-term jobs over a long period of time, or if the majority of people in fixed-term employment quickly go over to permanent employment. In the former scenario it can be assumed that the individual will suffer long-term, negative consequences regarding health, economy, standard of living and regarding working conditions that stimulate personal development. A number of Swedish longitudinal studies, in which the respondents have been studied over a number of years via data in registers, give us interesting information about this issue. Unfortunately there is no data about health issues from these studies, but two studies (Walette 2004, Wikman 2002) report on what we have referred to as working conditions that stimulate personal development.

Kristina Håkansson (2001) has studied people with temporary employment, in Labour Force Surveys (AKU) at a series of points in time, starting in 1994. Håkansson found that more than a third of those in temporary employment had secured permanent posts after a period of two years. The path to a permanent post varied. Sometimes it was via a period of studying; sometimes it was even preceded by a period of unemployment. About the same number, or just over a third, who Håkansson refers to as the insecure group, remained in an insecure situation with occasional periods of unemployment and occasional periods of employment. This group consisted mainly of seasonal and on call workers. Finally there was a group that Håkansson calls the "flexible" group, who had not secured a permanent post, but had not been unemployed either, so in some ways they could be described as being established in the labour market. This group mainly consisted of those employed on a project basis or as substitutes, who

moved between different posts, but did not have periods of unemployment between jobs. They moved from one substitute post or project-linked appointment to another.

In conclusion, Håkansson's study shows that the different types of employment have very different consequences. Those in probationary work have the greatest chance of their temporary employment leading to a permanent post, which is hardly surprising, as the whole point of a probationary job is to find a suitable person for a permanent post. Three out of four people in this group had permanent posts within two years of the time the first survey was made. Those who worked as substitutes or were employed on a project basis had the next best chance; about 40 per cent of them had a permanent post within two years. Of those who were in seasonal employment or were employed on call about 30 per cent had permanent employment after two years. The conclusion Håkansson draws is that, if one only considers which type of fixed-term employment is involved, probationary job is a very effective bridge to permanent employment. Working as a substitute or being employed on a project basis can function as a bridge to a certain extent. On the other hand, seasonal employment or employment for a specific need often results in people remaining in a weak position in the labour market.

The same researcher (Håkansson 2001) also examined the difference in gaining permanent posts from a gender perspective, and found significant differences. Fixed-term employment had markedly different consequences for men compared with women. Almost half of all the men with fixed-term employment, 47 per cent, had secured a permanent post within two years. The equivalent percentage among women was 30 per cent. There were also considerably more women in the group with an insecure position, i.e. those that alternated between periods of employment and periods of unemployment. Regardless of the type of fixed-term employment, the sector they worked in or their socio-economic background, fixed-term employment led to permanent employment much more often for men than for women. The greatest difference was among those employed on a project basis, of whom almost twice as many men as women secured a permanent post after the project. It can thus be seen that fixed-term employment works as a bridge to a much greater extent for men than for women.

Anders Wikman (2002) has made longitudinal studies based on Statistics Sweden's Labour Force Surveys and Work Environment Surveys. His studies cover two periods, which makes it possible for him to compare the situation in 1993–1996 with that in 1998–2000, when the situation in the labour market had improved. Looking at all types of fixed-term employment, however, this improvement does not seem to have greatly improved the chances of those in temporary employment getting permanent posts. Just over 30 per cent had permanent posts after two years in the first period, compared with almost 40 per cent in the later period. These figures harmonise well with the figures in the study made by Håkansson, which was conducted in the period between Wikman's studies. If we focus mainly on the figures from the later period, 1998–2000, Wikman's material shows the following results with regard to the different types of employment.

In both periods, the chances of getting a permanent post are highest for those employed in probationary employment. However, the percentage who secured permanent posts is only about 65 per cent, which is lower than Håkansson's figure from the in-between period. Considerably more posts as substitutes led to permanent employment in 1998–2000 compared with the period 1993–96. The figures are almost 50 per cent compared with just over 30 per cent. The increase is probably connected to the change in the regulations that ruled that those who have worked as substitutes for the same employer for three years in the last five-year period shall automatically be given permanent posts. The change in the regulations came at the same time as a shortage of staff in parts of the public sector, in which the percentage of substitutes was high. This makes it difficult to establish the direct effects of the change in regulations. Project-linked employment led to permanent employment in about 40 per cent of the cases. Those who were employed on call experienced a slight improvement at the end of the 1990s compared with earlier. The percentage that secured permanent posts rose from almost 20 per cent to almost 30 per cent.

In his PhD thesis, Mårten Wallethe (2004) studied temporary employment throughout the 1990s via Statistics Sweden's ) Labour Force Surveys. The results of his study are generally in line with the results of the studies made by Wikman and Håkansson. The conclusion and empirical result of Wallethe's study is that temporary jobs are so heterogeneous that they

should be analysed in separate sub-groups. The various divisions in working life emerge even more clearly in these analyses, not least between Swedish and foreign-born employees and from a gender perspective. The transition to permanent employment was also affected by age, socio-economic status, the sector of employment and part-time employment. The likelihood of receiving on-the-job training was much lower for those in temporary employment than for those with equivalent permanent posts, and even lower for foreign-born employees with temporary posts.

Wikman also examined the importance of education with regard to work, influence and a number of other variables. His conclusion was that the difficulty in becoming established on the labour market is related to the fact that those in fixed-term employment do not have the same opportunities to gain experience of working life as those in permanent employment do. They are not given as much responsibility and are not faced by the same challenges. They do not get the same training and are not offered opportunities for further education. Moreover, the opportunities to improve one's own qualifications in order to become more attractive on the labour market are also limited in many ways. With reference to this, two studies of fixed-term employment and unemployment should be mentioned. The results show that the degree of unemployment in a follow-up period is also relatively high among those in fixed-term employment. Håkansson (2001) used data from the Swedish Labour Market Board (AMS) in her study to follow up individuals over a four-year period. This showed that after four years a large proportion of the group in fixed-term employment still had difficulty in supporting themselves. About 40 per cent had some sort of unemployment benefits included in their income and the degree of unemployment was four times as high as among other employees.

Another study made of another period of time also showed that a relatively high percentage were unemployed in a follow-up period (Levin 1998). The study carried out a five-year follow-up of employees with fixed-term employment, who were part of a survey of living conditions made in 1991, via the Swedish Labour Market Board's (AMS) register of job applicants. Those in temporary employment were almost four times more likely to become unemployed compared with other employees. Their weak position in the labour market remained even when other factors were taken into

account, such as differences in socio-economic group, the size of the workplace, working hours, membership in a union, which sector they worked in and the level of skill needed for their work.

The results of a Finnish longitudinal study (Virtanen 2003) are also of interest here. The study indicates that health selection also affects the transition to permanent employment. Good health facilitated the transition to permanent employment. A low level of sickness absence was presumed to be part of the mechanism in this positive circle. Conversely, Virtanen found negative circles that led to a dead end. Short-term appointments, unemployment and ill health reduced the likelihood of obtaining more secure employment. Virtanen concludes that this labour market differentiation increases the socio-economic differences in health.

### **Some concluding thoughts and opinions**

This overview has focused on health-related outcomes in a broad sense, which also includes working conditions related to health and personal development. The common denominator in different types of fixed-term employment is greater insecurity and a lower degree of predictability. It can also be said that the individual has little control over the conditions of his/her working life, which, according to the findings of research into stress, can be expected to give rise to stress reactions. These factors can thus represent a link between the type of employment and an increased prevalence of ill health among those in fixed-term employment. Problems of ill health are most common in the type of employment that is characterised by the greatest insecurity, i.e. on call employment and least common among those employed on a project basis, which is usually a relatively long-term appointment.

Financial stress is yet another factor related to the greater ill health effects. Financial stress and financial constraints are related to insecurity and lack of control over one's own life, but poor personal finances can also be associated with poor nutrition and eating habits and a lower standard of housing, which could also be expected to be linked to inferior health, regardless of the type of employment one has.

A question of primary importance from the perspective of policy-making is whether fixed-term employment is a dead end or whether it can act as

a bridge to more secure conditions in working life. A primary result of a number of two-year Swedish studies shows that there are clear differences in the consequences of different types of fixed-term employment. Probationary employments are the type of fixed-term appointment most likely to lead to a permanent post, which is hardly surprising. Three out of four in this group have secured a permanent post within two years. Probationary jobs can be seen as an effective bridge to permanent employment. Employment as a substitute, on a project basis leads to a permanent post within two years in 40 per cent of the cases, and can, therefore, to a certain extent be seen as a bridge. About 30 per cent of those who are employed seasonally or on call secure a permanent post within two years, which means that people in this type of employment are at risk of remaining in a weak position in the labour market.

There seem to be a number of different mechanisms involved in whether fixed-term employment works as a dead end or a bridge. In the Swedish studies we have used the expression “conditions that generate personal development”, by which is meant the access the employee has to further training, influence over their work situation etc. The difficulty in securing more permanent employment seems to be related to the fact that those in fixed-term employment do not have the same opportunities to gain experience in working life that those in permanent employment have. They are not given the same responsibility, are not faced by the same challenges, do not get the same training and are not offered opportunities for further education. Their opportunities to improve their own qualifications later are also limited. A Finnish follow-up study interprets the results along the lines that fixed-term employment tends to be a bridge to more permanent employment for the well educated, and a dead end for those with limited education (Nätti 1993, Nätti & Väisänen 2001). Another Finnish study shows that health selection (a low level of absence due to illness) is a criterion for the transition from fixed-term employment to permanent employment (Virtanen et al. 2002).

As has been clearly demonstrated, there are considerable gaps in the picture that research can provide of fixed-term employment and its effects on the individual's health and opportunities for personal development. In order to fill these gaps, studies that follow individuals over a period of time

are needed. Such studies are costly and it is difficult to collect, analyse and interpret data about the work environment of those who often move between different jobs and different environments. As yet, only a few such longitudinal studies have been made anywhere in the world (Virtanen 2003).

## References

- Aronsson G (1989) "Swedish Findings on Control and Health" p 76–88 in Sauter SL, Hurrell J & Cooper CL (ed) *Job Control and Worker Health*. John Wiley & Sons Ltd, NewYork.
- Aronsson G (1999) "Contingent workers and health and safety at work" *Work Employment and Society*, 13, 3, p 439–459.
- Aronsson G (2001) "A New Employment Contract. Editorial" *Scandinavian Journal of Work, Environment and Health*, 27, (6) p 361–363.
- Aronsson G, Dallner M & Gustafsson K (2000a) *Yrkes- och arbetsplatsinlåsning. En empirisk studie av omfattning och hälsokonsekvenser*. (Locked in an occupation or workplace. An empirical study of the prevalence and health consequences.) Arbete och Hälsa (Work and Health) 2000:5, National Institute for Working Life, Stockholm.
- Aronsson G, Dallner M, Lindh T, Göransson S. (2005) "Flexible pay but fixed expenses – personal financial strain among on-call employees" (accepted for publication in *International Journal of Health Services* 2005).
- Aronsson G & Gustafsson K (1999) "Kritik eller tystnad – en studie av arbetsmarknads- och anställningsförhållandens betydelse för arbetsmiljökritik" ("Criticism or silence – a study of the influence of the labour market and the type of employment on criticism of the work environment") *Arbetsmarknad & Arbetsliv*, 5 (3), p 189–206.
- Aronsson G, Gustafsson K & Dallner M (2002) "Work environment and health in different types of temporary jobs" *European Journal of Work and Organizational Psychology*, 11, 2, p 151–175.
- Aronsson G & Göransson S (1999) "Permanent employment but not in a preferred occupation" *Journal of Occupational Health Psychology*, nr 2, p 152–163.
- Beck U (2000) *The brave new world of work*. Polity Press, Cornwall.
- Benavides FG & Benach J (1999) *Precarious Employment and Health-Related Outcomes in the European Union*. European Foundation for the Improvement of Living and Working Conditions, Dublin.
- Berlin E (1995) "Massiv majoritet för ett fast jobb" ("A massive majority for a permanent post") *Arbetsmiljö*, 4, p 7–8.
- Blainplain R (1993) *Temporary Work and Labour of European Community and Member States*. Kluwer and Taxation Publishers, Deventer.
- Colbjørnsen T (2003) *Fleksibilitet og forutsigbarhet. (Flexibility and predictability.)* Universitetsforlaget, Oslo.



- Felstead A & Jewson N (1999) *Global trends in flexible labour*. MacMillan Business, London.
- Francois M (1991) "Le travail temporaire en milieu industriel. Incidences sur les conditions de travail et la santé des travailleurs" ("Temporary employment in an industrial environment. Effects on the working conditions and health of employees") *Le Travail Humain*, 54, 21–41.
- Holmlund B & Storrie D (2001) "Temporary Work in Turbulent Times: The Swedish Experience" Working paper, Department of Economics, Uppsala University.
- Håkansson K (2001) *Sprängbräda eller segmentering? En longitudinell studie av tidsbegränsat anställda. (A bridge or segmentation? A longitudinal study of those in fixed-term employment.)* Forskningsrapport 2001:1, Institutet för arbetsmarknadspolitisk utvärdering (Institute for labour market policy evaluation), Uppsala.
- Isaksson K, Aronsson G, Bellagh K & Göransson S (2001) *Att ofta byta arbetsplats – en jämförelse mellan utbyrda och korttidsanställda. (Changing workplace regularly – a comparison between those employed by manpower agencies and those in short-term employment.)* Arbete och Hälsa (Work and Health) 2001:7, National Institute for Working Life, Stockholm.
- Karasek R & Theorell T (1990) *Healthy Work. Stress, Productivity and the Reconstruction of Working Life*. Basic Books, New York.
- Levin H (1998) *Arbetslöshet, tidsbegränsade anställningar och rörlighet på arbetsmarknaden i 1990-talets Sverige. (Unemployment, fixed-term employment and mobility in the labour market in Sweden in the 1990s.)* Institute for Social Research, Licentiatserien 10/1998, Stockholm University.
- Nätti J (1993) "Temporary employment in the Nordic countries. A 'trap' or a 'bridge'?" *Work, Employment and Society*, 7, p 451–464.
- Nätti J & Väisänen M (2001) "Temporary employment in Finland – a bridge or a trap?" Paper presented at the 2001 Eale Conference, September 13–16, Jyväskylä.
- Näswall K, Hellgren J & Sverke M (2003) *Anställningstrygghet – Individen på den flexibla arbetsmarknaden. (Security of employment – the individual in the flexible labour market.)* Studentlitteratur, Lund.
- OECD (2002) *Employment Outlook*. OECD, Paris.
- Quinlan M, Mayhew C & Bohle P (2001) "The global expansion of precarious employment, work disorganization and consequences for occupational health: A review of recent research" *International Journal of Health Services*, 31, 2, p 335–414.
- SAF (1992) *Flexibilitet i praktiken. Anställningsformer och arbetstider. (Flexibility in practice. Types of employment and working hours.)* the Swedish Employers' Confederation, Stockholm.
- Storrie D (2003) "Reglering och tillväxt av tillfälliga anställningar i EU" ("The regulation and increase in temporary employment in the EU") *Arbetsmarknad & Arbetsliv*, 9 (3–4), p 147–163.

- Sverke M, Hellgren J & Näswall K (2002) "No security: A metaanalysis and review of job insecurity and its consequences" *Journal of Occupational Health Psychology*, 7, p 242–264.
- Wallette M (2004) *Temporary Jobs in Sweden: Incidence, Exit, and On-the-Job Training*. PhD thesis, Department of Economics, Lund University.
- Wikman A (2002) *Temporära kontrakt och inläsningseffekter. (Temporary contracts as bridges or traps.) Arbetsliv i omvandling (Working life in transition) 2002:4*, National Institute for Working Life, Stockholm.
- Virtanen M (2003) *Temporary employment and health*. People and work research reports 61, Doctoral thesis, Finnish Institute of Occupational Health, Helsinki.
- Virtanen M, Kivimäki M, Elovainio M & Vahtera J (2002) "Selection from fixed-term to permanent employment: prospective study on health, job satisfaction and behavioural risks" *Journal of Epidemiology and Community Health*, 56, p 693–699.

## A welfare state for everyone?

The position of immigrants in and outside the labour market

*Mikael Hjerm*

### **Immigration and integration**

Institutional interventions and regulations are fundamental to how, when and to what extent newcomers will become integrated into the social life of a community, and to their position in the labour market. These measures provide the basic prerequisite socio-economic conditions that allow all individuals to become full members of society (Dörr & Faist 1997).

The fundamental idea behind the goals of the Swedish Government's integration policy is a paraphrasing of the slogan from the French Revolution, namely *equality, freedom of choice and cooperation* (Government Bill 1975:26). Equality means that all immigrants shall have the same rights and obligations as all other citizens in Sweden, at the same time as each individual shall have the freedom of choice to choose to what degree he or she will retain his/her cultural identity, and to what extent he or she will become incorporated into the "Swedish" cultural identity. Cooperation refers to cooperation and tolerance between different ethnic groups and the non-acceptance of discrimination and racism.

This means that Sweden has adopted an integrative approach, in which immigrants are expected to become part of the civil society, irrespective of their cultural origins. In order to attain these goals, it is not only important to have interventions and regulations directly related to immigration, but the organisation of the welfare system is also of major significance. This influences the pattern of immigration that develops. Bommes and Geddes (2000, p. 2) say that:

National welfare states can be viewed as political filters that mediate efforts by immigrants to realise their chances for social participation.

In spite of not always having the best of intentions, Sweden has been successful in seeing that everyone living in the country has full social citizenship, at least officially. The right of “access to the welfare state” includes all residents of the country, irrespective of their national citizenship. This has not, however, been the result of a conscious strategy in the country’s immigration policy, but is one of the effects of the growth of the modern welfare state (Ryner 2000).

Sweden had never aimed to integrate immigrants before the goals of the integration policy were formulated, as they were expected to eventually return to their home countries, but due to the general terms of the organisation of the welfare state they were not excluded from its benefits. Comparatively speaking, Sweden has adopted a laissez-faire approach to integration policy and has trusted that the strong welfare state would be able to take care of the new demands and needs of the increasingly ethnically heterogeneous population. The expansion of the welfare state has taken place hand in hand with the growing post-war economies, and has operated as an efficient way of levelling out the differences between different groups in society. Consequently social rights were given to one and all, regardless of their citizenship or where they were born (Hammar 1990, Soysal 1994). For example, immigrants participated more in the labour market than non-immigrants did in the 1950s and 60s (Wadensjö 1972). In the 1970s the job situation for immigrants deteriorated (Ekberg 1990) and in the 1990s the trend continued downwards. Today immigrants participate significantly less in the labour market than Swedish-born citizens (Ekberg & Gustafsson 1995, Häll 1997, le Grand & Szulkin 1999, Socialstyrelsen 1998).

The low level of labour market participation of immigrants in Sweden has been said to be a result of the type of welfare state that exists in Sweden. Faist (1996) and Banting (2000) identify two types of welfare state: policy-orientated welfare states, as in Sweden, and market-orientated welfare states, as in the USA and Britain.<sup>1</sup> This division has recently been referred to in an editorial in the Swedish daily newspaper *Dagens Nyheter* (DN 2004a). The former are characterised by a high degree of regulation of the labour market, while the latter have a low degree of regulation. This difference is of great significance, especially to newly arrived immigrants, as these regulations are fundamental to the success of the integration process. In coun-

tries with a minimal regulation of the labour market, the problems associated with the integration process are primarily questions of economic deprivation, as the newly arrived immigrants are likely to have to take jobs with extremely low wages. If, on the other hand, the market is strictly regulated and there is a well-established welfare state, as in Sweden, there is a risk that newly arrived immigrants may not be able to enter the labour market at all. The comprehensive security offered by the welfare state, however, protects the individual through redistributing income, even though their chances of getting a job are limited.

Consequently immigrants can be expected to face different problems depending on which type of welfare state exists in the country to which they have migrated.

Regardless of whether the process of integration has been more successful in Sweden than in other countries, this analysis implies that although immigrants in Sweden might find it hard to enter the labour market, they will be protected by the universal welfare state if they do not succeed in getting a job. The question is whether or not this is the case.

## **Method of inquiry**

The data on which the analysis in this chapter is based are taken from the Survey of Living Conditions (ULF) which examines the circumstances of approximately 40,000 people.<sup>2</sup> In the section on results, a number of diagrams are presented, all of which (except for figs. 10.4 and 10.5) should be interpreted according to the same principles. The diagrams illustrate first- and second-generation immigrants in relation to native-born Swedes, given that they have the same level of education, marital status, sex, age and degree of employment. The native-born Swedes have a value of 100 in the diagrams and the living conditions of the other two groups are compared with the circumstances of their native-born “twins”. Sub-groups are also shown, in which all other factors are constant except for those that characterise the particular sub-group.

In figure 10.1 we can see, for example, that first-generation immigrants are twice as likely to be unemployed as native-born Swedes, given that they are the same sex, have the same level of education etc. We can also see that first-generation immigrants with a university degree are more likely to be

unemployed in comparison with the equivalent group of native-born Swedes.

The differences between immigrants from different countries of origin have not been studied, although there are clearly great differences in this respect. The reason that this aspect has been omitted is that successful integration implies equality in the standard of living (in a broad sense) of all groups of citizens, irrespective of where they were born. This means that although certain individual factors must be taken into account, the welfare state should ensure that one's country of origin is not the basis of inequality, or at least provide ways of increasing equality between different groups. Moreover, it should be noted that no group of first-generation immigrants, irrespective of their country of origin, has attained the same standard of living as native-born Swedes.

## **Employment**

The Swedish Integration Board claims that:

“The most important factor behind marginalisation and alienation is the lack of work opportunities or the possibility of supporting oneself ...”  
(The Department of Integration 2001, p. 17).

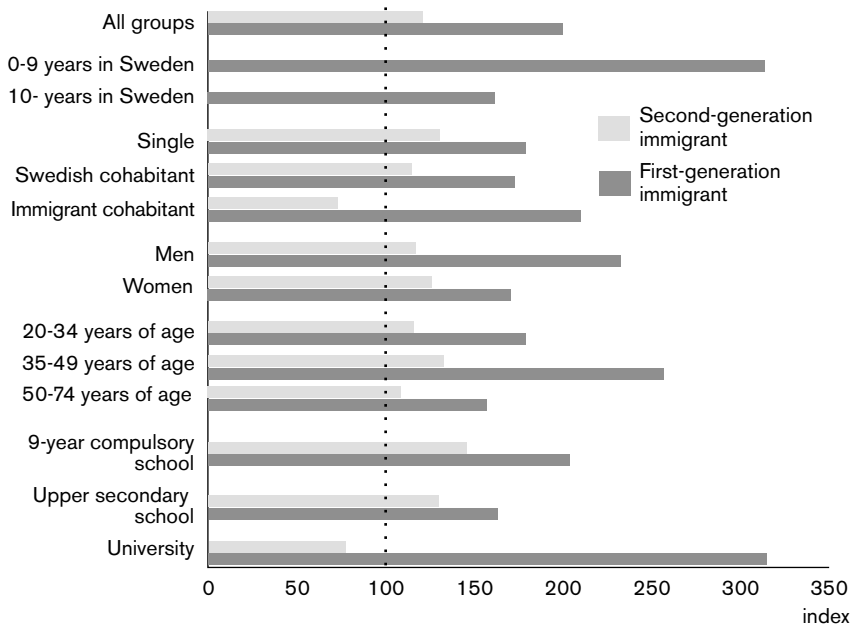
Participation in the labour market reduces financial marginalisation and means that the individual can be included in those parts of the social insurance scheme that are related to employment. Full employment is not the answer to all problems, but it is at least one of the prerequisites for avoiding marginalisation. However, simply having a job is not enough on its own, as people can still be marginalised due to their low income or because they have a low level of job security in the labour market. Let us start by examining unemployment in these groups.

Figure 10.1 shows that unemployment is generally higher amongst first-generation immigrants than amongst native-born Swedes, and this also applies to all the sub-groups. Unemployment is three times higher among first-generation immigrants with a university degree than in the equivalent group of native-born Swedes. It comes as no surprise that first-generation immigrants who have lived in Sweden for less than ten years have an extremely high level of unemployment, but even those who have lived here

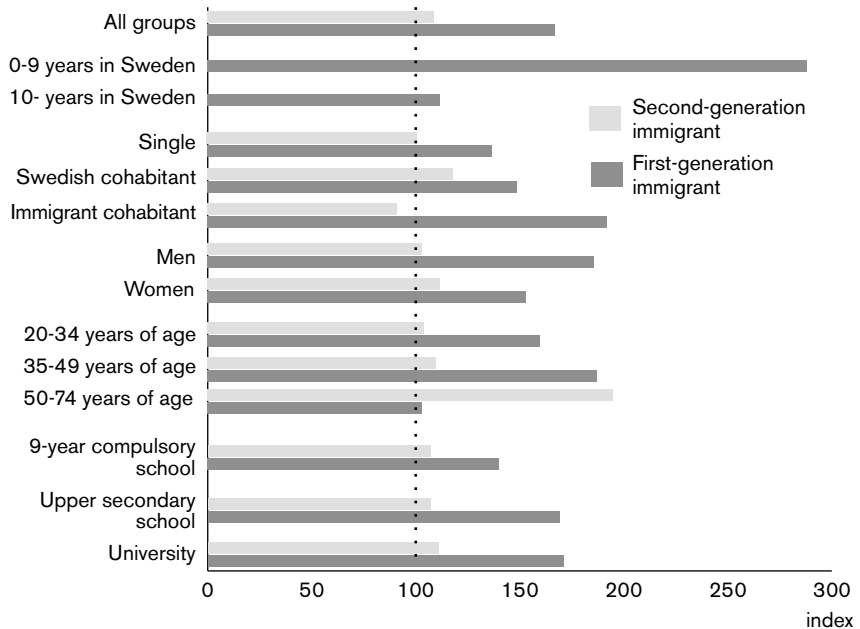
for more than ten years have about 50 per cent higher probability of being unemployed than native-born Swedes.

If employment is taken to be one of the prerequisites for successful integration and the achievement of full social citizenship, the above facts clearly constitute a problem. Moreover, unemployment in itself is not the only problem. There are also clear differences in the degree of job security possessed by different groups in the labour market, as shown in figures 10.2 and 10.3.

Job security in the labour market has been studied by looking at the probability of having a temporary as opposed to a permanent post, or of having been unemployed at some point in the previous five-year period. First-generation immigrants are more than one and a half times as likely to have a temporary post than native-born Swedes. They participate less in the



**Figure 10.1.** Unemployment, native-born Swedes = 100. (Source: Survey of Living Conditions, ULF, author's calculations.)



**Figure 10.2.** Temporary employment, native-born Swedes = 100. (Source: Survey of Living Conditions, ULF, author's calculations.)

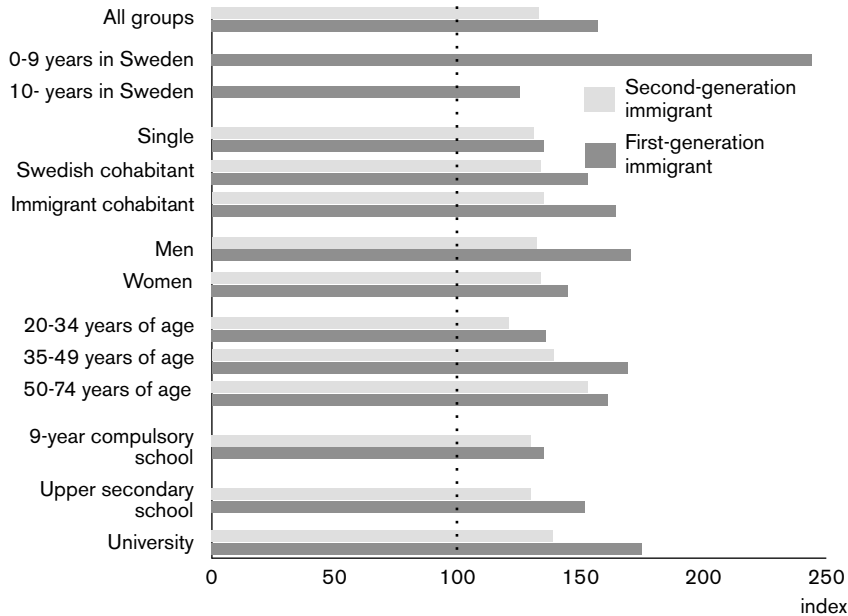
labour market, and those that are employed are employed on different terms than native-born Swedes.

Furthermore, more of those who had only lived a short while in Sweden, and who had been employed for three years at the same workplace, lost their jobs during the recession in the 1990s than those from the equivalent group of native-born Swedes who had only worked for one year at their workplace (Hjerm 2002).

## Work environment and health

The work environment has a major influence on our living conditions, both at the personal level, in terms of increased risk of ill health, and at the macro-level, where a poor work environment can have negative socio-economic consequences. The work environment is not only an indicator of different





**Figure 10.3.** Unemployed at some time during the past five years, native-born Swedes = 100. (Source: Survey of Living Conditions, ULF, author's calculations.)

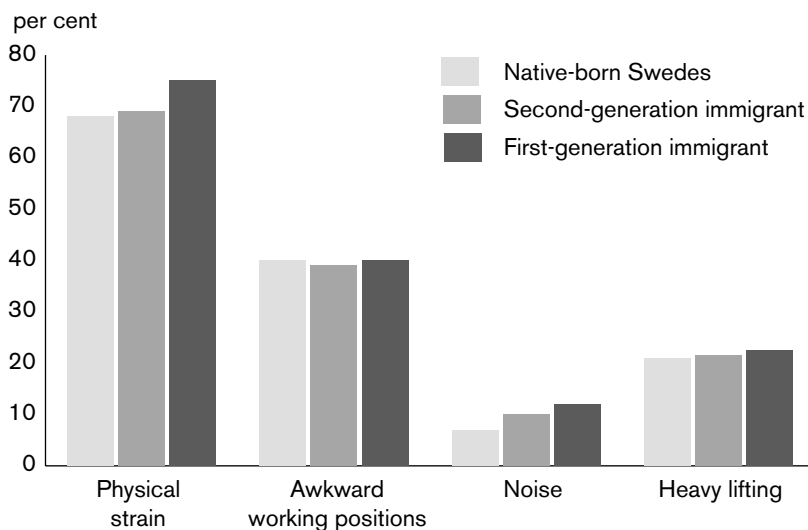
forms of stress and strain at work, but also affects our roles and our general welfare, such as our leisure time, social relations and participation in the social life of the community. In order to examine the work environment more closely it has been broken down into physical and psychosocial aspects.

The physical aspects of the work environment include physical strain,<sup>3</sup> noise levels, heavy lifting and awkward working positions. The psychosocial aspects include the degree of psychological stress involved, if the work includes opportunities for learning new things, if it is stressful and monotonous and if the individual has an “instrumental attitude”<sup>4</sup> to his/her work.

What is defined as a good work environment varies greatly between individuals, depending on their experience from previous jobs, their knowledge about the job they have and their personal expectations. This means that it is not only difficult to assess an individual's work environment

objectively, but that it is not necessarily even meaningful, as the probability of ill health is related to how the individual perceives his/her work environment, regardless of the objective situation!

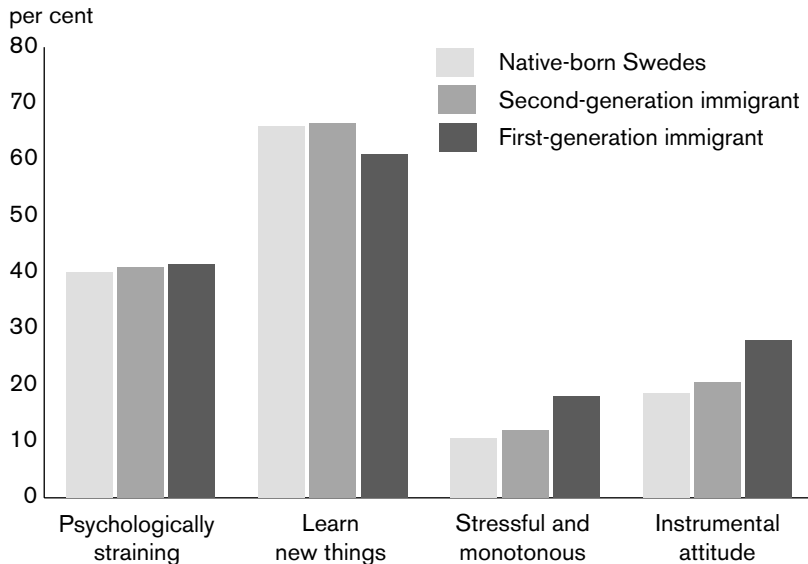
Comparative studies of the work environment are particularly problematic when the groups compared come from extremely different labour markets, which means that they have quite different ideas about what constitutes a good work environment, and when their opportunities to choose between different jobs differ widely. This is particularly relevant when first-generation immigrants are compared with people whose primary work experience has come from working life in Sweden. The data collected in this study indicates that immigrants generally have worse terms of employment and salaries and less continuity in their occupational role. There is therefore a clear risk that first-generation immigrants will judge their work environment as better than a native-born Swede would. This means that comparative studies of the work environment must be inter-



**Figure 10.4.** Physical work environment 1993–2000. All the persons included are gainfully employed. (Source: Survey of Living Conditions, ULF, author's calculations.)

preted with care. With this in mind, let us look at how individuals assess their work environment.

In contrast to the other figures, figures 10.4 and 10.5 show the percentages in each group that experience given problems in their work environment. Factors such as the level of education, sex, age and marital status have still been taken into account. For example, 75 per cent of the first-generation immigrants feel that their work is physically straining compared with 68 per cent of the native-born Swedes. There are only small differences between the groups regarding some of the eight indicators, but clear differences regarding others. For example, 62 per cent more of the immigrants say that their workplaces are noisy, and 59 per cent more that their work is stressful and monotonous. The general impression is that first-generation immigrants have a worse work environment than native-born Swedes, even though only groups with a similar level of education have been compared in the study.



**Figure 10.5.** Psychosocial work environment 1993–2000. All the persons included are employed. (Source: Survey of Living Conditions, ULF, author's calculations.)

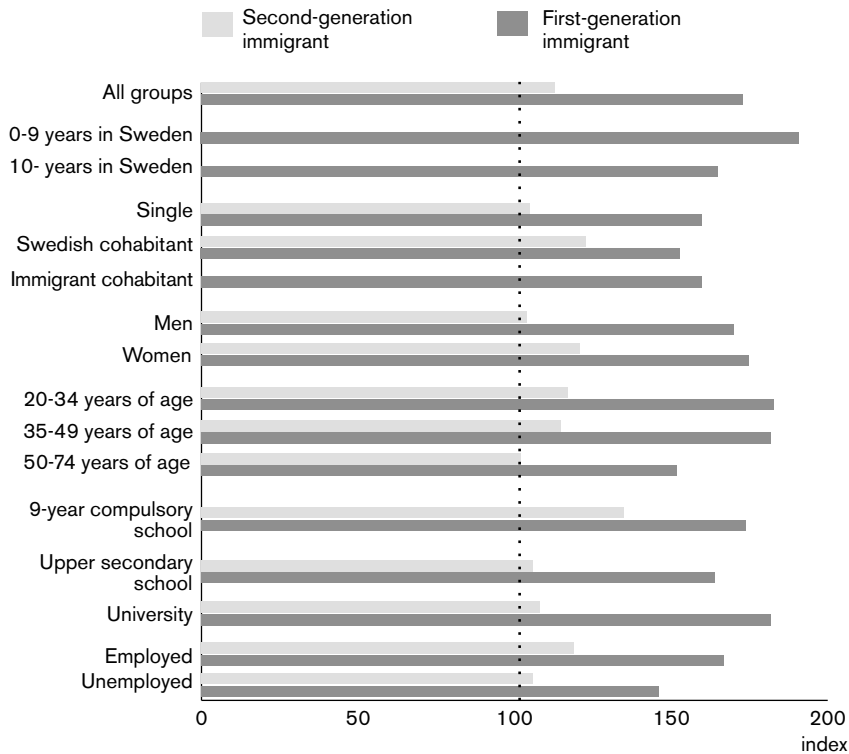
There is often a complex combination of reasons behind the differences between first-generation immigrants and others regarding health. These include the conditions under which they live in Sweden, but their experiences before and during their emigration can also seriously affect their health in the future (Söndergaard 2003). It is possible that immigrants are positively self-selected in this respect, as it is primarily relatively healthy individuals that succeed in leaving their mother countries to settle elsewhere (Ginsburg 1995). Immigrants, many of whom emigrate as adults, meet a new welfare system when they reach Sweden, and often start from a lower level than that of the equivalent group of native-born Swedes.

While native-born Swedes can look back on a childhood and adolescence in a rich and peaceful country characterised by relative equality, many immigrants have grown up under more difficult conditions that have given them a less healthy start in life. Moreover, the actual immigration situation can give rise to health problems. During a transitional period, a lack of resources (in a broad sense) can create a stressful and insecure situation. There are, therefore, many reasons why differences in health between immigrants and native-born Swedes remain, or even increase after immigration.

Figure 10.6 shows the number of people who say that they have health problems.<sup>5</sup> Almost twice as many first-generation immigrants as native-born Swedes think that they have poor health. Despite the fact that it is difficult to be sure of the reasons for this, the fact remains that immigrants at least feel that they are less healthy (see also the Swedish Board of Health and Welfare 2000 for further subjective health indicators). Not only do first-generation immigrants estimate their own health as poor (Leiniö 1995), but the death rate and statistics from the national health insurance scheme (Boalt 1989, Ekberg 1991) have also been studied. All of these studies confirm that immigrants have more sick days than native-born Swedes, have a higher death rate etc. This is particularly true of those from non-European countries.

### **Income and poverty**

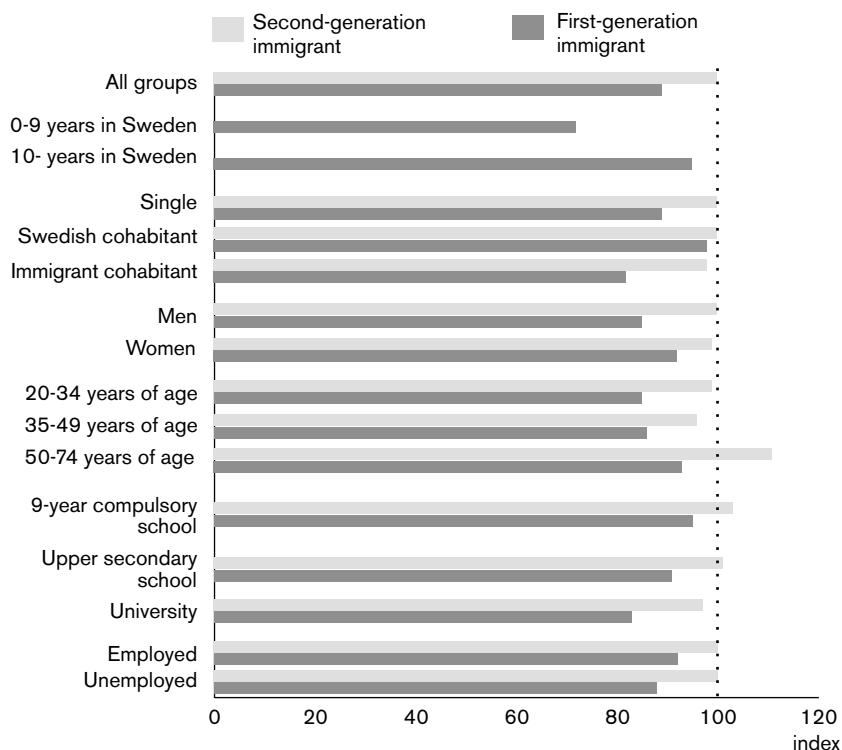
The Swedish social insurance system is based on the cornerstone of active participation in the labour market. This means that the inequalities that we have already noted are likely to be evident in other spheres too, even if the



**Figure 10.6.** Experienced health problems, native-born Swedes = 100. All the persons included are employed. (Source: Survey of Living Conditions, ULF, author's calculations.)

aim of the welfare state is to minimise the differences, for instance in poverty. Income and poverty are largely a result of the position one has in the labour market. Therefore it is likely that first-generation immigrants will have lower incomes and are more likely to suffer from poverty than native-born Swedes. The earnings of first-generation immigrants are only 88 per cent of those of native-born Swedes (according to the Survey of Living Conditions, ULF).

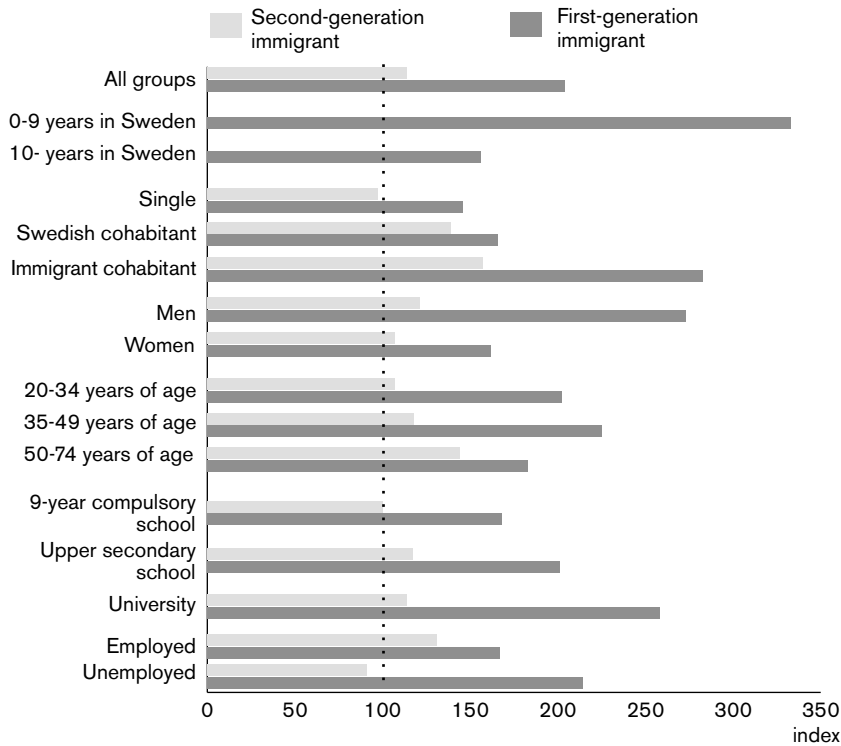
Figure 10.7 shows that the redistribution of income function of the welfare state does not always work in full, as first-generation immigrants



**Figure 10.7.** Disposable income per consumption unit, native-born Swedes = 100.  
(Source: Survey of Living Conditions, ULF, author's calculations.)

only have 89 per cent of the disposable income of native-born Swedes, even though their sex, and their level of income and employment are the same as that of native-born Swedes.<sup>6</sup> The difference is the same as the difference in earnings, which implies that the degree of redistribution of income is low. Among the unemployed, first-generation immigrants have 88 per cent of the disposable income that native-born Swedes have, while those with jobs have 92 per cent.

The difference between the groups can be explained by two factors. Firstly, first-generation immigrants earn less in the labour market than the equivalent group of native-born Swedes, and secondly, they are less well-



**Figure 10.8.** Disposable income below the level for social security, native-born Swedes = 100. (Source: Survey of Living Conditions, ULF, author's calculations.)

established and secure in their position in the labour market. The latter means that first-generation immigrants have less access to social insurance, which results in a lower disposable income. This becomes even clearer when we look at those with an income below the level for social security, or in other words, those who can be described as poor.

Figure 10.8 shows that the percentage of first-generation immigrants that can be described as poor is double that of native-born Swedes. Amongst those who have been in Sweden less than ten years, the percentage is three times higher. This means that among those that came to Sweden during the recession in the 1990s, as refugees for example, many more have extensive

financial problems than those in equivalent groups with the same level of education. This applies to both men and women.

The group of individuals who have a partner from elsewhere than Sweden are also very likely to have a dismal financial situation. The Swedish welfare system is thus incapable of levelling out these differences in income, which is clearly illustrated by the fact that unemployed first-generation immigrants are worse off than unemployed native-born Swedes.

## Overview

In order to achieve an overview of the integration of different groups in the social life of the community, the above-mentioned aspects must be considered together. When this is done a number of important factors emerge.

Firstly, the inability of the welfare state to ensure equality for everyone, irrespective of their position in the labour market, becomes clear in relation to first-generation immigrants. But even first-generation immigrants who are in employment are still a long way behind native-born Swedes. Furthermore, first-generation immigrants who are unemployed are even further behind native-born Swedes in the same situation, which indicates that *the safety net provided by the welfare state is less effective in the case of first-generation immigrants*. Although the difference between the groups with employment is less than for other groups, it is still large enough to make it necessary to reconsider the theory that “provided they get into the labour market everything will be fine”. This theory has lain behind the more or less official policy of increasing the already high level of self-employment among immigrants, but it has not been a great success (Hjerm 2004).

Secondly, individual factors cannot explain the differences demonstrated. Important background variables, such as level of education, age, marital status etc. have remained constant. The sum of individual group differences cannot explain or predict the differences between individuals, but studies of groups show that higher education normally gives rise to better opportunities in the labour market and, in the long run, to better salaries and a higher standard of living. The effects of higher education are also positive in the groups studied here, but *the improvement due to education is generally much lower for first-generation immigrants than for native-born Swedes* (cf. Chiswick et al. 1997 regarding the USA). In other words, higher



education does not benefit first-generation immigrants to the same extent as it does native-born Swedes.

Thirdly, there is considerable covariation between access and effect within and between the various welfare domains. First-generation immigrants are worse off than the equivalent groups of native-born Swedes in all of the aspects included in the study. The same applies to other marginalised groups in Sweden (cf. Standing Committee on Health and Welfare 2000:3), except that *first-generation immigrants are consistently the worst off in each group*. We must also bear in mind that the study only includes first-generation immigrants as one homogeneous group.

In fact, there are clear differences between different groups of first-generation immigrants, depending on their country of origin. A simple division can be made between those from the Nordic countries, the EU and North America, who are considerably better off, and those from countries where the majority of emigrants are refugees. At the level of the individual, this means that it takes a long time to free oneself from a negative pattern. A combination of a low level of education or a foreign education that is not recognised in Sweden, a lack of experience of Swedish working life, the problem of the Swedish language, and a lack of “cultural capital” and a social network result in a low level of employment, which in its turn results in a generally low standard of living: this is the basic pattern throughout the entire period of settling into the new country, and it influences the opportunities open to the individual over a prolonged period of time.

Fourthly, *second-generation immigrants are similar to native-born Swedes in many respects*. Without being entirely pessimistic, we should bear in mind that the majority of second-generation immigrants in this study are the children of the “labour force immigrants” that came to Sweden before the middle of the 1970s. It is therefore possible that we will see a change for the worse in the situation of second-generation immigrants in the future, i.e. when the children of those who have arrived in Sweden more recently have grown up.

The standard of living of immigrants should be seen from a “life career” perspective, where the starting point is the time of immigration. At this moment all immigrants naturally find themselves in an unfavourable position in relation to everyone else living in the country to which they have emigrated. One of the goals of the integration policy is to

compensate for this, which it also seems to succeed in. The standard of living of immigrants tends to improve in relation to the length of time they have lived in the country, which also occurred during the period in which the second-generation immigrants of today grew up. We must, however, ask ourselves the question how long this integration needs to take. Even after ten years in the country most immigrants have not attained the same standard of living as native-born Swedes. The facts indicate that this takes a whole generation.

### **Concluding discussion**

Integration in general can be seen as equality, where differences between groups in the community regarding a number of key factors in welfare policy are minimised through institutional measures and regulations. In these terms it is clear that integration into Swedish society has failed in the aspects examined in this study.

No support has been found for the assumption that first-generation immigrants who have difficulty in entering the Swedish labour market receive any significant protection via the welfare system. First-generation immigrants clearly do not have the same access to the labour market, and moreover they do not approach the income level of native-born Swedes if and when they succeed in getting employment. As if this were not enough, this also affects other aspects in which the welfare state is meant to level out differences, but where it fails to do so. First-generation immigrants are in general a long way from attaining the same standard of living enjoyed by native-born Swedes.

The paraphrase of the slogan from the French Revolution in the Government's integration policy rings hollow. Nor has the Swedish welfare state been as successful as claimed at providing the basis for equality through social citizenship. It has become increasingly clear that social exclusion in Sweden, as elsewhere, has closely followed constructed ethnic borderlines, in the wake of altered institutional and political systems and changes in the labour market. In this era of post-industrialism, enfeebled welfare states and new divisions of labour, it is clear that social exclusion and alienation based on ethnic divisions is one of the most acute and challenging problems facing the Swedish welfare state at present (cf. Quadagno 2000).

The Swedish welfare state has traditionally been good at incorporating immigrants into the community, due to the generality of the various institutional processes (see for example Lundh & Ohlsson 1999). During the recession in the beginning of the 1990s, however, Sweden was faced with unemployment levels similar to those that other European countries had suffered from for many years. The effects of unemployment were increased by severe cutbacks in the welfare state. The increasing unemployment made it harder for certain groups, such as young people and first-generation immigrants, to enter the labour market. An increasing number of people were denied full access to social insurance, and those with access received less and less.

In combination with an increasing number of refugees and asylum seekers, who were not as well-prepared as the earlier labour force immigrants to adapt to a new country, an increasing number of people, due to their inability to enter the labour market, were excluded from the possibility of attaining full citizenship. The effects of this will probably remain in the future, given the fact that so far it has taken a whole generation for groups of immigrants to attain the standard enjoyed by native-born Swedes. Newly arrived refugees are the most vulnerable group, which gives rise to a moral dilemma between the political responsibility to follow a humane refugee policy and the need for an efficient integration policy. The great difference between the situation faced by refugees and that of labour force immigrants from richer countries implies that there are mechanisms at work that cause discrimination of the most vulnerable groups, i.e. those who come from other continents, other cultural spheres and who have often suffered from severe deprivation.

In view of the present failure to integrate all groups of people, the moral dilemma becomes evident, as maintaining a relatively generous immigration policy seems to result in a situation of unsatisfactory integration. This does not imply that Sweden, or any other country, should necessarily further limit immigration, even though trades unions sometimes promote this as a solution to the problem (DN 2004b).

Immigration is hardly likely to cease and Sweden's borders will not be closed. The reason for this is not primarily a moral issue, but, as in the past, a question of pragmatics: Europe needs to solve the problem of its ageing

population. The modification of structures in society to cope with the new situation is a serious issue that must be faced if we are to be prepared for further immigration in the future.

A more efficient integration policy is essential. A reorganisation of the welfare state to deal with the multicultural reality, in the light of the changed labour market, is just as fundamental today as it was in the past. A solution to this challenge still seems far off, especially bearing in mind the recent debate about “social tourism” in relation to the new member countries of the EU.

## Notes

1. See also Thränhardt (2002) for a comparison of Holland and Germany.
2. The Survey of Living Conditions (ULF) is an annual survey that includes many social indicators combined with four rotating modules, i.e. different areas are examined in each survey. Some examples of indicators include education, work, work environment, economy, standard of living, leisure activities, health, social mobility. ULF is a combined cross-sectional study and panel study, in that approximately half of the sample are re-interviewed every eighth year. A sample of indicators was chosen from the ULF database in the period 1993–2000. Data for seven years were combined in order to ensure that first-generation immigrants were represented in the material. The choice of 1993 as the starting point was in order to examine a relatively homogeneous period, from a macroeconomic point of view. The results can thus be seen as average values for the time period. The aggregation of data from a number of years resulted in a database that comprises 39,847 individuals aged 20–74, of which approximately eleven per cent were born outside Sweden and a further six per cent have at least one parent born outside Sweden. The number of non-respondents during the period was approximately 20 per cent.

There are no large systematic differences between the number of respondents that answered in the groups studied, even though the non-native-born Swedes have a slightly lower answering frequency. The coefficients reported are standardised to an integration index according to the formula:

$100 \cdot P_{\text{immigrants}} / P_{\text{Swedes}}$ .  $P$  is the logistical coefficient of regression as a percentage for individuals from the same group. This means that a number of background factors remain constant in the analysis. These factors are marital status, sex, age, level of education, participation in the labour market and the number of years one has lived in Sweden (for the first-generation immigrant group).

3. This is an index that measures whether individuals have any of the following problems: repeated monotonous actions at work, unfavourable working

position, vibrations or shaking, profuse sweating daily, heavy lifting at least once a week.

4. Those with an instrumental attitude to their work are those who ticked the response “This job is like all other jobs. You do what you have to, but the only point of it all is to earn a wage.” in answer to the question: Which sentence corresponds best to your feelings about your present job?
5. The question asked in *ulf* is the following: How do you assess your general health? All those who have not answered “good” or “very good”, i.e. those who have answered “reasonable”, “bad” or “very bad” have been classified as having health problems.
6. The sum of their income from work, capital and social payments minus tax. This sum is then adjusted in relation to the size of the family and the cost of a “normal residence” in the area in which the respondent lives. The figures are taken from the tax register.

## References

- Banting K G (2000) “Looking in three Directions: Migration and the European Welfare State in Comparative Perspective” p 13–33 in Bommes M & Geddes A (ed) *Immigration and Welfare. Challenging the Borders of the Welfare State*. Routledge, London.
- Boalt Å (1989) *Invandrare och hälsa (Immigrants and Health)*. sou 1989:111, Fritzes, Stockholm.
- Bommes M & Geddes A (2000) “Introduction” p 1–12 in Bommes M & Geddes A (ed) *Immigration and Welfare. Challenging the Borders of the Welfare State*. Routledge, London.
- Chiswick B R, Cohen Y & Zach T (1997) “The Labor Market Status of Immigrants: Effects of the Unemployment Rate Arrival and Duration of Residence” *Industrial and Labor Relations Review*, vol 50(2), p 289–303.
- DN (2004a) Editorial: 13 January 2004.
- DN (2004b) ”L0 varnar för arbetskraftsinvandring” (“Swedish Trades Union Congress warning about labour force immigration”) DN debate 13 January 2004.
- Dörr S & Faist T (1997) “Institutional Conditions for the Integration of Immigrants in Welfare States: A Comparison of the Literature on Germany, France, Great Britain and the Netherlands” *European Journal of Political Research*, vol 31, p 401–426.
- Ekberg J (1990) *Invandrare på arbetsmarknaden (Immigrants in the labour market)*. Reports from Växjö University, CAPO, Växjö.
- Ekberg J (1991) *Vad hände sedan? En studie av utrikes födda på arbetsmarknaden (What happened next? A study of first-generation immigrants in the labour market)*. Acta Wexionensia Economy and Politics 3, Växjö University.

- Ekberg J & Gustafsson B (1995) *Invandrare på arbetsmarknaden (Immigrants and the labour market)*. SNS, Stockholm.
- Faist T (1996) "Immigration, Integration and the Welfare State" p 227–250 in Heller A, Bauböck R & Zolberg A R (ed) *The Challenge of Diversity Integration and Pluralism in Societies of Immigration*. Avebury, Aldershot.
- Ginsburg B-E (1995) "Migrationsprocessen ur ett flyktingperspektiv" ("The process of migration from the perspective of refugees") in *Invandrades hälsa och sociala förhållanden*, Socialstyrelsen (*The health and social welfare of immigrants*, published by the Swedish Board of Health and Welfare). Underlag till Folkhälsorapport 1994 och Social Rapport, SoS rapport 1995:5, Socialstyrelsen, Stockholm.
- le Grand C & Szulkin R (1999) "Invandrarnas löner i Sverige. Betydelsen av vistelse-tid, invandrarland och svensk skolgång" ("Immigrants' earnings in Sweden. The influence of the length of time in the country, the country of origin and Swedish schooling") *Arbetsmarknad & Arbetsliv*, vol 5(2), p 89–110.
- Hammar T (1990) *Democracy and the Nation State*. Avebury, Hants.
- Hjerm M (2002) *Ett förlorat 1990-tal. Invandrades situation på den svenska arbetsmarknaden under perioden 1990–1996 (The lost 1990s. The situation for immigrants in the Swedish labour market during the period 1990–1996)*. Integrationsverket 2002:06, Norrköping.
- Hjerm M (2004) "Immigrant Entrepreneurship in the Swedish welfare state" *Sociology*, forthcoming.
- Häll L (1997) "Invandrarnas levnadsförhållanden" ("The living conditions of immigrants") p 467–490 in scb *Välfärd och ojämlikhet i 20-årsperspektiv (Welfare and inequality in a 20-year perspective)*, published by Statistics Sweden) scb, Stockholm.
- Integrationsverket (2001) *Rapport integration 2001*. Integrationsverket (The Swedish Integration Board), Norrköping.
- Leiniö T-L (1995) "Invandrarnas hälsa" ("The health of immigrants") in Socialstyrelsen (ed) *Invandrades hälsa och sociala förhållanden (The health and social situation of immigrants)*, published by the National Board of Health and Welfare). Underlag till Folkhälsorapport 1994 och Social Rapport 1995, SoS rapport 1995:5, Socialstyrelsen, Stockholm.
- Lundh C & Ohlsson R (1999) *Från arbetskraftsimport till flyktinginvandring (From an imported labour force to refugee immigration)*. SNS, Stockholm.
- Quadagno J (2000) "Another Face of Inequality: Racial and Ethnic Exclusion in the Welfare State" *Social Politics*, vol 7(2), p 229–237.
- Ryner M (2000) "Transformation and Migration" p 51–71 in Bommes M & Geddes A (ed) *Immigration and Welfare. Challenging the Borders of the Welfare State*. Routledge, London.
- Socialstyrelsen (1998) *Levnadsförhållanden hos fyra invandrargrupper födda i Chile, Iran, Polen och Turkiet (The living conditions of four immigrant groups born in Chile,*

- Iran, Poland and Turkey*). Invandrarprojekt: Rapport 1998:1. Invandrades Levnadsvillkor 1, Socialstyrelsen (National Board of Health and Welfare), Stockholm.
- Socialstyrelsen (2000) *Olika villkor – olika hälsa. En studie bland invandrare från Chile, Iran, Polen och Turkiet* (*Different conditions: different health. A study of immigrants from Chile, Iran, Poland and Turkey*) Invandrarprojekt: Rapport 2000:3, Invandrades Levnadsvillkor 4, Socialstyrelsen (National Board of Health and Welfare), Stockholm.
- sou (2000:3) *Välfärd vid vägskäl (Welfare at the crossroads)*. Fritzes, Stockholm.
- Soysal Y (1994) *Limits of Citizenship: Migrants and Postnational Membership in Europe*. University of Chicago Press, Chicago.
- Söndergaard H P (2003) "Livshändelser hos nyanlända flyktingar" ("Events in the lives of newly arrived refugees") *Socialmedicinsk tidskrift*, vol 80(1), p 37–44.
- Thränhardt D (2000) "Conflict, Consensus, and Policy Outcomes: Immigration and Integration in Germany and The Netherlands" p 162–186 in Koopmans R & Statham P (ed) *Challenging Immigration and Ethnic Relations Politics*. Oxford University Press, Oxford.
- Wadensjö E (1972) *Immigration och samhällsekonomi (Immigration and the social economy)*. Thesis, Lund Economic Studies nr 8, Lund University.





## The welfare of the welfare services

*Rolf Å Gustafsson*

### **The work environment backlash**

Employing almost a quarter of the workforce, the welfare services sector encompassing schools and childcare as well as the health services, social services and elderly care services is not only one of the largest in the labour market, but also one that underwent widespread organisational changes in the 1990s. This often in combination with budget cuts. After reviewing research, the Swedish Welfare Commission states in its English summary, that there is a considerable lack of knowledge:

[...] It is clear that market-oriented organisational forms popularly known as ‘new public management’ enjoyed a major breakthrough in the 1990s. There is, however, no regular statistical data available concerning the presence of purchaser-provider models, profit centres, customer choice models or performance-based financing systems in the various welfare service sectors. [...] Virtually no research has been carried out with regard to the possible consequences of the changes for staff and patients, pupils and other users of welfare services (Palme et al. 2003, p. 90).

Thanks in no small measure to the work of the Work Environment Commission (Tåhlin 1989), considerable work environment problems were apparent as early as the late 1980s, primarily within the health services. Despite this, the 1990s was a decade in which there was a narrow focus on the productivity and economic control of the welfare services. It all started with arguments for various models for providing freedom of choice to patients, users and customers (von Otter 1996), but the discourse quickly came to focus on measures to increase cost-effectiveness, create more competition and introduce privatisation (Arvidsson & Jönsson 1991, 1997).

The few attempts made to discuss the work environment risks inherent in such reorganisations were largely ignored (Gustafsson 1994), but there is now a growing awareness that the change of regime brought increasing work environment problems (von Otter 2003, p. 19).

It is clear that research on work environment, democracy and care issues were neglected in the intensely change-oriented climate of the 1990s (Bogen 2001, Gustafsson 1999). In other words, Swedish social policy research in which working life research has enjoyed a prominent position in international terms since its flowering in the mid-1970s has not succeeded in keeping up with, and capturing, the work environment consequences of the wave of reorganisation that occurred. Most interest was focused on the coveted increases in productivity and customer freedom of choice, and how market mechanisms may be used to replace or supplement direct political control (see for example Blomqvist & Rothstein 2000, Clarke & Newman 2001).

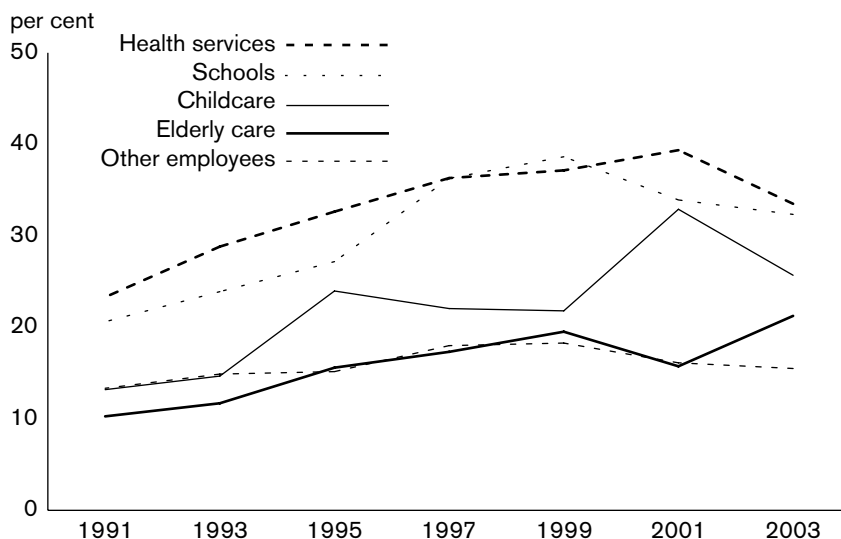
Using the Work Environment Surveys carried out every two years by Statistics Sweden (scb), however, it is possible to delineate a balance sheet of what is perhaps the most intensely change-oriented decade in the history of the Swedish welfare services. Olof Bäckman has carried out one such study as part of the Welfare Commission, which summarises the 1990s as follows:

The Commission has previously presented research which analyses in detail developments in the psychosocial work environment in the 1990s. [...] These studies demonstrate fairly clearly that the deterioration was strongest in the welfare service sector (school, health care and care services) as well as in a number of other service sectors (where women are overrepresented). Not least, there was a substantial rise in the numbers of jobs with high physical demands and a low degree of autonomy, i.e. negative stress (Palme et al. 2003, p. 21–22).

Figure 11.1 gives an overview of how personnel evaluate their work environment and the changes it underwent up to 2003.<sup>1</sup> The measure depicts the decision latitude at work as assessed by the employees themselves. Through a large number of previous studies, we know that the combination of *low control and high psychological demands* constitutes a risk situation in terms of health, and often involves negative consequences from a social

viewpoint (for more on this, see Bäckman, 2001). This is the demand-control model, or the Karasek-Theorell model, named after the researchers who first carried out this type of analysis on large bodies of material. A considerable number of studies have shown that work characterised by small opportunities of influencing *how* ones own tasks are done, *when* they are to be done and at *what pace* (i.e. category low control in the figure) is particularly problematic when it is combined with *pressure of time* for example, with shortened lunch hours, finishing some of the work at home, having no time to talk to others, and constant demands of *attention* and *concentration* (i.e. category high demands).<sup>2</sup>

Figure 11.1. shows that personnel in the health services and schools report a problematic situation. At the beginning of the decade, just over 20 per cent of such personnel found themselves in an “unhealthy” work situation, a proportion that was already significantly higher than that found among other employees (13 per cent). Just over a decade later, we can see a



**Figure 11.1.** Combination of low control and high demands in the work situation. Percentage of those employed in various sectors in Sweden, 1991–2003. (Source: Statistics Sweden, Work Environment Survey for each year, processed by Anders Wikman.)

widening gap in comparison with other employees: in 2001, 40 per cent in the health services and 34 per cent in schools reported the combination low control/high demands, compared with 16 per cent for other employees in 2001.

Another clear and consistent pattern in the figure is the increasing diffusion of this type of problematic work situation throughout the welfare services sector. The relatively moderate increase among other employees between 1991 and 2001 (from 13 per cent to 16 per cent) in itself problematic against the background of what we know about this type of work situation appears modest in comparison with the increase for childcare from 13 to 33 per cent, for schools from 21 to 34 per cent, and for elderly care services from 10 to 16 per cent.<sup>3</sup>

We noted above that there is a lack of research to explain these deteriorations, or for that matter, the positive break in the trend for schools, elderly care services and other employees between the two most recent measurements in 2001 and 2003. Through the work of the Welfare Commission (sou 2000:3, Palme et al. 2003), however, we know that the total number of staff in the health and elderly care services fell almost continuously throughout the 1990s. The overall result was about 15 per cent fewer staff than in 1990, caring for an equally large, and ageing, population. This has of course affected working conditions in the health care and elderly care services.

According to the same source, the greatest percentage cutbacks took place in childcare, where staff density (staff-child ratio) fell by 20 per cent during the 1993–2000 period. A tangible measure of this is that the number of children per full-time equivalent increased from 4.4 to 5.6 (1990–98). Schools, however, did not experience a great reduction in staff in the 1990s, although the proportion of trained teachers fell continuously throughout the 1990s in both the 9-year compulsory schools and upper secondary schools. In addition, the adult presence in the form of teachers fell by almost 1 teacher per 100 pupils, i.e. from roughly 8.5 per 100 pupils in 1992 to 7.5 per 100 in 1998 (see further in Chapter 13 of this anthology).

We also know that the entire welfare services sector has undergone vast reorganisations, not least through privatisation and the introduction of purchaser-provider models. Research has recently indicated that recurring

reorganisations in themselves are associated with increased sickness absence (Szücs et al. 2003). The total number of those working in publicly funded welfare services, but employed by a private contractor, doubled between 1993 and 2000 (from just over 6 to almost 13 per cent). Both the pace and forms of the outsourcing varied considerably, however, between different municipalities and county councils, and between different welfare services (for more on this see Trydegård, 2001). Most private providers are private profit-driven companies.

It is not possible to draw any definite conclusions about whether privatisation usually leads to a poorer or better work environment, and in which respects, due to the limited amount of Swedish research on this issue.

### **An era of changing perspectives**

At present it is almost impossible to analyse the working conditions in various types of publicly financed welfare services without taking into account two complex phenomena which cannot be studied in isolation from each other. These are the *globalisation* of national economies, and an international trend known as *New Public Management* (NPM) which has strongly influenced Swedish policy-makers. In brief, NPM means more businesslike management of the public sector and increased use of private providers subcontractors who carry out political decisions via tendered contracts (Hogget 1996). This organisational model or administrative policy trend is based on the assumption that public and private profit-driven organisations can and should be run in similar ways (Premfors et al. 2003).

#### *Globalisation*

In an overview of the globalisation debate, Held and McGrew (2004, p.2) distinguish two scientific camps and say that there is an increasing gap between what they call globalists and sceptics.

The globalists focus on the growth of global Internet-based finance markets that have radically increased the movement of capital. According to their view, the balance of power between market and state meaning national democratic entities has shifted. The state has in different degrees been weakened by having its latitude for action curtailed. The globalists claim that this

[...] generates powerful pressures on states to develop market-friendly policies, including restricted public deficits and curbs on expenditure, especially on social goods; lower levels of direct taxation that are internationally competitive; privatization and labour market deregulation (Held & McGrew 2004, p. 22–23).

The sceptics, on the other hand, cite both empirical evidence and theoretical analyses in arriving at the conclusion that

[...] states do not respond in identical ways to the dynamics of world markets or to external shocks. While international financial markets and international competition may well impose similar kinds of economic disciplines on all governments, this does not necessarily prefigure a convergence in national economic strategies or policies. [...] Nor is there much convincing evidence to suggest that international financial disciplines by themselves either preclude governments from pursuing progressive redistributive fiscal strategies or, alternatively, prefigure the demise of the welfare state or robust policies of social protection. The fact that levels of national welfare spending and social protection continue to differ considerably, even within the EU, suggests that social democracy is not threatened by globalization (Held & McGrew 2004, p. 47–48).

### *New Public Management*

There is a similar situation in the debate about New Public Management (Premfors et al. 2003). Some researchers adhere to a *convergence theory*, arguing that an increasing number of countries have implemented, or are currently implementing, most aspects of the package of proposals that is part of NPM. This convergence view in turn has two variants.

The dominant perspective is represented by researchers who think that NPM is *a necessary and thereby a rational strategy* for restructuring the public sector (see Guillén 2001, p. 250).

Those researchers who by contrast are critical of the increased spread of NPM often point to the *neoliberal ideology* inherent in its ideas. They assert that convergence is largely due to a diffusion of ideas that are driven by

higher officials in civil service, often via commercial consultancy companies and international expert organisations (known as INGOs), rather than by scientific evidence or evaluations that have shown that the ideas have the intended positive effects (see also Clarke & Newman 2001, Jacobsson 1994, Premfors et al. 2003, p. 320).

Others, however, question all types of analysis that assert that current change will lead to the adoption of a standardised NPM model by the public sectors of most countries in other words, to convergence. The British researcher Christopher Pollit (2001, p. 945) argues that the notion of a uniform and almost automatic or necessary change of the public sector towards more corporate-like forms of organisation is a myth that “[...] will support careers, enhance images and boost the incomes of those who purvey its signs and symbols.” The Swedish political scientist Rune Premfors and his colleagues (2003) argue that many European researchers in the field of public administration in fact represent a divergence theory. Though they do not deny that there have been increasing efforts to reform the public sector, they argue that the changes, in practice, display a wide variety in type, content and not least results. There is, then, no real global wave of NPM reforms (Premfors et al. 2003, p. 331).

The scientific conclusion that can be drawn from the debate outlined above is that *we know or ought to know that we do not know*. There is currently no undisputed definition or analysis in social science of either globalisation or NPM. The same holds for the interplay between these phenomena (Guillén 2001, Premfors et al. 2003, p. 332).

- These disputes are probably partly due to the tendency to talk about different things (Premfors et al. 2003, p. 333). National models of social insurance and welfare services, for example, are probably less forced to converge than national strategies for full employment (Esping-Andersen 2000, p. 2, Korpi 2003, p. 603).
- There is probably more convergence in the talk about NPM than there is when it comes to decisions, actions and results (Guillén 2001, p. 246, Pollit 2001). The possible effects of globalisation on publicly controlled and financed activity might very well converge at certain levels for example, in the view that cuts in public expenditure are necessary and achievable through exposure to competition while there may at the same

time be divergence in other respects, for example changes in working conditions and the reactions of personnel, users and citizens to this.

- Fundamental political ideologies play a decisive role when researchers pose questions, make a selection of empirical material and carry out analyses. It is easy to find support in the literature for this being true of both the globalisation debate (Held & McGrew 2004, Chapter 8) and discussions about new administrative policy. Of course many of those who support NPM assert that their philosophy is non-political, rational and value-neutral. There are, however, a number of analyses showing that the framing of the issues is normally based on a limited selection of facts, that the models are often value-based and that the intended practical consequences are rarely non-political in the sense of being value-neutral (Guillén 2001, Montin 2002, Chapter 9, Premfors et al. 2003, p. 351).

### **Organising top-down and by external influences: 1663, 1766 and 1943**

The organisational structure of welfare services in Sweden let us say in the mid-1980s was in many ways an aggregate of past influences. Caring for the poor, an ancient tradition that had been carried out by the Church, had become interwoven with the social change that in the late 19<sup>th</sup> century slowly turned the parishes into democratic municipalities. The largely philosophically-schooled learned men who had long controlled the scientific development of care began at the same time to transform into a modern medical profession, retaining their established dominant position. To this we can add the decisive role of the heritage of military organisation, ideals of public service and bureaucratic structures. The standardisation, large-scale operations and conveyor belts of industrialism were added to the brew in the post-war era.

The NPM of the 1990s was intended as a radical break with these established forms of organisation (Bejerot & Hasselblad 2003, p. 108), but we shall see that in one important respect, NPM has nothing new to offer. This organisational ideology is only one in a series of impetuses for change that have a top-down and external origin. I argue that we have sufficient historical evidence to say that the driving motives, as well as the actual organisational models that gradually shaped the welfare system, primarily



consist of external influences.<sup>4</sup> Looking back into the organisational history of Swedish care, as we will do below, it becomes clear that the roots of its basic characteristics are to be found in the economic and political structures of society. In this respect nothing new happened in the 1990s.

In Sweden, the Collegium Medicum was formed in 1663 on the initiative of eight Doctors of Medicine. It was a society that grew into the Swedish Medical Association (Läkarförbundet), the Swedish Society of Medicine (Läkarsällskapet) and the predecessor of the Medical Board (Medicinalstyrelsen), later the National Board of Health and Welfare (Socialstyrelsen).<sup>5</sup> The medical ordinances of 1668, which were largely based on the proposals of the Collegium Medicum, laid the foundations for the practice of medicine in both Sweden and Finland for a long time to come. It is therefore interesting to examine some important points in these medical ordinances, which came about after an intense struggle with competing professional categories primarily the surgeons, who at this time were organised through the Guild of Barbers.

- The Collegium Medicum was to *supervise and control* the itinerant practitioners who sold various cures and medications at local market places. They gradually came to be regarded as quacks, from quacksalvers those who peddle salves.
- Doctors of medicine with requests to practice their profession in Sweden were to show their doctors certificate to the Collegium Medicum and undergo an *examination verbally*.
- Apothecaries were to be *examined* by the Collegium Medicum, which was also given the task of making inspections of the apothecary shops.
- Clear *boundaries were drawn between competing professional categories*. Surgeon-barbers were not to involve themselves in internal medicine when a medical doctor was available locally. There was also a duty to summon a doctor in the event of complicated surgical procedures.
- The wise women known today as midwives were to be controlled by the Collegium Medicum through *inspection and registration* by the town physician.

The above shows that the doctors wanted to acquire a monopoly on expertise in care. This process began in the mid-17<sup>th</sup> century, which is to say *over*

*two hundred years before the advent of modern scientific medicine.* As late as the 1860s–1870s, medical training was largely based on ancient teachings about the balance of the four body humours (humoralism). In the mid-19th century, established medical treatment practices still revolved around purging, attempts to stimulate urination, the administration of herbal decoctions, blood-letting and other procedures that were based on the idea of restoring the balance and composition of the body humours in the presence of disease (Nutton 1997).

The strong position of the medical profession in the organisation of care work is a classic example of how academically trained groups, through their *high status and social proximity* to the ruling classes, had a head start in establishing a strong position of power. Competing semi-professional and professional categories in the making were sidelined (barber-surgeons) or subordinated (nurses), on grounds that were not entirely based on the demonstrated skills of the medical profession in alleviating suffering or administering successful treatment.

The *mercantilist* ideas that reached their peak in Sweden in the mid-18<sup>th</sup> century constituted another crucial societal impetus in the evolving organisation of care work and also functioned as a framework for the increasing influence of medical doctors. For the mercantilists, the state was as an economic actor whose interests were to be strongly promoted, with the purpose of boosting the nations wealth and power (Magnusson 2003). The state was to support the growth of domestic manufacturing and trading companies. Low wages and abundant access to labour, provided through a steady rise in population, were part of the mercantilist ideal. The mercantilists also wanted a scientific development in the service of the nation and of economic progress. *The growth of the populace was an important means to this end.*

The events in medical policy that were decisive in shaping the future, and which were linked to this economic and political ambition to create an economically productive lower class, were the ordinances of 1763 and 1766 concerning asylums and orphanages. This created the tripartite division of care resources which still applies in Swedish health care.

- The *central, state-run asylums/hospitals* were to be reserved for the demanding, dangerous and hopeless cases. These institutions were

transferred to the County Councils in the 1960s and came to be called psychiatric hospitals.

- The *parish poorhouses* were to handle the somewhat less demanding, but still hopeless cases: the old poor and others with some sort of disability who were unable to obtain sufficient means to survive and did not have relatives who were able to look after them.
- The Seraphim Hospital in Stockholm, founded in 1752, and its clinical research, became a prototype for the growing *regional somatic hospitals* that focused on the curable.

The presumed curable, then, were to be admitted to regional somatic hospitals in order to be returned to work after treatment. The elderly and the social outcasts were to be looked after by the church parishes. The lunatics were to be isolated in the state asylums. The explicit idea in this sorting of the clientele of the public care services of the time was to free up economic resources that could be devoted to poor and outcast children. The principle was one of *sorting according to reparability*. Resources were devoted to the children of the underclass in their capacity of potential labour force.

As a side-effect of this economically and politically motivated institutional division of labour, there opened up a window of opportunity for medical science. Clinical research could proceed apace at the Seraphim Hospital and other somatic hospitals. The great breakthroughs in medical science came a century after the reorganisation resulting from the statutes of the 1760s on the sorting of patients.

Much later the need for financial and administrative control gradually become urgent in the somatic hospitals that slowly (to modern eyes) grew from the Seraphim Hospital (the great expansion of somatic hospitals began in the mid-1930s). *A wave of rationalisation was initiated through the broad-ranging National Hospital Commission of 1943*, whose instructions contained the task of examining opportunities of using rationalisation to limit the operating costs of hospitals run by national or local government. Time and motion studies were carried out at hospitals. The final report contained a number of rationalisation proposals. The practical expression of this was, among other things, a strictly enforced Tayloristic work organisation at the

ward, which is still an obstacle to the social interaction between care staff and the patients. The commission of 1943 was headed by Tarras Sällfors who has been called the Swedish Frederick Taylor.

Separation into various tasks and areas of responsibility had of course been implemented gradually during the preceding organising process. Important factors underlying the increasingly regulated top-down structure included the medical profession's socially based demand for the right to make decisions as well as the scientific progress that created a need for highly trained and specialised professionals to lead the treatment work. During the post-war era, however, rationalisation took place more according to models imported from business life. The Tayloristic organisation of health care work now reinforced the principle that each person was to be given his or her predetermined tasks. For subordinate staff, this meant that planning, analysis and decision-making were increasingly and systematically separated from the actual care work.

The effect of this was that patients during the care process met a series of decision-makers and role players in a hierarchical structure. Another effect was the creation of a strata of low-paid, poorly trained auxiliaries and other predominantly female assisting staff who were not only subordinate to professional and semi-professional decision-makers in their evidence-based work. The subordination of those supposed to be only manual care workers also had strong social, patriarchal, and status-related grounds that were passed on through a growing bureaucratic/professionally organised hierarchy, whose power base only partly referred to medical expertise (Lindgren 1999).

In the post-war expansion of public care, then, politicians, experts and administrators imported organisational models from industry. Key words were efficiency, rationalisation, productivity, and uniformity. In these years, the top-down control of care, public education, social work and other types of socially motivated assistance became a firmly established principle that was largely based on industrial forms of production, business economics and management.

If we now summarise, and at the same time supplement, the picture outlined above, a number of examples emerge of organising top-down and by external influences, in what is now named welfare services work:

- *The Church* did not just contribute through its message of charity, but also through its hierarchical tradition that has been decisive. Parish poor relief has its roots in the work of the Catholic Church in Sweden prior to the Reformation, as do the asylums/hospitals and other care institutions that grew up alongside the medieval monasteries. When the Swedish State Church was created by King Gustav Vasa in the 1520s, the Crown took over responsibility for the hospitals, a responsibility that endured until the 1960s for psychiatric hospitals. Another important example of this is the Swedish school system, which in the 19th century was closely tied to the Swedish Church and its municipal providers.

- *The hierarchies of the military*, which are constructed to head large-scale operations by strict and fast commanding top-down, have been important in many ways. One oft-analysed example is that of the influential nurse Florence Nightingale, who reformed British hospital care in the late 19<sup>th</sup> century. Her influence was international and contributed strongly to the position attained by the nursing profession in Swedish health care. It took place against the background of experiences in the Crimean war, and was based on an ideal of disciplined control and surveillance of the auxiliaries from above. Operational analysis and programme budgeting, developed in the US military during the Second World War, are further examples that have been decisive in the development of a new administrative policy in Sweden since the 1960s (Sundström 2003).

- *Older conceptions of the public interest* were, as we have seen, important motivating factors in the organisation and control of care for long periods of time. The great importance of wartime medical services for both surgical expertise and the development of the organisation of care is regarded as a fact of medical history (Cooter 1997). An obvious Swedish example is the fact that the leading research and training institution, Karolinska Institutet, has its origins in the Institute for the Training of Field Surgeons (1810). Public concerns and measures regarding population growth, labour policy, public education and hygiene have clearly been interwoven with ideas on the public interest ever since mercantilist times: a public interest formulated by the Crown and the upper classes view of the population as a source of labour and soldiers.

- The organisational ideals of *industrial society*, above all Tayloristic rationalisation and control, have been fundamental in the post-war extension of health care and other care services in Sweden. And then, in the 1990s, theories of *competition and market mechanisms* made their entrance, not least through NPM.

In the extension of this tradition of organising top-down and by external influences a vision now emerges of an authoritarian workplace, with a focus on the economic and tangible performance of every individual employee. Critical researchers have issued warnings about the effects (not least on medical treatment) of full implementation of uniform measurements, benchmarking and other control systems that are inherent in NPM in the shape of customer-oriented control (TQM).

It is now possible to envision the contours of widespread regulation of the clinical work of doctors. [...] nobody can expect to avoid their actions being systematically evaluated by reference to political and financial goals. *Nobody* can expect trust, something that was part of the historically established social contract of these professions. Transparency and facts are seen as a basis for more planned and efficient action, and nobody can be trusted to act in this way without audit and control. (Bejerot & Hasselbladh 2003, p. 113).

### **What happened to the public employer?**

Despite the multitude of modern texts on welfare policy only a small fraction comment on the fact that municipal and county council politicians are the employers of almost a quarter of the Swedish labour force. The institutional history of the public sector as an employer is a marginal and rare topic in social or historical research (Gustafsson 2000, Chapters 1 and 2, Sjölund et al. 1997).

Up to some point in the 1950s, government personnel policy was based on the ideal of the irremovable, incorruptible, disinterested and neutral civil servant working in the public interest. There is no research into differences between the central government's view of its civil servants and the roles that politicians planned for officials and workers in the welfare services when expansion began in earnest in the post-war era.

A commission ran for seventeen years, preceded by three decades of public debate, before civil servants were given negotiating rights by law in 1965. The first coherent policy for the government as an employer can be dated to 1985, when a personnel policy bill was put before the Swedish Parliament by the Social Democratic government. At that time, however, cutbacks and increased efficiency in the public sector had definitely been launched in public discourse. Several commentators argue that Swedish administrative policy at that time definitely started to move towards the type of business-imitating management that subsequently came to be associated with NPM (Premfors et al. 2003, p. 284, see also Sjölund et al. 1997).

One reason why public employers went unseen in debate and research on the organisation of the welfare services for such a long time is that *democratic influence came into the historical development at a late stage*. The welfare services were brought under democratic control by the municipal reform movement that began in the 1850s and was completed in 1920 with the introduction of universal suffrage. This development was powered neither by motives related to care ideology nor to employer policy. Furthermore, the internal organisation of the somatic hospitals and their place in the tripartite care system had by 1864 already taken on the form they have today. Municipal and county council politicians thus inherited a structure that was largely shaped and consolidated by external societal factors (Gustafsson 1987, p. 293, Gustafsson 1989).

My interpretation is that this made it difficult for municipal and county council politicians to take control of organisational developments. The task of politicians was initially limited to controlling budgets and extending the provision of care according to patterns established by earlier developments. It was difficult to deal with extra-medical issues such as the work environment and workplace democracy within the established structures.

During the post-war period, politicians focused on extending welfare services to the citizens: the welfare state, not the welfare of the welfare workers was on the agenda which kept the working conditions of welfare services personnel on the sidelines as low-priority issues (Gustafsson 2000, pp. 43–47).

Despite the fact that NPM is based on the assumption that the relationship between employers and employees are similar in the public and private

sectors, we can state that *politically appointed employers in the field of welfare production have different assignments as well as different tasks compared with private employers*. Some points that will summarise these differences are set out below.

### 1. *Democratically delegated power*

Public employers do not own their organisations, but operate on behalf of vote-holding citizens who collectively own the buildings and other assets used to provide the services. Many of those entitled to vote are also employed in various types of welfare services. Welfare services staff, then, participate in the election of their own employers. This means that the *democratically delegated powers of public employers are only of a conditional nature*.

Private employers, on the other hand, work on the assignments of shareholders and the board, within a framework of the limits of private ownership rights and other legislation. Thus, private employers who obtain contracts in the field of welfare services have to serve two masters: the politicians who, on the assignment of the voters, are to steer the operations to meet social targets, and their own boards, who have to achieve financial profit.

### 2. *Structurally based demands for external and internal legitimacy*

The public employer is thus faced with a problem of democratic legitimacy that does not apply to private employers. This becomes clear when we distinguish between the external and internal legitimacy of welfare systems.

The *external* legitimacy of welfare systems their acceptance and political support among the citizens and taxpayers who are potential and current recipients of grants and assistance has been the object of considerable empirical research in Sweden (Svallfors 1996). In international comparison we know that Swedes tend to favour the public financing of welfare systems and accept high taxes.

What here is coined as the *internal* legitimacy of the welfare systems refers to the corresponding problem in the inner life of the welfare-service-producing organisations. This issue has seldom been discussed, and applies not only to financing, but also to organisational matters. Who makes decisions for whom? How are the rewards and burdens of the work distributed? In what ways are the frames of and aspirations for care work negoti-



ated and decided? The internal legitimacy of welfare policy builds on or is undermined by the views and perspectives that welfare services staff hold on the political control of their own working conditions. The report of the Swedish Democracy Commission, published at the millennium, drew attention to this problem against the background of the Commission's own research reports.

In recent years, increasing tension has become apparent in the municipal and county council sectors between experts and elected representatives, and some professional groups are increasingly critical of political control (sou 2000:1, p. 146).

The Commission asserts that the lack of internal legitimacy (although it does not use the term internal legitimacy) is probably most serious in the health services and school sector, which are the largest publicly-steered operations in Sweden. These sectors employ well-educated professional groups, and, it might be added, underwent a good deal of NPM-inspired reorganisations and cutbacks during the 1990s. A questionnaire distributed to politicians and staff within the elderly care services showed that care workers who said they had been visited at their workplaces by politicians in the previous year had a much more positive view of increased political influence over the organisation and work environment of elderly care services than those who had not. This applied regardless of whether the staff were formally employed by a private or a public employer (Gustafsson & Szebehely 2002).

### *3. Reforming society and the individual*

Another important difference between private and public employers is that the latter often have more or less explicit assignments related to changing society or individuals. This applies particularly to the welfare services: examples are public education, improving public health, improving democracy and social integration. Private employers, historically speaking, have not carried out assignments like this. Private employers must be subjected to political regulation if they are to implement assignments like this, and this must take place alongside the assignments chosen by the shareholders within the framework of market conditions.

#### 4. *Network-based steering and operation*

An important difference between the work organisation of welfare services and that of industrial production, and much of the production of other goods and services, is that operational results are achieved, and in reality controlled, by relationships that are much more complex than that between employer and employee, or employer-employee-customer, as is the case in service work.

Most welfare service work involves creating and maintaining relationships between at least four parties: employer, employee, help recipients or other citizens, and relatives. This can be said to mean that welfare services are something more than, and something different from, work and service in the established senses of the words. A service provided under the Schools Act is not only to ensure the transfer of knowledge from teachers to pupils under the control of an employer, but is also to create a democratic mindset in future citizens. This requires a complex interplay with the social network around the employer (the municipal politician), the employee (the head teacher or teacher), the future citizen (the pupil), and the parents. This unique characteristic of the work makes particular demands on the public employer that have their roots in the political or social nature of the work.

#### 5. *Producing and reproducing social infrastructure*

In the elderly care services, a Muslim, a Mosaican, a Lutheran and an atheist are to meet fragility and its resulting dependency, and then death, with equal dignity. The welfare services have a moral, political and cultural content, and so are part of the *social infrastructure* of society. Much of the intangible benefits created there have effects that transcend time and space: some of the children in our publicly funded childcare will perhaps in thirty or forty years be candidates for the post of UN Secretary-General; others will perhaps be international criminals. If the fifty-year-olds of today begin to worry about what will happen to elderly care services in ten, fifteen years, then this affects motivation to work, consumption patterns, and gender and family relationships.

## Summary and conclusions

We may say that the 1990s debate about the public sector sidelined work environment issues. At the same time, poor working conditions not only remained part of the everyday life of staff in the welfare services, but increased and became more deeply rooted. Some work environment problems can be ascribed to the old bureaucratic organisation of the public monopoly, i.e. some of the problems NPM promised to solve. Another factor is of course the number of staff in relation to the number of children and pupils, as well as in relation to the number of elderly requiring assistance (the largest group requiring care and nursing, both within the health services and of course the elderly care services themselves). Frequent re-organisations and some privatisation are other likely sources of the work environment backlash, but exactly what the chains of cause and effect are for the various categories of welfare services staff is unknown.

If the productivity increases that were promised in the reorganisations of the 1990s had actually occurred to any great extent, they would not have been accompanied by higher workloads or deteriorations in the work environment. By definition, an increase in productivity means that the organisation works more intelligently and produces more care of the same quality for each crown spent or for each quantity of manpower invested. If large enough, there is *theoretically* no need for more staff in order to care for an increasing number of people with increasingly complex needs (Gustafsson 2003). In practice, however, it is very difficult to implement such unproblematic and desirable productivity increases in the health and caring services. It is actually difficult even to measure whether the intended increases in productivity and, above all, efficiency are achieved or not (Granqvist 2000). This may be the reason why even researchers who originally advocated competition as a means to increase productivity, later admitted that in practice we have experienced increased workloads for welfare workers during the 1990s (Arvidsson and Jönsson 1997, p. 15).

There is something special about welfare services work. The conditions and reactions of staff do not only concern their own working conditions, but also the care, help, and education that they provide together with other citizens. Welfare services could therefore be regarded as part of our social

infrastructure. It is probably neither possible nor desirable to control such social processes in detail and top-down (Gustafsson 2000, Chapter 7). A researcher who has studied the practical consequences of NPM in Nordic elderly care services says that it might be that these ideas actually survive because care staff do *not* fully accept the management models promoted by administrators and reformers.

[...] by sticking to the rationality of care and their own identity as responsible professionals, the home help staff save the reforms from being revealed as bureaucratic, inefficient and destructive. From their point of view, this rescue work is about taking moral responsibility for the individual in need of help. Administrators and reformers, who exist in a world of ideas, do not see these everyday acts of heroism. As long as they observe that measurements and orders are being produced, that staff submit their work schedules for statistical processing etc., there is always a risk that they will relax and think that they are on the right course (Vabö 2003, p. 87).

There is also something special about public employment, which grew and consolidated in the latter half of the 20th century without much interest from social science researchers. Public employers do not own their organisations: they work on the assignment of vote-holding citizens who collectively own the assets deployed to conduct the operations. Public employers only have democratically delegated powers of a conditional nature. Another important difference between private and public employers is that the latter are often more or less explicitly geared to shaping society as well as individuals. This applies particularly to the welfare services. In the historical process of organising top-down and by external influences, however, other motives than welfare policy have dominated. The Church, the military, older conceptions of the public interest, the management of industrial society and its economic theory on competition and market mechanisms – all have wielded decisive influence.

The societal role of the welfare services has rarely, or never, been linked to the welfare of the welfare workers and their conditions. Traditional top-down organising with external influences should be replaced by *a discourse on organisational forms specific to welfare services and their societal role*. In

studying the welfare services, work environment researchers often apply perspectives and measurements emanating from research on industrial- and office work. This is probably why we understand so little about the conditions of welfare services work, and why they appear increasingly like the weather: everyone talks about it, but nobody does anything to improve it.

## Notes

1. The figure is based on data from the Work Environment Surveys carried out by Statistics Sweden, which are done every second year and which were used by Bäckman (2001) until 1999. The material on each occasion consists of about 14,000 people and covers a representative selection of those employed in Sweden. Those who have been absent from work for more than three months are not included. The dropout has increased from just under 20 per cent in 1991 to just over 30 per cent in the most recent measurements. Division of the material into the categories health care, schools, elderly care, childcare and other is done using the same categories as in Bäckman (2001), summarised in Palme et al 2003.

2. Figure 11.1 shows those who have provided answers that indicate high demands and low control, according to the two indexes designed in the following way:

*High demand* means that the respondents have answered:

- "Every day or every second day" to the item: "Do you sometimes have so much to do that you have to cut short your lunch hour, work extra or take work home with you?"
- "Half of the time or more" to the item: "Is it so stressful sometimes that you do not have time to talk about, or even think about, other things than work?"
- "Half of the time or more" to the item: "Does the work demand all of your attention and concentration?"

The index for *low control* means that the respondents have answered:

- "Not usually" or "never" to the item: "Are you ever involved in deciding how your work is arranged (i.e. what is to be done, how it is to be done and who is to work with you)?"
- "Not usually" or "never" to the item: "Can you partly decide when various tasks are to be carried out (e.g. by choosing to work a little faster on some days and taking it a little easier on other days)?"
- "About a quarter of the time or less" to the item: "Are you able to decide on the pace of your own work?"

Those counted as high demands/low control are those who have answered at least two of the negative" alternatives of the dichotomised items in each index.

3. According to terms used here, elderly care services largely denotes those working in the home help services. We know however through other studies that elderly care services staff in special housing, for example nursing homes, in several respects have a heavier and more problematic work situation than those whose work is mainly in the home help services. See Bäckman (2001), appendix 3, and Gustafsson and Szebehely (2001).
4. "External influences" here means ideas and organisational ideals that cannot be traced back to current (post-war) medical, social psychology or psychiatric research on the treatment of disease or the alleviation of human suffering, or research on the specific work environment, or the organisational conditions of welfare services in a broad sense.
5. This section is based on Gustafsson (1987) and Gustafsson (1989), although some references other than those found there have been added to the current text. For an international overview: McGrew (1985).

## References

- Arvidsson G & Jönsson B (ed.) (1991) *Valfrihet och konkurrens i sjukvården. (Freedom of choice and competition in health care.)* SNS förlag, Stockholm.
- Arvidsson G & Jönsson B (ed.) (1997) *Politik och marknad i framtidens sjukvård. (Politics and market in the future of health care.)* SNS förlag, Stockholm.
- Bejerot E & Hasselbladh H (2003) Nya kontroll- och maktrelationer inom sjukvården (New control and power relationships in health care) *Arbetsmarknad & Arbetsliv*, 9, pp. 107–127.
- Blomqvist P & Rothstein B (2000) *Välfärdsstatens nya ansikte. Demokrati och marknadsreformer inom den offentliga sektorn. (The new face of the welfare state. Democracy and market reforms in the public sector.)* Agora, Stockholm.
- Bogen H (2001) Hvilke konsekvenser har konkurrenseutsetting for ansatte? (Which are the consequences of competition for employees?) *Tidsskrift for Velferdsforskning*, vol 4, no. 4.
- Bäckman O (2001) Med välfärdsstaten som arbetsgivare. Arbetsmiljön och dess konsekvenser inom välfärdstjänsteområdet på 1990-talet (The welfare state as employer. The work environment and its consequences in the welfare services in the 1990s) in Szebehely M (ed.) *Välfärdstjänster i omvandling. (Welfare services in transition)* SOU 2001:52, Fritzes, Stockholm.
- Clarke J & Newman J (2001) *The Managerial State. Power, Politics and Ideology in the Remaking of Social Welfare.* 3<sup>rd</sup> Edition, Sage, London.
- Cooter R (1997) War and modern medicine in Bynum F & Porter R (ed.) *Companion encyclopedia of the history of medicine.* (vol 1–2), Routledge, London.
- Esping-Andersen G (2000) The sustainability of welfare states into the twenty-first century *International Journal of Health Services*, 30 (1): pp. 112.

- Granqvist R (2000) Ekonomiskt tänkande om sjukvården under 1990-talet (Economic thinking about health care in the 1990s) in Szebehely M (ed.) *Välfärd, vård och omsorg. Antologi från Kommittén välfärdsbokslut. (Welfare and care. Anthology from the Welfare Commission.)* sou 2000:38, Fritzes, Stockholm.
- Guillén M F (2001) Is Globalization Civilizing, Destructive, or Feeble? A Critique of Five Key Debates in the Social Science Literature in *Annual Review of Sociology*, vol 27, 2001, pp. 235–260, Annual Reviews, Palo Alto California.
- Gustafsson R Å (1987) *Traditionernas ok. Den svenska hälso- och sjukvårdens organisering i ett historie-sociologiskt perspektiv. (The yoke of tradition. The organisation of Swedish health care in a historical-sociological perspective.)* Esselte studium, Stockholm.
- Gustafsson R Å (1989) Origins of authority: The organization of medical care in Sweden in *International Journal of Health Services*, vol 19, no 1, 1989, pp. 121–133.
- Gustafsson R Å (1994) Arbetsorganisatoriska risker med de nya ekonomistyrningssystemen (Work organisation risks of the new financial management systems) in Gustafsson R Å (ed.) *Köp och sälj, var god och svälj? Vårdens nya ekonomistyrningssystem i ett arbetsmiljöperspektiv. (Buy and sell, please be well? The new financial management systems of care in a work environment perspective.)* Work Environment Fund, Stockholm.
- Gustafsson R Å (1999) Den nya ekonomistyrningen och arbetsmiljön (The new financial management and the work environment) sou 1999:66, appendix 1. *De nya styrsystemen inom hälso- och sjukvården vad hände med ekonomi, arbetsmiljö och demokrati? (The new management systems in health care – what happened to the economy, the work environment, and democracy?)* Fritzes, Stockholm.
- Gustafsson R Å (2000) *Välfärdstjänstearbetet. Dragkampen mellan privat och offentligt i ett historie-sociologiskt perspektiv. (Welfare services work. The struggle between private and public in a historical-sociological perspective.)* Daidalos, Göteborg.
- Gustafsson R Å (2003) Vinst ger sämre vård (Profit gives poorer care) *Svenska Dagbladet* newspaper, Brännpunkt page, Friday 5 September 2003.
- Gustafsson R Å & Szebehely M (2001) *Arbetsvillkor och välfärdsopinion inom äldreomsorgen – en enkätbaserad fallstudie bland personal och politiker* (Working conditions and welfare opinion in elderly care – a questionnaire-based case study among staff and politicians) Arbetslivsrapport 2001:9, National Institute for Working Life, Stockholm.
- Gustafsson R Å & Szebehely M (2002) Skilda perspektiv på politikerrollen inom äldreomsorgen – om beställar-utförar modeller i praktiken (Differing perspectives of the role of the politician in elderly care. The purchaser-provider model in practice) *Tidskrift för Velferdsforskning*, 5, pp. 68–84.
- Held D & McGrew A (2004) *Globalization/Anti-Globalization*. Polity, Cambridge.
- Hogget P (1996) New modes of control in the public sector *Public Administration* 74, pp. 932.
- Jacobsson B (ed.) (1994) *Organisationsexperiment i kommuner och landsting. (Experiments in organisation in municipalities and county councils)* Nerenius & Santérus förlag, Stockholm.

- Korpi W (2003) Welfare-State Regress in Western Europe: Politics, Institutions, Globalization, and Europeanization in *Annual Review of Sociology*, vol 29, 2003, pp. 589–609, Annual Reviews, Palo Alto California.
- Lindgren G (1999) *Klass, kön och kirurgi. Relationer bland vårdpersonal i organisationsförändringarnas spår. (Class, gender and surgery. Relationships between care staff in the wake of organisational change.)* Liber, Malmö.
- Magnusson L (2003) Mercantilism in Samuels W J, Biddle J E & Davis J B (ed.) *A Companion to the History of Economic Thought*. Blackwell, Oxford.
- McGrew R E (1985) *Encyclopedia of medical history*. Macmillan Press, London.
- Montin S (2002) *Moderna kommuner (Modern municipalities)* Liber, Malmö.
- Nutton V (1997) Humoralism in Bynum F & Porter R (ed.) *Companion encyclopedia of the history of medicine*. (vol 1–2), Routledge, London.
- von Otter C (1996) Om den repressiva omtanken och andra tankar om patienternas valfrihet (About repressivon and other thoughts on patient freedom of choice) in Anell A & Rosén P (ed.) *Valfrihet och jämlikhet i vården (Freedom and equality in care)*. sns, Stockholm.
- von Otter C (2003) *Låsningar och lösningar i svenskt arbetsliv. Slutsatser från en trendanalys. (Deadlock and solutions in Swedish working life. Conclusions from an analysis of trends.)* National Institute for Working Life, Stockholm
- Palme, J et al. (2003) A welfare balance sheet for the 1990s. Final Report of the Swedish Welfare Commission., *Scandinavian Journal of Public Health*, supplement 60, august 2003.
- Pollit C (2001) Convergence: The useful myth? *Public administration*, 79 (4): pp. 933–947.
- Premfors R, Ehn P, Haldén E & Sundström G (2003) *Demokrati och byråkrati. (Democracy and bureaucracy.)* Studentlitteratur, Lund.
- Sjölund M, Wise L R, Perry J L & Sjöström A (1997) *Lön för mödan. Lönesättning i offentlig sektor. (Pay for caring. Pay-setting in the public sector.)* National Agency for Government Employers, Swedish Assn. of County Councils, Swedish Assn. of Local Authorities, Stockholm.
- sou 2000:1 *En uthållig demokrati. (Sustainable democracy)* Report of the Democracy Commission. Fritzes, Stockholm.
- sou 2000:3 *Välfärd vid vägsäl. Utvecklingen under 1990-talet. (Welfare at the crossroads. Developments in the 1990s.)* Report by the Welfare Commission. Fritzes, Stockholm.
- sou 2001:79 *Välfärdsboksutet för 1990-talet. (Welfare: the balance sheet for the 1990s.)* Final Report by the Welfare Commission. Fritzes, Stockholm.
- Sundström G (2003) *Stat på villovägar. Resultatstyrningens framväxt i ett historiskt-institutionellt perspektiv. (Lost state. The growth of target-based management in a historical-institutional perspective.)* Stockholm Studies in Politics 96, Stockholm.
- Svallfors S (1996) *Välfärdsstatens politiska ekonomi. Välfärdsopinioner i 90-talets Sverige. (The political economy of the welfare state. Welfare opinions in Sweden of the 1990s.)* Borea, Umeå.



- Szücs S, Hemström Ö & Marklund S (2003) *Organisatoriska faktorerers betydelse för långa sjukskrivningar i kommuner. (The importance of organisational factors for long sickness absences in municipalities.)* Arbete och Hälsa (Work and Health) 2003:6, National Institute for Working Life, Stockholm
- Trydegård G-B (2001) Valfärdstjänster till salu – privatisering och alternativa driftformer under 1990-talet (Welfare services for sale – privatisation and alternative providers in the 1990s) in Szebehely M (ed.) *Valfärdstjänster i omvandling. (Welfare services in transition.)* SOU 2001:52, Fritzes, Stockholm.
- Tåhlin M (1989) Psykosociala arbetsvillkor och nedsatt hälsa i olika yrkesgrupper i Sverige – en analys på grundval av levnadsnivåundersökningen 1981 (Psychosocial work conditions and poor health in various professional categories in Sweden – an analysis based on the living standard study of 1981) *Arbeten utsatta för särskilda hälsorisker. (Work subject to special health risks.) Appendix F: Myocardial infarction, psychosocial stress, suicide. Report in the Work Environment Commissions study.* Allmänna förlaget, Stockholm.
- Vabö M (2003) Mellan traditioner och trender. New Public Management som idé och praktik (Between traditions and trends. New Public Management in theory and practice) in Szebehely M (ed.) *Hemhjälp i Norden. (Home help in the Nordic countries.)* Studentlitteratur, Lund.



## CHAPTER 12

# The first work environment – children at school

*Ewa Menckel*

Since 1<sup>st</sup> July 1990, all schoolchildren in Sweden, from the first class up, are covered by the Work Environment Act. This act has now been in force for fifteen years. What has it meant to the one and a half million children who are at school every day? Have their working conditions improved and, if so, in what ways? Has the physical and psychosocial work environment changed over the years? Is bullying between schoolchildren a problem? Do schoolchildren suffer from injuries at school, and can a pattern of injuries be identified? Have threats and violence in school increased and become more serious? Has the everyday language of young people at school changed; for example, has it become more aggressive and more sexually charged? These are some of the questions that have been raised in the media in the last few years. But what are the facts, and is there any research in this area?

This chapter takes up some of these questions. It focuses on children at school and their work environment. The work environment of pre-school children is not examined, even though they have also been covered by the Work Environment Act since 1998. The changes in the school system, and how they have affected school staff, in particular teachers, are described in more detail in Chapter 13.

As schoolchildren are now covered by the Work Environment Act, the regulations relating to the work environment also apply to them. They are considered to be “employees” in just the same way as adults are in working life. School represents children’s first encounter with a work environment, and it is therefore important that it is a good one, in which they can develop intellectually and socially, and where they can feel secure and be treated with respect. Furthermore, the basis for many of the values that we retain throughout our lives is established while we are at school. The local authorities, who

are responsible for schools in their municipality, must ensure that a good work environment is created at all schools. It is of particular importance to children up to the age of 16, as for them attendance at school is compulsory and their choice of school is limited, which means that they are not able to choose their work environment either.

When we examine the work environment of schoolchildren, it is important to bear in mind the changes that have taken place in the education system over the past years. In the 1990s the education system underwent major changes in terms of overall responsibility, organisation, the national curriculum, syllabuses, the grading system and working methods (Swedish Work Environment Authority 2002). The responsibility for schools was decentralised to the level of the municipality and the individual schools, and the number of independent schools increased. The number of pupils has also increased every year since the beginning of the 1990s. In the nine-year compulsory schools alone the number of pupils has risen by 20 per cent, while the number of teachers has failed to increase at the same rate. The resources allocated to school health care and pupil welfare have decreased throughout the period. Schools have thus been involved in a major process of change during the 1990s, which may have affected pupils and staff in various ways.

### **The work environment and health of schoolchildren**

There are very few research-based studies of the physical and psychosocial work environment in schools that focus on the pupils' perspective. This section briefly presents some studies and statistics relating to schoolchildren's health.

#### *A national survey directed to head teachers in 2002*

The first study is a national survey of the work environment in schools that was carried out in the spring of 2002 (The Swedish Work Environment Authority 2002). A total of 4,159 school management areas were included, which represents almost all the school management areas in the Statistics Sweden (SCB) register. The questionnaire was distributed to the head teachers in each of the respective school management areas, and they were to report on their school's overall work environment. The questions asked

were largely the same as those used in previous surveys in 1992, 1993, and 1997. The survey is described in more detail in Chapter 13.

The physical problems in the work environment in schools were similar to those noted in the earlier surveys, and of the same magnitude. Ventilation was still the most common problem, followed by the outdoor environment, noise levels and the lack of purpose-built premises. The psychosocial problems had increased during the 1990s. In the spring of 2002, 75 per cent of the school management areas reported that teachers and head teachers suffered from high pressure of work and symptoms of stress.

The survey does not include any specific data on the pupils' work environment, but regarding "pupil-related problems in the work environment" a third of the school management areas mentioned pupil welfare and bullying between pupils as problem areas. Other pupil-related problems mentioned were vandalism, harassment and threats of violence. However, these issues, together with drug abuse and criminality, were at the bottom of the list of work environment problems in schools. This applies to earlier studies as well. The survey report comments that:

This indicates that the pupils' work situation is totally forgotten when the psychosocial work environment in schools is discussed (The Swedish Work Environment Authority 2002, p 13).

### *How is the work environment for pupils?*

In the research project "Pupils' work environment and injuries" that was carried out from 1996 to 1998, head teachers, as those responsible for the work environment at school, were again requested to evaluate the physical and psychosocial work environment in schools (Menckel et al 1997, Laflamme & Menckel 1998). However, in contrast to the above-mentioned study, they were asked to assess how the work environment had been for their pupils in a given year (the academic year 1995–96). A questionnaire was sent to all the local compulsory schools and upper secondary schools in a selection of municipalities that were representative for the whole of Sweden, and was answered by 708 head teachers, i.e. 68 per cent.

The pupils' physical work environment was considered satisfactory by two-thirds of the head teachers, with regard to classrooms, noise level,

outdoor environment, maintenance and ergonomic aspects. The factors that were considered unsatisfactory were the ventilation and the indoor climate. Almost half of the head teachers answered that these aspects did not function satisfactorily for the pupils. With regard to the psychosocial work environment for the pupils, the following aspects were considered to be unsatisfactory: teacher ratios/staff resources, the limited pastoral care teachers/staff could give to pupils, the limited pastoral care available to pupils and the size of classes. The factors in the school work environment that the head teachers felt did not function at all were information and training in pupils' welfare and safety issues, and pupil participation and influence in matters relating to their work environment.

The factors that the head teachers considered unsatisfactory were the same in compulsory schools and upper secondary schools. Regarding the physical work environment, most head teachers considered that the ventilation and the indoor climate in schools were unsatisfactory. The noise level was considered unsatisfactory by more head teachers of compulsory schools than of upper secondary schools. Furthermore, head teachers of inner city schools and schools in the suburbs of cities considered the pupils' physical and psychosocial work environment to be unsatisfactory more often than the head teachers of schools in other types of municipality. Further analysis showed that in these schools there was also a higher risk of injury to pupils during breaks and in the schoolyard (Laflamme et al 1998b).

### *Cooperation between staff and pupils in schools*

Häggqvist (2004) has investigated the basis for cooperation between the staff and pupils in schools in a number of studies. The results of these studies show that problems related to the work environment in schools have increased during the 1990s. This is particularly true of the psychosocial environment, where pupils have experienced increased psychosocial stress and strains. Sixty-seven per cent of the pupils were worried about the plans for saving and cutbacks in schools, and 72 per cent that they would not cope with their school work. One in three pupils was worried about pupils being bullied by adults. Problems related to the psychosocial environment also contributed to truancy. The pupils also felt that their participation in decision-

making about the school's work environment and school development issues had decreased during the period.

*Working conditions at an upper secondary school with an IT profile*

Another study of students' physical and psychosocial working conditions will be presented briefly here. The study focuses on pupils at an upper secondary school with an IT profile, from 1999 to 2000 (Isaksson et al 2003). The symptoms of a group of students ( $n = 295$ ) in their necks, shoulders, arms, hands and backs were examined. The students used computers many hours per month and often had longer continuous working periods than a reference group of professional adult computer users ( $n = 1,283$ ). In general the students experienced more discomfort in their computer work than the reference group, in particular with regard to their office chairs and working position. All of the students had the same type of chair and table, which were not adjustable for height. In comparison with the reference group, a higher percentage of the students had inferior working techniques, for example they did not support their arms satisfactorily or their hands or lower arms were pressed against the edge of the table.

A higher percentage of the students, in comparison with the reference group, also complained of stress-related problems. Problems with necks, on at least three days in the past month, were more or less as common amongst the students as in the reference group. A quarter of the boys and almost half of the girls mentioned this. Headaches were more common amongst the students than among the adult workers. Sixty-six per cent of the female and 32 per cent of the male students reported that they had suffered from headaches at least three days in the past month. This result is notably high, especially that of the girls.

*Surveys of schoolchildren's health*

The latest report on schoolchildren's health and lifestyles also shows that somatic and psychological problems have increased for boys and girls (The National Institute of Public Health 2003). The survey is carried out every fourth year and is based on data collected from children of 11, 13 and 15 years of age. Self-estimates of health, somatic and psychological problems

and the general sense of well-being all show a deterioration with age. The difference between boys and girls also increases as they get older. Girls are less satisfied with their lives than boys of all ages. This difference has become more noticeable during the period 1985-2001, when the 15-year-old and the 13-year-old girls in particular have become less satisfied with their lives. With respect to the way they regard their bodies, 15 per cent of the 13- and 15-year-old girls say that they diet or take other measures to try to lose weight. The survey does not show whether the girls that diet are overweight or not. Overweight is said to be a health problem for many young people (the Children's Ombudsman 2002).

A survey in which questionnaires were distributed to school health care and pupil welfare staff indicated that the health of children and youths had deteriorated over a period of ten years (the Children's Ombudsman 2002). Approximately 40 per cent of the respondents thought that schoolchildren's physical health had deteriorated. About 90 per cent reported that their psychological health had also deteriorated. Stress and concentration problems were common amongst both boys and girls and were thought to have increased during the period studied. Other studies also show that the level of stress amongst pupils has increased (the National Agency for Education 2000). Pupils felt that the demands on them were too high and that the pace of schoolwork did not suit them. They also felt that it was often noisy in the classroom, which prevented them from concentrating on their schoolwork.

### *Summary and conclusion*

In conclusion it can be said that the work environment in schools is still unsatisfactory and there is a need for more research into the pupils' work environment. The physical problems in the work environment that were evident at the beginning of the 1990s generally still exist in 2002. The psychosocial problems in the work environment seem to have increased during the same period. The stress-related symptoms shown by pupils have been emphasised more than anything else. Large schools and schools in or near large cities seem to have the most serious problems. There are no research-based studies that analyse the factors behind schools with good physical or psychosocial work environments for pupils, or how the pupils'



work environment in state-run schools compares with that in independent schools.

Based on the above, a number of suggestions can be made regarding schoolchildren's work environment. Firstly, the responsibility that schools and local authorities have for creating a satisfactory work environment must be emphasised, and resources for improving the situation must be made available. Furthermore, both local authorities and head teachers must learn more about the work environment, and the legislation and regulations relating to this area. A systematic reviewing of the work environment must be integrated into the regular work of schools. A better dialogue between adults and pupils in schools is necessary, and pupils should participate more in decision-making about the work environment and school development issues. There should be greater cooperation between the various groups of staff and pupils within schools, and they must have a broader base of qualified staff that can promote preventive and health-promoting policies in schools.

### **School – an arena for bullying**

Bullying is not a new phenomenon. It has certainly always existed, but it has not always been something that people have dared to discuss. Statistics show that bullying at school is a widespread problem. It is difficult to attain exact figures on bullying, as nationwide continuous assessment of the problem does not take place.

Bullying can be defined in different ways, but an important starting point is that those who feel that they are being bullied should be taken seriously. Bullying is not something that happens once or twice, but is systematic insulting or offensive behaviour towards a person. Offensive behaviour can take many forms: psychological, physical and verbal. The most quoted definition of bullying is taken from Olweus (1992, p 28). He says:

A pupil is bullied when he or she is repeatedly or under a certain period subjected to negative behaviour from one or more other pupils.

Olweus now talks about bullying as "schoolmate abuse". He also points out that bullying involves a certain imbalance in strength between the person being bullied and the one or those that are bullying.

*What characterises bullies and their victims?*

Research gives a rather clear picture of the typical victim and the typical bully (Olweus 2002). The picture that emerges generally appears to apply to both boys and girls. The victims are often considered more anxious and insecure than average children. They feel lonely and abandoned at school. They often have a negative attitude towards violence and the use of violent means. If they are boys, they are often physically weaker than their fellow pupils. Bullies, on the other hand, are often notably aggressive towards other pupils, and are often even aggressive towards adults. They are characterised by their impulsive behaviour and their need to dominate others in a negative way. A common belief is that individuals who are rough and aggressive are really anxious and insecure “underneath”. Olweus’ research does not support this idea, but rather indicates the contrary (Olweus 2002). Bullies tend to have little anxiety or insecurity, or are fairly average in these respects. They do not have problems of low self-esteem.

*The existence of bullying*

The National Agency for Education’s survey in 2000 showed that four per cent of schoolchildren felt that they were bullied by other pupils, which was a doubling since the survey made three years earlier (the National Agency for Education 2000). More boys than girls are bullied. It is more usual that pupils feel bullied by their teachers than by other pupils. Six per cent said that they were bullied by teachers. Bullying by pupils is most common in the upper secondary school. Other studies have resulted in much higher figures for bullying by other pupils, as much as 20 per cent (Olweus 2002). In addition to the victim and the bully, there is a large group of pupils who either encourage the bully or simply watch the bullying taking place.

An overview of the research on bullying in Nordic schools shows that the occurrence of bullying has been more or less constant over the years (Frånberg 2003), in spite of all the different measures that have been taken and efforts that have been made to solve the problem in these countries. In Norway, however, the national effort to reduce bullying has proved successful (Oweus 2002). In this programme, special instructors have been trained and tutored to train and supervise other “key individuals” in a large number

of schools. This programme has been scientifically followed up and evaluated continuously.

### *Shortcomings of earlier research*

At the first national conference on bullying and offensive behaviour in Sweden in August 2002 (Menckel 2002) it was agreed that earlier research on this subject had been characterised by (Eriksson et al 2002):

- a strong focus on individuals, with the disciplines of psychology and pedagogy taking a leading role
- a focus on occurrence and distribution, based on the characteristics of the actors involved
- quantitative hypothesis-testing studies, and a lack of intention analyses
- research areas that are too homogenous for a phenomenon that is so complex
- a limited use of sociological and socio-psychological theories
- too little understanding of the two opposing systems in schools, i.e. the administrative and the social systems.

### *The social conditions behind bullying*

Eriksson (2001) has reached the conclusion that bullying occurs in situations where the actors are in a given place for a long or indefinite period of time, and where they are thrown together with others not of their own choice. It is also a situation that is impossible to leave except at great personal cost, and those involved are subjected to compulsory attendance. This type of social situation does not occur spontaneously, but is organised by some sort of authority. Participants in this type of group, which includes school classes, work teams and local branches of associations, are subject to an administrative system that intervenes in their activities. In the case of schools, there is the Education Act and local regulations that decide what behaviour is permitted, recommended or forbidden. This is the basis of the administrative system of schools.

A school is also a set of pupils who are organised (or organise themselves) into different groups. This can be called the informal or social system. These two systems, the administrative and the social, are in opposition. The former “pushes the victim of bullying back” into the social

system, as everyone in the system is equal and no difference should be made between pupils. The social system, on the other hand, “forces the victim out” of the group. However, the social system cannot be forced to embrace an individual without it ceasing to function as a social system, or it might continue to function undercover. Further research on these aspects of the problem can help to explain and understand bullying at school. It should also be included in discussions about preventive and corrective measures against bullying at school.

A thesis on schools’ policy documents against bullying shows the limitations of the obligation on schools to formulate documents that outline their agenda for the prevention of bullying at school (Forsman 2003). This explains to some extent why the preventive and corrective measures schools have taken against bullying have “as yet failed to give better results” (Forsman 2003, p 284).

### *Summary and conclusions*

In conclusion, it is clear that there are not many theoretical studies of this question and, moreover, too few researchers that work with sufficiently comprehensive studies of bullying at school. A network of those who are working with this problem should be created, and the artificial divisions that exist in this research area, especially between bullying at school and bullying between adults, should be removed. A contact network of those who are involved with the problem at the practical level should also be developed. Furthermore, there is a need to develop a scientific discussion and a conceptual platform. New databases must be established, as well as better contact with research councils and educational institutions, such as teacher training colleges.

Several steps have been taken in the right direction in recent years. The National Institute for Working Life has developed a theme entitled “Working Life in Schools”, which includes bullying on its agenda. The Agency for School Development has initiated a joint Nordic project on the subject of bullying. The project “Pupil Health” includes a major study of bullying (Nilsson & Norgren 2001). From 2001, questions of bullying and insulting behaviour are included in the development programme that focuses on learning, values and health. This means that the school’s work with health

issues is seen in a wider perspective that includes all teaching, the work environment and pupil participation.

An important consideration for the future is that bullying at school must be seen in a wider perspective. School is part of the community and what takes place at school can also have repercussions outside school. The following quotation from a young girl also illustrates that bullying at school must be seen in a wider perspective, or in the whole environment in which schoolchildren live:

At school the adults try to stop the bullying. But in the reality tv series “The Farm” people are encouraged to bully. How do you think children interpret that? (Linda, 12 years of age, in the Swedish newspaper *Aftonbladet*, 8<sup>th</sup> Nov 2002).

### **Pupil injuries and patterns of injuries**

The importance of seeing schoolchildren’s work environment in a wider perspective was also an important point in the above-mentioned project “Pupils’ Work Environment and Pupil Injuries”. A model was developed as an instrument for registering and analysing pupil injuries at school (Laflamme & Menckel 1998). In this model the actual injury is separated from the sequence of events prior to the accident, and from the factors and situation that initiated or triggered the process that led up to the accident. This perspective is based on international and Swedish research on occupational injuries.

According to this model, pupils can, both individually and collectively, bear responsibility for causing accidents or injuries. It also shows that schools must be viewed from the point of view of their educational atmosphere, and from the activities that pupils participate in and the places in which these activities are carried out. Schools and pupils are seen as participants in a larger sphere, i.e. the surrounding community or municipality. The local authorities also influence how the work environment and safety measures of the school are prioritised, decide the financial budget for education and are responsible for educational planning in the municipality etc.

This model and an inventory of the scientific research from the past forty years constitute the basis of the registration form for pupil injuries at

school that was formulated in the project (Laflamme et al. 1998a). This form was then used by the 79 schools that registered pupil injuries and accidents during the academic year 1996–97. The following criteria were to be met for each registration: 1) a serious injury that demands hospitalisation or medical care, 2) an injury that involves a number of pupils and that can be a result of violence between pupils and 3) an injury that has occurred repeatedly and which may indicate a deficiency in the work environment. A total of 1,094 injuries were registered.

During the spring term of 1997 there was a total of 19 injuries per 1,000 schoolchildren. The number of schoolchildren included in the study was 28,935. Looking at the total number of injuries, boys and girls had the same amount of injuries. Most of the injuries occurred in the first six years of compulsory school and in upper secondary school, during lessons and at breaks. One of five injuries occurred in the school yard.

Analyses were made in order to identify the most typical situations, occurrence and consequences of pupil injuries, in other words the pattern of injuries (see Laflamme & Menckel 1998). Girls suffered mainly from injuries due to dangerous surfaces or fixed equipment, and often sprained or twisted their joints or fractured their legs, feet or fingers during physical education lessons. Boys suffered mainly from injuries caused by collisions, blows and bumps that occurred during breaks or sports activities, and injuries to their heads and legs.

### *The connection between violence and bullying*

A special analysis was made of injuries following interaction between pupils that could have been a result of intentional or unintentional behaviour. Thirty-four per cent of the injuries were classified into this group. Nine per cent of the total number of injuries were judged to be the result of intentional behaviour, in other words violence. For girls the percentage was six per cent and for boys ten per cent. An analysis of the comments regarding these injuries showed that 20 per cent were classified as “starting as play/sports activities, but developed into tackling and got out of control” (Menckel 2001). About 40 per cent were classified as “one-sided provocation”. A few injuries, four to be exact, were classified as “intervention”, i.e. a pupil who tried to mediate in a fight had been injured.

There is plenty of international research on violence at school, but there are very few Swedish studies (Eliasson & Menckel 2003). The national survey of schoolchildren and crime made by the Swedish Council for Crime Prevention showed that a quarter of the pupils in the ninth class had been subjected to physical violence during the last twelve-month period (Swedish Council for Crime Prevention 2000). A great deal of this violence took place in schools. Boys experienced more violence than girls did. There were often great differences between different schools. In general, the problem seems to be somewhat greater in cities (Lindström 2001). The number of cases of violence at school reported to the police increased significantly during the 1990s (Estrada 1999).

Research also shows that there are a number of trigger factors that can contribute significantly to pupil injuries, for example things that happen at school, such as harassment from schoolmates or poor school results (Engström 2003, Laflamme 2003a, b). As they have a delayed effect, these trigger factors from school can result in injuries both in the school environment and outside school. Other contributing factors can be tiring physical activity, intellectual strain and, as mentioned, also school examinations (Engström 2003). Children with lower social status are at greater risk of injury than other children.

In order to document how trigger factors influence the risk of injury, a major research study has been carried out at Astrid Lindgren's Children's Hospital in Stockholm (Laflamme 2003a, b). Over a period of two years, interviews were conducted with 600 children aged 10 to 15, who had been hospitalised at least one night, or who had been given a follow-up appointment because of their injury. The children's parents filled in a questionnaire about the child's social background, their home environment and school environment. The child answered questions about what had happened at the time of the accident, how the injury had occurred, what had happened prior to the accident and if they had suffered from any particular occurrence in the period preceding the accident.

The results showed that injuries occurred more often outside school than during school hours. Injuries at school occurred most often during lessons, especially during physical education lessons, but also at breaks. Boys suffered from more injuries than girls did: two of three injured



**Figure 12.1.** Examples of factors in the school environment that can trigger behaviour leading to physical injuries.

children were boys. The number of injuries increased with age up to 13 years of age, and then remained fairly constant. Most injuries occurred through a fall on level ground or from a height. Collisions, blows and bumps were also usual.

About a third of the injuries were registered as injuries from interaction. These usually occurred when playing games or sports with schoolmates. Some injuries occurred during what the children themselves described as “play fighting”. Apart from this, 24 injuries were the result of violent behaviour, in which there was a clear intention to harm the victim. Four of these victims were girls. In most cases the perpetrators involved were children that the victims knew. Most of them were older than the victims and went to the same school.

The results showed, moreover, that harassment of schoolmates occurred frequently in many of the injured 10- to 15-year-old children’s environments. Fourteen per cent of the boys and 17 per cent of the girls had “often” been harassed, i.e. twice a week or more often. This was also a factor that influenced their safety, both directly and indirectly. The harassment worked directly as a causal mechanism behind intentional physical injuries and indirectly as a trigger factor to accidents, most of which were unintentional. In the latter case, the effect of the trigger factor was short-term, i.e. injury occurred a maximum of 15 minutes after the child had been harassed. The risk of



physical injury was more than four and a half times higher during that time period than in periods without harassment. The sketches in figure 12.1 illustrate how factors in the school environment can lead to physical injury.

### *Summary and conclusions*

In conclusion, it can be ascertained that more research on pupil injuries and injury patterns is needed in order to understand the individual mechanisms and the structural factors behind injuries to children. This is necessary to create a safe and positive school environment for both pupils and adults. As there is no continuous registration of pupil injuries at a national level, it is important that every school, as a first step, documents what takes place at their school.

### **Everyday language and sexual behaviour at school**

During recent years the media have drawn attention to the harsher climate in schools. The language used is said to be full of swear words and scornful sexual epithets, and behaviour between pupils seems to be more aggressive today than it was ten years ago. Special attention has been drawn to the vulnerable position of girls. Words such as “whore” and “cunt” are said to be common amongst pupils.

In order to find out more about this, two research projects have been undertaken by the National Institute for Working Life. The first is a national survey of upper secondary school students. The second examines verbal aggression and violence between compulsory school pupils from a gender perspective. Both studies are summarised in brief below.

### *The occurrence of sexual harassment in upper secondary schools*

The first study was carried out in the spring of 2001 (Menckel & Witkowska 2002). It was concerned with the interaction between students at school and also examined other aspects of the school environment. A questionnaire was sent to the home address of 2,200 randomly chosen boys and girls, born in 1983. The questionnaire consisted of 90 questions, most of which had fixed alternatives, but also including some open questions. A total of 980 respondents answered the questionnaire, giving a response rate of 51 per cent. More girls than boys answered.

The questionnaire focused on two issues: school and pupils. The main questions asked about were: What are the problems at your school? What do they say and do at your school? What happens to the pupil or student? The answers were analysed according to the criteria: boys and girls, what type of study programme the students were taking, the size of the school, the type of municipality the school belonged to.

The difference between the answers of boys compared with those of girls was more evident regarding questions about verbal abuse with sexual overtones than regarding physical abuse or other types of offensive behaviour. Examples of how boys and girls respectively answered regarding verbal abuse they had been subjected to can be seen in table 12.1.

*Students' suggestions concerning how the school can prevent sexual harassment*

Students' answers to the open question "What do you think the school should do to prevent sexual harassment" were also analysed. The results show that everyday language and sexual behaviour are questions that many students at upper secondary school feel concerned about. More than 730 of the 980 students have written their feelings about sexual harassment at school, often in lengthy responses, and about what can or should be done to avoid or prevent this phenomenon. More girls than boys have answered. The responses often put forward several different suggestions of measures that can be taken.

The most usual suggestion was more information, discussion and dialogues. This has often been mentioned in combination with suggestions of other measures. Many students wrote that they wanted more "information" in order to learn more about what was meant by sexual harassment. They also suggested that teachers should be given more information: "Bring this matter up and admit that it takes place, instead of just referring to it fleetingly," "Inform people more about how offensive it can be," "Discussions! If no one mentions it and talks about it, it's impossible to change the bad things," and "I think it would be best if girls and boys discussed this together in class. They can give talks on this topic to each other. It's important that everyone understands how it feels to be sexually harassed."

Others say that the school must react, intervene, be clearer, take the problem seriously. Examples of responses are: "React every time you hear or

**Table 12.1.** Verbal insults with a sexual overtone that pupils have been subjected to. Per cent.  
(Source: Menckel & Witkowska 2002.)

	Girls (n = 540)	Boys (n = 440)
<i>Boasts to others focusing on sex</i>		
Boasted about their sexual experiences, talked about sexual fantasies and dreams or about their sex life a number of times to you, or when you have been there?	77	71
<i>Insulting comments about gender</i>		
Made derogatory jokes or comments about your sex, or about others of the same sex as you, e.g. "all boys are immature"?	76	66
<i>Comments about the attractiveness of others</i>		
Commented publicly about how attractive/unattractive you are?	71	62
<i>Sexual comments</i>		
Commented on your appearance, your body or your private life in a sexual way?	65	58
<i>Insulting comments about sexual orientation</i>		
Made derogatory jokes or comments about your sexual orientation, or about others with the same sexual orientation as you, e.g. "all girls are whores" or "I hate queers"	55	39
<i>Use of words such as whore etc.</i>		
Called you whore, slut, cunt or something similar?	37	36
<i>Verbal demands for sexual services</i>		
Made insinuations, suggestions or demands regarding sexual services or a sexual relationship?	26	24
<i>Use of words such as lesbian etc</i>		
Called you lesbian, queer, dyke or something similar?	17	53

see something, not just in extreme cases" and "Do something and look into even 'minor things' if the person subjected to offence wants you to. These 'minor things' can lead to worse things." Very few answered that "It's only a joke." An example of a response from one boy is "No one at my school takes this seriously, it's part of our everyday language." Some answers were also of the type: "Everything works fine at my school – no problem," "Don't know, don't care" and "Nothing can be done about it." Other examples of the latter attitude are "There isn't much anyone can do. We're too old now, a serious effort should be made at an earlier stage – in the primary school." Some students called for punishment and suspension to deter perpetrators:

“They’re too feeble when they discover this is going on” and “Have clear rules”, were some of the comments.

There was a tendency for girls to ask for more information and discussion than boys. Girls usually suggested a number of measures that should be taken, while the boys just gave one suggestion. The boys’ answers were generally shorter than those of the girls.

### *The view of pupils and teachers regarding everyday language*

The other study of everyday language that is presented here involved all the pupils in the sixth and eighth classes in the municipality of Uddevalla and their teachers (Eliasson & Menckel 2003). A total of 1,014 pupils and 61 teachers completed the questionnaire. The response rate for the pupils was over 84 per cent, and 81 per cent for teachers. The teachers informed the pupils about the study and the pupils then responded to the questionnaires during lesson time. The teachers completed their questionnaires during work time. Participation was voluntary and anonymous.

A majority of the pupils of both sexes, 70 per cent, felt that the everyday language at their school was aggressive. About half of the pupils said that another pupil had said something unkind or unpleasant to them at least once during the past academic year. There was no significant difference between the answers to this question in relation to the pupil’s sex or which class they were in. 30 per cent of the girls and 13 per cent of the boys had been called “whore” by another pupil, which implies that the word has increasingly become a general term of abuse. Furthermore, twice as many boys as girls had been threatened verbally.

Physically aggressive behaviour also occurred. Forty-four per cent of the girls and 65 per cent of the boys said they had been subjected to some kind of violence at least once in the past academic year. Both the boys and the girls who had been subjected to aggressive behaviour said that it was usually boys that were the perpetrators. The girls consistently reacted more negatively than boys to this behaviour.

### *Summary and conclusions*

In conclusion, it is clear that Swedish schools are not free from harassment and offensive behaviour with sexual overtones. This seems to apply to both

compulsory schools and upper secondary schools. The two related studies are the first major studies that have been undertaken and they provide a basis for further studies. More research and improved theoretical models are needed.

### **Some suggestions for the future**

School is one of our most important workplaces. Every day one and a half million children and almost 200,000 adults work in 6,000 compulsory schools and upper secondary schools. It is therefore natural that a lot of attention is drawn to what is going on in schools. School is also a part of the community, and trends in the community as well as other social phenomena are reflected in schools.

School is also the first contact pupils have with “their own working life.” The environment they meet at school contributes to their expectations of adult working life. If they have an unsatisfactory work environment at school, and if they are subjected to physical injury, bullying, threats, violence and harassment it can affect their health, choice of profession and future working life. It is therefore important that the workplace in which pupils spend a great deal of their weekdays, during their formative years moreover, offers them a good environment, in which they can develop both intellectually and socially, and where they will not be injured or risk injury (Swedish Government Official Reports 2003:127).

In Sweden, as in other countries, injuries resulting from accidents and violence are a public health problem. In the case of Swedish schools, it is also a problem that has been given increasing attention in the media. Research on violence and injuries as a result of violence in Swedish schools is, however, limited. International experience of these problems, and other problems too, shows that early attention and early preventive measures are essential to ensuring a good work environment and promoting security and safety in schools.

The work environment in schools is important. More should be done in this area. Too little is known about the division of responsibility for the work environment in schools and what concrete measures should be taken to create a good environment in schools. What preventive measures result in a reduction of injuries, less bullying and offensive behaviour? More research must be done on these matters, the academic field must be ex-

tended and more academic disciplines should tackle the issues from their own various perspectives.

What is bullying and what is not bullying? Which models and frames of reference should be developed and tested? What mechanisms are involved and how should they be studied? In which situations does bullying and offensive behaviour occur, and which situations result in physical injuries or have psychological consequences? What characterises schools in which bullying and offensive behaviour do not seem to be a problem? What sort of schools seem to have a good work environment for pupils as well as staff? These are some of the questions that it is important to study further.

## References

- Arbetsmiljöverket (2002) *Skolans arbetsmiljö – resultat av en enkätundersökning våren 2002* (The work environment in schools – results of a survey made in the spring of 2002). Rapport 2002, Arbetsmiljöverket (Swedish Environment Authority), Stockholm.
- Barnombudsmannen (2003) *Vem bryr sig? (Who cares?)* Barnombudsmannen (The Children's Ombudsman), Stockholm.
- Brotsförebyggande rådet (2000) *Stöld, våld och droger bland pojkar och flickor i årskurs 9 (Theft, violence and drugs amongst boys and girls in year 9 – the last year of compulsory school)*. BRÅ-rapport 2000:17, Fritzes, Stockholm.
- Eliasson M & Menckel E (2003) "Ord och mening. Könsperspektiv på verbal aggression och våld mellan elever i grundskolan" ("Words and intentions. A gender perspective of verbal aggression and violence between pupils in the nine-year compulsory school") Arbetslivsrapport 2003:8, Arbetslivsinstitutet (National Institute for Working Life), Stockholm.
- Engström K (2003) *Social Differences in Injury Risk in Childhood and Youth. Exploring the roles of structural and triggering factors*. Thesis, Department of Public Health Sciences, Karolinska Institutet, Stockholm.
- Eriksson B (2001) "Mobbning: en sociologisk diskussion" ("Bullying: a sociological discussion") *Sociologisk forskning* 2:9–43.
- Eriksson B, Lindberg O, Flygare E & Danback K (2002) *Skolan – en arena för mobbning (School: an arena for bullying)*. Skolverket (The National Agency for Education), Stockholm.
- Estrada F (1999) *Ungdomsbrotslighet som samhällsproblem. Utveckling, uppmärksamhet och reaktion (Youth criminality and social problems. Development, attention and reaction)*. Thesis, Kriminologiska institutionen, Stockholms universitet.
- Folkhälsoinstitutet (2003) *Svenska skolbarns hälsövanor 2001/02 (The health-related behaviour of Swedish school children 2001/2002)*. Folkhälsoinstitutet (National Institute for Public Health), Stockholm.

- Forsman A (2003) *Skolans texter mot mobbning – reella styrdokument eller hyllvärmare? (Anti-bullying agendas in Swedish schools – real plans of action or just dust-collectors?)* Thesis 2003:25, Institutionen för lärarutbildning, Luleå tekniska universitet, Luleå.
- Frånberg G-M (2003) *Mobbning i nordiska skolor (Bullying in Nordic schools)*. Nordiska ministerrådet 2003:508, Köpenhamn.
- Häggqvist S (2004) *Arbetsmiljö och utveckling i skolan. Förutsättningar för samverkan mellan elever och personal (Work environment and development in schools. Cooperation between pupils and staff)*. Thesis, Kungliga Tekniska Högskolan (The Royal Institute of Technology), Arbete och Hälsa 2004:3, Arbetslivsinstitutet, Stockholm.
- Isaksson A, Hansson Risberg E, Toomingas A, Hagman M, Hansson M, Hagberg M & Wigaeus Tornqvist E (2003) "Arbetsförhållanden och hälsa bland elever på ett IT-gymnasium med intensiv användning av bärbar dator" ("Working conditions and health amongst pupils at an upper secondary school with an IT profile, who use laptop computers intensively") Arbetslivsrapport 2003:14, Arbetslivsinstitutet, Stockholm.
- Laflamme L & Menckel E (1998) *Elever, skador & skolmiljöer. Skademönster och risksituationer (Pupils, injuries and the school environment. Patterns of injuries and risk situations)*. Rapport 1998:6, Folkhälsoinstitutet, Stockholm.
- Laflamme L, Menckel E & Alderberg E (1998a) "School-injury determinants and characteristics. Developing an investigation instrument from a literature review" *Accident Analysis and Prevention* 30,4: p 481-95.
- Laflamme L, Menckel E & Alderberg E (1998b) "The physical and psychosocial environments in Swedish schools: quality aspects and relations to pupil-injury determinants as perceived by school principals" *Work. A journal of Prevention, Assessment & Rehabilitation* 11: p 57-65.
- Laflamme L (2003a) "Peer victimization during early adolescence: An injury trigger, an injury mechanism and a frequent exposure in school" *International Journal of Adolescents' Medical Health* 15(3): p 367-279.
- Laflamme L (2003b) *Två läsår bland 10-15-åringar i Stockholms län. Inblick i skademönster, skadeomständigheter och skolliv (10-15 year-olds in Stockholm county over two academic years. Insights into patterns of injuries, the circumstances in which injuries occur and the school situation)*. sou 2003:79, Fritzes, Stockholm.
- Lindström P (2001) "School violence: A multi-level perspective". *International Review of Victimology*, 8: p 141-58.
- Menckel E (2001) "Threats, violence and harassment in school and work-life" p 331-347 in Marklund S (ed) *Worklife and Health in Sweden 2000*, National Institute for Working Life, Stockholm.
- Menckel E, Laflamme L, Aldenberg E & Schelp L (1997). *Elevers arbetsmiljö & skaderisker. Ett skolledningsperspektiv (Pupils' work environment and risks of injury from the perspective of the school management)*. Rapport 1997:15, Folkhälsoinstitutet, Stockholm.

- Menckel E & Witkowska E (2002) "Allvar eller på skämt? En nationell undersökning av språkbruk och sexuella beteenden bland gymnasieelever" ("Serious or a joke? A national survey of the everyday language and sexual behaviour of upper secondary school pupils"). Arbetslivsinstitutet, Stockholm.
- Menckel E (ed) (2002) *Vänskap vinner. Om mobbning och kränkande behandling i skolan. Dokumentation från en idé- och kunskapskonferens* (*Friendship prevails. Bullying and insulting behaviour in schools. Documentation of a conference on ideas and knowledge*). Halmstad University.
- Nilsson A & Norgren O (2001) "Det måste va' sånt som får en att fundera mera" *Om hälsoarbete i skolan – från direktiv till perspektiv* (*Working with health in schools – from directives to perspectives*). Skolverket, Stockholm.
- Olweus D (1992) *Mobbning i skolan: Vad vi vet och vad vi kan göra* (*Bullying at school: what we know and what we can do*). Almqvist & Wicksell, Stockholm.
- Olweus (2002) "Mobbning i skolan: Grundläggande fakta, ett effektivt åtgärdsprogram och en ny nationell satsning i Norge" ("Bullying at school: basic facts, an effective action plan and a new nationwide campaign in Norway") p 27–60 in Menckel E (ed) *Vänskap vinner. Om mobbning och kränkande behandling i skolan. Dokumentation från en idé- och kunskapskonferens* (*Friendship prevails. Bullying and insulting behaviour in schools. Documentation of a conference on ideas and knowledge*). Halmstad University.
- Skolverket (2000) *Attityder till skolan 2000* (*Attitudes to school 2000*). Skolverkets rapport 197, Skolverket, Stockholm.
- sou 2003:127 *Från barnolycksfall till barns rätt till säkerhet och utveckling. (From children's accidents to children's rights to safety and personal development)* Slutbetänkande av Barnsäkerhetsdelegationen. Fritzes, Stockholm.



## CHAPTER 13

# Meaningful work in a demanding work environment – teachers at school

*Eva Månsson and Anders Persson*

A large majority of teachers in Swedish 9-year compulsory schools and upper secondary schools find their work very meaningful, although they complain of serious problems in their work environment, especially on the psychosocial level. In the last 10–15 years, school has become one of Sweden's major problem areas as far as the work environment is concerned. This applies to the work environment of both pupils (see Chapter 12 in this anthology) and staff. This article focuses on the latter. We present facts about the psychosocial environment and health problems of teachers, and relate these problems to the changes in the school system over the past 15 years. Based on the results of our own case studies, we then discuss which aspects of these changes teachers feel have had a negative effect on their work environment.

### **The psychosocial work environment at schools**

Psychosocial problems in the work environment are not uncommon in schools. This is made clear in the latest survey of work environments and in the report “Negative stress in working life”<sup>1</sup> which was based on a survey made in 2001 by the Swedish Work Environment Authority (Arbetsmiljöverket) together with Statistics Sweden (scb). The major problems that teachers face, and their chief complaints, are presented in table 13.1.

The surveys of work environments show that teachers feel that their workload has increased radically. They are top of the list in this respect compared with other occupational groups. Teachers say twice as often as the average employee that their work intrudes on the lunch breaks, and that they work overtime or continue working at home. Control over the work situation and social support have decreased in the municipal sector in the period from 1991 to 1999.

**Table 13.1.** The percentage of male and female teachers with work-related problems and complaints.

Problem	Compulsory school teachers		Upper secondary school teachers		All teachers	
	Men	Women	Men	Women	Men	Women
High demands at work <sup>a</sup>	–	93	75	82	54	58
Little control over own work situation <sup>a</sup>	–	65	55	60*	40	53
Lack of social support	–	43	58	48	43	35
Work is psychologically stressful <sup>b</sup>	81	89	68	81	42	49
Insomnia <sup>b</sup>	35	42	26	36	18	21
Difficult to stop thinking about work <sup>b</sup>	79	85	68	80	44	46
Difficult to find time to relax <sup>b</sup>	–	66	–	64	39	43
Subjected to conflicts with others <sup>b</sup>	81	66	67	67	33	35
Subjected to violence or threats of violence <sup>b</sup>	31	21	15	12	10	17

a. Figures taken from a combination of data from the Work Environment Surveys from 1997 and 1999 (SCB).

b. Figures taken from a combination of data from the Work Environment Surveys from 1997, 1999 and 2001 (SCB).

– No data available.

\* The difference between the group of upper secondary school women teachers and the general group of women teachers is not significant.

Teachers, especially teachers at compulsory schools, are less able than others to control their work pace or to choose when to work with their various tasks. Teachers receive less support from their superiors, who are also criticised for failing to give teachers guidance. The latter applies chiefly to teachers in upper secondary schools.

Teachers are involved in conflicts and disagreements with others twice as often as the average employee. Male teachers in compulsory schools are amongst those that have most often been subjected to violence or threats of violence, or harassment based on gender, by their bosses or workmates. Teachers also feel more often than others that it is difficult for them to express criticism of their working conditions.

According to the results of the surveys, teachers, regardless of their gender or the type/level of school they work at, are amongst the occupational groups that face the highest demands, have the least control over their work situation and the least social support. These factors all contribute to work-related stress (Karasek & Theorell 1990). Occupations with working conditions of this kind had the highest frequency of members who were considering giving up or had given up their jobs for the sake of their health. This applied to both men and women, and the same pattern could be seen for all age groups.

Female teachers in compulsory schools constitute one of the groups with the largest percentage of individuals who feel uneasy about going to work. Insomnia is much more common amongst teachers than amongst other occupational groups. Female teachers in compulsory schools are the group that have the highest frequency of psychological complaints due to work, while female teachers at the upper secondary level come in third place.

Four out of five female teachers, regardless of type/level of school, find it difficult to stop thinking about their work in their leisure time. This is only slightly less common amongst male teachers at the compulsory school level. Those who suffer least from this are male teachers at the upper secondary school level, but even in this group almost seven of every ten teachers find it difficult to stop thinking about work.

Although teachers complain about their demanding work environment, a large proportion of them still find their work meaningful, and say that they have more than average opportunities to learn new things and develop in their professional role, and that they have received in-service training during paid working hours.

These results are largely confirmed by the latest survey from the Swedish Work Environment Authority in which questionnaires were distributed to head teachers (Arbetsmiljöverket 2002). Every other year head teachers in all the school management areas in Sweden answer questions about the physical and psychosocial problems in their schools that have emerged in their regular checks on the work environment. According to the 57 per cent of head teachers that responded to the questionnaire in 2002, the most common complaints among the teachers that emerged in their inspections

were heavy workloads and high levels of stress (75 per cent), a feeling of inadequacy (63 per cent) and the risk of burnout or long-term sickness (54 per cent).

A survey made in 2001 by the National Institute for Working Life (Arbetslivsinstitutet) in Malmö, known as the KVAR survey<sup>2</sup>, shows similar results (Jönsson et al. 2003). Sixty-five per cent of the teachers that participated in the survey worked in a school that had undergone organisational change during the previous three-year period. They felt that they had not had any influence over this process of change, and a quarter of the teachers felt that the changes were for the worse. More than half felt that the school had conflicting objectives. Almost as many felt that too much of their work time was spent on things other than those focusing on the pupils needs.

The majority felt that they worked more than normal working hours, and estimated that they put in an average of seven hours extra a week. This survey also showed that teachers felt they had too much to do and did not have time to complete all the tasks they wanted to. However, an equal number felt that they demanded too much of themselves. Every third teacher neither felt they had the support of their boss, nor had confidence in their boss. Only ten per cent received feedback from their boss, which was significantly less than those who would have liked to get this. It was the pupils that gave the teachers most feedback, and the teachers recognised them as their most valuable source of feedback.

How has the teachers' dissatisfaction been expressed in concrete terms and how do they feel that their health problems have affected their ability to work? The number of teachers that have left their jobs in schools run by local authorities has increased since 2001. It is older teachers, aged 55–64, especially those in upper secondary schools, who account for most of this increase. According to the survey *Negative stress and illness* (Arbetsmiljöverket & Statistiska centralbyrån 2001b), the reason for the increase is related to the increased stress that teachers have experienced, and still experience, at school.

Sick leave among teachers has increased, as it has in other occupational groups in Sweden. According to the National Board of Occupational Safety and Health (Arbetarskyddsstyrelsen 1999) the most common diagnoses behind sick leave are overwork, burnout and depression. Sick leave increases

with age after 55 years of age. Women are beyond comparison off sick more often than men. In the period 1996 to 1999, the total cost of sick pay per member of staff at pre-schools, compulsory schools and the academic programmes in upper secondary schools, almost doubled.

Why have the psychosocial problems in the work environment become so conspicuous in schools? Can this be related to the changes that have taken place in schools since the beginning of the 1990s? We will firstly summarise what we think are the most significant changes in schools, and then conclude the chapter by presenting the results of studies that show what it is in the changes that the teachers feel has led to a deterioration in their work environment.

### **Changes in schools during the 1990s**

Prior to the 1990s the form and content of the school system was relatively stable. Major reforms, which were generally well supported by research, took place relatively infrequently and were concerned with matters such as the length of compulsory schooling, the national curriculum and the work organisation of schools. With this in mind, the 1990s represent a dramatic explosion of both reforms and a series of adaptations to the conditions in the world outside the school, both at the national and the global level. We will describe some of the changes that we think have influenced the work environment of schools.

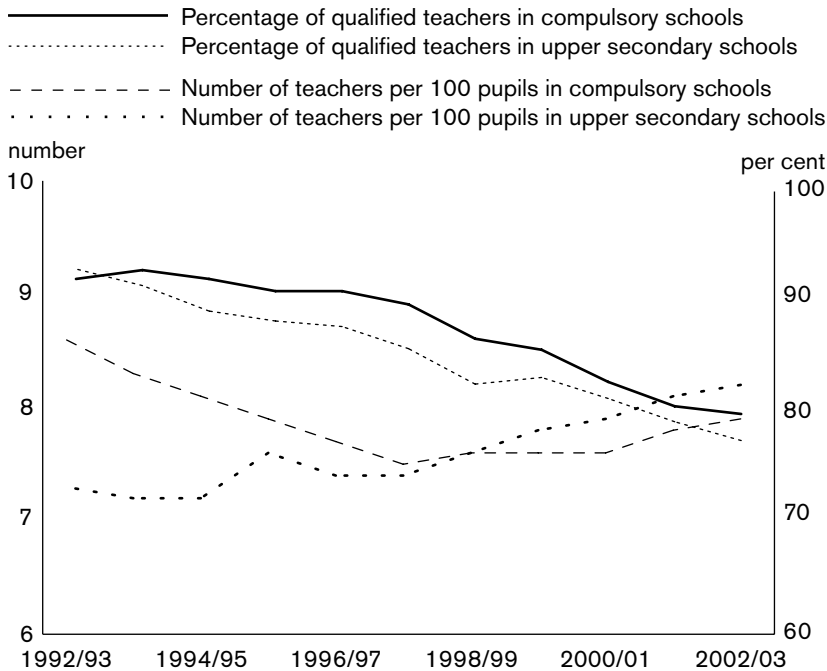
During the first half of the 1990s a new *steering system* for schools was gradually developed, in which the handing over of responsibility to local authorities in 1991 was the initial change. The new steering system is a goal-and result-governed system and is based on a division of responsibility between:

- the Government, which formulates the objectives and evaluates the degree to which they are being met
- the local authorities, who bear the primary responsibility for the schools they run, and who now have greater freedom regarding how the resources are distributed and
- the schools themselves, in particular the “professional” staff, i.e. the head teachers, teachers and other teaching staff.

The handing over of responsibility to local authorities means, among other things, that school development is now based on evaluation and following up results. This leads to a continuous process of change with the aim of improving the degree to which the school meets the different objectives.

Another important aspect of the changes in the steering system is that during the 1990s schools started to change to more of a “management” style of leadership. This is illustrated by the change in status of head teachers. While in the past they were mainly seen as the prime member of a group of colleagues (*primus inter pares*), during the 1990s they have become the lowest of the superior authorities (*ultimus inter superiores*). Head teachers have been lifted out of the ranks of the school staff to become, or are now expected to be, the employer’s representatives and intermediate managers in the local authority administration (for further details, see Persson et al. 2005). Increasing responsibility, but not more power, has been decentralised to head teachers, who now need to become full-time managers if they are to meet the demands of their new workload. One statistical indication of this simultaneous movement upwards and the decentralisation of responsibility and duties downwards, and the increased distance between head teachers and teachers in the classroom, is the fact that fewer and fewer head teachers have teaching duties included in their post. In 1993, 28 per cent of head teachers also taught, but in 2002 only 9 per cent did. In the upper secondary school, however, the number of head teachers who also teach has not decreased as sharply (Skolverket 2001, 2003).

The changeover to schools run by local authorities took place at the same time as there was a marked reduction in the resources made available to schools, due to the financial crisis in the public sector throughout most of the 1990s. The reasons why national and local politicians chose to reduce the resources available to schools are open to question; however, we will not discuss them here, but only comment that the costs of teaching in compulsory schools during the period 1991–96 were cut by one fifth (Riksdagens revisorer 2002, p. 14f). The situation improved during the second half of the 1990s, partly due to the fact that ear-marked project funds were distributed to the local authorities for this purpose. Examples of this type of support are



**Figure 13.1.** The number of teachers (full-time posts) per 100 pupils and the percentage of qualified teachers. (Source: Sweden's official statistics/The National Agency for Education.)

the Ylva funds in 1997, Persson funds from 1997–2000 and Wärnersson funds from 2001–06 (the latter are called staff-strengthening resources, aimed at increasing teacher-pupil ratios in order to reach the schools' objectives more successfully).

These project funds do not represent a long-term improvement in financing, and in combination with many other projects, such as *An Attractive School* from 1998, they have introduced a system of *project organisation* in schools, which once again emphasises the tendency towards continuous change. The reduction in resources can also be illustrated in many other ways. Figure 13.1 shows the official statistics of the number of teachers per 100 pupils in compulsory schools and in upper secondary schools, and the percentage of qualified teachers.

It can be seen that until 1998 the teacher-pupil ratios fell in compulsory schools, but not in upper secondary schools. After 1998 these ratios improved in both compulsory schools and upper secondary schools. The compulsory schools did not quite regain their ratios from the start of the period, while the teacher-pupil ratios improved in upper secondary schools. Qualified teachers also represent a resource in schools. The figure shows that the percentage of qualified teachers has fallen sharply in both compulsory schools and upper secondary schools since 1992.

During the 1990s a number of changes took place that represent a type of *individualisation*, both regarding parents' choice of schools, pupils' goal-related grading system and teachers' individualised salary levels. Around 1990 a number of government bills increased the opportunities for parents to choose which school to send their children to, and from 1993 local authorities are obliged to subsidise pupils who go to independent schools. Since this system was introduced, the number of pupils at independent schools has increased from half a per cent to five per cent in compulsory schools and over seven per cent in upper secondary schools. The number of pupils at independent schools varies from municipality to municipality. In some municipalities there are no independent schools, while in others, particularly in city municipalities, there is a relatively large percentage. In these municipalities, where 10–15 per cent of pupils at the compulsory school level go to independent schools (Skolverket 2003), they represent a significant alternative and thus increase the pressure for change in the schools run by local authorities.

The new grading system that was introduced in both compulsory schools and upper secondary schools in 1994 also represents a type of individualisation, as the system of relative grading was replaced by a goal-related grading system, which means that pupils themselves can choose what level to aim for in relation to given criteria for the various grades. Personal development dialogues are a key part of the new grading system, and since 1994 schools are required to organise this type of consultation for each pupil at least once a term. In compulsory schools there is no grade that represents failure, unlike in upper secondary schools, so the objective is that all pupils should be able to attain the pass grade. Finally, a system of individualised salaries for teachers was introduced in 1996, which can be seen both as a type of



individualisation and also as part of the new steering system. In the agreement on working hours that was made between the employers and the teachers' unions in 1996, teachers' salaries were to be related to the individual teacher's contribution to school development.

The *work organisation* of schools has undergone significant changes during the 1990s. The above-mentioned agreement on working hours involved a division of teachers' working hours into regulated and non regulated working hours (*förtroendearbetstid*). The regulated working hours represent over 70 per cent of the teachers' total working hours. Teachers are expected to be at school during most of their working hours, during which they teach or perform other duties, for example are available for collaboration with their colleagues in their teaching team. Working in teams is a method that gained much ground in the 1990s, in spite of the fact that it has been part of the school agenda since the SIA-reform in the middle of the 1970s. The need to cooperate has also arisen through the integration of pre-schools with primary schools. This was instituted through the passing of a government bill at the end of the 1990s, when a national curriculum for pre-schools was also introduced for the first time.

In 1994 new *guidelines for teaching* were introduced in the new national curriculum and syllabuses for compulsory schools and upper secondary schools. At the same time, as mentioned earlier, the present goal-related grading system was introduced, providing comprehensive criteria for achieving the various grades.

In the 1990s there was a *strong emphasis on education* and a tendency towards *mass education*, especially regarding formal education (even though practical ability was also recognised, as can be seen in the EU Commission's *Memorandum on Life-long Learning*, 2000). During the same period, upper secondary school education became more or less obligatory, in the sense that almost all students in Sweden (today 98 per cent) continue to the upper secondary school after compulsory school, which is presumably a result of the situation in the labour market, in particular youth unemployment. In 1992 upper secondary schools were completely reorganised in that the old system of courses (*linjer*) was replaced by 16 study programmes (*utbildningsprogram*), all of which could lead on to further education at the tertiary level. Furthermore, a wide choice of over 400 elective courses was offered to meet

the expected demands of working life, but also no doubt in an attempt to adapt schools to the new situation with pupils of widely differing abilities and motivation for studying.

Finally, we want to mention the changes that have taken place in educational discourse, i.e. the discussion and debate about schools, not least because it influences our conception of the purpose of schools. At the beginning of the 1990s the educational discourse was strongly influenced by an *ideological shift*, which Schüllerqvist has described as a transition from a value system that emphasised:

[...] non-segregation (socially and geographically), levelling out of social differences, equality, general civic qualifications as a preparation for further education, a future occupation and public responsibility for education as participants in a democratic society (1995, p. 54) [to a completely new value system that is characterised by] [...] individual choice, parental responsibility for the education, efficiency and competition, both financial and pedagogical, and individual development of competence and qualifications (1995, p. 92).

If we interpret this freely we can say that at the beginning of the 1990s three key trends in modern social development hit the Swedish school system with full force: The conversion of knowledge to a commodity (commodification), the conversion of individual actors to people who make rational choices (human capitalisation) and the conversion of school as an institution to an organisation (corporationalisation and managerialisation).

As can be seen above, politicians have attempted to translate these general trends into changes within the school system during the 1990s, at the same time as other changes have taken place, for example large reductions in resources to schools, which has meant that school development in the 1990s has been fraught with contradictions. At this level of discourse, it is therefore necessary, in addition to mentioning the ideological shift, to also describe the development in schools in terms of crisis awareness<sup>3</sup>. We can say that a strong sense of crisis awareness has been spread within schools and round about them, not least through the media. In an analysis of school discourse, Melander (2004) uses the word "crisis" to connect the two main ideological alternatives in the Swedish school debate at the end of the 1990s.

The demand for “more resources” prioritised by the Social Democrats and the demand for “more freedom of choice” from the right wing are seen as two different answers to the *crisis* that we have been led to believe exists in schools.

### *Continuous change – uneven development*

Three factors stand out when one looks back at the many changes and efforts to introduce changes that characterise the school system in the 1990s. Firstly, the tempo and frequency of the changes per se increased, and consequently the ideas and knowledge supporting them. The continuous changes were based on evaluations and were also partly stimulated by the media and were said to be a change to management by objectives. Secondly, another aspect of the changes in the school system, is the fact that many changes were introduced simultaneously, and some have been of a conflicting nature, for instance increased demands on the pupils, and thus also on teachers, at the same time as less resources have been made available to schools. Thirdly and lastly, regarding the changes in the school system in the 1990s, the development in schools can be described as uneven, which is related to the fact that an increasing degree of responsibility for schools has been handed over to local authorities.

As mentioned earlier, the handing over of responsibility to local authorities in 1991 represented *a new type of contract* between the state, local authorities and the professional actors in schools. The difficulties that schools have faced during the 1990s, primarily in the form of severely reduced resources at the same time as constant attempts were made to introduce change, have influenced the contract in various ways during this period. In the first half of the 1990s, the state seemed to *hand over* responsibility for schools to local authorities, but with greatly reduced resources; and at the same time they imposed major changes based on government decisions, such as the new grading system that raised the demands on schools to achieve results.

This has sometimes been referred to as a change from management by regulations, to management by objectives. Local authorities reacted to this decentralisation in different ways. Some handed over the running of schools to professionals within the schools, while other local authorities attempted

to manage school development themselves. In theory local authorities have this freedom of choice, as a number of regulations such as the size of classes have been removed. However, the possibility of attaining the objectives set up by the government has been limited by the economic demands on local authorities to balance their budgets. Instead of speaking about a change from management by regulations, to management by objectives, we would describe the change as a movement from bureaucratic management by regulations, to management by economic norms.

Much of the local authorities' school development has therefore in reality been a case of rationalisation, i.e. doing the same thing, or more things, but with less resources available. Many schools, more in some municipalities than others, have therefore been drawn into the whirlpool of continuous reorganisation by the local authorities, as this has become the accepted way of trying to improve efficiency, or at least of trying to retain the belief that one is on the path to improved efficiency.

This has from time to time given rise to major conflicts between decision-makers in the local authorities and the professionals within the schools. There has often been disagreement concerning the political decisions and unwillingness to follow them. Towards the end of the 1990s the state attempted *to regain control* of school development, partly through earmarked funds to various projects, as previously mentioned, and partly through more stringent school inspections. The objective was to achieve a more uniform standard of education and consequently to even out the development of schools run by local authorities. At the level of the individual school it is easy to understand that many look back on the 1990s as a long series of continuous changes.

### **Changes in schools and problems in the work environment**

Research into the work environment and its effects on health has been a prioritised area in Sweden ever since the 1970s. A good work environment demands working conditions that ensure a low risk of both physical and psychological damage. Various safety precautions have ensured that physical accidents in working life have decreased. Research into the psychosocial work environment have shown that, in order to feel content at work, people need security, recognition and support from their bosses, good companion-

ship and cooperation with their colleagues and acknowledgement from their clients/customers, in this case their pupils. Work should be interesting and stimulating and give opportunities for creativity and taking responsibility. It should be possible to influence one's own work situation. The workload should be reasonable, both in quantity and quality. It is important to be able to participate in decision-making in matters in which one is involved, and the objectives of the work activity as well as one's own work tasks should be expressed clearly. Although awareness of these needs is well established, increased psychosocial pressure is a common problem in working life today. This incongruity can clearly not be blamed on a lack of understanding of the situation.

It is, of course, easy to assume that the deterioration of the work environment in schools during the 1990s is related to the changes that have taken place during that period. However, assuming that there is a connection, it can signify a number of different things. For example, could it be that people feel that their working conditions have deteriorated because they were previously so favourable that a change towards a more "normal" workload is seen as a deterioration?

Have working conditions in the 1990s really become worse than normal? Is the change principally in the way teachers experience their work situation, or have real changes in their work situation taken place? It is, of course, difficult to reject one answer in favour of the other, and we find that we have to give the standard answer that it is not a case of one thing or the other, but rather that there is some truth in both. Wikman and Marklund have shown that there is a "relatively clear" connection between organisational change, a deterioration in the psychosocial environment and increased sick leave among municipal employees, and they conclude that:

It is particularly true of increased demands at work without any compensation in terms of increased freedom. This tendency can be seen at the level of both individuals and groups and is well defined in terms of time. The fact that the increase in sick days has been particularly great amongst municipal and county council employees is clearly related to the fact that employees in this sector have faced particularly serious difficulties (Wikman & Marklund 2003, p. 53).

With reference to the above-mentioned studies and others that we have made ourselves, we cannot claim that there is a causal relationship between changes in the school system and the deterioration in the work environment for teachers, but we can describe the connection that teachers themselves see. Let us, in conclusion, examine the actual changes that have been described above and see how teachers think they have affected their work situation. We base the following discussion on the study of teachers' work environment and health and changes in schools, carried out by the National Institute for Working Life.<sup>4</sup>

### *Weary of changes and waning confidence*

We start by examining the increased pace of reforms, as discussed in the previous section. The process of change has been questioned by teachers, and recent changes have been felt to be less well-planned in comparison with earlier changes, which were based on more comprehensive research. As the process of decentralisation occurred at the same time as the economic recession of the 1990s, schools were faced with a reduction in resources, which has largely been blamed on the local authorities. The teachers' comments imply waning confidence in the decision-makers, especially at the municipal level, a feeling of weariness with regard to changes and less willingness to accept orders given from above. In a study of long-term sick-listed employees in 40 municipalities by Szücs et al. (2003), a lack of participation in organisational changes is shown to be the factor most closely related to long-term sick-listing of municipal employees.

The teachers also show in various ways that they are dissatisfied with the alienated leadership, who they now see as the extended arm of the decision-makers. The new, extended role of head teachers has meant that they have less time for leadership of teaching activities, and their contact with the teachers has diminished. The younger teachers feel that they have no guidance in their teaching role, while the older teachers feel little confidence in a boss who they feel is operating in the interests of others outside the school. Teachers feel lost and feel less "pride in their job" and this is exacerbated by the negative picture of school that is projected in the mass media.

*Greater demands and less recognition*

More and more tasks are incorporated into the teachers' regulated working hours. The reduction in teaching resources has ultimately resulted in larger classes. At the same time resources for pastoral care have been cut back, and the responsibility for counselling and pupil welfare has been left to the teachers. At the upper secondary school level, comprehensive schools that are open to all pupils have resulted in classes with very mixed levels of ability and motivation. This puts considerable demands on the teachers' professional skills, especially if the teacher aims to help all the pupils to achieve the objectives and results demanded by the National Agency for Education (Skolverket).

The introduction of a new national curriculum and a new grading system in compulsory schools and upper secondary schools has increased the workload of teachers. As mentioned earlier, a new grading system has been introduced in compulsory schools, which means that all pupils should be given the help they need to pass their courses. However, as the pupils are not graded in compulsory school until year eight, the personal development dialogues, which all pupils have with their teacher each term, have become the medium through which schools communicate with pupils and parents. A large amount of paper work has evolved for teachers in connection with these dialogues.

The upper secondary school is now organised into overlapping courses of varying numbers of credits, which involves considerably more work for teachers in setting grades than the previous system, where grades were only set at the end of term. An indication of the increased workload is the increased number of hours per week that teachers work. One of our case studies (Månsson 2002, 2004) showed that teachers worked 12.5 hours a week in excess of the required number of hours. The results of this study confirm the tendency indicated in a survey recently made by the Swedish Union of Teachers (Lärarförbundet) showing that 30 per cent of the respondents said that they do not manage to complete their tasks within their regular working hours (*Lärarnas Tidning* nr 1, 2004).

As there are so few job opportunities for 15–16 year-olds in the labour market, almost all pupils continue from compulsory school to upper sec-

ondary school, so teachers are now faced by a less streamed and often less motivated group of students than previously, who moreover are now on three-year study programmes, irrespective of their choice of specialisation. Schools are less likely to be a forum for a “beneficial meeting” than previously, which means that teachers have less chance of receiving positive recognition from their most important contact group, namely their students.

*Insecurity, threatened solidarity between members of staff and lower status*

The project organisation of schools in recent years has among other things allowed new recruitment of teachers, but there is still a lack of qualified teachers. Many teachers are appointed on a temporary basis and the number of unqualified teachers has increased greatly. This has meant that the qualified teachers with permanent posts have had to act as mentors. Both the status and salaries of teachers have been affected, and teachers with temporary posts have sometimes been given a higher salary than those with permanent posts. The professional pride of teachers has been affected negatively.

Individualisation in the form of free choice of schools, including independent schools, has also meant that schools have an insecure financial basis. The goal-related grading system and the obligatory individual development dialogues not only put pressure on pupils, but also on teachers. Predictable salary development has been replaced by an individualised system, based on the teacher’s performance. The individualised salary system, which was originally introduced partly to stimulate increased participation in school development issues, has resulted in competition and can come into conflict with the cooperation that is expected within teaching teams. This has undermined teachers’ security of employment and threatens solidarity between colleagues.

*Curtailed control*

Teachers feel that many of the changes in the school system in the 1990s have curtailed their control over their work situation. The agreement on working hours has regulated the relative freedom that teachers enjoyed previously with regard to working hours. Now their working hours are not



only regulated, but also timetabled by others. The physical environment, with shared staff rooms and the demand that teachers should be accessible to their students, has created practical difficulties in accomplishing tasks during the time that teachers are required to spend at school. The teachers feel that it is impossible to complete a task or prepare a lesson in a satisfactory way. Parents and children have been given more say in the way teaching is to take place. At the same time there has been an increase in team decisions about teaching matters, which many teachers experience as a loss of work control. Moreover, many teachers in the upper secondary school who teach on various study programmes feel that taking part in teaching team meetings actually adds to their workload rather than lightening it. Differentiated working hours, lessons of varying lengths, and time that is to be spent at school doing individual tasks, have all contributed to a reduction in social contact between colleagues.

The decision-makers would like to see the teacher's role change, from that of someone who imparts knowledge to that of tutor or mentor. Professional teachers view this with mixed feelings. A great many teachers feel that the change in work tasks resulting from the demand for participation in school development has meant that they no longer take such a pleasure in their work, and that opportunities for creativity in their work have disappeared. The more detailed the description of the results expected, the more limited will be the freedom of teachers to exercise control over their work and choose the way in which to achieve the objectives (Carlgren & Englund 1996). In the same way, the new grading system in compulsory schools has meant that teachers must adapt their teaching methods to the pupils who previously left compulsory school without having passed all the core subjects on the curriculum.

### *A loss of meaning and lack of sense of coherence*

In our case studies we have also found indications of what could be called "a loss of meaning". A number of the teachers we have interviewed refer to the changes that we have described, as aspects of a world in which everything seems transient, and in which earlier ways of making their work feel meaningful now seem less effective (Persson & Stavreski 2004). Many of the contemporary changes, some of which moreover conflict with one another,

give rise to a feeling that there is no longer any sense of coherence. It is possible that the teachers who feel that there is a lack of coherence also find it difficult to experience their work as meaningful, which consequently makes them more aware of the deterioration of their work environment, and in some cases leads to sick-listing. On the other hand, those who still feel that their work is meaningful, although not necessarily in the way prescribed by the national curriculum, are presumably better equipped to cope with the stress arising from the unsatisfactory work environment in schools.

### **Changes in the school system as a problem in the work environment of teachers**

In conclusion we can see that each change that we have described in the school system is seen by some teachers as a negative factor in their work environment, which can also be confirmed in terms of working life theory. There have been other intentions behind the changes, but our conclusion is that the changes in the school system in the 1990s have created problems in the work environment of many teachers. There is, of course, no overall consensus amongst teachers on this matter, but very many have been affected, some to such a degree that their health has been put at risk.

We assume that it is also relevant to point out that Sweden has one of the highest average ages amongst teachers in Europe, according to a recently published report from the EU Commission (2002). In a profession that has undergone rapid change, it is of major significance that many people have trained to be teachers under completely different circumstances; and that they may therefore experience this as a major addition to their workload, while younger colleagues who have joined the teaching profession later may take the working conditions more for granted (for a discussion of generations and changes in professions, see Greiff 2004). In a study of the workload of upper secondary school teachers (Månsson 2004) it emerged that the changes are more stressful for older teachers with long experience of the profession than for their younger colleagues. The study claims that the reason for this is the different norms of the two groups with regard to their work.

Another reason that teachers find their work increasingly stressful can be found in the nature of professions that are based on human relationships:

in these occupations the relationship with clients is of primary importance and gives the job its meaning. In a situation where resources are cut back at the same time as demands are raised through changes in the school system, it can be difficult for the professional teacher to limit his or her workload. An indication of this is the fact that, although teachers feel that their workload is too heavy, approximately 85 per cent of female and 75 per cent of male teachers feel that their work is very meaningful (Arbetsmiljöverket & Statistiska centralbyrån 2001a).

This is confirmed in our studies. The teachers that prioritise doing a good job regardless of their working situation often stretch their personal resources of time and energy to the limit. They find it difficult to set realistic limits to their work.

This also applies to teachers who do not prioritise their own needs. They find it difficult to refuse to take on tasks they are requested to do, and often take on more than they can manage. They take on more and more work without receiving recognition or compensation for what they do, either verbally or in monetary terms. Their workload becomes unreasonably large and results in loss of energy in those affected.

Thus, being too conscientious is clearly hazardous to health, given the level of demands and system of rewards that currently exist in schools today.

## Notes

1. The report is based on the surveys of work environments made by the Swedish Work Environment Authority (Arbetsmiljöverket) in the period 1991–1999 and the studies of work-related complaints in the period 1995–2000.
2. A joint research project at the National Institute for Working Life, southern district (Arbetslivsinstitut Syd) named “KVAR-projektet”, “Organisation, leadership and control in relation to the psychosocial work environment in human services – a quality audit”. The results of the project are presented in an anthology, published in 2005.
3. The word “crisis” can be used in a number of ways, for example to describe a very difficult situation, but also to describe a turning point. Since the end of the 1970s, the word “crisis” has often been used to create a consciousness of a critical situation, which has then made it easier for politicians to get support for their various policies (for further details, see Persson 1996 and 1997). The picture of schools in Sweden in the 1990s has generally been pessimistic, but it

has been far from unified. Swedish schoolchildren tend to have good academic results in international comparisons, at the same time as the picture of schools projected by the media, at least at the national level, suggests serious problems. The more problems that are written into the agenda, or in other words, the greater the public awareness of a crisis, the more attempts at reform will be accepted. This can of course become a problem, as the continuous reforms prevent the actors in schools from finding a satisfactory working rhythm. With reference to this, it should be mentioned that the latest report on the crisis in schools concludes that the crisis has been exaggerated, but even this can lead to new reforms which will disturb the work of schools still further (Björklund 2003).

4. The results presented here are extremely summarised, but for further details we refer the reader to Månsson (2004) and Persson and Stavreski (2004), and forthcoming reports on health-promoting attitudes among teachers by Eva Månsson.

## References

- Arbetskyddsstyrelsen (1999) "Korta Arbetskadefakta" ("Short facts on work-related injuries") Stressrelaterade arbetssjukdomar nr 12 (Stress-related work-related illnesses no 12), National Board of Occupational Safety and Health, Stockholm.
- Arbetsmiljöverket (2002) *Skolans arbetsmiljö – resultat av enkätundersökning våren 2002. (The work environment of schools – results of a survey in the spring of 2002.)* Swedish Work Environment Authority, Stockholm.
- Arbetsmiljöverket & Statistiska centralbyrån (2001a) "Arbetsmiljön 2001" ("the Work Environment 2001") Statistiska meddelanden AM 68 SM 0201, Swedish Work Environment Authority & Statistics Sweden, Stockholm.
- Arbetsmiljöverket & Statistiska centralbyrån (2001b) "Negativ stress och ohälsa. Inverkan av höga krav, låg egenkontroll och bristande socialt stöd i arbetet" ("Negative stress and illness. The effects of high demands, low control, and lack of social support.") Information om utbildning och arbetsmarknad nr 2 2001, Swedish Work Environment Authority & Statistics Sweden, Stockholm.
- Björklund A (ed) (2003) *Den svenska skolan – effektiv och jämlik? (Swedish schools – efficient and equal?)* Välfärdspolitiska rådets rapport 2003, SNS Förlag, Stockholm.
- Carlgren I & Englund T (1996) "Innehållsfrågan, didaktiken och läroplansreformen" ("the question of content, teaching methods and the reform of the national curriculum) in Englund T (ed) *Utbildningspolitiskt systemskifte. (A shift in education policy.)* HLS förlag, Stockholm.
- EU-kommissionen (2002) *The teaching profession in Europe: Profile, trends and concerns.* Report 2: Supply and Demand, the EU Commission, Brussels.

- Greiff M (2004) "Att studera lärararbetets förändring. Teoretiska och metodiska reflektioner" (Studying changes in the teaching profession. Theoretical and methodological ideas") in *Nära gränsen? Perspektiv på skolans arbetsliv. (Perspectives on working life in schools.)* National Institute for Working Life, Malmö.
- Jönsson S, Tranquist J & Petersson H (2003) *Mellan klient och organisation. Psykosocial arbetsmiljö i arbete med människor (Between the client and the organisation. The psychosocial work environment in occupations that involve working with people.)* National Institute for Working Life, Malmö.
- Karasek R & Theorell T (1990) *Healthy work – stress, productivity and the reconstruction of working life.* Basic Books, New York.
- Lärarnas Tidning* nr 3, 2003, nr 1, 2004.
- Melander F (2004) "Kris i skolan? En analys av den aktuella svenska skoldiskursen" ("A school system in crisis? An analysis of the current school debate in Sweden) in *Nära gränsen? Perspektiv på skolans arbetsliv. (Perspectives on working life in schools.)* National Institute for Working Life, Malmö.
- "Memorandum om livslångt lärande" ("A memorandum on life-long learning") (2000) (working paper from the EU Commission).
- Månsson E (2002) *Hinder och möjligheter för lärare i dagens skola (Obstacles and opportunities for teachers in schools today).* National Institute for Working Life, Malmö.
- Månsson E (2004) "Dagens lärare – klämd mellan oförenliga krav?" ("Teachers of today – torn between incompatible demands?") in *Nära gränsen? Perspektiv på skolans arbetsliv. (Perspectives on working life in schools.)* National Institute for Working Life, Malmö.
- Persson A (1996) "Kris och risk – diskurser över katastrofen" ("Crisis and risk – discourses on the catastrophe") *Tvärsnitt* nr 1, 1996.
- Persson A (1997) *Politiken i krissambället (Politics in a crisis-ridden society).* Carlssons, Stockholm.
- Persson A, Andersson G & Nilsson Lindström M (2005) "Successful Swedish headmasters in tension fields and alliances", in *International Journal of Leadership in Education*, vol. 8, 1.
- Persson A & Stavreski H (2004) "Allting flyter – lärare mellan förvandling, anpassning och reform" ("A transient world – teachers caught in a process of change, adaptation and reforms") in *Nära gränsen? Perspektiv på skolans arbetsliv. (Perspectives on working life in schools.)* National Institute for Working Life, Malmö.
- Riksdagens Revisorer (2002) *Statens styrning av skolan (The state control of schools).* The Riksdag Auditors, Stockholm.
- Schüllerqvist U (1995) "Förskjutningen av svensk skolpolitisk debatt under det senaste decenniet" ("The shift in the debate on Swedish school policy during the last decade") in Englund T (ed) *Utbildningspolitiskt systemskifte? (A shift in education policy?)* HLS Förlag, Stockholm.
- Skolverket (2001) *Barnomsorg, skola och vuxenutbildning i siffror: del 2. (Childcare, school and adult education in figures: Part 2.)* Rapport nr 198, The Swedish National Agency for Education. Liber distr, Stockholm.

- Skolverket (2003) *Barnomsorg, skola och vuxenutbildning. Jämförelsetal för huvudmän. (Childcare, school and adult education. Comparative figures for authorities with overall responsibility.)* The Swedish National Agency for Education, Stockholm.
- Szücs S, Hemström Ö & Marklund S (2003) *Organisatoriska faktorerers betydelse för långa sjukskrivningar i kommuner. (The influence of organisational factors on long-term sick-leave in municipalities.)* Arbete och Hälsa (Work and Health) 2003:6, National Institute for Working Life, Stockholm.
- Wikman A & Marklund S (2003) "Tolkningar av arbetssjuklighetens utveckling i Sverige" ("Interpretations of work-related illness in Sweden") in von Otter C (ed) *Ute och inne i svenskt arbetsliv. Forskare analyserar och spekulerar om trender i framtidens arbete. (What's in and out in Swedish working life. Researchers analyse and speculate on trends in future work)* Arbetsliv i omvandling (Working life in transition) 2003:8, National Institute for Working Life, Stockholm.

## CHAPTER 14

# Working conditions and health at call centres

*Allan Toomingas*

### What is a call centre?

Call centres are a relatively new organisational unit, which have grown substantially in the labour market since the mid-1990s. There is no accepted definition of a call centre. The Swedish National Encyclopedia says:

**“Call centre**, a workplace where a number of people systematically handle incoming and outgoing communications. Mainly involves customer service, customer support, order receipt, switchboard services, telemarketing etc.”

It should perhaps be emphasised that the operation is computer assisted. “An operation, which handles customer and client contacts remotely, using telecommunications and computer assistance” could thus be another description. If the operation is to be called a “centre”, it should perhaps comprise at least 10 workstations. However, there are also virtual call centres, which connect operators working from home.

The name for this type of company varies. Customer service company, teleoffice, helpdesk and remote support are some alternatives. Contact centre is a term used increasingly often. Nor is there an accepted job title for call centre employees. They may be called, for example, call handlers, service managers or sales agents. The term (call centre) operator is used here.

The typical call centre operator works at a computer, using a telephone with headset, pen and paper, among 10–100 other operators at similar workstations, generally in an open-plan office (Figure 14.1).



**Figure 14.1.** Call centre interiors. (Photo: Lars-Erik Bystrom.)



### *Organisational forms and operations*

Operations similar to call centres have existed since the early 1900s in the form of manual switchboards, customer information and service as well as systematised sales and market research by telephone. One frequently used example is the Ford Motor Company, which together with the telephone company AT&T in the USA set up a free helpline for customers during the 1960s. The term call centre was first used in 1991 in the USA and in 1994 in Sweden.

The operational concept behind a call centre is to bring together the customer and client contacts of one or more organisations in a separate unit, thus specialising and streamlining the operations. A call centre may be organisationally and physically located *within a parent organisation* (called *internal* below) and have, for example, a customer service function in a bank or insurance company. A call centre may also be an *independent company* (called *external* below), which has this service function as its main activity and sells its services to other companies.

The operations may vary in degree of complexity with regard to the services provided. These range from less complicated services, such as directory enquiries, ticket booking, travel reservations or appointment booking, to slightly more complex services, such as order receipt, fault reporting or customer service for mobile phone companies. Complex services include troubleshooting in computer systems, medical, financial or insurance advice and the work of public authorities. Even stockbrokers' work is of a call centre nature. A special type are alarm centres, which receive and direct alarms to the emergency services and other emergency vehicles, security companies and other social functions of an "emergency" nature.

Incoming telephone calls are most common, for example, in customer service, order receipt, ticket sales and alarm centres. Outgoing calls occur in sales assignments and market research. Faxes, sms messages and emails are also handled, of which the latter are increasing sharply in certain areas.

### *Computers at call centres*

Telecommunications to and from a call centre go via a central computer, often called an automatic call distributor (ACD) or router. Incoming calls are

directed by the ACD to the next free, logged-in operator. The ACD also logs the time elapsed before the customer is connected, the number of unanswered calls, the total duration of the call and the time that the operator is not actively answering calls or is logged off. Logging off may be due to the operator leaving the workstation to go to the toilet etc. The equivalent call logging takes place in outgoing calls. This type of call logging often forms the basis for monitoring the agreements that the call centre has with its clients.

Each employee also has a computer linked to a network to retrieve and provide information on the matters handled.

## Trends

An increasing number of companies are concentrating their customer service in special call or contact centres, often located at external companies. A number of public authorities and publicly owned companies with a large number of client contacts also choose this operational model. These include the Swedish Police, the Swedish Post Office, SJ (Swedish railway company), Telia (Swedish telecom operator), Vattenfall (Swedish power company), the Swedish Motor Vehicle Registration Office and the Swedish National Board of Student Aid. Public authorities, which are in the process of introducing the model during 2004, include Sweden's regional tax authorities and job centres. The so-called 24-hour public authority, which is being introduced, means that citizens should be able to communicate via IT with public authorities 24 hours a day, 7 days a week. Even though no one from the authority is online round the clock, staff are needed to answer all incoming telephone enquiries, SMS messages and emails.

The technology and organisation of call centre operations allow them to be located at any distance from the customer, even abroad. Language barriers are solved by hiring staff with the appropriate language skills. There is a trend towards locating call centres in countries with lower costs. This applies mainly to south-east Asia and India, from which there is data showing an annual increase of 50 per cent in call centre jobs (McKinsey 1999). Round-the-clock service is facilitated by connecting night-time calls to a call centre in a different time zone.

An ongoing trend is towards more complex customer matters. Information and advice, which were previously provided in person by bank and

insurance company employees and others, are now increasingly provided by telephone or email. The same applies to medical advice. The above trend on the part of public authorities will also contribute to the increase in complex matters. Less complicated customer matters, such as information and bookings, can be fully automated by means of increasingly sophisticated technology, as the customer communicates via a touch-tone telephone or a voice-controlled computer.

This trend may result in an increasing number of graduates, people with considerable work experience and older people being engaged in more complex tasks at call or contact centres in the future. The quality rather than the quantity of the customer contact will be increasingly important.

### **Distribution and development in Sweden and globally**

The data on the number of companies and employees in call centre work in Sweden is unreliable, due to both the difficulties in defining a call centre and the varied job titles.

Call centre work does not have its own code in the *Swedish Standard Classification of Occupations* (ssyk). The nearest code is ssyk 422, “client information clerks”, which does not, however, distinguish call centre operators from receptionists, telephonists and others with similar occupations. Statistics Sweden (scb) will use a more precise coding as from 2006.

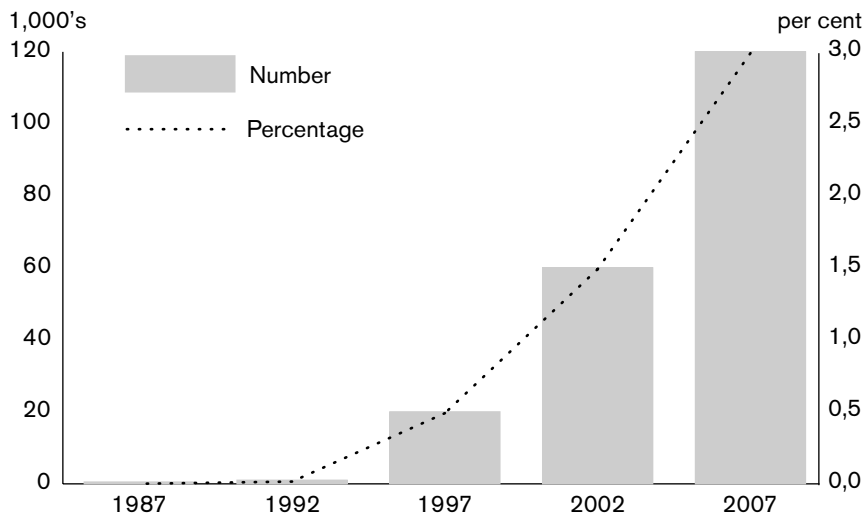
The data on *external* call centres (cf. the introduction) is least unreliable, but nevertheless varies from source to source. Statistics Sweden’s company database states that in January 2004, there were a total of 289 workplaces with a total of approximately 8,000 employees at such external call centres, under the *Swedish Standard Industrial Classification of All Economic Activities* code sni 74 860 “call centre services”. The government Invest in Sweden Agency stated that there were 192 external companies with approximately 14,000 employees in 2002. The data from Statistics Sweden and Invest in Sweden Agency thus differs. Statistics Sweden’s data may be underestimates, due to the problems of identifying all the call centres in the business sector. Invest in Sweden Agency’s data is based on information from the sector’s own representatives. The quality of the information may be difficult to evaluate.

The majority of external call centres are small. Of the 289 in Statistics Sweden’s database, 167 had fewer than 10 employees. The average size of an

external call centre is 46 workstations, according to Invest in Sweden Agency. Since many companies operate a shift system using the same workstation, the number of employees often exceeds the number of workstations.

It is particularly difficult to obtain data on employees in internal call centres. Various sources state that 75–80 per cent of all call centre operators are found in internal companies.

Call centres are one of the fastest growing labour market sectors. The first data from Sweden is from 1987, when 440 employees at 50 tele-marketing companies were identified (Cohen 2004). During the second half of the 1990s, the number increased dramatically, according to Invest in Sweden Agency (Figure 14.2). According to the Agency, there were a total of approximately 60,000 call centre operators in 2002, which is equivalent to approximately 1.5 per cent of the working population in Sweden. Invest in Sweden Agency (2004) estimates that the annual increase in the number of call centre employees will be 10 per cent during the period 2002–07.



**Figure 14.2.** Number of full-time employees and percentage of working population with call centre work in Sweden 1987–2002, and a forecast for 2007. (Source: Modified from Invest in Sweden Agency 2004.)

There have been great expectations that the call centre sector would provide new opportunities for entry to or continued employment in the labour market. Young people could, for example, be employed in call centre work while studying, or as an entry-level job. For individuals with physical or mental disabilities, there are opportunities to adapt the work to their special needs. The opportunity to work from home can also sometimes be arranged. However, no studies are known on whether the call centre sector has so far contributed to such long-term sustainable jobs.

Competition is fierce and profitability is considered to be weak. During the late 1990s, many Swedish companies were bought up by foreign investors. During the early 2000s, there has been a consolidation of the market with continued mergers and acquisitions (Cohen 2004).

Sweden is particularly interesting for the expansion of call centres. The high prevalence of PCs and mobile phones results in a large demand for service. Sweden is well advanced in IT-based technology, which is further accentuated by the rollout of broadband technology.

Call centres are located throughout Sweden. The Swedish Center for Call & Contact Services identified 339 call centres in 2003, of which 78 were located in Norrland, 64 in western Sweden, 108 in the Mälardalen region and 89 in south-east Sweden. New call centres are often set up in regions with high unemployment, where they have become an important industry (Cohen 2004, HSE 2001).

The problem of a lack of reliable statistics is similar in other countries. Frequently quoted figures state that approximately 5 per cent of jobs in the USA and approximately 1.3 per cent of jobs in Europe are estimated to be in call centres. In the UK, there were between 225,000 and 420,000 call centre operators at 4,000 to 5,000 companies at the beginning of 2000, equivalent to approximately 2 per cent of all workplaces. There are similar figures for Australia. The rate of increase in the number of jobs is often stated at 20–30 per cent per year.

### **Staff, training and employment conditions**

The conditions at call centres in Sweden presented in this chapter are mainly based on five published reports (HTF 2000, Norman et al. 2001,

Tengblad et al. 2001, Toomingas et al. 2003a, b). Several other studies are reported from the USA, the UK, Germany and other countries.

A major study of 28 call centres in different parts of Sweden and with different types of organisation and operations was carried out in 2002. The study was led by the National Institute for Working Life in Solna, in collaboration with Occupational Medicine in Sundsvall and the Institute for Psychosocial Medicine at Karolinska Institutet in Stockholm (Toomingas et al. 2003b). It was found that the average age of the employees was relatively low, aged 30 to 40, but with a large variation. The proportion of employees with higher education was on average approximately 25 per cent, which is slightly lower than among equivalent age groups in the rest of the gainfully employed Swedish population. It was higher at internal companies and also higher in the case of highly complex customer calls.

Trade union affiliation was just as high as among other employees in Sweden, approximately 80 per cent. In Swedish studies as in international studies, it has been found that the great majority of call centre operators are women.

Apart from the necessary specialised knowledge, personal qualities are generally the most important recruitment qualifications, particularly good customer skills. Sometimes language skills may be attractive. Previous experience of call centre work is rarely asked for. New employees generally receive internal training for two to six weeks, after which they are gradually trained to work independently.

Further training is generally focused on the products or services handled by the company. Training courses in sales techniques occur with a view to the development of more general skills. Career opportunities are limited, especially at external companies. However, there is the possibility of becoming a supervisor. At internal companies, it is possible in some cases to continue or alternate with employment at the parent company.

There are special study programmes for call centre administrators and managers at Blekinge Institute of Technology and at Mid Sweden University in Sundsvall.

The Swedish studies report that a large proportion of the staff has permanent full-time employment, which mostly takes place in traditional office hours. Scheduled hours and unsocial hours are also common. The

views of operators vary regarding evening and weekend work. Many operators are positive, including students who study in the daytime, while others see it as a disruption to their private life. Hourly employment may also occur to smooth out peaks in the workload. The number of staff from employment agencies is limited.

## Work organisation

When organising the work, it is decided *what* should be done, *who* should do what, and *how*, *where* and *when* the work should be carried out as well as the work *pace*.

### *Tasks, work content and job requirements*

*What* should be done at the call centre, in other words the content of the work, is mainly determined by the company's assignments.

Call centre operators report that they handle customer calls during the greater part of their working hours. In the above study by the National Institute for Working Life (Toomingas et al. 2003b), this accounted for 65 per cent of working hours. This proportion may be slightly higher at companies with less complex calls, compared with companies with more complex calls. Administration is reported to occupy approximately 10–30 per cent of working hours, other activities 5–10 per cent and breaks just over 5 per cent. Other activities may consist of meetings or further training. Companies usually set the target that calls and associated administration should comprise 60–80 per cent of working hours.

*Who* does what is determined by the management's decision on the distribution of duties. Different call centre companies have assignments of a different nature and degree of complexity, including incoming and outgoing calls. But this variation applies more rarely *within* the company, which often has a more limited range of assignments. Some companies have only *one* assignment. Monotony, repetitive calls and lack of stimulus are therefore frequent comments on the actual deficiencies of call centre work. Variety in the call content is also appreciated by operators as a positive element of the work. The limited scope of call centre company operations makes it difficult to achieve more radical variety in the daily tasks. This probably applies particularly to external companies, which usually only

handle customer service calls. Some variety could be achieved at internal companies by combining the work with other tasks in the parent company.

Several studies have indicated the importance of the *work content*. The main concern is about jobs that are monotonous and lack stimulus and opportunities for further development. In view of the predominance of women in less complex activities, a risk is seen of a new trap for women, where they end up in routine and non-stimulating tasks (Belt & Richardson 2000, Fenety et al. 1999, Holman 2003). Other researchers have emphasised that even apparently less complex call centre jobs make high mental demands, due to the need for constant attention, often combined with high quantitative and qualitative demands (Melin 2003). Such work situations are often linked to stress reactions in the body.

Working at a call centre is often reported to be *mentally demanding*. The phrase “mentally demanding” means that the operator must be constantly service-minded, work quickly and concentrate even if the immediate environment is disturbing, that the work requires considerable expert knowledge, and that the operator should be able to find his or her own solutions to customers’ problems. The *software* that is often found at call centres is not adapted to the operations either, and therefore hinders the operator’s information management unnecessarily, reducing performance (Tengblad et al. 2001).

*Emotional demands* are a particular mental demand faced by staff with customer or client contacts. This may entail not showing spontaneous emotions, even when the operator is angry, irritated or unhappy. Call centre operators sometimes encounter threatening, abusive or unduly demanding customers. This can, of course, be unpleasant and stressful in itself. Moreover, a professional attitude requires the operator nevertheless to treat the customers in a controlled and strict manner, “smiling down the line”, which is an additional stress factor.

### *Working methods*

*How* the work should be carried out at a call centre is often strongly determined by different procedures and agreements with the client companies. Sometimes the operator must strictly follow a script, standard responses etc. The software design further determines how the operator can carry out his or her work.



Feeling supervised, controlled and monitored recurs in various contexts as a negative element of call centre work. Being able to organise the details of the work oneself and “being able to work in peace” are therefore elements that are often appreciated. Lack of control of one’s own work has been reported in a number of studies of call centre work (Bain et al. 2002, Norman et al. 2001, Sprigg et al. 2003, Tengblad et al. 2001, Toomingas et al. 2003b).

*Where* the work should be carried out at a call centre is determined by the fact that the operations are based on customer telephone calls and on interaction with a computer system via a screen, keyboard and control device. The majority of the tasks must be carried out at the workstation and cannot be carried out elsewhere. On average, three-quarters of the working day is often spent sitting, handling customer calls and administration. Over a working year, this means 1,300–1,400 hours sitting at a computer and telephone. As a result, the design of the work environment and the employees’ knowledge and use of appropriate working methods are of great importance for perceived comfort – and for the risk of developing various types of disorder.

### *Working hours and work pace*

*When* the work should be carried out at a call centre is often determined and scheduled by the company so that the staffing level should match the call load. Opportunities for flexibility and influencing one’s own working hours are both a theoretically and empirically proven positive factor in the work.

The work *pace* at a call centre is usually determined by the flow of the incoming calls and the programming of the ACD. It is an advantage if the operator can determine when the next call is put through. The pace of both incoming and outgoing calls is also determined by the production targets established by the management and monitored by the call logging.

The number of customer calls per day and the duration of the calls may vary considerably, depending on the type of assignment. A typical example is approximately 100 calls per day, but may be considerably more. The call duration may be 4–5 minutes in a typical example, while 1.5–2 minutes is usual in more routine assignments. External companies and companies with less complex calls have more and shorter calls than other companies.

Too high a work pace, stress and pressure to handle a large number of calls are common negative comments on call centre work. Half of the operators in the National Institute for Working Life's study considered that the number of calls per working day was just right, 20 per cent thought there were too many and 10 per cent considered that there were too few.

### *Production control and remuneration system*

Supervision and control of the employees' work through *call logging and monitoring* have often been reported as particularly evident at call centres and as a source of stress for the employees (Sprigg et al. 2003, Tengblad et al. 2001, Toomingas et al. 2003b). Call logging often forms the basis for feedback and sometimes bonus for the group and the individual operator.

Monitoring of telephone calls is common. In these cases, a supervisor or coach generally sits next to the operator and listens to the customer calls via an extra headset. Monitoring often takes place as part of training, further development and quality control of the work.

Both call logging and monitoring may be experienced by the operators as a good way of demonstrating their own performance. Monitoring can also function as a way of developing customer calls. However, the downside is that many operators may feel supervised, controlled, stressed and nervous, particularly as a result of call logging.

Call logging stresses the *quantity*, while monitoring stresses the *quality* of the work. It is easy for the two to come into conflict, leading to a role conflict for the operator. The operators in the National Institute for Working Life's study felt unhappy just under 20 per cent of the time due to the high number of calls, and just over 15 per cent of the time due to the conflict between the number of calls and their duration.

According to the *Work Environment Act*, "quantitative or qualitative control of the employee's labour input via the computer system must not be carried out without the latter's knowledge" (Swedish Work Environment Authority's Provisions and General Recommendations (AFS) 1998:5, Section 10). The *Personal Data Act* gives the employer the right to electronically record and store such information for control purposes, if this takes place with the employee's consent, or in accordance with a "balance of interests", where the employer's need to process the data outweighs the employee's

interest in the data not being processed. Trade union agreements may also come into play. However, the employees must be informed of which data is being collected and what the purpose is. Nor should the data be stored for a longer period than justified by the purpose.

The Swedish Data Inspection Board reports that in its inspections of call centres it has found that many companies fail to comply with these conditions (Datainspektionen 2003). Intrusive electronic real-time monitoring of individuals is regarded as incompatible with the Act. Nor should such personal data be publicly displayed at the company.

*Wages* account for approximately 60–75 per cent of the total costs of a call centre and have been described as relatively low. According to the Salaried Employees' Union (HTF), the contractual minimum wage for 2002 was SEK 13,630 per month for the over-23s and the average wage was just over SEK 14,000. The fixed wage is sometimes linked to a bonus system, which may be based on the company's or the individual's performance.

*Campaigns and prize competitions* with various rewards and publicly displayed call or sales statistics on an individual or group basis have been described as a frequent carrot and stick (Tengblad et al. 2001, Toomingas et al. 2003b). However, too much emphasis on competitions between individuals or different teams can be detrimental to the atmosphere and cohesion at the company in the long term. In a good work situation, the work in itself, the wage and the social support from management and colleagues should be sufficient reward.

### **Strictly controlled, restricted and repetitive work**

The type of work organisation commonly found at call centres has often been compared to a mental production line. Researchers in the field of working life have warned of and refer to the large body of well-known knowledge concerning the risks of such an operational organisation (Bain et al. 2002, Tengblad et al. 2001, Toomingas et al. 2003b, Zapf et al. 2003). Call centre work may consequently be mentally demanding, repetitive, strictly controlled and both physically and mentally restricted, as well as offering few opportunities for control of one's own work.

This is in conflict with what the Work Environment Act states in AFS 1998:5, Section 7:

Display screen work which is closely controlled or restricted in a physical or mental respect or is monotonously repetitive may not normally occur.

Such working conditions may constitute a risk of poor well-being and various types of disorder and ill health arising, particularly if the work is carried out for a long period without a break, at inappropriately designed workplaces or under stress.

### **Physical work environment conditions**

Physical work environment conditions at Swedish call centres vary, but appear in general to be of a good standard, particularly in an international perspective (Tengblad et al. 2001, Toomingas et al. 2003b).

#### *Room climate*

The room climate is generally good, but with the usual problems of dry air in the winter. This is an unavoidable phenomenon, which is difficult to solve in our climate region, when cold outdoor air is taken in and heated to room temperature. Dry air can lead to problems with dry mucous membranes in the eyes, throat and respiratory passages, increasing the strain on these organs in this work, which is demanding on both the vision and the voice. Eye and throat disorders are also common at call centres. Almost every call centre operator has a bottle of water on the desk.

#### *Sound levels*

When a large number of operators sit close together and talk in the same premises, the sound levels are often high. In the National Institute for Working Life's study, where the average space was 8–9 m<sup>2</sup> per operator, the average sound level was 61dB(A). Such levels disturb the ability to concentrate and speech comprehension. This can in turn cause problems in the form of headache and tiredness, which are common among call centre operators.

The acoustic screens between the operators are often inadequate. The headsets commonly used are not designed to reduce ambient noise appreciably. Half of the operators in the above study also reported that their headsets did not shut out disturbing noise. A hearing test is not part of hiring procedures, despite call centre work being demanding on hearing.

*Vision ergonomics*

In terms of vision ergonomics, conditions are often not optimal, with a risk of glare and reflections in the screen from windows or other light sources. Both ceiling luminaires and other operators' task lighting can easily cause these problems in an open-plan office. This can lead to eye disorders, headache and neck pain, all of which are very common among call centre operators. It is also important that all operators have a regular eye test, as prescribed in the Work Environment Act (AFS 1998:5, Section 6). Only 10–30 per cent of the operators in the Swedish companies studied state that they have had an eye test.

*Office furniture and working postures*

Operator chairs, desks and other equipment are often of a good standard, a view shared by the employees. However, all employees should have an electrically height-adjustable desk, to increase the opportunity for varying the working posture and to adjust the height more easily, when sharing the workstation with other employees.

However, a number of inappropriate working postures occur, partly as a result of a non-optimal adjustment of furniture and computer equipment. The keyboard and the mouse are very commonly positioned too far from the body. This easily leads to working with inappropriate postures and without supporting the arms and hands. In the long term, this constitutes a risk of aches and pains developing, mainly in the neck, shoulders, arms and hands (Punnet & Bergqvist 1997).

**Knowledge**

However, it is not sufficient that the equipment is good from a work environment perspective. The staff must use it correctly, to achieve the objectives of preventing ill health. Much seems to indicate that there is a lack of knowledge, understanding and motivation among call centre operators to work using the correct method and technique. It is well known that height-adjustable computer desks are not used as intended; the operator remains seated the whole day. Management has the important educational task of providing information and explaining why and how staff should work correctly. The employer should ensure that the employee has adequate

knowledge of, for example, appropriate working postures and movements, and how technical equipment and aids should be used, in accordance with AFS 1998:1, Section 6. Many employers, not only those at call centres, are often unaware of this responsibility. In the National Institute for Working Life's study, nearly 40 per cent of the operators considered that they had not received such information.

### **Work environment inspections**

Compliance with the Work Environment Acts varies in the call centre sector, as in other sectors. The Work Environment Inspection Board carried out inspections at 112 call centre companies during 2002 and 2003 (Jonsson 2004). Enforcement notices were issued to 86 per cent of these companies for a total of 582 measures, and this was just as common at internal as external companies. These are high figures in that notices are generally issued to approximately 60 per cent of inspected companies in other sectors.

Just under half the notices concerned deficiencies in the companies' systematic work environment programmes, for example, the absence of investigations of the work environment and a lack of knowledge of the work environment on the part of management and staff.

A large proportion of the notices concerned measures to reduce strictly controlled and restricted work with long shifts, little variety and few opportunities to influence the work.

Another large proportion of the notices concerned deficiencies in the physical design of the work environment, with disturbing noise, inadequate work surfaces, incorrectly positioned equipment and inappropriate working postures. The Inspection Board has stated that the way in which the work is organised, managed and controlled is of crucial importance for how the employees experience their working conditions.

### **Work satisfaction**

The employees' own views on their working conditions at call centres are both positive and negative. In the National Institute for Working Life's study, the positive would seem to have outweighed the negative for many operators, since one in two wanted to remain at the same company and

carry out the same work (Table 14.1). One in four wanted to remain at the company, but with other tasks or in another position. Operators at companies with highly complex customer calls were least interested in changing job. Obviously, the employees' own qualifications, the local labour market and thus the opportunities for getting another job may have had an impact here. On average, employees had worked at the company for four years and with the present tasks for at least one month.

Colleagues and the atmosphere at work, the customer contact and any opportunities for influencing the working hours were often stated as the main advantages of the work. Similar overall positive opinions are reported in other studies (Tengblad et al. 2001).

However, one in four call centre operators wanted to leave their current workplace. This more rarely involved dissatisfaction solely with the present company, since only a minority wanted to move to another company and continue with similar work. The majority wanted to switch to completely different tasks. The conditions that they often considered negative in the present job were mainly the high work pace with a large number of calls and the monotonous and sedentary work.

Other disadvantages that were often expressed were the management's careful monitoring of the work, the individual's lack of control and unsuitable working hours, particularly where these clashed with family life and

**Table 14.1.** Responses to the question "Do you want to continue with your present work?" among operators at 28 different call centres. Distribution by external and internal companies, as well as by degree of complexity of customer calls. Per cent. (Source: Toomingas et al. 2003b.)

	Type of company		Degree of complexity			
	external n=673	internal n=510	low n=486	medium n=370	high n=327	all n=1,183
Want to continue with present work at present company	46	53	50	42	54	49
Want to switch to other work or another position at present company	23	27	21	22	33	25
Want to continue with similar work but at another company	6	4	5	7	4	5
Do not at all want to continue with this type of work	25	16	24	29	9	21

leisure activities. Similar disadvantages are reported in many other studies (Bain et al. 2002, HSE 2001, HTF 2000, Tengblad et al. 2001).

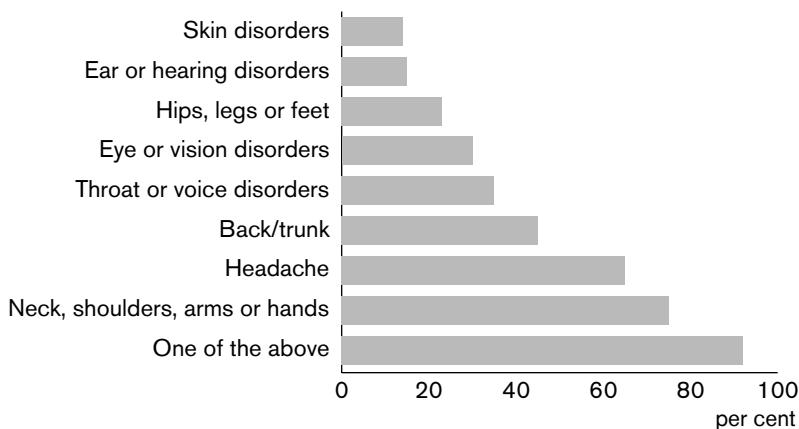
Similar findings have been made in working life in general, where 20 per cent of permanent employees consider themselves to be in the “wrong occupation” and the “wrong workplace” (Aronsson et al. 2000).

## Disorders and state of health

Due to the lack of database information on the sector and its employees, it is difficult to obtain clear data on occupational injuries or sickness absence among call centre operators. Most existing data therefore comes from studies of individual companies and notification of occupational injuries.

### *Studies at companies*

Physical disorders are very common among call centre operators. In the above study by the National Institute for Working Life, just over nine out of ten operators reported that they had suffered from physical disorders during the past month (Figure 14.3). Generally, this involved headache or aches and pains in the neck, shoulders, arms or hands. The incidence of disorders



**Figure 14.3.** Percentage of all participants who reported aches and pains or other disorders during the past month, in a study of 1,183 operators at 28 different call centres in Sweden. (Source: Toomingas et al. 2003b.)



is similar or slightly higher than among other employees with intensive display screen work.

Almost one in four of those who had reported physical disorders said that these had caused sleeping problems. Difficulties in carrying out daily housework and in exercising were also common. Difficulty in carrying out gainful employment was placed sixth among various negative consequences of physical disorders. The negative consequences of physical disorders among computer users are evidently noticed more often outside work than at work!

The most common method of pain management was to take painkillers or other medication. More than one in two stated that they had taken medication for their physical disorders during the past month. One in five of those with physical disorders reported that the disorders had led to sickness absence during the past month.

In a medical examination of operators included in the above study, only one in three was found to be in good health. One in two of those examined was considered to be suffering from ill health which was probably wholly or partly caused or exacerbated by the work. This usually involved musculoskeletal ailments.

Similar findings of a high incidence of physical disorders and proven ill health on medical examination have been reported in most studies of call centre staff (Ferreira et al. 1997, Taylor et al. 2003, Tengblad et al. 2001).

Self-reported sickness absence in the above study by the National Institute for Working Life, irrespective of illness and type of absence (reporting sick, compensatory leave for overtime or holiday days), was 25 days per year or approximately 10 per cent of total working hours. In addition, there was "sickness attendance", which accounted for approximately five per cent of total working hours. Sickness absence among the call centre operators in the study is considered to have been slightly higher than among the rest of the working population. Other researchers have also reported a high incidence of sickness absence (Bain et al. 2002).

Similar health problems are also common among other professional computer users (Gerr et al. 2002, Karlqvist et al. 2002, Punnet & Bergqvist 1997). In a study in which different professional computer users could be compared using the same methods, call centre operators had the highest

proportion of disorders, reported sick more often and had a higher consumption of pharmaceutical products than the other occupational groups, despite their considerably lower age and shorter period of computer work (Norman et al. 2001, Toomingas et al. 2003a). The reason that call centre operators suffer to a greater extent from disorders and ill health may be that they have fewer opportunities for variety, breaks and control of the work.

### *Notification of occupational injuries*

Occupational injuries notified to the Swedish Work Environment Authority can only be identified in the case of external call centres (SNI code 74 860). According to unpublished data, there were 10 notifications in 2002 and 22 in 2003, equivalent to approximately 0.3 per cent of the operators in the database. In the study by the National Institute for Working Life, 21 operators, or 1.8 per cent, reported that they had given notification of an occupational injury during the past year. The figures are very unreliable, due to the limited number of notifications. The large difference can also be due to the difficulties in classifying call centre staff under the correct occupational and industry code. On average, the equivalent figure is 1.2 per cent among the working population aged 20 to 40, and 0.2 per cent among office workers with considerable computer work.

### **Comprehensive explanatory model for ill health**

The data on the high prevalence of disorders and ill health is alarming, particularly in relation to the relatively low average age of call centre employees. Headache and musculoskeletal aches and pains are very common. Such disorders are generally caused by several interacting factors, such as those linked to the individual, the work and conditions outside work.

A number of studies from different countries have indicated various factors in call centre work that are possible explanations for the disorders and ill health found, mainly organisational and psychosocial deficiencies (Sprigg et al. 2003, Taylor et al. 2003). Generally, they involve high output demands, high mental demands, the management's monitoring and the employee's lack of control of his or her work. These may affect health through the development of stress reactions.

This stress may be compounded by reactions to other stress factors, such as working in an open-plan office, disturbances due to high sound levels in the premises, monotony and constrained working postures (Evans & Johnson 2000, Melin 2003, Sprigg et al. 2003, Taylor et al. 2003). Monotonous tasks, constrained postures and (machine) controlled work with a lack of control of one's own work have been shown to increase the secretion of stress hormones.

Deficiencies in ergonomic conditions regarding musculoskeletal load and vision may also have an impact, such as the design and adjustment of the desk, chair and computer equipment.

Today, there are good explanatory models for how such conditions in computer work can cause the type of disorders demonstrated at call centres (Christensen & Sjøgaard 1999, Johansson et al. 2003). A common explanation is that these conditions can result in low-intensive but prolonged static activity of muscles mainly in the neck, shoulders and forearms. This activity affects certain areas of the muscles, but without initially causing disorders. Unless the conditions improve and if the opportunities for rest, recovery and good sleep are also poor, a risk arises of aches and pains developing. The operator easily gets into a vicious circle and the disorders tend to spread and become increasingly difficult to cure.

### **Guidelines for a sustainable development of call centre work**

It should be possible to reduce many of the problems described concerning working conditions at call centres, even though some may require extensive changes in the work organisation. Work environment legislation, for example AFS 1998:5, Section 7 (see above "Strictly controlled, restricted and repetitive work"), should state the minimum requirements for such a process of change and development.

On the basis of current legislation, theory development and research experience, the following still only partially tested proposals may be put forward.

The most important, but perhaps also the most difficult thing, is to *organise* the work so as to create optimal physical and mental variety, as well as opportunities for the operators to control and develop in their work. The sector therefore faces a major challenge to further develop operations in

these respects. This includes being able to control the work pace, alternating between a sitting and standing posture when working, switching between different customer assignments or carrying out tasks other than customer calls, and taking regular breaks, preferably involving physical activity.

*Participation in the planning* and organisation of operations may increase commitment. *Further training* increases the opportunities for variety in the tasks. In order to achieve adequate variety, call centre work could perhaps be combined with *other tasks* from other areas of the company in the case of an internal call centre, or from other companies in the case of a group of companies. In order to break the prolonged sedentariness at call centres, alternative tasks should preferably be more physically demanding and active.

There are few reports on attempts to improve the working conditions at call centres. Two companies made ergonomic improvements, which included installing height-adjustable computer desks (Most 1999). Reports of pain after the working day declined from 50 to 10 per cent. Ten-minute breaks every hour reduced the development of disorders among call centre operators (Ferreira et al. 1997). Another study showed increased productivity following ergonomic improvement measures (Smith & Bayehi 2003). Studies have also suggested that more autonomous groups have higher sales volumes and also consider themselves to provide a better quality of service (Batt 1999).

In order to create the preconditions for a long-term sustainable development, the working conditions should be examined at an early stage and an attempt made to prevent the problems observed at these new workplaces. When setting up new call centres, current knowledge of good work organisation and a good work environment should be put into practice. Call centres are a new line of business, which should be able to apply modern knowledge of work organisation and work environment, without being hampered by the inertia often found in existing organisational structures.

It is important that the sector utilises the motivation of the staff to work with and for the business. The ominous state of health and lack of well-being may, however, threaten the staff's wishes and opportunities to continue working in the long term.

*Subsidies from public authorities* to entrepreneurs looking to start up call centres should be linked to some form of quality control or work environ-

ment certification, to avoid contributing to the development of ill health and other problems.

A *systematic work environment programme*, in accordance with the Work Environment Act, may be a good way of structuring the work environment programme (AFS 2001:1). The competence of the occupational health service can provide a good complement to this programme.

Advice and guidelines for improvements are available from organisations representing employers (CCA 2003), trade unions (Paul & Huws 2002), supervisory authorities (HSE 2001) and researchers (Tengblad et al. 2001, Toomingas et al. 2003b). Ethical guidelines for customer relations and for monitoring and recording calls are available from trade associations, such as the Swedish Call Centre Federation. Guidelines for call centres in Europe have been issued by European trade associations and trade unions, such as the European Telecommunications Network Operators Association and UNI-Europe Telecom for Trade Unions (see also European Foundation 2004).

Further advice and recommendations regarding the appropriate design of computer workstations and good working techniques in computer work can be downloaded from the National Institute for Working Life's website: [www.niwl.se/datorarbete](http://www.niwl.se/datorarbete) (with full English versions). The website also has a range of different questionnaires and checklists, which may be useful in investigations of such workplaces.

### *Acknowledgments*

Many thanks to Philip Cohen, Swedish Call Centre Federation; Tina Walroth, Call Center & Support Services Institute; and Tommy Mases, HTF for valuable information.

### **References**

- Aronsson G, Dallner M & Gustafsson K (2000) *Yrkes- och arbetsplatsinlåsning. En empirisk studie av omfattning och hälsokonsekvenser. (Locked in an occupation or workplace. An empirical study of the prevalence and health consequences.)* Arbete och Hälsa (Work and Health) 2000:5, National Institute for Working Life, Stockholm.
- Bain P, Watson A, Mulvey G, Taylor P & Gall G (2002) "Taylorism, targets and the pursuit of quantity and quality by call centre management" *New Technology, Work and Employment*, 17(3), pp 170–185.

- Batt R (1999) "Work organization, technology and performance in customer services and sales" *Ergonomics, Industrial and Labor Relations Review*, 52, pp 539–564.
- Belt V & Richardson R (2000) "Women's work in the information economy" *Information, Communication & Society*, 3(3), pp 366–385.
- CCA (2003) "CCA Standard: A framework for best practice" (<http://www.cca.org.uk/standards>), Call Centre Association (Version April 2004).
- Christensen H & Sjøgaard G (ed.) (1999) *Muscular disorders in computer users: Mechanisms and models. Procid Symposium 25–27 November 1999*. National Institute of Occupational Health, Copenhagen.
- Cohen P (2004) "Callcenter – nygammal bransch" opublicerad pm ("Call centres – a sector that is both new and old" Unpublished memo), Swedish Call Centre Federation, Stockholm.
- Datainspektionen (2003) *Behandling av personuppgifter för kontroll av anställda. (Processing of personal data for the control of employees.)* Report 2003:3, Swedish Data Inspection Board, Stockholm.
- European Foundation (2004) "Call centre charter agreed" (<http://www.eiro.eurofound.eu.int/2004/05/feature/eu04052004f.html>), European Foundation for the Improvement of Living and Working Conditions, Dublin (Version June 2004).
- Evans GW & Johnson D (2000) "Stress and open-office noise" *Journal of Applied Psychology*, 85(5), pp 779–783.
- Fenety A, Putnam C & Loppie C (1999) "Self-reported health determinants in female call centre tele-operators: A qualitative analysis" in Lee G (ed.) *Advances in occupational ergonomics and safety*. IOS Press, Amsterdam.
- Ferreira M, Conceicao G & Saldiva P (1997) "Work organization is significantly associated with upper extremity musculoskeletal disorders among employees engaged in interactive computer-telephone tasks at an international bank subsidiary in Sao Paulo, Brazil" *American Journal of Industrial Medicine*, pp 468–473.
- Gerr F, Marcus M, Ensor C, Kleinbaum D, Cohen S, Edwards A, Gentry E, Ortiz D & Monteilh C (2002) "A prospective study of computer users: 1. Study design and incidence of musculoskeletal symptoms and disorders" *American Journal of Industrial Medicine*, 41, pp 221–235.
- Holman D (2003) "Call centres" in Holman D, Wall T, Clegg C, Sparrow P & Howard A (ed.) *The new workplace. A guide to the human impact of modern working practices*. Wiley & Sons, West Sussex.
- HSE (2001) "Advice regarding call centre working practices. Local Authority Circular" (<http://www.hse.gov.uk/lau/lacs>), Health and Safety Executive and Local Authorities Enforcement Liaison Committee (HELA) (Version April 2004).
- HTF (2000) *Den "nya" arbetsmarknaden. HTFs projekt om förhållanden inom Tele-marketing-Callcenter-Telefonintervjuföretag december 2000. (The "new" labour market. The Salaried Employees' Union project concerning the conditions in telemarketing, call centre and telephone survey companies in December 2000.)* Salaried Employees' Union (HTF), Stockholm.

- Invest in Sweden Agency (2004) "Overview – the contact centre market" (<http://www.isa.se>), Invest in Sweden Agency, Stockholm (Version 23 January 2004).
- Johansson H, Windhorst U, Djupsjöbacka M & Passatore M (ed.) (2003) *Chronic work-related myalgia. Neuromuscular mechanisms behind work-related chronic muscle pain syndromes*. Gävle University Press, Gävle.
- Jonsson C (2004) *Arbetsmiljö på callcenter. Tillsynsprojekt 2002-2003 inom Arbetsmiljöverket. (The work environment at call centres. Supervision project 2002-2003 at the Swedish Work Environment Authority.)* Report 2004:2, Swedish Work Environment Authority, Solna.
- Karlqvist L, Wigaeus Tornqvist E, Hagberg M, Hagman M & Toomingas A (2002) "Self-reported working conditions of VDU operators and associations with musculoskeletal symptoms: a cross-sectional study focussing on gender differences" *International Journal of Industrial Ergonomics*, 30, pp 277-294.
- McKinsey (1999) *Highlights of the NASSCOM. McKinsey study report on the IT enabled service segment*. National Association for Software and Service Companies, New Delhi.
- Melin B (2003) "Mentala löpande band och risken för kognitiv överbelastning" ("Mental production lines and the risk of cognitive overload") pp 235-251 in von Otter C (ed.) *Ute och inne i svenskt arbetsliv. Forskare analyserar och spekulerar om trender i framtidens arbete. (What's in and out in Swedish working life. Researchers analyse and speculate on future work trends.)* Arbetsliv i omvandling (Working Life in Transition) 2003:8, National Institute for Working Life, Stockholm.
- Most IG (1999) "Psychosocial elements in the work environment of a large call center operation" *Occupational Medicine: State of the Art Reviews*, 14(1), pp 135-146.
- Norman K, Toomingas A, Nilsson T, Hagberg M & Wigaeus Tornqvist E (2001) "Arbetsförhållanden och upplevda besvär hos kvinnliga och manliga arbetstagare på ett callcenter" Arbetslivsrapport ("Working conditions and disorders experienced by male and female employees at a call centre" Working Life Report) 2001:5, National Institute for Working Life, Stockholm.
- Paul J & Huws U (2002) *How can we help? Good practice in call-centre employment*. Analytical Social and Economic Research Ltd for the TOSCA project, European Trade Union Confederation, Brussels.
- Punnet L & Bergqvist U (1997) *Visual display unit work and upper extremity musculoskeletal disorders. A review of epidemiological findings*. Arbete och Hälsa (Work and Health) 1997:16, National Institute for Working Life, Stockholm.
- Smith MJ & Bayehi AD (2003) "Do ergonomics improvements increase computer workers' productivity? An intervention study in a call centre" *Ergonomics*, 46(1-3), pp 3-18.
- Sprigg C, Smith P & Jackson P (2003) *Psychosocial risk factors in call centres: An evaluation of work design and well-being*. Health & Safety Executive, London.

- Taylor P, Baldry C, Bain P & Vaughan E (2003) "A unique working environment: health, sickness and absence management in UK call centres" *Work, employment and society*, 17(3), pp 435-458.
- Tengblad P, Backström M, Herrman L, Hammarström O & Sandgren S (2001) *Hållbart arbete i informationssamhället. Slutrapport från projektet "Callcenter i utveckling – långsiktigt hållbart arbete med kunder på distans". (Sustainable work in the information society. Final report from the "Call centres under development – long-term sustainable work with remote customers" project.)* ATK Arbetstagarkonsultation AB, Stockholm.
- Toomingas A, Nilsson T, Hagberg M, Hagman M & Wigaeus Tornqvist E (2003a) "Symptoms and clinical findings from the musculoskeletal system among operators at a call centre in Sweden – A 10-month follow-up study" *International Journal of Occupational Safety and Ergonomics*, 9, pp 405-418.
- Toomingas A, Hagman M, Hansson Risberg E & Norman K (2003b) "Arbetsförhållanden och hälsa vid ett urval av calcenterföretag i Sverige" Arbetslivsrapport ("Working conditions and health at a sample of call centres in Sweden" Working Life Report) 2003:10, National Institute for Working Life, Stockholm.
- Zapf D, Isic A, Bechtoldt M & Balu P (2003) "What is typical for call centre jobs? Job characteristics and service interactions in different call centres" *European Journal of Work and Organizational Psychology*, 12(4), pp 311-340.



## CHAPTER 15

# Jobs that involve the risk of threats and violence

*Ewa Menckel and Annika Hultin*

Threats and violence in society are a growing problem today, both nationally and internationally. Violence occurs in many forms and situations and can also threaten employees at work. In the Nordic countries, as in many other countries, violence towards members of staff is an increasing problem. Violence can result in physical injury and psychological ill health, for example anxiety, tension, stress or financial loss. It can also affect the working conditions at the workplace and within the organisation. The resulting unsatisfactory working conditions may, in their turn, lead to a higher risk of violence towards employees.

Some of the questions that must be answered, and that research can focus on, are concerned with the prevalence and frequency of threats and violence in working life, for instance: who are the victims, where, when, how and how often does violence occur? There are also other questions. Has there been an increase in violence and threats, and have they become more serious? What are the factors behind the threats and violence? In what situations do threats and violence occur, and when do they lead to physical injury and psychological ill health? What consequences do threats and violence have for the individual, the group, the workplace and society in general? What can be done to prevent the occurrence of threats and violence?

We start this chapter by presenting some definitions and terms related to threats and violence. We then outline which workplaces and which occupational groups are, according to the statistics available, particularly at risk of threats and violence in working life in Sweden. This is followed by a presentation of the results of two nationwide research projects. These focus on sectors in which threats and violence are common occurrences, namely

the municipal care and welfare sector, and retail trade and services. There is also a section describing the national inspection of the work environment with regard to threats and violence in the workplace, including examples from the above-mentioned sectors. The chapter ends with a short summary of what we know today and some reflections on areas where further research is needed.

## Definitions and terms

There are a great number of definitions of the concept “violence at work”, both in official publications, for instance from public authorities and organisations, and in unofficial documents. One definition that has been of great significance in creating a unified attitude to violence at work was formulated by a group of experts appointed by the European Commission in 1995. The group suggested the following definition:

Incidents where persons are abused, threatened or assaulted in circumstances related to their work, involving an explicit or implicit challenge to their safety, well-being and health (Wynne et al. 1997, p. 1).

This definition includes both physical and psychological offences and also covers violence towards employees and violence in which family members or acquaintances are threatened or attacked.

The Swedish Work Environment Act does not include a definition of violence, but in the recommendations from the Swedish Work Environment Authority (Arbetsmiljöverket, AV) regarding the application of the directive on threats and violence in the work environment, violence is defined as “everything from murder to harassment in the form of threats by letter or via the telephone” (AFS 1993:2, p. 7, see information box).

The two research projects that are presented in this chapter contain definitions of threats and violence. In the nationwide survey of threats and violence towards employees in the municipal care and welfare sector, violence is defined as “both verbal and physical aggression” (Menckel & Viitasara 2000, p. 55). Examples of this definition given in the questionnaire include screaming, threats on the telephone, hitting, pinching, kicking, pushing, holding someone down etc. In the project on threats and violence in the retail trade and service sector, violence is described as:

Conscious physical or verbal aggression that causes harm or discomfort to one or more people, regardless of whether they are the intended victims of the attack or if they become involved for other reasons (Geijer & Menckel 2003a, p. 9).

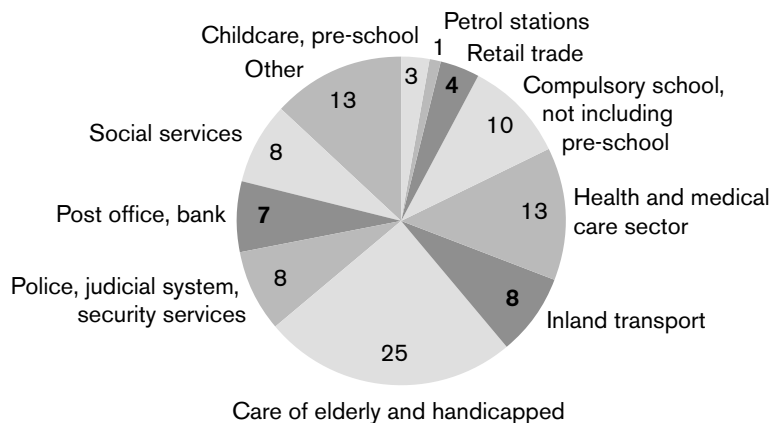
This definition also includes threats and threatening behaviour as a form of violence.

### Sectors and occupational groups at risk

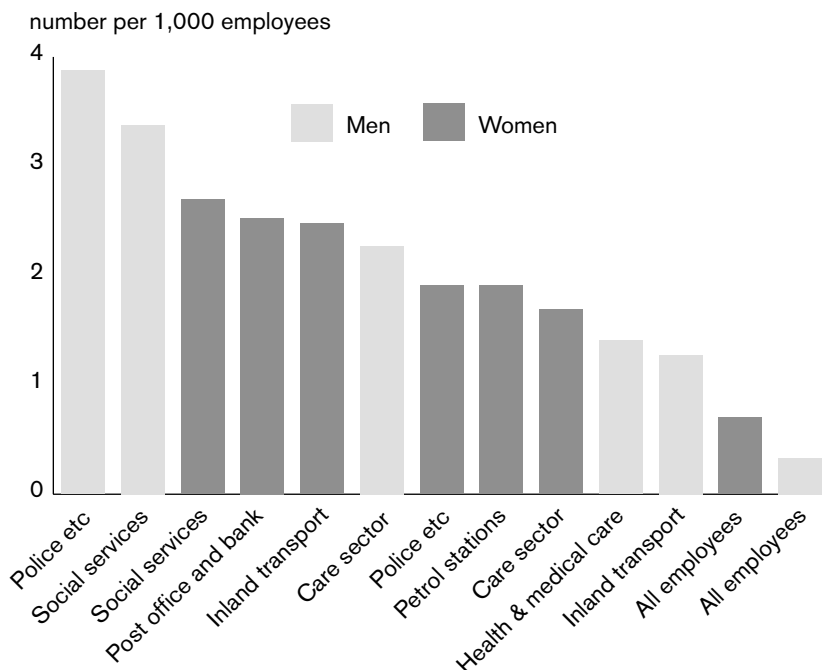
Violence and threats of violence at work represent a serious and widespread problem in the work environment today. Certain sectors and occupations are more at risk than others.

#### *Women more often victims than men*

The number of reported injuries at work due to violence or threats has greatly increased during the period 1994–99 (Swedish Work Environment Authority 2003). Since 1999 the figures for men have continued to increase. In 2001 there was a decrease in the number of cases reported concerning women, though cases concerning women still almost doubled the number



**Figure 15.1.** Percentages of reported work injuries resulting from threats or violence 2002–03, divided according to occupation. (Source: Swedish Work Environment Authority/ISA.)



**Figure 15.2.** Reported accidents involving violence or threats 2002–03. Number per 1 000 employees and year. Business sector/sex. (Source: Swedish Work Environment Authority/ISA, Statistics Sweden/RAMS 2001.)

of cases concerning men. In 2002, for example, 1,970 work injuries due to violence or threats were reported, of which 1,308 concerned women and 662 concerned men. A third of the reported cases were in the care sector, followed by the nine-year compulsory school, inland transport, the police force, security guards and the judicial system and social services (see Figure 15.1). The problem of threats and violence in schools is discussed in this book in Chapter 12 (regarding pupils) and Chapter 13 (regarding adults).

In comparing different sectors, relative frequency should also be taken into account, i.e. the number of reported incidents must be related to the number of people employed in the respective sectors (see Figure 15.2). With regard to men, the police force, care sector and social services have a high relative frequency. With regard to women, the post office and banks,

inland transport and petrol stations have a high relative frequency. The overall risk of violence and threats is greater for women, and is particularly high for women up to the age of 24.

As the information system for work injuries (ISA) changed its coding routines from the beginning of 2002, it is impossible to make satisfactory comparisons with earlier years. Injuries are underreported to a considerable extent (see Chapter 3), which means that the frequencies given above are underestimated in comparison with the actual number of injuries. It is also possible that the tendency to report injuries varies between different sectors.

### *Consequences*

ISA does not indicate how serious the consequences of injuries of this type are for the individual. In the period 1999–2003, eleven cases of injury had fatal consequences due to violence. More than half the cases reported in 2001 led to sickness absence. A particularly high percentage of sickness absence occurs in compulsory schools, restaurants, the transport sector, petrol stations, childcare, and care of the elderly and of mentally and physically handicapped patients. Statistics on sickness absence do not give full information about how serious the injuries are, as many people continue to work in spite of their psychological suffering.

Another measure of the incidence of threats and violence in working life can be seen in the sample surveys made by the Swedish Work Environment Authority (AV) and Statistics Sweden (SCB). Statistics from the Work Environment Survey are based on these surveys. This is made every other year in the final quarter of the year and is based partly on telephone interviews and partly on questionnaires distributed by post. In the Work Environment Survey for 2001, 17 per cent of the employed women and just over 9 per cent of the men said that they had been subjected to violence or threats of violence at some point in the previous twelve months (Swedish Work Environment Authority & Statistics Sweden 2003). This amounts to approximately 540,000 people. The number of people who feel that they have been subjected to violence or threats of violence varies between different sectors and between the sexes. Amongst women it is usually carers, nurses, auxiliary nurses, social workers/counsellors and cashiers that report

the use of violence or threats of violence. Among men it is policemen, security guards, teachers in compulsory schools, doctors and vehicle drivers that report having experienced this type of problem most often.

*Threats and violence in the municipal care sector*

One of the sectors that has the most reported cases of work injuries due to threats and violence is community care services. In spite of the fact that threats and violence seem to be a major problem in this sector, often occurring daily, there is still very little information available about the problem (Menckel et al. 2002). One of the reasons is that threats and violence are not always reported or documented, and that research in this area is only just beginning (Menckel 2000).

Because of this situation, the National Institute for Working Life (Arbetslivsinstitutet) and the municipality and county council advisory committee on the work environment together made a nationwide survey of threats and violence in the public care sector in January 2000 (Menckel & Viitasara 2000, Viitasara 2004). Questionnaires were sent to a random sample of 2,800, of a total of 172,000 employees. The seven largest occupational groups were identified (see Table 15.1). The response rate was high, 85 per cent on average.

*Slightly more than half have been subjected to threats and violence in the past year*

Of the total number of respondents, 51 per cent said that they had been subjected to threats and violence during the past year (Table 15.1). Sixty-seven per cent of them said that they were subjected to threats and violence "from time to time" or "at least once a month". Slightly more than nine per cent experienced threats or violence "almost daily". The carers and auxiliary nurses were the occupational groups that suffered from the highest frequency and number of incidents (Viitasara 2004). The personal assistants reported more than any other occupational group that they suffered daily from incidents involving threats or violence.

Of those who had been subjected to threats and violence, the majority, or 79 per cent, said that it was usually verbal threats, screaming and aggression. Ninety-two per cent of the administrators were subjected to this

**Table 15.1.** Subjected to threats and violence in municipal healthcare sector during the past year. The percentage subjected to threats and violence, and the frequency divided according to occupation. Percentage. (Source: Viitasara et al. 2003.)

	Coord- inator	Specialists	Manager /Carer	Orderly	Nursing assistant	Auxiliary nurse	Personal assistants	Total
<i>Subjected to threats and violence<sup>a</sup></i>								
Percentage	31.7	46.3	40.5	61.6	44.5	60.7	36.2	50.7
<i>Frequency<sup>b</sup></i>								
1. Once	17.8	12.2	18.9	6.6	6.2	3.6	14.1	6.5
2. From time to time	65.6	63.3	58.2	53.0	56.6	52.1	42.9	54.8
3. At least once a month	12.1	10.9	9.0	13.6	9.7	13.5	13.8	11.7
4. At least once a week	3.4	10.2	9.8	15.2	18.5	20.9	15.7	17.7
5. Almost daily	1.1	3.4	4.1	11.6	9.0	9.9	13.5	9.3
Total	100	100	100	100	100	100	100	100

<sup>a</sup>.  $\chi^2 (6) = 4918.96$ ,  $p < .001$  (weighted  $N = 159.843$ ).

<sup>b</sup>.  $\chi^2 (24) = 2780.53$ ,  $p < .001$  (weighted  $N = 80.479$ ).

type of threat or violence, making them the group that experienced this problem most often. More than half of the carers, auxiliary nurses and female personal assistants had been hit, 15 per cent of the carers and 27 per cent of the male personal assistants had also been subjected to threats and violence in which weapons or other objects had been used. It was usually patients or those receiving care that showed aggression towards the members of staff. Half of the supervisors, or 54 per cent, had also been subjected to aggression from relatives to patients and care recipients.

### *Worst for young members of staff*

Young members of staff suffered most from this problem in all the occupational groups. Those between 19 and 24 years of age were the worst off. Those employed in housing for the handicapped, and those who worked nights or had irregular working hours were in a worse position. Changes in the organisation of work at a workplace, for example a reduction in staff or an increased number of patients and high pressure of work over the last year, gave rise to a greater risk of violence and threats.

Only three per cent of the total group studied had been absent from work due to incidents involving threats or violence, but in 19 per cent of the cases the incidents had led to physical injury or ill health. Approximately 60 per cent had reported the incidents to their bosses. Many said that they had suffered from various psychological reactions to the incidents involving threats or violence. For example, 42 per cent had felt angry or irritated about the incidents, 36 per cent felt sad and 36 per cent felt frustrated. These incidents gave 32 per cent of the respondents a feeling of helplessness.

Threats and violence also affected the members of staff in their work with patients. More than half of the victims of threats and violence, or 55 per cent, said that they had become more careful or wary at work as a result of the incidents. Nearly a quarter, or 24 per cent, felt less pleasure in their work due to what had taken place.

About 40 per cent of the victims had received help or support after the incidents involving threats or violence. In most cases help was given by workmates. About 25 per cent said that their employer had offered to provide information or courses on violence and threats as a preventative measure, and 17 per cent said that their employer had gone over to double staffing to reduce the number of members of staff working shifts alone.

In conclusion, the results of this study show that threats and violence towards members of staff in the community care services are a far greater problem than they appear to be from the number of work injuries reported in the official statistics. *All occupational groups suffer from this*, even if some occupational groups experience a greater number of incidents and a higher frequency than others. *Cutbacks and a high workload give rise to a greater risk*. Threats and violence are, therefore, a serious problem in the work environment.

### **Threats and violence in the retail trade and petrol stations**

Threats and violence are a work environment problem that is common in certain parts of the retail trade and service sector. In these sectors companies often have late opening hours and employees working alone, which can increase the risk of threats and violence. In spite of the increase in this problem in this sector of working life, there is very little known about the



situation in Sweden. In order to find out more, and to develop a bank of knowledge for further research, intervention and education, the National Institute for Working Life in collaboration with the Swedish Work Environment Authority initiated a project entitled “Threats and violence towards petrol stations and convenience stores” that was carried out from 2001–03.

The project consisted of three parts: a pilot study of around-the-clock convenience stores in central Stockholm; an overview of national and international research on threats and violence in the retail trade; and a nationwide survey carried out at private petrol stations. A brief summary of each part is given below.

#### *Pilot study of around-the-clock convenience stores in central Stockholm*

The pilot study investigated 17 around-the-clock convenience stores in central Stockholm in the summer of 2001 (Geijer 2002). A questionnaire about the work environment, security and the risk of threats and violence was personally handed out to the night staff. A total of 30 questionnaires were returned, giving a response rate of 79 per cent. The results show that it was most common to work alone. The average age of the staff was 22 years, and the average length of employment was 5 months. A little over half of the staff had no training in security measures. A third, or 17 per cent, had been subjected to physical violence during the past year and 60 per cent had been threatened with violence. None of the respondents had experienced a robbery. Many of them felt worried about the possibility of violence (67 per cent) or threats (80 per cent). As it was such a limited study, no generalisations can be made, but experiences from this study were used in the two following parts of the study.

#### *Overview of research on threats and violence in the retail trade*

A summary of the national and international research and documentation on threats and violence in the retail trade and service sector was made through searches in 31 databases (Geijer & Menckel 2003a). The aim was to study scientifically tested preventive measures in the part of the retail trade sector that is known as the service trade, including petrol stations. One hundred and five publications were chosen. The articles concentrated on the later part of the 1990s and primarily studied working conditions in the

USA. Thirty articles dealt with different statistical reviews and almost half of them focused on work-related murders. Thirty-one different preventive measures were mentioned in the scientific studies, of which nine focused on the physical environment, seven on the community, eight on technical aids and seven on work organisation.

The preventive measure that was mentioned in most of the studies was double staffing. Other common measures were concerned with entrances and escape routes, the positioning of the cash desk, cashier routines, and the view into and out of the workplace. An overview of the results of all the articles showed that limiting opening hours was an effective measure for reducing the risk of threats and violence. However, many of the studies had serious shortcomings and their different approaches made comparison difficult.

European research in this area was extremely limited and there were virtually no studies with a qualitative approach. This survey of research in the area gave rise to a number of questions, which resulted in 13 working hypotheses. These are the basis of the third part of the project, which is a nationwide survey of private petrol stations.

### *Survey of private petrol stations*

The survey was made in September and October 2002 with the help of Statistics Sweden (SCB) (Geijer & Menckel 2003b). The managers of 1,414 petrol stations all over Sweden were requested to complete a questionnaire consisting of almost 80 questions. Most of the questions referred to the past 12-month period. In all, 925 replies were received, which gave a response rate of 68 per cent, after correction for overlap.

Some of the results are given here:

- There was a great variation in the level of risk of threats and violence.
- Threats and violence were over three times as common in *large* cities as in rural areas.
- 11 per cent of the managers had been subjected to threats or violence during the past year.
- 85 per cent of those who had been subjected to threats and violence said that they had become more careful and more on their guard at work.
- Verbal threats were the most common occurrence.
- 26 robberies were reported during the past twelve-month period.

- In 25 of the incidents of robbery, the attacks had occurred without prior warning so the staff had no chance to react. In almost 50 per cent of the incidents that did not involve robbery, the attacks did not occur without prior warning.
- Almost 14 per cent of the robberies occurred in connection with closing time and slightly over 4 per cent at opening time.
- 43 per cent of the incidents reported involved staff working alone.
- 40 per cent of the incidents that did not involve robbery occurred when members of staff were working alone.
- 46 per cent of the managers, 92 per cent of the hourly-paid employees and 72 per cent of the full-time employees said that they had had no training in dealing with threatening or violent situations.
- 76 per cent of the petrol stations had not made a recent assessment of the risks involved.
- 14 per cent of all incidents had been reported to the Swedish Work Environment Authority.

In the written comments from the managers on the questionnaires, many expressed the feeling that they only had limited choices of what they could do about the situation, and that the lack of economic resources made it hard to improve security.

Many of the working hypotheses that had been formulated proved difficult to verify as so few incidents had been reported. The results, which are summarised in table 15.2, should therefore be seen as trends that need to be studied further. The great variation in the level of risk implies that there is a need for each petrol station to make its own risk assessment of their specific situation. It can be seen that incidents involving robbery differ from other incidents of threat and violence. A more careful collection of data on robberies is needed so that this can be studied more closely.

In conclusion, it can be seen that research in this area is limited and that the scientific material has many shortcomings. The nationwide survey showed *great variation* in the level of risk of threats and violence between different petrol stations, and that *late opening hours* in petrol stations appears to lead to a greater risk of threats, violence and robbery.

**Table 15.2.** Summary of the answers to the given questions. (Source: Geijer & Menckel 2003b.)

Questions/working hypotheses	Answers given in the survey
Are petrol stations near cities more at risk of threats and violence?	Yes, the risk co-varies with the geographical locality.
Are petrol stations on through roads more at risk of threats and violence?	Yes, this is true of petrol stations in rural areas.
Are petrol stations without other surrounding activities more at risk of threats and violence?	No, no difference in the level of risk could be seen.
Are petrol stations with a high turnover more often subjected to threats and violence?	Yes, but probably not because of their turnover, as such.
Is there a greater risk of threats and violence when a member of staff works alone?	No, these results do not show this.
Does double staffing mean that twice as many people are injured?	No, these results do not show this.
Do late opening hours increase the risk of threats and violence?	Yes, late opening hours increase the relative risk.
Do petrol stations with postal services/bank suffer more from robbery?	No, these results do not show this.
Are petrol stations that serve fast food more at risk of attacks not including robbery?	Yes, but this seems to be more related to their geographical location.
Are the opening and closing of the petrol station particularly risky?	Yes, the results imply this.
Are robberies usually made by perpetrators without a legitimate connection to the petrol station?	Yes, the results imply this.
Are incidents that do not involve robbery usually initiated by perpetrators with a legitimate connection to the petrol station?	Yes, in about 50 per cent of the cases.
When there are many customers in the shop is there a reduced risk of threats and violence?	No, but many customers reduce the risk of robbery.
Do robberies often occur unexpectedly, without prior warning?	Yes, the results imply this.
Are incidents that do not involve robbery usually preceded by indications noticed by the staff?	Yes, in about 50 per cent of the cases.
Are robbers often armed, in contrast to the perpetrators of incidents that do not involve robbery?	Yes, the results imply this.
Does a training in security measures reduce the risk of threats and violence?	No, there is covariance between the risk level and training, but the causal relationship is unclear.

## Security measures and inspection

In recent years, the Swedish Work Environment Authority has taken an active role in inspecting workplaces with regard to threats and violence. Some of the measures they have taken are presented below.

### *Risk assessment model for threats and violence in convenience stores and petrol stations*

Those that work in convenience stores face a great risk of robbery. According to the Swedish Council for Crime Prevention (Brottsförebyggande rådet), 796 shops were robbed during 2002. That is an increase of eight per cent from the previous year. People who experience this type of incident at work often face a long struggle to get back on their feet after crisis therapy and sick leave.

In 2002, the Swedish Work Environment Authority initiated a project that focused on convenience stores. The project was carried out in close cooperation with the National Institute for Working Life. The aim was to develop a tool for assessing the risk of threats and violence in a more systematic and uniform way over the whole country. A special assessment model was developed to enable controllers to carry out inspections in accordance with the Work Environment Act and other directives (Clarín & Köhler Krantz 2002). The model includes work organisation, training courses, information, technical aids and geographical location.

Assessments made using the model divide workplaces into the categories green, amber and red, where green indicates that “there may be a risk of threats and violence”, amber indicates that “there is a medium risk of threats and violence – examine further” and red indicates that “there is a serious risk of threats and violence – examine further”.

The model has been tested in practice by the Work Environment Authority’s Inspection Department (Arbetsmiljöinspektionen) on a number of inspections of convenience stores. It works well and can be used both for planning and in the follow-up to inspections. However, it cannot be used as a checklist for inspections. Therefore, a special brochure has been produced, called “Investigate the risks of threats and violence at work”, which gives examples of questions that can be asked when assessing risks in the workplace (Swedish Work Environment Authority 2002).

*Government decisions in a number of cases of appeal*

In 2001, the Work Environment Authority's Inspection Department in Linköping prohibited a large number of petrol stations from having employees working alone between 10 p.m. and 6 a.m. seven days a week, on penalty of a fine of SEK 25,000, unless they ensured that the customer entrance was locked and sales were made via a night-time counter-window. Eighteen petrol stations appealed to the Swedish Government, who changed their decision in September 2002 to the following (Ministry of Industry, Employment and Communication 2002):

*Alternative 1. The petrol station is open around-the-clock*

It is prohibited, under penalty of a fine of SEK 25,000, to have employees working alone between 10 p.m. and 6 a.m. seven days a week, if they cannot lock the customer entrance by remote control between 10 p.m. and 12 midnight and 5 a.m. and 6 a.m. and serve customers via a night-time counter-window. Between 12 midnight and 5 a.m. all sales must be made via the night-time counter-window.

*Alternative 2. The petrol station is open between 6 a.m. and midnight*

It is prohibited, on penalty of a fine of SEK 25,000, to have employees working alone between 10 p.m. and 12 midnight if they cannot lock the customer entrance by remote control. Alternatively the employee who is working alone must be able to lock the customer entrance, and when the entrance is locked, sales must be made via the night-time counter-window. An extra person, for example a security guard, must be present at the petrol station at closing time.

The decision was based on extensive investigations that examined, among other things, the number of employees, the geographical location, opening hours, risk analyses, whether it was possible to summon help quickly, alarms and alarm equipment, locks, routines for handling cash, security equipment, surveillance cameras and information from the local police. An examination of the statistics on reported work injuries related to threats and violence from 1997–99 showed that 26 per cent of incidents involving violence took place between midnight and 6 a.m. and 30 per cent between 10 p.m. and 11

p.m. The risk of incidents involving threats and violence is therefore greater late in the evening or during the night.

The Government based its decisions on the Work Environment Act that prescribes a satisfactory work environment in relation to the nature of the work and the current level of social and technical development (Chapter 2, paragraph 1); that work should be carried out in a secure and healthy environment (Chapter 2, paragraph 2); and the regulations on working alone (Chapter 3, paragraph 2). The importance of requisite knowledge was also emphasised (Chapter 3, paragraph 3). Furthermore, reference was made to the directives on working alone, on threats and violence and on systematic improvement of the work environment (see information box).

---

**Information box.** Current work environment regulations with regard to threats and violence.

---

Apart from the general regulations regarding the work environment and rules about working alone in *the Work Environment Act* (the Swedish Code of Statutes, Svensk Författnings-samling, SFS 1977:1160) there are special directives regarding problems of threats and violence.

*AFS 1993:2 Violence and menaces in the work environment.*

The directives require the employer to investigate the risks of threats and violence in the work environment and to take the measures that the investigation shows to be necessary. The employees must have sufficient training and information and be provided with adequate instructions to be able to carry out their work tasks safely. They should also be given supervision and support. If the job involves regular risks of threats and violence, employees should be given specific supervision and support. Employees must also be able to summon help quickly if an incident involving threats or violence occurs. If a work task involves a clear risk of violence or a threat of violence, the employee should not be expected to carry out the task alone. Furthermore, accidents and incidents involving violence or threats of violence should be investigated and documented. Employees that are subjected to violence or the threat of violence should receive help and support promptly in order to prevent physical or psychological injury.

Questions of measures related to violence or threats of violence are also included in a number of other directives, namely:

- AFS 1982:3 Solitary work
  - AFS 1990:18 Care and assistance in private homes
  - AFS 1993:17 Victimization at work
  - AFS 1994:32 Pregnant and breast feeding employees
  - AFS 1996:1 Minors (young people) at work
  - AFS 1997:7 First aid and support to employees in crisis situations.
-

*The Swedish Work Environment Authority's Board of Accident Investigation (Arbetsmiljöverkets haverikommission)*

In 2001 the Swedish Work Environment Authority instituted a Board of Accident Investigation to examine certain serious accidents (Swedish Work Environment Authority 2004). The investigations endeavour to answer the questions: what has happened, why has it happened and how can similar incidents be prevented in the future?

In February 2003 a security guard died and two security guards were seriously wounded outside the department store Åhléns, in the centre of Stockholm. The direct reason for the accident was that a man who was caught shoplifting attacked the security guards with a knife and stabbed them when they tried to seize him. The Board of Accident Investigation decided to make an investigation and contacted representatives for the employer, individual security guards, safety supervisors, the Institute for Guard Training (Väktarskolan), the police, the county administrative board and manufacturers of protective waistcoats. To prevent similar incidents in the future the Board of Accident Investigation recommended, among other things that:

- specifically designed risk assessments are made with great care for security guards and watchmen who work in environments where they are exposed to violence
- newly appointed security guards and patrolmen are given an explicit introduction, instructions and training, so that they are very familiar with the premises and equipment at their workplace
- security guards who work in environments where they are exposed to violence should be experienced adults who also have many years of professional experience
- clear instructions are given, emphasising that security guards should not attempt to seize people who they believe to be armed with weapons
- an increased use of surveillance cameras and video-filming is recommended
- personal protective equipment, such as protective waistcoats, should be obligatory for security guards who work in environments where there is a high risk of violence
- alarm equipment should be installed and should be in working order.



*Inspections with regard to threats and violence in the primary care sector*

In the beginning of 2003 the Work Environment Authority's Inspection Department in Stockholm made inspections of the risk of threats and violence in the primary care sector in the counties of Stockholm and Uppsala (Work Environment Inspection Department in Stockholm 2003). Inspections were made at a total of 87 local health care centres and doctors' surgeries in both counties. In 64 health centres the routines for dealing with threats and violence were unsatisfactory, for example they had no written instructions for preventive or follow-up measures in connection with incidents of violence. The Inspection Department reported that threats and violence had occurred at a number of the health centres. Furthermore, it emerged that the managers of the health centres were not well prepared to deal with the issue of threats and violence.

**The need for further research and preventive strategies**

As can be seen, threats and violence have become increasingly common in working life. A number of nationwide studies in recent years have shown that incidents involving threats and violence towards employees occur much more often, and are of a more serious nature, than can be seen from the number of cases reported or from other official statistics. All occupational groups are at risk, even if the risks are higher in some occupational groups than in others.

Although threats and violence are a significant problem, and even occur daily in some occupations, there is only limited information available about the problem. The reason for this is partly that incidents involving threats and violence are not always reported or documented, and partly that research in this area is only just beginning. Systematic registration of threats and violence in the workplace, as well as research and intervention, are essential prerequisites on which to base preventive strategies.

Both theoretical and applied research on threats and violence must be developed and broadened, and must encompass different scientific approaches and strategies. One problem that is clearly manifested in scientific publications in this area is *the lack of a uniform definition of "violence"*. This, in addition to the fact that too few studies adopt a holistic approach to

threats and violence, means that there is insufficient knowledge about the problem. A holistic approach should include specific, situation-related and structural factors, i.e. individual-related, workplace-related and more permanent factors that are connected to the organisation, its surroundings and its relationship to the community. There must be increased interdisciplinary research and there should be more overreaching studies with relevance to the situation in Sweden.

It is important to deal with the problem of violence, from the perspective both of the work environment and of public health. Three important steps must be taken, namely: *a survey* of the violence problem, *analysis* including identifying which groups are at risk, the conditions and factors behind the risk of violence, and a *programme of intervention*, including formulation, execution and evaluation. To work successfully with prevention at all levels, increased cooperation should be developed with research institutes, supervisory authorities, trade associations, work environment organisations, trades unions, employers and employees.

Work with preventive measures involves knowledge, understanding and sustainability. It can be organised in different ways and can focus on the physical environment, the way in which work is organised or individuals in or outside the workplace. The time perspective can be instantaneous or long-term, but the common goal is to prevent or diminish the risk of violence and improve security for all employees.

Current research and statistics indicate that special attention should be paid to the problem of violence in working life. There are indications that threats and violence in certain sectors and for certain occupational groups are increasing and becoming more serious. Examples of such occupational groups include the police, security guards and other security officers, employees in the public transport sector and in some parts of the health care sector, for example accident and emergency departments and psychiatric care. Special attention should also be paid to the work environment in schools.

Violence is a problematic subject. Violence is shocking, unpleasant and can lead to psychological ill health, physical injury and even to death. It is a sensitive subject that can give rise to feelings of guilt and shame, which makes it difficult for employers, managers and colleagues to deal with.

Violence at workplaces is a complex problem that demands cooperation at all levels.

## References

- The Swedish Work Environment Authority's Inspection Department in Stockholm (2003) "Rapport om primärvårdsinspektioner i Stockholms och Uppsala län" ("Report on inspection of the primary care sector in the counties of Stockholm and Uppsala"), the Swedish Work Environment Authority, Stockholm.
- "Informationssystemet om arbetsskador (ISA)" ("The information system for work injuries"), the Swedish Work Environment Authority.
- The Swedish Work Environment Authority (2002) "Undersök riskerna för våld och hot på jobbet, Checklista" ("Investigate the risks of threats and violence at work, Checklist"), the Swedish Work Environment Authority, Stockholm.
- The Swedish Work Environment Authority (2003) "Korta sifferfakta" nr 2 ("Short summary of figures" no 2), the Swedish Work Environment Authority, Stockholm.
- The Swedish Work Environment Authority (2004) "Arbetsmiljöverkets haverikommission" ("the Swedish Work Environment Authority's Board of Accident Investigation") Utredningsrapport nr 1, (investigation report nr 1), the Swedish Work Environment Authority, Stockholm.
- The Swedish Work Environment Authority & Statistics Sweden (2003) "Arbetsmiljön 2001" ("The work environment 2001") *Statistiska meddelanden* AM 68 SM 0201.
- Clarín O & Köhler Krantz B (2002) *Servicehandel, Hot och Våld. (Convenience stores, Threats and violence.)* Rapport 2002:6, the Swedish Work Environment Authority, Stockholm.
- Geijer P (2002) "Hot och våld vid nattöppen detaljhandel. Pilotstudie i centrala Stockholm" ("Threats and violence in connection with round-the-clock convenience stores, A pilot study in central Stockholm"), the National Institute for Working Life, Stockholm.
- Geijer P & Menckel E (2003a) "Hot och våld i detaljhandeln. En kunskapsöversikt baserad på nationell och internationell forskning" ("Threats and violence in convenience stores. A survey of national and international research"), the National Institute for Working Life, Stockholm.
- Geijer P & Menckel E (2003b) "Hot och våld vid svenska bensinstationer. En rikstäckande enkätundersökning av privatdrivna bensinstationer" ("Threats and violence in connection with petrol stations. A nationwide survey of private petrol stations"), the National Institute for Working Life, Stockholm.
- Menckel E (2000) "Inledning" ("Introduction") p 7–10 in Menckel E (ed) *Hot och våld i vård och omsorg. Fakta, forskning och förebyggande arbete (Threats and violence in the health and care sector. Facts, research and preventive measures)*, the National Institute for Working Life, Stockholm.

- Menckel E, Carter N & Viitasara E (2002) "Violence towards caregivers of persons with developmental disabilities. Developing a system for recording challenging behavior" *Work: A Journal of Prevention, Assessment, & Rehabilitation* 15: p 3–8.
- Menckel E & Viitasara E (2000) *Utsatt för hot och våld i vård och omsorg. En undersökning bland kommunalt anställda. (At risk of violence in the community care sector. A study of municipal employees.)*, the National Institute for Working Life, Stockholm.
- Ministry of Industry, Employment and Communication (2002) "Beslut i överklagningsärende" ("Decisions about cases of appeal") dnr N2001/670/ARM and others, Ministry of Industry, Employment and Communication, Stockholm.
- Viitasara E (2004) *Violence in Caring. Risk factors, outcomes and support*. Arbete och Hälsa (Work and Health), Thesis 2004:1, the National Institute for Working Life, Stockholm.
- Viitasara E, Sverke M & Menckel E (2003) "Multiple risk factors for violence to seven occupational groups in the Swedish caring sector" *Relations industrielles/Industrial relations*, vol 58, p 202–231.
- Wynne R, Clarkin N, Cox T & Griffiths A (1997) *Guidance on the prevention of violence at work. Health and safety at work*. European Commission, Directorate General V, Luxembourg.

PART 4  
PREVENTIVE WORK



## Rehabilitation to work

*Kerstin Ekberg*

### **The status of rehabilitation-to-work in the regulatory framework**

Regulations to improve the work environment were introduced into the Work Environment Act in 1991. These regulations extended the responsibility of the employer to include responsibility for rehabilitation at the workplace. Work conditions were to be adapted to the capacity of the individual employee, and the employee was given the right to influence his/her own work situation and participate in change and development work, while the employee in turn was obliged to participate in measures designed to improve the work environment.

The National Insurance Act introduced the term “rehabilitation to work” into social insurance for the first time in 1992. The term referred to rehabilitation measures that were important in facilitating a return to work for people who were on long-term sickness absence or who had a temporary or permanent disability pension. The overall objective of rehabilitation-to-work is to maintain the “work line”, i.e. as many people as possible should be able to support themselves by working. The work line also means that the public sector is to prioritise active measures to bring people back to work.

The emphasis of the rehabilitation process was shifted towards working life by the transfer of greater responsibility to the employer. This responsibility included carrying out a rehabilitation plan and undertaking rehabilitation measures at, or in association with, the workplace, with the intention of providing work for the sicklisted employee. The Social Insurance Office was given the role of coordinating the rehabilitation process.

A general employer’s period was also introduced on 1 January 1992 that obliged the employer to pay sick pay for the first two weeks of each sickness

absence. The purpose of this was to increase the employer's responsibility for the health of employees and create incentives for employers to initiate improvements in the work environment that would promote the health of employees.

Sickness absence fell in the early 1990s and reached its lowest point in 1997, after which an increase was seen, particularly in long-term sickness absence. The variations in sickness absence are of course due to a number of different factors. The most common factors cited include changes in working life and in the labour market, as well as an ageing workforce and the relatively limited opportunities for young people to enter working life. Changes in the labour market, with an increasing "slimming down" of work organisations, fewer supervisors and demands on the individual for new skills – demands that are sometimes unclear in terms of their purpose and also in connection with professional roles – subject employees to greater mental strain.

Another factor presumed to contribute to the increasing rate of ill health is that a greater proportion of the workforce is self-employed or in temporary employment: this proportion grew from 18 per cent in 1990 to 25 per cent in 1998. For these groups, opportunities of implementing rehabilitation measures based on workplace adaptation are limited. Furthermore, the role of occupational health services in preventive work at the work place was reduced when the special government grant for this was abolished. A government Commission report may lead to the role of occupational health services being strengthened once again.

There is currently inadequate availability of rehabilitation measures, particularly for people with complex problems, language difficulties, or psychosomatic and stress-related problems. Availability is also unevenly distributed geographically and between diagnosis groups.

### **Collaboration between actors**

Rehabilitation-to-work rests on an interplay between several different levels: the individual and his/her personal circumstances, workplace-related and organisational factors, and society, with its legislation and the framework and application of its social insurance system. It is unclear who is responsible for carrying out rehabilitation and for funding it. Medical



rehabilitation – generally involving medical care – is the responsibility of the County Councils. However, other parallel measures are required to promote a return to work, and responsibility for these measures lies with the employer.

For unemployed people on sick leave, the labour market authorities are responsible for carrying out the rehabilitation necessary to ensure that the sicklisted person becomes available for work. The responsibility of the Social Insurance Office means, in principle, that it is responsible for coordinating the various activities that are based on the rehabilitation studies and plans produced in consultation with the sicklisted person. An important part of this responsibility is ensuring that the rehabilitation process is coherent and coordinated and takes place on the basis of jointly agreed goals.

The National Social Insurance Board (1999) says that there are a number of grey areas in the collaboration between the employer and the Social Insurance Office regarding the scope of the employer's obligations. This applies both to the rehabilitation plan and the required action, as well as the allocation of costs. In the view of the National Social Insurance Board, this leads to negotiations about responsibility for rehabilitation between the Social Insurance Office and the employer "over the head" of the individual involved.

Lack of structure in forms of collaboration, and unclear description of goals, reduces the effectiveness of rehabilitation-to-work. Within the Social Insurance Offices, a large number of "caseworker-based" solutions are reported in the coordination work (Ekberg et al. 2002); these vary depending on how they view the individual, his/her responsibility for his/her own health, and the responsibility of the employer. The difficulties are partly due to poor communication between the doctor who sicklisted the person and the Social Insurance Office.

The Government Bill (2002/03:89) introduced the coordination meeting as means of exercising control and improving and extending the basis for decisions on measures intended to lead towards a return to work. The coordination meetings are intended to function as a barrier to shifting attitudes about what constitutes sickness among patients, doctors and the Social Insurance Offices, and to improve the mapping of work capacity and a return to work. Apart from its responsibility for coordinating, the

Social Insurance Office is also responsible for convening coordination meetings.

The body of regulation that currently governs rehabilitation-to-work in Sweden largely rests on the assumption that an individual's work capacity or incapacity is based on medically established diagnoses. According to the National Insurance Act, for someone to be entitled to compensation – sickness benefit, rehabilitation allowance, activity compensation and sickness compensation – there must be a clear cause and effect relationship between the disease and the reduction in work capacity. The assessment of work capacity is to be determined by the effects of the disease on the ability to do work (Söderberg et al. 2004). A new medical certificate was introduced on 1 July 2003, in which the doctor is to describe what treatment and action is necessary to restore functionality. In a comparative study of two counties, Söderberg and co-workers (2004) found that a suggestion to get in touch with the employer was only made in 2 per cent and 8 per cent, respectively, of the medical certificates in these counties. Information about work and employment was thus marginal, which means that the Social Insurance Office's assessment of work capacity cannot be based on actual circumstances.

The employer's responsibility for the rehabilitation of employees is unclear, leaving wide scope for interpretation. In practice, therefore, the public sector authorities have increasingly assumed practical responsibility for rehabilitation. This means, in turn, that many rehabilitation measures are carried out without workplace conditions being taken into account and without the employer becoming actively involved. The rehabilitation measures thus risk becoming largely focused on the individual on sick leave rather than on the combination individual/workplace.

One difficulty for actors involved in rehabilitation-to-work is that it is unclear what the actual term means. The term vocational rehabilitation often includes purely medical rehabilitation, and sometimes it applies to measures involving both the individual and the workplace. This is why Söderberg (2000:78 (p. 231) attempts to establish a new term: rehabilitation-to-work:

Rehabilitation-to-work is a coherent individually structured process in which the individual participates actively in various coordinated and

often parallel measures. The process is based on rehabilitation targets set by the individual together with the insurer, in accordance with the work line principle of primarily getting back to work.

This definition involves viewing rehabilitation-to-work as a coherent process and not one divided up among rehabilitation actors, and that various types of measure can and should take place at the same time rather than separately. However, the role of the workplace is not clear in this definition either.

## **Rehabilitation allowance**

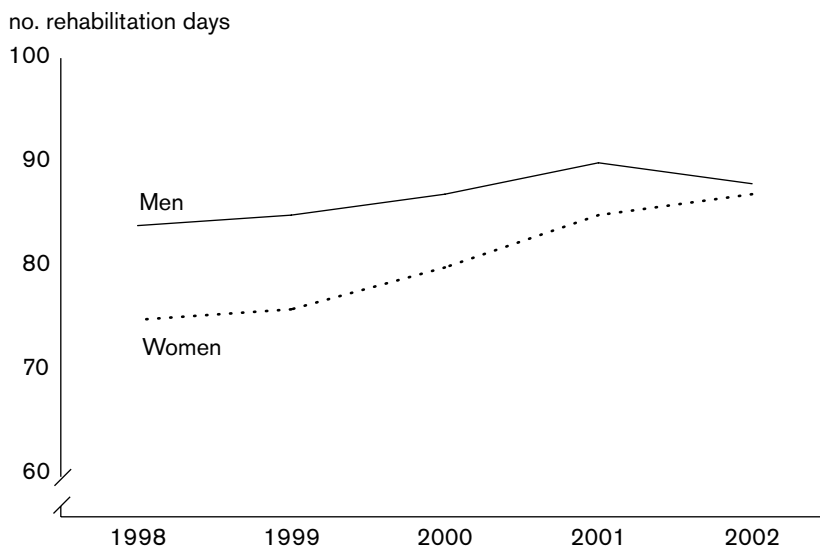
Rehabilitation allowance is designed to help the Social Insurance Office do its work of promoting a return to work for those on sick leave. Rehabilitation allowance is paid to those “participating in rehabilitation-to-work”. One condition is that the rehabilitation measures are part of a rehabilitation plan established together with the Social Insurance Office. Rehabilitation allowance is to build on the activities occupational training and work trials.

This means that the person is given the opportunity to test his/her work capacity at his/her own place of work or another place of work. Grants for ergonomic aids at the workplace are also available for people with specific functional impairments. In some cases, rehabilitation allowance can be paid for short training courses.

The number of people receiving rehabilitation allowance is relatively speaking very small, but numbers have been rising since 1999, especially among women. Men, however, still have the highest number of compensated rehabilitation days per person (Figure 16.1), and more men than women receive full rehabilitation allowance.

The number of women with full rehabilitation allowance increased from 67 per 1,000 to 77 per 1,000 between 1998 and 2002. The corresponding figure for men was 76 per 1,000 in 1998 and 82 per 1,000 in 2002. On average, then, those who receive rehabilitation allowance receive fewer than 90 full rehabilitation days per person, and there are sex differences here too.

Against the background of the fact that many sicklisted people are on long-term sick leave and need a relatively long period of rehabilitation to return to work, it can be called into question whether the rehabilitation



**Figure 16.1.** Average number of paid rehabilitation days per recipient and year. (Source: [www.rfv.se](http://www.rfv.se).)

period is long enough to yield adequate results. There are currently no ways of assessing whether the rehabilitation measures for which people receive an allowance are based on criteria that aim to link types of problem or disease to types of rehabilitation measure – in other words, there is no control of effectiveness.

### The role of the workplace

Most rehabilitation programmes are focused on the individual, and vary enormously in their design, structure and target group. Relatively few scientific studies focus on changes in workplaces or organisations, or on the interplay between the individual and the organisation.

Generally speaking, workplace-oriented interventions and measures cannot be evaluated using the same criteria as individual-oriented interventions. It is difficult to distinguish which parts of a rehabilitation programme are effective. Only one large published study, the Sherbrooke model, has a

randomised design (Loisel et al. 1994, 1997, 2002) enabling a comparison of different types of intervention for problems in the musculoskeletal system. In this study, a combination of individual-oriented and workplace-oriented intervention more than halved the number of sick days compared with passive measures. Intervention that was entirely workplace-oriented, including information to the sicklisted person and measures carried out at the workplace in consultation with the sicklisted person, almost halved the number of sick days, while intervention that was solely individual-oriented had no effect. After one year, significant differences remained between the various types of rehabilitation in the number of working days lost. In a six-year follow-up, it appeared that the model involving combined clinical and workplace-oriented rehabilitation had led to the greatest number of days worked. There are no controlled Swedish studies of workplace-oriented rehabilitation with a similar approach.

International studies whose intervention programmes included some type of equipment adaptation, changed schedules or other physical or organisational workplace adaptations report a doubling in returns to work and a halving of working days lost after intervention (Andersson et al. 2003). However, the various types of work adaptation were not compared with each other. Six prospective studies (*ibid*) carried out in six countries report a two-year follow-up in which workplace adaptation was the most successful intervention regardless of country, even when the analyses took into account a number of background factors, medical history and attitudes to work.

In a six-year follow-up of 21,000 individuals, a 77 per cent reduction in the number of sick days is reported in an intervention programme comprising training of supervisors, workplace adaptation and case management conferences, and freedom for the individual to choose rehabilitation actor (*ibid*). The longitudinal design of the study boosts the validity of the conclusions, but it has no control groups, so the significance of any external/social factors cannot be evaluated.

Common workplace measures are ergonomic adaptations or limitation of working hours in the form of part-time sick leave or work training. It is more rare that duties are changed. Often, the workplace says that it is unable to change or adapt the work to suit employees with some kind of

functional impairment. The coordination meetings that are to be held according to Government Bill 2002/03:89 should thus be able to meet an important need in promoting targeted rehabilitation plans, in which both the employee and the employer have the opportunity to discuss options for a return to work.

Rehabilitation programmes that are, by comparison, successfully oriented towards the interplay between individual and organisation, or workplace conditions, often focus on successive adaptation and training of the individual's work capacity at the workplace. This sometimes takes place in combination with follow-up after a return to work to clarify any need of further adaptation. Programmes like this, oriented towards promoting a return to work for those on sick leave and preventing ill health, and which actively involve the management, are associated with shorter periods of sick leave (Shrey 2000). The participation of the sicklisted person and his/her colleagues in developing programmes for rehabilitation-to-work at the workplace increases commitment and cooperation at the workplace, particularly when duties have to be adapted.

In Sweden, many types of operation, primarily those in the public sector, have introduced the "3-3 system" which involves three days at work and three days off, all year round. In practice, this means that people work 8.5 hours a day for 180 days a year, which is to say that the total number of working hours per employee falls by 15 per cent. The system includes a number of days for training and skills enhancement. The few, rather limited, evaluations that have been carried out indicate that this organisation of working hours leads to a fall in sickness rates and that the system in general leads to overall gain for the operations.

The basic idea is that it is reasonable to have the same staffing levels regardless of the day of the week, in operations that demand equal effort and availability seven days a week. This schedule is therefore suitable for care and health care work. To date, the negative consequences, in the shape of encroachment into the private and social spheres, do not seem to outweigh the positive effects. Nor have more specific issues of obstacles to or opportunities for a return to work in the 3-3 system been reported; generally, there has been a fall in sickness absence – primarily short-term sickness absence, but also long-term sickness absence.

Many workplaces have initiated various types of programme to promote a return to work. "Case managers" are more common in other countries than in Sweden. The system can be designed so that an employee at the workplace assists in the communication between employer, employee and rehabilitation actors. Case management means that the sicklisted person is given some sort of support during the rehabilitation process by someone who knows about regulations, rights and opportunities. Case managers can be appointed at the workplace to act as a link between primary health care and the employer and to guide the rehabilitation process.

Many case studies report a need for some sort of supportive individual whose knowledge of regulations and contacts can facilitate the rehabilitation process. In Sweden, the caseworker at the Social Insurance Office could be one such person, within the framework of his or her coordinating responsibility. It is clear, however, that it is difficult to introduce process-supporting work methods in a public authority, which is why workplace-based systems of case management could be better in the Swedish system.

### **Attitudes and approach of the management**

The design of the actual tasks is not the only factor that is significant in the success of the return to work: several studies have shown that the attitude of the management is a significant factor in the potential for a return to work after sickness absence (Krause et al. 2001). Supervisors, however, often experience a conflict of interest between their responsibility for production and their responsibility for staff when an employee goes on sick leave, and they say that they have no training in these issues (Barajas et al. 2002, Strindlund 2002). The standards and attitudes of the organisation to health and work capacity seem to be important, both in the attitudes of supervisors and in the authority vested in first line managers to work with preventive and rehabilitation measures (Eakin 1992). In practice, variations occur in how supervisors see their responsibility and are able to exercise it, leading to wide variations in how they work to promote a return to work for their employees.

In a Canadian study of the views of small-business owners on preventive and health-promoting measures at the workplace, Eakin (1992) describes how working conditions were often taken for granted: in reducing health

risks, the focus was instead on changed behaviour in employees. The most common attitude in employers was “leave it up to the workers”, and there was an unwillingness to actively intervene in employees’ health behaviour.

The study points to the fact that the attitudes of the small-business owners were primarily related to their view of the importance of health and safety, followed by their social relationship to their employees and finally their awareness of their own responsibility for health in the workplace. Small-business owners who saw health and safety in individualistic and moral terms did not feel that they had a mandate to intervene in the health-related behaviour of employees. The degree to which they assume responsibility is thus affected by how important they think health is at the workplace, and the degree of responsibility and authority that they feel they have in these issues.

Responsibility can in turn be affected by what social role they have in relation to their employees. Eakin and MacEachen (1998) discuss health in the workplace in a social-interactionalist perspective. Ill health then becomes a problem in cases in which there is already a problematic relationship between the management and workers. Ill health is thus seen as the employee’s last chance to assert his/her integrity in a relationship with the management that is already charged with conflict.

In many studies, active participation by the sicklisted person’s supervisor is said to be particularly important. The attitude of the management is therefore significant and influences the potential to return to work from sick leave. A Dutch study of employees with lumbar problems showed a 21 per cent lower return to work in employees who were not supported by their supervisor (Krause et al. 2001). These supervisors, however, seem in their turn often to lack the support of more senior managers in working with ill health and rehabilitation.

These supervisors experience a lack of clarity about their responsibility, and a lack of support and authority. This lack of clarity leads to personal interpretations of how health and sickness absence should be dealt with, and in what respects they themselves are responsible and in what respects others are. In the end, it might simply be a case of how much the organisation gives the supervisor a mandate to work with these issues. Uncertainty leads to avoidance of responsibility, or attempts to shift it to



others. People do not know how to carry out workplace adaptation, and therefore need the help and support of e.g. occupational health services about how to adapt the workplace (Baril et al. 2003). Studies that involved teaching middle managers or supervisors about pain and about what attitudes promote a return to work do, in fact, lead to a greater return to work and to more adaptations of workplaces (Haldorsen et al. 1997). The changes that might be required at workplaces to enable the sicklisted person to return to work thus involve a learning process for all those involved.

If an employee's poor health or disease is viewed as caused by non-work-related factors, some supervisors say that they are not responsible for helping improve the employee's chances of returning to work. In such cases, there is probably a lack of legitimacy for working with the issue, despite the fact that responsibility for rehabilitation applies "regardless of how work capacity has come to be reduced" (sou 1990:49). The type of ill health also seems to influence the attitude of the supervisor. Mental and psychosomatic conditions are deemed harder to deal with than physical symptoms, and these problems are largely ascribed to the individual him/herself, or his/her life situation, rather than to the work (Strindlund 2002).

The importance of the management, and the workplace, in the willingness and ability of the individual to return to work was clear in a study of people on long-term sick leave in public services (Strindlund & Ekberg 2004). Forty per cent of those on long-term sick leave said in this study that they could return to work if the situation at the workplace changed.

A return to work after sickness absence is comparable to a process of change, one that involves learning on the part of both the individual and the workplace. The individual's feelings about the implementation of the rehabilitation process are thought to have direct bearing on the results in terms of work capacity and health. Individual experience, rather than the actual event, determines the individual's evaluation of and reaction to the situation.

### **Factors that promote a return to work**

There are relatively few studies of measures to facilitate a return to work. The literature mainly deals with studies of interventions intended to reduce

the symptoms and functional impairment in the individual. Studies about disorders of the musculoskeletal system are the most common. Some studies show a link between a reduced level of problems and return to work (Andersson et al. 2003), even if less pain does not always lead to the individual returning to work. Early intervention is assumed to prevent the development of chronic problems and promote a return to work. Several studies today point to a need for measures adapted to the phase in the sickness absence that the person is going through. Wide-ranging rehabilitation measures in the acute phase in disorders of the musculoskeletal system do not give better results than a system that includes information, activity and pain reduction (Andersson et al. 2003).

Different factors are important at different times in the sickness period. The longer the time that has elapsed since the person fell ill or took sick leave, the more important psychosocial and work-related factors are, even if research into the significance of these circumstances for a return to work is still extremely limited. The design of the rehabilitation process affects both the motivation of the participants and the results achieved.

Many studies underline the importance of the participatory nature of the rehabilitation process. In a pilot study in which participants suffering pain were on sick leave for up to eight years, more than half managed to enter work-related activities after six months' work in a problem-based group. One important reason was the participatory and targeted design of the rehabilitation method. The participants' overall goal was to return to work. Each participant was to personally state how this goal was to be achieved, and then work on achieving it within the framework of the method of the rehabilitation process (Medin et al. 2003). Baril and co-workers (2003) describe how perceived unfair distribution of the workload between colleagues can occur if a person cannot carry out all the usual tasks because of his or her functional impairment. In one example in which it was possible to solve this problem, the group of workers was allowed to exercise influence over which tasks were to be included in the work adaptation, as well as how various tasks were to be assigned among them.

Krause and co-workers (2001) report that people on sickness absence who experienced high demands at work before the sickness absence had lower levels of return to work in both the acute and sub-acute or chronic

phases than those who had low demands at work. Low control at work combined with high demands reduced the return to work by a factor of two during the sub-acute or chronic phase, but not during the acute phase. A low level of support from the supervisor also reduced return to work. Phase-specific analyses showed that the degree of severity of the injury or symptom is more significant during the acute phase, 1–30 days' sickness absence, than later in the period of sickness absence. Influence at work, "job strain", flexibility in working hours and rest periods, and previous back problems all affected the return to work during the sub-acute or chronic phase, more than 30 days' sickness absence.

Interestingly, it appeared that previous experience of back problems facilitated the return to work in this and other studies. This can be interpreted to mean that experience of the problems aids the individual's ability to deal with his or her symptoms – the individual may have learned to deal with the fear of pain and also minimise avoidant behaviour in connection with activity (Linton 2001).

This and other studies show that the situation at the workplace – work environment factors and the standards, values and the priorities of the management – are important in the success of rehabilitation measures. The literature however offers almost no experiences of how successful rehabilitation-to-work is to be implemented at the workplace. A return to the job that generated their ill health is particularly difficult for people who are on sick leave due to stress-related mental problems or who are suffering from burnout. One obstacle to the application of the regulations is therefore the current general tendency to work for a return to the previous workplace.

Employer networks, in which there is collaboration between different employers, would be helpful in these cases and would promote mobility to find other jobs.

### **Motivation of the sicklisted person**

The views of those on sick leave of what increases their motivation to return to work cover both structural factors such as workload and control over their work, as well as the content of the work, which is to say that the work feels meaningful and they feel that they can produce work of high quality.

Good relationships with colleagues and a sense of belonging to the group are reported to facilitate a return to work (Gard & Sandberg 1998, Strindlund & Ekberg 2004). Baril and co-workers (2003) carried out a wide-ranging interview study in Canada of people on sick leave, other actors at the workplace and actors outside the workplace. The attitudes of the sick-listed person to their problems, recovery and work were felt to be extremely important by all parties. The sicklisted person could be viewed as lacking motivation and being unwilling to participate in the rehabilitation work, or the different actors could identify organisational factors and workplace cultures that affected the motivation of the individual.

The propensity of those on sick leave to participate in rehabilitation was related to the degree to which their views and experiences were taken on board by the employer. If adaptation of the workplace was felt to be badly planned or meaningless, the sicklisted person tended to be less motivated to participate.

Motivation to participate in the rehabilitation programme is lower in cases in which the supervisor did not respect limitations in work capacity set out in the medical certificate (Baril et al. 2003, Strindlund & Ekberg 2004). These situations can occur if production requirements increase and the supervisor tries to solve the problem by increasing the workload or working hours, without taking medically based limitations in work capacity into account. A number of studies have shown that social relationships at the workplace are important in how motivated people are to participate in the rehabilitation process (Baril et al. 2003, Strindlund & Ekberg 2004).

### Several actors

Given that rehabilitation-to-work is a complex process in practice, involving many actors with different types of responsibility, it is important to examine which are the conditions for, or obstacles to, collaboration. In Sweden, the biggest collaboration project in the country that has been followed up is *Socsam* (National Social Insurance Board 2001). *Socsam* is based on financial coordination between the social insurance system, the health services and the social services, and was tested in eight of the country's 289 municipalities. It was found that the participating parties' joint responsibility was a driver for coordinating measures, in the aspects of

structure and continuity in joint activities. In the evaluation of *Frisam* (National Board of Health and Welfare) it is said that:

“Cooperation between actors is of value to the individual if it takes place on the basis of a coherent view, participation, a committed attitude, sufficient time and continuity in the work. If the individual is not a participant in the work, it can instead have negative results. The results of the evaluation also show that cooperation increases the room for manoeuvre of the welfare organisations. At the same time, the obstacles showing that the current system does not support cooperation become all too apparent.”

We do not know much about how sicklisted people view other actors outside the workplace. Baril and co-workers (2003) report that sicklisted people see “the system” as a source of loss of their own control – “disempowerment” – and that its complexity can lead to decisions being seen as random or unfair. A qualitative study in which supervisors, trade union representatives, occupational health services and other rehabilitation actors were interviewed about barriers and enabling factors in rehabilitation-to-work showed that barriers primarily arise when there are delays in passing on information or treatment, and when there is inefficient communication between the actors. Enabling factors, then, were workplace-based rehabilitation programmes, efficient communication, teamwork and mutual respect between the actors (Friesen et al. 2001).

## Summary

To promote a return to work after disease or injury, measures should be based on a coordinated process involving the health services, the Social Insurance Office, the employer and the sicklisted person. Putting this coordination into practice seems to be a difficult problem, however, due to the different regulatory frameworks for the sectors involved, and also to communication problems. There is much to indicate that the role of the workplace is underestimated in the most common rehabilitation measures.

Generally, more resources are devoted to individual and symptom-oriented measures than are devoted to changing the conditions that created the ill health in the first place. It is particularly important to develop forms

of collaboration between the sicklisted person and the other actors. Rehabilitation back to work is a targeted process in which the role of the sicklisted person is greatly neglected, both in research and in practice.

## References

- Andersson A, Ekberg K, Enthoven P, Kjellman G, Ockander M, Skargren E, Åkerlind I & Öberg B (2003) *Vad är en god arbetslivsinriktad rehabilitering? Slutsatser baserade på en litteratursammanställning. (What is good rehabilitation-to-work? Conclusions based on a review of the literature.)* IHS rapport 2003:1, Linköping University.
- Barajas J, Nordqvist C & Ekberg K (2002) "Intervention elucidate intra-organisational hindrances to employee development" pp 67–70 in *Proceedings of the 34th Annual Congress of the Nordic Ergonomics Society*. Kolmården, Sweden.
- Biril R, Clarke J, Friesen M, Stock S, Cole D & The Work-Ready group (2003) "Management of return-to-work programs for workers with musculoskeletal disorders: a qualitative study in three Canadian provinces" *Social Science & Medicine*, 2003;57: pp. 2101–2114.
- Eakin JM (1992) "Leaving it up to the workers: sociological perspectives on the management of health and safety in small workplaces" *International Journal of Health Services*, 1992;22: pp. 689–704.
- Eakin JM & MacEachen E (1998) "Health and the social relations of work: a study of the health-related experiences of employees in small workplaces" *Sociology of Health Illness*, 1998;20: pp. 896–914.
- Ekberg K, Heide A & Petersson B (2002) "Förutsättningar för en effektiv selekteringsprocess i utredningsarbetet på försäkringskassorna" ("Prerequisites for an effective selection process in the investigative work of the Social Insurance Offices") Federation of Social Insurance Offices, *Fakta & Debatt* no. 1, 2002.
- Friesen MN, Yassi A & Cooper J (2001) "Return-to-work: the importance of human interactions and organizational structures" *Work*, 2001;17: pp. 11–22.
- Gard G & Sandberg AC (1998) "Motivating factors for return to work" *Physiotherapy Research International*, 1998;3: pp. 100–108.
- Haldorsen EMH, Jensen IB, Linton SJ, Nygren Å & Ursin H (1997) "Training work supervisors for reintegration of employees treated for musculoskeletal pain" *Journal of Occupational Rehabilitation*, 1997;7: pp. 33–43.
- Krause N, Dasinger LK, Deegan LJ, Rudolph L & Brand RJ (2001) "Psychosocial job factors and return to work after compensated low back pain injury: a disability phase-specific analysis" *American Journal of Industrial Medicine*, 2001;40: pp. 374–392.
- Linton SJ (2001) "Occupational psychological factors increase the risk for back pain: a systematic review" *Journal of Occupational Rehabilitation*, 2001;11: pp. 53–66.

- Loisel P, Abenhaim L, Durand P, Esdaile JM, Suissa S, Gosselin L, Simard R, Turcotte J & Lemaire J (1997) "A population based randomised clinical trial on back pain management" *Spine*, 1997;22: pp. 2911–2918.
- Loisel P, Durand P, Abenhaim L, Gosselin L, Simard R, Turcotte J & Esdaile JM (1994) "Management of occupational back pain: the Sherbrooke model. Results of a pilot and feasibility study" *Occupational and Environmental Medicine*, 1994;51: pp. 597–602.
- Loisel P, Lemaire J, Poitras S, Durand M-J, Champagne F, Stock S, Diallo B & Tremblay C (2002) "Cost-benefit and cost-effectiveness analysis of a disability prevention model for back pain management: a six-year follow-up study" *Occupational and Environmental Medicine*, 2002;59: pp. 807–15.
- Medin J, Bendtsen P & Ekberg K (2003) "Health promotion and rehabilitation: a case study" *Disability and Rehabilitation*, 2003; vol 25, nr 16, pp. 908–913.
- National Social Insurance Board (2001) *Socsam-försök med politisk och finansiell samordning. En slutrapport. (Socsam – an attempt at political and financial coordination. Final report.)* Finansiell samordning 2001:1, National Social Insurance Board, Stockholm.
- National Social Insurance Board (1999) *Morgondagens rehabilitering – om försäkringskassans uppdrag och gränssnitt mot rehabiliteringsansvariga parter. (Tomorrow's rehabilitation – on the task of the Social Insurance Office and its interface with parties responsible for rehabilitation.)* RFV anser 1999:8, National Social Insurance Board, Stockholm.
- Shrey D E (2000) "Worksite disability management model for effective return-to-work planning" *Occupational Medicine, State of the Art Reviews*, 2000;15:4, pp. 789–801.
- sou 1990:49 *Arbete och Hälsa. (Work and Health.)* Fritzes, Stockholm.
- sou 2000:78 *Rehabilitering till arbete. En reform med individen i centrum. (Vocational rehabilitation. A reform with the individual at its centre.)* Ministry of Social Affairs, Stockholm.
- National Board of Health and Welfare (2001) *Samverkan för särskilt utsatta. Utvärdering av frivillig samverkan. (Working together to help the vulnerable. Evaluation of voluntary collaboration.)* Uppföljning och utvärdering 2001-03-15. (Follow-up and evaluation, 15 March 2001.) Ministry of Social Affairs, Stockholm.
- Strindlund L (2002) *Sjukskrivnings- och rehabiliteringsprocessen ur chefens perspektiv – en intervjustudie av första linjens chefer. (The sicklisting and rehabilitation process from the manager's perspective – an interview study with first line managers.)* Master's thesis in public health science, Linköping University.
- Strindlund L & Ekberg K (2004) *Långtidssjukskrivna inom Landstinget i Östergötland 2002. Diagnoser, arbetsförhållanden och rehabiliteringsbehov. (People on long-term sick leave in Östergötland 2002. Diagnoses, work conditions and rehabilitation needs.)* IHS rapport 2004:1, Linköping University.

Söderberg E, Marnetoft S-U & Shahrnejad B (2004) *Utfärdade läkarintyg i två län – en jämförande studie ur ett sjukförsäkringsperspektiv. (Medical certificates issued in two counties – a comparative study from a sickness insurance perspective.)* Report 2004:2, Försäkringsmedicinskt centrum and Linköping University.



## Work environment policy and the actors involved

*Kaj Frick, Ove Eriksson and Peter Westerholm<sup>1</sup>*

### **From Occupational Hazards Act to Systematic Work Environment Management**

*The work environment is mainly determined by the market*

Work environment policy is a matter of interaction between four main actors (Frick 2002):

- i. Employers and the managers who control the work of the employees and thus have primary responsibility for ensuring that it can be done without risk of ill health or accidents.
- ii. Employees and their representatives, who participate in the work environment management of their employers.
- iii. The government, which promotes the work of other actors and frames the requirements on employers through its regulations and supervision (via the Swedish Work Environment Authority).
- iv. Occupational health services and other experts, who produce and share or spread knowledge of risks and countermeasures.

The cornerstone of both policy and interaction is the view that the work environment is a by-product of production, the technology and organisation of which affect the health of workers. The primary determinant of the work environment is therefore the market relationship between those who control production and those who carry it out. For example, Swedish improvements in the work environment took place largely thanks to the shortage of labour that existed between 1945 and 1990. Employers, above all those in manufacturing industries, were often forced to improve the work to be in a position to recruit and retain labour.

The work environment had already become a political issue by the late 19th century, when accidents and some occupational diseases began to feature in public debate. Since then, the government has sought to promote health and safety at work by limiting the discretion of employers with respect to their employees. The aim of work environment policy, however, was and remains primarily one of self-regulation. Those who control production should preferably carry the responsibility to discover and remedy the risks of the work. This is why the interaction between the government, the employers and their employees had a corporative orientation right from the start; one in which all parties are involved in influencing the design and application of the regulations (Rothstein & Bergström 1999).

*The reforms of the 1970s strengthened the position of all actors except employers*

Government involvement has grown steadily since then (Lundh & Gunnarsson 1987). Our current work environment system has much of its basis in the reforms of the 1970s. The Work Environment Act (AML) of 1978 introduced a broad definition of the work environment. It covered technical and organisational risk factors for bodily injury and disease, as well as for work-related health disorders with psychological and social causes.

The law's objectives of protecting against ill health were reinforced, leading to a greater number of more stringent regulations. These objectives were promoted by extending the right of employees to participate in work environment work – primarily through their safety representatives – via the extension of occupational health services and more government supervision. Finally, work environment management was underpinned by a greater body of knowledge as a result of grants to research, development, training and information via the Workers' Protection Fund (later the Work Environment Fund and then the Council for Working Life Research). Some such grants are now allocated by the Swedish Council for Working Life and Social Research (FAS) and the Swedish Agency for Innovation Systems (Vinnova).

The reforms strengthened the hand of three actors: employees, the government and the experts. The government did not, however, regulate how the most important actor – the employer – was to manage the work

environment. Measures to counteract organisational and psychological risks were also limited in scope (Frick 2004).

It took time before regulations began to be issued that dealt with organisational and psychological work conditions. At local level, the parties primarily concentrated on technical risks. Collaboration on the organisation of work took place under the auspices of the Codetermination Act (MBL) rather than the AML. Work environment activities were often isolated from the planning and management of actual production. The “safety organisation” remained a “sidecar” to line management, which made it more difficult to implement actions against known risks and prevent new ones (Frick 1994).

### *Systematic Work Environment Management to make earlier reforms more efficient*

Increasing numbers of repetitive strain injuries were reported in the 1980s. This, together with increased levels of sickness absence, the highlighting of stress issues, and continued significant physical health risks led to new a debate and new reforms (SOU 1990:49). The changes made to the AML in 1991 therefore emphasised demands on the psychosocial work environment and the adaptation of the work environment to people’s differing capacities. Under the influence of e.g. modern quality systems and similar procedural regulation within environmental policies, demands were also introduced for employers to create an organisational framework to manage the quality of the work environment.

This “Internal Control” (IC) has since been reformulated as a requirement for *Systematic Work Environment Management* (SWEM; AFS 2001:1). The purpose of better integrating regard for the work environment into the management of production is to better remedy technical deficiencies, as well as to discover and remedy organisational and psychological health hazards inherent in the operation. These can seldom be solved via the “sidecar”, and the government cannot regulate them in detail.

When internal control was to be implemented in 1993, however, Sweden had slipped into an economic crisis. Employers, trade union organisations, the government and the media became more concerned with saving jobs than with improving them. Budgets to the National Board of Occupational

Safety and Health were cut and occupational health services were weakened (see below). The ambition to achieve better control of the work environment remained, however. The introduction of internal control was often a partial objective in the 25,000 projects subsidised by the Working Life Fund in 1990–95 (Frick, 1995). As mentioned above, internal control could also benefit from the spread of other quality control systems, above all the standardised quality management and assurance system ISO 9000.

From its earlier bureaucratically controlled inspections (Lundberg 1982), the National Board of Occupational Safety and Health (now the Swedish Work Environment Authority), tried to move towards a more target- and result-oriented approach (more on this below). Since the late 1980s, its Labour Inspection has required and also enforced organisational measures to counteract repetitive strain injury, and has developed models for systematic inspection of employers' work environment management.

*The increasing sickness absence and the government's  
11-point programme*

Despite this, it has been difficult to implement the government's overall strategy for improved health in the workplace, which is to say that employers themselves are to discover and remedy health risks. Systematic work environment management of this kind requires changes in how operations are managed. The need for organisational development also makes it difficult to reliably assess the implementation of SWEM (in Swedish referred to as SAM).

In a study from 2002, only about 25–30 per cent of employers say that they have introduced SWEM (Work Environment Authority 2003a). Additionally, those who say that they have introduced it may have shortcomings in the application of their policy, their drawing up of routines and in other respects (Work Environment Inspectorate 2003).

At the same time, there has been a sharp increase in sickness absence since 1997, which can partly be linked to problems in the work environment. The consequent personnel problems and the explosion in the costs of social insurance systems led the government in 2001 to launch an 11-point programme for better health at work. This includes an emphasis that workplaces and working conditions must be better adapted to the capacity

and needs of individuals. Focus is thus again on how employers and other actors can ensure a good work environment.

## **Employer development of business and work quality**

### *Who are the employers?*

In 2003, just under 4 million employees worked at about 300,000 workplaces. About 1.4 million of them are employed by 700 municipalities, county councils and government agencies etc., while 1.6 million work in 6,000 private companies with at least 50 employees, and 1.0 million work in small businesses (Statistics Sweden 2004).

This is where production takes place, and this is the work environment arena in which managers – together with employees – are to prevent any risks. The employers, who are to ensure that managers do this, can be described in several ways. The majority of employers – who according to the AML are to “take all the precautions necessary to prevent the employee from being exposed to ill health or accidents” – are found in just over 200,000 companies that employ staff. Most of these companies, then, are small, but most *employees* work for big employers.

It should be observed that many privately-owned small workplaces are owned by a few large corporations. Larsson (2000) observed that 16 per cent of “employers” employed 81 per cent of employees (if each private and public “corporation” is regarded as one employer). Apart from this, increasing numbers of independent small businesses are being drawn into some type of central coordination, through for example a subcontracting role, franchising and licensing, or via joint purchasing and advertising (Giertz 1999).

### *The role of the employer*

As is the case with all statutory regulation, work environment policy builds on the self-interest and voluntary commitment of those who are responsible. Work environment regulations are backed up by inspections and sanctions, but they are primarily standards setting out what law-abiding employers are to do without being forced (Hasle et al. 2003). They are also often minimum standards which mean “the work environment may not deteriorate below this level, and should preferably be much better”.

As early as the 1970s, the two sides of the engineering industry agreed that their target should be to achieve levels less than 25 per cent of the threshold limit values for noise and chemicals (Verkstadsföreningen 1978). An important objective of large government grants to R&D, training and information about risks and countermeasures, is to motivate and support such voluntary improvements. In the internal development of the work environment, there are in fact a large number of “employers”, namely all the managers whose decisions affect work conditions and the environment at the workplace in a broad sense. Apart from the voluntary aspect, these managers are also work environment actors in that they can be held responsible under the Penal Code if their actions cause ill health or hazards. Few are convicted of work environment offences, however, and sanctions are weak. The legal system is seldom able to clarify the individual responsibility of managers for the shortcomings that caused accidents, and is never able to do this in cases of notified occupational diseases. This is why greater stringency of both the content and the application of the law is currently under consideration (Arbetarskydd 2004a).

### *Trends in work environment management*

An employer’s management of the work environment takes place within the context of an overall operation, so it is difficult to say how much time and money is devoted to work environment management. However, it is possible to distinguish a few important trends:

- Reduction of sickness absence and other personnel problems has become a central issue in working life. Reports, industry press etc. describe a large number of initiatives to promote the health of employees. These developments are supported by the government and the central social partners (i.e. the parties on the labour market). Nineteen projects in the public sector were awarded SEK 70 million from the government’s 11-point programme in 2001. During the 2002–2007 period, the social partners – through their joint insurance company, the AFA – are allocating SEK 295 million to supporting health in public sector workplaces in the programme “Healthy Life Now” and SEK 155 million to “Improved Work Environment and Health” in the private sector.

- Formal instruments to support the willingness and ability of employers to manage the work environment are increasingly used:
  - The Work Environment Commission's proposals about financial incentives have been revived. The employer's obligation to pay 15 per cent of the sick pay (in long-term sickness absence) is regarded as a "stick" for employers to promote healthy workplaces.
  - The statutory requirement (1 July 2003) to report sickness absence in the company's annual reports, and the attempts to produce a more wide-ranging "health balance sheet" are regarded as a "carrot" in the same direction. This is to demonstrate to the employer and others what the costs are to business if they fail to deal with ill health at work.
  - Certified work environment management systems, based on SWEM, are becoming more common. There are currently about 120 certified organisations ([www.isoguiden.com](http://www.isoguiden.com), May 2004). However, a study by the Swedish Work Environment Authority (2003b) advised the government against subsidising certification, as this would not benefit those workplaces that are in greatest need of improvement. Additionally, serious shortcomings have been found in the management of the work environment at certified workplaces (Arbetarskydd 2003, Work Environment Inspectorate 2003).
  - Increasing numbers of companies are adopting voluntary international ethics codes, which also include requirements for work environment management (Wheeler & Elkington, 2004)
- Knowledge of SWEM continues to spread. The Swedish Work Environment Authority, the social partners and others are providing training and information about how systematic work environment management can be developed at workplaces.

### *The limited ability of managers to assume responsibility*

Systematic work environment management requires employers to plan the integration of health considerations into their decisions. Small businesses often find it more difficult to cope with this. Research (e.g. Antonsson et al. 1998, Axelsson 2002 and Walters 2001) shows, among other things, that:

- Most small businesses are led in an informal fashion by managers with little time and little training. It can be difficult to develop work that is

systematic enough to discover and remedy health hazards in the workplace. This work can usually be improved, however. Almost all small business owners plan their economy and their production in much more detail than they plan the management of their work environment.

- Additionally, small businesses often have poor knowledge of work environment issues and few purchase adequate know-how (from the occupational health services for example) of health risks and how they can be minimised. Advisers who are in direct contact with small business owners therefore have an important role to play in supporting their work environment management.

Big employers are used to management by objectives. It should be possible to apply this to their work environment. Some large industries have also been successful in reducing risks and promoting health at work. At the same time, a lot of big employers and their managers find it difficult to shoulder their responsibility for the work environment due to changes in the structure of production or the organisation of management (Larsson 2000).

In the interests of flexibility and efficiency, strategic management of operations – including decisions that affect the work environment – is often separated from operative production management. The important task of creating a good work environment is often delegated downwards in the organisation without sufficient clarity, resources and supportive skills and follow-up from the top. This might happen as follows:

- Big companies are divided up into several smaller ones. Each of these is an individual employer, but the framework for their operations – and work environments – is largely determined by group management. Lack of clarity about allocation of responsibility in this type of fragmented organisation has also caused serious accidents (Fredholm et al. 1992, Hopkins 2000).

- In the increasing prevalence of production in networks, formally independent businesses are managed through contracts. For example, franchise holders are responsible for work environments that are controlled in detail by the franchiser, which has led to problems that the Swedish Work Environment Authority has taken steps to resolve (Arbetarskydd 2004b).



- The public sector also runs operations via contracts between political purchasers and providers who are in charge of the production. This, in combination with repeated cuts and reorganisations, has caused stress to staff (Larsson 2004). The Swedish Work Environment Authority therefore emphasises the responsibility of politicians to assess the work environment consequences of their decisions. Additionally, the emphasis on cutting costs in public sector organisations purchasing services from the private sector has caused conflicts about the work environment, for example when staff in the provider companies think that their workload is too high.

Within organisations, too, there is limited scope for managers to conduct efficient work environment management:

- In decentralised production, the employer saves on supervisors and middle managers. This is seen as a particularly serious problem in the public sector, where it is not unusual for a supervisor to have over fifty subordinates (SKTF 2002). It is hard to find time for cooperation with the local unions, talks with each of the employees, risk assessments and other work to improve health and safety.
- Managers have less support when HR departments, occupational health services and other staff functions are cut back and their tasks allocated to the line organisation.
- Cost-cutting and reorganisations lead to frequent replacement of managers, which makes it more difficult for managers to interact with employees on work environment issues and to build up internal skills in handling them.
- The same changes mean that line managers are often given a number of different projects and that their attention and initiative are fragmented.

Employers are formally responsible for ensuring that lower-level managers can carry out delegated work environment tasks. However, the supervision and analysis of delegation systems make large demands on the ability of the Swedish Work Environment Authority and the legal system to understand complex management systems. This is reflected, among other things, in the

low number of convictions when work environment crimes are brought to trial.

The other problem – that everyday, actual power over the work environment is quite often separated from legal responsibility – is seldom debated (unlike in some countries: Johnstone 1999). Sweden has only a few regulations about the environmental responsibility of building contractors, suppliers and others, and work environment demands are seldom given priority in public procurement.

This does not prevent many employers from trying to adapt their management of the work environment to their general organisation and management of production. Among other things, a number of large actors in network production are trying to promote the work environment and the work of improving it, by setting out requirements and support during procurement (Regeringskansliet 2004). Additionally, control systems can be designed so that they provide better feedback between the work environment on the “shop floor” and senior management, making it easier for junior managers and employers to deal with problems themselves.

This multifaceted, sometimes conflicting, development of work environment management results in significant differences in control of the working conditions among employers with similar operations. Sickness absence varies greatly even within sectors (SOU 2002:5). It also happens that the Swedish Work Environment Authority brings a certain employer's shortcomings to court, while rewarding another employer in the same sector for good work environment management.

### **Safety representatives have a central role in ensuring healthy jobs**

Participation through safety representatives remains fundamental to the cooperation of the social partners. Without the influence of employees, the work environment will be too dependent on the goodwill and capacity of individual managers, since the government cannot control and enforce more than a fraction of the necessary improvements. The work environment policy is thus based on the participation of employees in the work environment work, in order both to protect their own health

and to support the work of the employer. For these reasons, employees also have a statutory responsibility to participate in this work.

As far as possible, individual employees are to deal with their work environment problems together with management. This is easier if they are given improved training in their jobs and more flexible tasks – but we know very little of how this works in practice. Employee influence has been studied as an aspect of the psychosocial work environment, rather than as a means of improving the work environment via participation in decisions and influence in the work process.

However, Aronsson and Gustafsson (1999) have shown that those who have insecure jobs are unwilling to criticise the work environment. At a given level of health problems, those who hesitate to criticise the work environment take sick leave more often than others (Wikman 2000).

Despite the changes in working life, participation via safety representatives remains fundamental. Active representatives have proved to be more effective in reducing risks than simple direct employee participation, particularly if the representatives are trade union officials, who also are supported by their own organisations (Walters & Frick 2000). When problems involve many employees or are complex, they often need to be dealt with by someone with an overview, knowledge and time. Employees and employers can also have divergent interests in terms of how much money and time to invest in the work environment. Then, safety representatives are better able to look after the health interests of employees.

### *The number of safety representatives varies between industries*

Under the AML, a safety representative is to be appointed at workplaces with five employees or more. If there are several safety representatives, one is to be a senior safety representative with the task of coordinating the activities. If there are fifty employees or more, the social partners are to appoint a joint safety committee. At workplaces without a committee, trade union associations with members at the workplace can appoint representatives from “outside the circle of employees”, known as regional safety representatives. Local safety representatives should also be appointed in such workplaces.

There are no statistics about safety committees, despite the fact that the partners are supposed to use these to cooperate on work environment and

health development issues on behalf of the employees. Where committees do exist, however, 75 per cent of safety representatives were satisfied with their work (Swedish Trade Union Confederation (LO) 1997). On the other hand, we know that after a previous decline in the number of safety representatives, these now number over 100,000, of whom around 67,000 are appointed by LO (blue-collar) trade unions, 29,000 by TCO (white-collar, Swedish Confederation of Professional Employees) unions and about 5,000 by unions within SACO (professional and academic, Swedish Confederation of Professional Associations) (Swedish Work Environment Authority 2004).

Workplaces in the private sector have 17 safety representatives per 1,000 employees, while those in the public sector have 44. The latter workplaces often have representatives from the LO unions, as well as from those within TCO and SACO. The private service sector – which is growing fast – has relatively few safety representatives.

Almost 120,000 workplaces are supposed to appoint safety representatives, as they have five employees or more. According to Table 17.1, there are 8,000 principal safety representatives and 12,000 individual safety representatives. Together they cover 20,000 workplaces. The register is somewhat inaccurate, however, due to incomplete reporting. Many senior safety representatives probably coordinate several scattered workplaces (e.g. day care centres) whose representatives are registered as “local” reps despite the fact that their workplaces are counted as individual workplaces. If we estimate that every third or fourth local representative represents one workplace, then these cover a further 20,000 – 30,000 workplaces. *Even so, safety representatives are lacking in a majority of workplaces that should actually have them.*

### *Small workplaces are supported by regional safety representatives*

Most of the workplaces without safety representatives – and many of those with representatives – are supported by regional safety representatives (Frick & Walters 1998). Together, about 2,000 regional safety representatives correspond to about 300 full-time equivalents. The white-collar unions have appointed more regional safety representatives since the 1990s, but about 80 per cent of their work is still done by those appointed by LO

**Table 17.1.** Safety representative by type (sole representative, local representative, senior safety representative, regional safety representative) and industrial sector. No. safety representatives per 1,000 employees, by industrial sector. (Source: Swedish Work Environment Authority 2004).

Business sector	Sole	Local	Senior	RSR	Total repre- sentatives	Representatives/ 1,000 employees
Agriculture, hunting, forestry and fishing	119	374	71	33	597	16
Quarrying (mines etc.)	17	434	46	1	498	66
Manufacturing industry	2 360	15 841	2 412	376	20 989	32
Electricity, gas, heating and water supply	117	1 080	129	26	1 352	61
Construction and civil engineering work	1 256	4 610	643	223	6 732	32
Wholesale and retail trade, repairs	1 637	3 145	532	77	5 391	12
Hotels and restaurants	173	444	42	77	736	8
Transport and communication	409	3 087	450	64	4 010	16
Financial business	134	1 134	111	6	1 385	18
Real estate and busi- ness activities, rentals	272	1 355	201	44	1 872	4
Public administration, defence	1 377	12 882	815	101	15 175	70
Education	1 061	10 043	832	208	12 144	39
Health and social work	2 574	25 164	1 080	229	29 047	42
Other social and personal service activities	671	2 908	463	417	4 459	27
Total	12 177	82 501	7 827	1 882	104 387	28

unions. Apart from providing advice by phone, arranging training and suchlike, the regional safety representatives in 2003 visited about 65,000 small workplaces. This is a much larger number than is reached by the Work Environment Inspectorate or the occupational health services. Conflicts are relatively unusual. Many small business owners instead ask the regional safety representative for advice on work environment issues. The trade union organisations themselves fund about half of the work of the regional safety representatives, with the rest being paid for by government funding.

*Situation and training of the safety representatives*

A study carried out in 2000 of the training needs of the safety representatives described how their situation depends on the work environment management of employers. According to the study, this varies

[...] widely between industries. A strong tradition of work environment management and a large proportion of bigger companies are often associated with a well-functioning work environment organisation. Examples of such areas are the paper industry (Paper Workers' Union) and the communications area (Union for Service and Communications Employees). A large number of small companies and lack of internal control [now SWEM] often leads to poorer participation and knowledge on the part of safety representatives. Examples of industries of this type are the cultural industry (Musicians' Union), the retail sector (Commercial Employees' Union), hotels and restaurants, building work (Building Workers' Union, Electricians' Union and Sheet Metalworkers' Union) and agriculture (Agricultural Workers' Union). There is good reason to believe that the same situation also applies to the SACO and TCO unions in these fields.

The public sector (government, county councils and municipalities) is a special case in relation to the private sector. Here, the situation of the safety representatives is influenced to a great degree by the combination of financial cuts [...] and management problems (both political and executive management). Great changes are also taking place in the public sector through the development of systems of cooperation in which work environment management is being integrated into operational issues (Arbetsdagarkonsult 2000).

Safety representatives still do much of the work environment management that is supposed to be done by managers, despite the fact that SWEM seeks to activate the latter. At big workplaces, the senior safety representatives, working 50 per cent of their time or more, often have a central role in this work (Frick 1994). However, most representatives do their work in only a few hours a week.

The representatives have strong rights to push issues, but only temporary, emergency powers to order a stoppage of work. Their primary task is

to contribute to improvements by submitting well-founded proposals. For this to work, it is crucial that safety representatives have received training. This provides them with contacts as well as creating respect for their arguments and their assignment in general. Of the LO representatives, a quarter lack basic training. Over half also wish to learn more about psycho-social issues (LO 1997).

### *Changes in the basis of participation*

The role of employees in cooperation concerning their work environment is weakened by the looser organisational links of modern production. Increasing numbers of employees with insecure jobs have a poorer work environment and poorer occupational health than employees with permanent posts (Quinlan & Mayhew 2000). They are also in a weak position to remedy these risks when they have short-term, insecure relationships with managers. The mix of temporary and permanent employees at the workplace also makes it more difficult for them to come together and take joint action.

Changes in the organisation and management of production also risk undermining the dialogue between permanent employees and their managers, for example:

- when it is more difficult for safety representatives and other employees to find out who decides what about the work environment, both within their own organisation and through the influence of large purchasers and other external parties
- when health risks have ambiguous, organisational causes, which often have their origins much higher up in the management system
- when employees' greater responsibility for production makes it harder for representatives to find the time to carry out their assignment and to step back and examine the operations from a work environment perspective. They may also be less supported by other employees, who take a more individualistic view of their tasks and their careers.

Some changes, however, benefit the participation of safety representatives and other employees in the improvement of the work environment, for example:

- when better training and strengthened independence gives them a better overview and a stronger position from which to see and argue for alternative problem-solving at work
- when decentralised forms of production increase managers' need for a dialogue with employees
- when the employers improve SWEM, providing a basis for better dialogue and clearer roles for the parties involved.

## **Government regulation and supervision through the Swedish Work Environment Authority**

### *The organisation, resources and skills of the Authority*

Since 2001, control of employer compliance with AML and other issues have been handled by a single authority, the Swedish Work Environment Authority (SWEA). The Work Environment Inspectorate is one of its departments. This is a big reorganisation in formal terms. In the old Labour Inspectorate, each district was an independent authority, with the then National Board of Occupational Safety and Health as a separate overarching authority. The ambition is that the new organisation is to be better at coordinating activity and achieving more uniform action. The reorganisation can therefore be seen as one way – among others – of responding to the signals from government. Since the 1990s, these signals have emphasised that the Authority is to have a supervisory role, while advice to employers – as responsible subjects – is to be provided by the occupational health services, and also emphasise the attention to be paid to organisational work environment problems, improved uniformity of application, service, and more effort to get employers to introduce and maintain SWEM.

During the 1995– 2000 period, the then National Board of Occupational Safety and Health was cut back by 160 full-time staff equivalents, or about 20 per cent (Remaeus & Westerholm 2000), but in 2001–03 the SWEA was boosted by new funds of SEK 70 million. The letter of instruction for 2001 stated that the extra resources were to be:

used to employ more staff in the inspection operations and for methodology and skills improvement, primarily oriented towards organisational



issues related to stress due to mental strain, social factors, workload, monotonous physical work etc. It might also apply to work adaptation.

Thanks to the extra resources, the SWEA employed just over 800 people in November 2003, of whom 400 were inspectors.

To develop skills in the field of work organisation, a development programme was conducted in 2001–03 that was known as “Work organisation and negative stress” (ARNE). It consisted mainly of recruitment and the development of skills and methodology. Skills in the field of behavioural science were stressed when new inspectors were being recruited. Existing inspectors also received training in work organisation, and there was work to develop methods for inspecting these aspects.

### *Management of the operations*

In the early 1990s, the SWEA developed a number of “result indicators” for the inspections of the then Labour Inspectorate. These were developed to follow up how much time the inspectors spent in the field, and also to promote the focus of their inspections on companies and organisations having the poorest work environments. The use of quantitative measures to follow up inspections was not entirely uncontroversial, but it helped focus the work of the SWEA on a controlling role. As follow-up has developed, various types of quantitative measures have also become more accepted as parts of this follow-up.

From an efficiency viewpoint, it is important to reach consensus on what the work is to be targeted on. Since the early 1990s, the Authority has adopted multi-year programmes, primarily to coordinate the inspections. Based on an analysis of occupational injury statistics and various studies of the degree of severity of the problems and of numbers of afflicted, the activity plan for 2004–2006 prioritises inspection of the health and medical care, nursing and social services, schools, construction and civil engineering, transport and the wood products industry. Additionally, supervision of SWEM, ergonomics and organisational and social conditions are prioritised for all industries (Arbetsmiljöverket 2003c).

Within the current framework of resources, inspectors are now able to visit about 10 per cent of all workplaces annually. The new activity pro-

gramme therefore emphasises the importance of using the knowledge and commitment of other actors in the work environment field. These include the social partners, industry and business organisations, and occupational health services. Special industry programmes drawn up by the SWEA will be used to improve cooperation on their work environment issues, both within the Authority and with the social partners in these industries.

### *Simplified performance regulation*

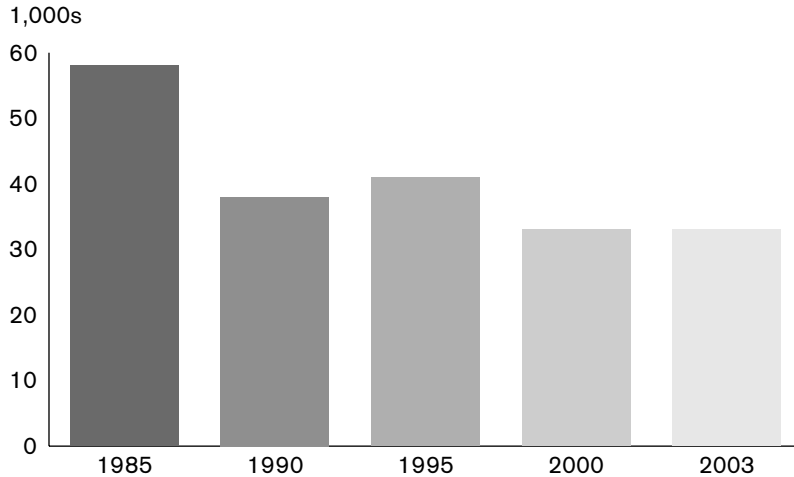
As described, Swedish work environment policy has long rested on tripartite cooperation. This means that when a problem has been identified and it has been judged that regulation is the best way of dealing with it, the social partners are invited to participate in a regulatory group. The group discusses the problem, the draft regulation, and the economic and health consequences of the proposal. The group's proposal is sent out for consideration to a large number of stakeholders. A consequence assessment is attached to the proposal and, since 1998, a special analysis of the consequences for small businesses.

From having consisted of technically-oriented detailed regulation, work environment policy has largely come to consist of performance-oriented regulation. The regulation states the goal and the level of requirements, but the employer decides on the method to reach the goal. Thereby the regulations will not hamper technological development.

The National Board of Occupational Safety and Health decided in 1996 to reduce the number of regulations (paragraphs) by 25 per cent to 2000 – while retaining the work environment standards. The efforts have been successful. The number of paragraphs and points in the regulations has fallen by almost half, and the regulations have been reviewed to be more easily understood. New, overarching regulations have replaced old detailed regulations. Regulations with similar areas of application have been combined. This has created a clearer regulatory structure (Eriksson & Lindberg 2002).

### *Inspection has shifted towards organisational issues*

A database register for monitoring measures and results of the inspection called the Coordinated Workplace Register for the National Board of

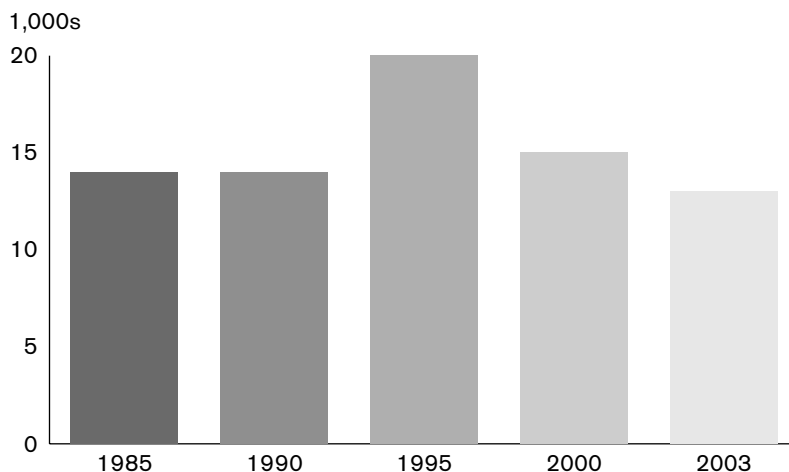


**Figure 17.1.** Number of workplace visits by Work Environment Inspectorate 1985–2003.  
(Source: SARA. 1985 and 1990 actually refer to the financial years 1985–86 and 1990–91.)

Occupational Safety and Health (SARA for short) has been in use for many years. The following is some data showing how inspections have changed. Just over 57,000 workplaces were visited in 1985. The number of visits subsequently varied between just over 30,000 to just over 40,000 per year. Between 1985 and 1990, the number of visits fell from 0.7 to 0.5 per inspector workday. After this, the number remained largely unchanged. The reduction in the total number of visits between 1995 and 2000 was caused by the significant cutbacks. While it is not clear in Figure 17.1, the extra resources meant that the number of workplace visits in fact increased between 2002 and 2003, from just over 26,000 to over 33,000 visits.

Inspection notices were issued at increasing numbers of visits in the 1990s (Figure 17.2). Throughout the 1990s and the first years of the 21st century, about half of all visits led to a notice. This is a sign of the greater priority given to the worst – and thereby more time-consuming – workplaces.

Figure 17.3 shows that the Inspectorate's requirements have also changed along with changed problems in the work environment. In 1984,

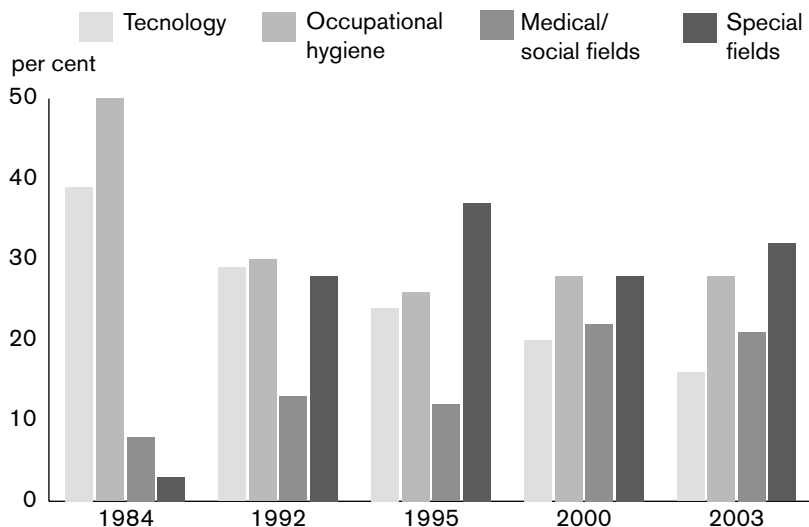


**Figure 17.2.** Number of inspection reports, 1985–2003. (Source: SARA. 1985 and 1990 actually refer to the financial years 1985–86 and 1990–91.)

almost 90 per cent of the requirements concerned technical or occupational hygiene problems. While as many such requirements were made in 2003, their proportion has halved, since the total number of measures required by the Inspectorate is greater than before. Just over 10 per cent of requirements concerned medical and social issues and special areas in 1984, while the corresponding proportion in 2003 was 55 per cent. Much of this increase is because IC/SWEM have been included in special areas since 1995.

The Inspectorate has thus both shifted towards a more controlling, supervisory role, with more requirements, and also towards more complex work environment problems. However, while issues of stress and mental strain have attracted more attention, many of the “classic” work environment problems still remain. In combination with the use of methods to improve the efficiency of inspections and with greater demands for uniformity and access, this means that each inspection takes more time.

The increase in resources from 2001 onwards means that the inspectors are now visiting more workplaces. If the time devoted to each visit should



**Figure 17.3.** Number of different types of demands in inspection reports, 1984–2003. (Source: SARA. The 1984 figures are based on special processing of then existing data. The 1992 and 1995 figures are processed budget-year data.)

continue to rise, however, the number of workplace visits could fall once again. In the work environment debate, it is sometimes asserted that the SWEA should put quality before quantity – meaning fewer but “better” inspections. This, however, is an over-simplification, since a reduction in workplace visits would in itself bring about a loss of quality, as the requirements of a good work environment would become less known and clear in working life. The SWEA therefore tries to develop methods and practices that promote a reasonable balance between the biggest possible number of workplace visits and the best possible “content” of the visits.

## **The development and future of the occupational health services**

### *The work in general*

Swedish occupational health services have long been regarded as a central actor in the work of improving the work environment and health in the workplace. A few important milestones in this development are:

1967: The Swedish Employers' Federation (SAF) and the Swedish LO adopt joint guidelines for occupational health services.

1976: Work environment agreement between the SAF the LO and the PTK (Negotiation Cartel for Salaried Employees in the Private Business Sector), with recommendations for collaboration in occupational health centres and agreements on guidelines for occupational health services.

1986: Regulations in the Work Environment Act on the employer's obligation to provide occupational health services where the work conditions provide a motive for it.

1991: Regulations in the Work Environment Act on internal controls – now SWEM.

1992: The SAF/LO/PTK work environment agreement is annulled by SAF.

1993: The general government grant to corporate health services (about 20–25 per cent of the annual budget) ends.

2000: The Work Environment Act (in Chapter 3 Section 2b) defines the concept of occupational health services as follows:

“An independent expert resource in the domains of the working environment and rehabilitation. Occupational health services shall in particular act for the prevention and elimination of health risks at workplaces, and shall have the competence to identify and describe links between the working environment, organisation, productivity and health.”

The resources that the country's occupational health services have at their disposal to fulfil the public health task assigned to them by the government can only be described in outline here. There are no statistics of where the occupational health services are, or how they are organised. Additionally, structural change is ongoing implying the formation of larger corporate occupational health service units through mergers and purchases. Greater competitiveness also pitches occupational health services against each other in the competition for good companies, meaning companies willing to pay. However, according to estimates made by the Swedish Association of Occupational Health Services (FSF) there were in January 2004 just over 660 occupational health units of varying sizes, with a total of 5,100–5,500 employees. Of these, about:

- 50 per cent are medical staff
- 20–25 per cent are behavioural scientists, work environment engineers, health counsellors etc.
- 20–25 per cent are administrative staff.

As to what the services do, the Swedish Agency for Administrative Development estimated in 2001 that occupational health services spend about the same amount of time and resources doing work that is the statutory or regulatory responsibility of the employer as they do on “other work”, including preventive health care, work-related medical treatment, medical examinations, training, technical services etc. (SOU 2001:49). The degree of coverage varies nowadays (May 2004, according to RSF estimates):

- from 90 per cent in municipalities
- 85 per cent in large private companies
- 80 per cent in county councils and government agencies and institutions
- 70–75 per cent in medium-sized companies
- to 25–30 per cent in small businesses (SMEs).

The abolition of the government funding subsidy and the termination of the occupational health agreement in the early 1990s changed the role of the occupational health services in the workplace *from* one that was oriented towards implementing regulations *to* a more market-oriented customer-focused approach. The main focus of occupational health services is at present moving *from* the individual *to* the organisation – even if still somewhat more in theory than in practice.

The occupational health services have also shifted focus *from* close collaboration with trade union organisations and local safety organisations *to* strengthening contacts with employer representatives and the company management.

Other factors have also changed during this period. The sickness absence rate has climbed dramatically in Sweden since 1997. This has led to renewed expectations that the occupational health services will act as a problem-solver. The report SOU 2002:5 submitted several proposals for how the work of the occupational health services could be strengthened, including a clarification of the employer’s responsibility for ensuring that occupa-

tional health services were available, obligatory certification of occupational health services, registration of occupational health services with the Swedish Work Environment Authority and more agreements on sharing of tasks with regard to primary health care between county councils and occupational health services.

No political decisions have yet been made concerning the proposals, however. Instead, a new occupational health services public inquiry was commissioned by the government in the autumn of 2003. Its brief included examining:

- obligatory occupational health services for employers
- quality in the work of the occupational health services
- how training of occupational health services personnel is to be organised.
- manpower supply for the occupational health services, with large numbers of retirements looming
- coordination with public health and medical care.

This public inquiry has been completed and its official report has been published in December 2004 as SOU 2004:113.

### *Ongoing quality development*

Since 1995–1996, the occupational health services have applied a SWEDAC-accredited voluntary quality assurance system. About 40 per cent of occupational health units are certified under this system, and a further 40 per cent are working to become certified. The manual for this system is currently under review. On the basis of similar documents used in Finland, Norway and the Netherlands, a number of measures are proposed including the adoption of a “Good Practice” document with guidelines for development of quality work (Arbetsmiljöverket & Arbetslivsinstitutet 2004). The FSF, the Swedish Work Environment Authority and the social partners have jointly, with many other important stakeholders, collaborated in developing this method, which is part of the government’s 11-point programme mentioned earlier. Initially the practical work is to be oriented towards:

- process methodology for occupational health services, including “customer dialogue”.



- competition-neutral methods, for example for:
  - a) medical examinations of night-shift workers
  - b) systematic work environment management
  - c) assessments of work capacity
  - d) health promotion
- the social commitment and accountability of the occupational health services
- instruments for the self-assessment of quality of occupational health services.

*Few studies of the interaction of occupational health services with its clients*

As an expert system for working life, the occupational health services can also be regarded as a central instrument for the feedback of information to workplaces, and perhaps also to society, about trends in developments with regard to health and the work environment. Bearing in mind this role and the historical size of occupational health services, it is remarkable that neither the occupational health services themselves, nor working life research, produces any more detailed information about the work of the occupational health services. Some reasons for the lack of development in this field of R&D:

- The occupational health services compete under market conditions. Customers are not very interested in producing generalizable scientific knowledge and the occupational health services themselves have no coherent structure for R&D work.
- The occupational health services do many different types of work, which are often included in measures taken at the company. This makes it difficult to distinguish and evaluate which specific interventions and measures are directly due to the actions of the occupational health services.

Westerholm and Bostedt (2004) used a questionnaire to 1,000 customer companies about how they experienced work environment problems, and their views about the ability of occupational health services to provide expert help. Not all customers requested the services provided by the occupational health services for the problems they themselves deemed to be most impor-

tant. The occupational health services are regarded as having a high degree of skills in primary medical care, medical examinations, ergonomics and rehabilitation, but less so in work organisation and issues pertaining to workplace stress. Companies and safety representatives felt, for example, that the quality of indoor air was a serious problem, but it was not something that they usually consulted the occupational health services about.

Antonsson and Schmidt (2003) studied, mainly through interviews, access to and use of the occupational health services by small businesses (SMES). They discussed, among other things, whether companies were members of occupational health services or not, the type of occupational health services purchased, and how the occupational health services designed programmes for small businesses in systematic work environment matters, rehabilitation, medical checks and other issues. The small businesses appeared to mainly ask for medically-oriented services so that personnel on sick leave could quickly return to work. Interest in issues related to sick leave has grown in recent years.

Johnsson and co-workers (2003) examined the management of sickness absence and designed a practical health-promoting programme for a large company. In their book, they describe an occupational health service approach to communicating an awareness of the strong links between health, efficiency and profitability. Targeted work based on this awareness is seen as necessary to develop a company that is “healthy” in the best sense of the word. There is also great emphasis on motivation and leadership at work. The book reports the financial benefits that the company involved appears to have accrued through a steady increase in numbers of long-term healthy staff (those who had taken no sick leave in two years) after the launching of an intervention programme.

### *Stakeholders and their expectations of the occupational health services*

Apart from employers and employees, there are a number of other stakeholders in the occupational and rehabilitation work of the occupational health services (as set out in the Work Environment Act) and in its health care function, which is unregulated but nonetheless remains a real aspect of the everyday work of the occupational health services. The following important areas of interest can be distinguished:

- Advice to *company management and employers* on issues of health and the work environment in a broad sense, and expert help in investigations and decisions about preventive work, particularly SWEM, and the same in rehabilitation
  - Advice to *employees as a collective*, on the same issues
- Consulting services on medical matters to *individual employees* or managers in their corporate organisations. The task includes helping employees, where necessary, to safeguard their legal rights to sickness benefit or rehabilitation.
- Advice and preparation of medical bases for decisions for the *Social Insurance Office* in individual cases.
  - Help to the company's own *occupational health service organisation* to survive financially in competition with others who are offering comparable services.
  - Support to the *managers of the occupational health services* in satisfying the needs of several customers and other stakeholders while keeping their own actions within the bounds of professionalism and professional ethics.
  - Information to the *government*, which through its organs has the task of ensuring that work conditions do not lead to ill health and exclusion from the labour market.

To survive in the marketplace, the occupational health services must be able to respond to a multitude of needs from a wide range of customers and clients. Apart from assisting the work of preventing and eliminating health risks, and of work adaptation and rehabilitation, many occupational health service units seem to do workplace health promotion. The range of services offered by the occupational health services is therefore broad and varied.

Several stakeholders have expectations of how occupational health services and their individual staff carry out these services. In the Work Environment Act, corporate health services are an “independent expert resource in the working environment and rehabilitation”. Previous studies, and the government, have expressed that the meaning of “independent” in this context is “impartial”, because both employee and employer representatives are to exercise influence over the purchase and orientation of the services provided by the occupational health services.

However, this gives the staff of the occupational health services little guidance as to how they are to work to achieve the independence set out in the law. In the brochure issued by the sector organisation FSF in 1996 – before the changes in the Work Environment Act – independence is cited as meaning that “the occupational health services [...] shall act in a professional manner towards principals and users.” However, professionalism is not the same thing as being impartial towards the various stakeholders. The seemingly eternal discussion of the question: “Who is the customer?” in the occupational health services is therefore far from over.

It should of course be noted that the occupational health services have no formal responsibility for the work environment, personnel management or rehabilitation at their customer companies. The occupational health services are to supply expert advice to customers and other stakeholders, who in their turn hold various types of responsibility. However, the occupational health services have a responsibility in their professional role as experts, not least through the relationship of trust that usually exists between the staff of the occupational health services and individual employees and customer companies, when they are assessing state of health and need for care.

*The government must determine the role of the occupational health services*

The most important issue that needs to be considered by the current Occupational Health Services Commission and the government is the status of the occupational health services. Is this a market-based, commercial activity supplying services to those who request them and wish to pay for them? Or are the occupational health services also an expert system acting in the spirit of public health? Experience indicates that the market only requests preventive and health-promoting services to a limited extent, and that where they are carried out, they are not documented so that they can be evaluated.

The government is therefore facing a moment of truth. What role are the occupational health services to play in the occupational health of society and companies – and, by extension, in the public health of the nation? Can the market-based position of the occupational health services contribute to,

or obstruct, the intentions defined in the law? A position on this issue will have important consequences for the functions of the occupational health services, collaboration with public organs, quality and skill issues, inspection, R&D and many associated issues of training and education.

### **Policy to promote the self-help capacity of work environment management**

The government must determine how work environment policy is to enable the occupational health services to contribute to preventive work environment management. The other work environment actors, however, also have divergent abilities to efficiently carry out long-term measures and achieve the intentions of the legislator. For employers, the looser production structures mean that their responsibility for their employees' work environment is becoming less clear, and that their practical ability to meet this responsibility – where they have it – is declining (Larsson 2000, Quinlan & Mayhew 2000). These developments, however, are not unambiguous. Some employers do succeed in integrating SWEM into their management, and through this are able to improve the work environment as part of the development of their own operations.

Positive developments like this are of course a central objective of work environment policy, but it is unclear how much the government and employees can actually manage to support them. The state has not yet attempted to transcend the 19th century concept of employer responsibility – on which the Work Environment Act is based – and extend the responsibility to those responsible for the increasing indirect influence that we today see being exerted on the work environment via procurement, contracts, management by objectives and similar changes that characterise modern working life.

The Swedish Work Environment Authority seeks to develop its organisation, methods and strategy of inspection, but the effects of this on the work environment are largely unknown for several reasons. They are difficult to evaluate in principle (Eriksson 2004). Additionally, the measures have not yet had time to carry an observable impact. However, gaps in knowledge are also due to a lack of research and evaluation. Unlike, for example, the case of labour market policy, the *actors and instruments* of work

environment policy are seldom studied, possibly because these domains have long been regarded as being matters to be settled in collective agreements by the social partners rather than by the government (Frick 2002).

This is why there is no detailed knowledge of the scope and conditions of employee participation, directly and via safety representatives. Participation based on knowledge and dialogue will, however, remain crucial in reducing the health risks of work. Employers and managers have “efficient production” as their main task. Their management of the work environment is therefore obstructed by conflicts about the costs of work environment improvements, and by lack of time and quality in how the businesses are organised and managed.

The extent to which the SWEA’s supervision of SWEM’s §4 – which requires that employees are allowed to participate in this work – can bolster employee participation, is also a question that remains to be studied. However, it is the trade union organisations who are to appoint and support the safety representatives under current legislation, and they have once again become active in work environment issues. The TCO now devotes considerable funding to regional safety representatives whose job is to support the union members in small businesses – something that the LO has been doing for a long time. The ability of the trade unions to compensate the undermining of the safety representatives’ position will depend on their ability to maintain union activity in the changing working life.

One difficult question is therefore how safety representatives are to be able to examine and offset shortcomings at higher levels of management systems. Studies of work environment activities as a “sidecar” showed, among other things, that it was often possible to obtain knowledge about risks, countermeasures and suitable methods in work environment activities. The great difficulty rather lay with how the management systems of businesses are to be persuaded to *integrate* this systematic management of the work environment into the management and development of the business.

In this, the big issue is how higher echelons of management – in their policy, division of tasks, resources, authority and knowledge transfer, and in their follow-up – are to provide the workplaces with optimum conditions for discovering and solving the work environment problems that face us in modern working life. Work environment policy and the actors in the field

need to shift focus, from helping avert concrete health risks to considering how *management systems* are to be able to work according to the principle of “help to self-help”.

## Note

1. Kaj Frick is the principal author of this chapter. Ove Eriksson's main contribution was the section about the Swedish Work Environment Authority, and Peter Westerholm's that about the occupational health services.

## References

- AFS 2001:1. *Systematic work environment management*. Regulations by the Swedish Work Environment Authority (www.av.se), Solna.
- Antonsson A-B, Nilsson M & Hansén O (1998) *Internkontroll i småföretagen – Verkligheten och visioner. (Internal control in small businesses – reality and visions.)* IVL Rapport b1291, Swedish Environmental Research Institute, Stockholm.
- Antonsson A-B & Schmidt L (2003) *Småföretag och företagshälsovård – ska berget komma till Muhammed eller Muhammed till berget? (Small businesses and occupational health services – should the mountain come to Mohammed or Mohammed to the mountain?)* IVL Rapport b1542, Swedish Environmental Research Institute, Stockholm.
- Arbetsarkiv (2003) (Swedish work environment magazine) ”Stickprov räckte för Det Norske Veritas arbetsmiljöcertifikat” (“Random test was enough for Det Norske Veritas work environment certificate”) no. 14, p. 5.
- Arbetsarkiv (2004a) ”Riksåklagaren öppnar för lagändring” (“The Prosecutor General opens the door for legislative change”) no. 2, p. 5.
- Arbetsarkiv (2004b) ”Öppettider på 7-Eleven utreds” (Opening hours at 7-Eleven to be investigated) no. 5, p. 13.
- Arbetsmiljöinspektionen (2003) *Inspektionsmeddelande (Inspection Notice) 7 April 2003: Besked om resultat av inspektion vid Stena Gottbard Återvinning AB. (Information on results of inspection of Stena Gottbard Återvinning AB.)* Work Environment Inspectorate in Gothenburg.
- Aronsson G & Gustafsson K (1999) ”Kritik eller tystnad – en studie av arbetsmarknads- och anställningsförhållandenas betydelse för arbetsmiljökritik” (“Criticism or silence – a study of the significance of labour market and employment conditions in work environment criticism”) *Arbetsmarknad & Arbetsliv*, 5:3, pp. 189–206.
- Arbetslagarkonsult (2000) *Bättre möjligheter till en bättre arbetsmiljö – om skyddsombudens informations- och kunskapsförsörjning: Behov, möjligheter, tillgång, utbud. (Opportunities for a better work environment – about the information and knowledge supply of the safety representatives: needs, opportunities, access, supply.)* Arbetslagarkonsult, Stockholm.

- Arbetsmiljöverket (2003a) *Undersökning av systematiskt arbetsmiljöarbete. (Study of systematic work environment management.)* Rapport 2003:2. (www.av.se). Inregia AB & Swedish Work Environment Authority, Solna.
- Arbetsmiljöverket (2003b) "Utveckling och användning av arbetsmiljöcertifiering – slutrapport 2003-03-31" (Development and use of work environment management certification – final report, 31 March 2003) Swedish Work Environment Authority, Solna.
- Arbetsmiljöverket (2003c) *Verksambetsprogram för 2004–2006 (Plan of Activity 2004–2006)*. Swedish Work Environment Authority, Solna.
- Arbetsmiljöverket (2003d) *Regler för inspektion (Rules for inspection)*. Tillsynsserien no. 4/2003, Swedish Work Environment Authority, Solna.
- Arbetsmiljöverket (2004) "Körning 2004-02-15 av Arbetsmiljöverkets skyddsombudsregister" ("The Swedish Work Environment Authority register of safety representatives 15 February 2004"), Swedish Work Environment Authority, Solna.
- Arbetsmiljöverket & Arbetslivsinstitutet (2004) *Kompetens – Kvalitet – Kundnytta: Metodutveckling inom företagshälsovården. (Skills-quality-customer benefit. Methodology development in occupational health services.)* Swedish Work Environment Authority, Solna, and National Institute for Working Life, Stockholm.
- Axelsson C (2002) *Formalisering som binder och möjlighet i små företag: en studie av arbetsmiljöarbete ur ett lärandeperspektiv. (Formalisation as obstacles and opportunities in small businesses: A study of work environment work from a learning perspective.)* Dept. of Human Work Sciences, Luleå University of Technology, Luleå.
- Eriksson O (2004) Evaluation of interventions in the government sector in Sweden – a need for change. *Policy and Practice in health safety*, Vol 2:1.
- Eriksson O & Lindberg K (2002) *Regler inom arbetsmiljöområdet om konsekvensutredningars kvalitet. Bakgrund, utveckling, nuläge och förslag till förbättringar. (Rules in the work environment field about the quality of consequence studies. Background, development, current position and proposed improvements.)* Rapport 2002:3, Swedish Work Environment Authority, Solna.
- Fredholm O, Holmqvist D & Rosberg A (1992) "Organisatorisk utredning vid Nobel Chemicals AB, 1992-02-20/21 med anledning av olyckshändelse i byggnad F 25 1992-02-10" ("Organisational inquiry at Nobel Chemicals AB, 20/21/2 1992, due to accident in building F25 on 20 February 1992"), Inspection report 92/235 & Judgment no. db 309, in case b 266/92. Labour Inspectorate in Örebro, Explosives and Flammables Inspectorate & Karlskoga District Court.
- Frick K (1994) *Från sidovagn till integrerat arbetsmiljöarbete – arbetsmiljöstyrning som ett ledningsproblem i svensk industri. (From sidecar to integrated work environment management – work environment control as a management problem in Swedish industry.)* Centre for Working Life, Stockholm.
- Frick K (1995) "Reconciling the divergent goals of high productivity and occupational health and safety – The Swedish Work Life Funds". *Working Paper*, National Institute for Working Life, Stockholm.



- Frick K (2002) "Sweden: Occupational Health and Safety Management Strategies 1970–2001" in Walters D (ed.) *Regulating Health and Safety Management in the European Union*. P.I.E. Peter Lang, Brussels.
- Frick K (2004) "Why isn't the work environment healthy? – High aims but lower practices in Swedish work environment reforms". Paper to the EUC–TUTB conference 30–31 January 2004 on *Joint OSH strategy for the enlarged Europe*. EUC–TUTB, Brussels.
- Frick K & Walters D (1998) "Worker representation on health and safety in small enterprises: Lessons from a Swedish approach". *International Labour Review*, Vol. 137:3.
- Giertz E (1999) *Kompetens för tillväxt – verksamhetsutveckling i praktiken*. (Skills for growth – business development in practice.) Celemiab International, Malmö.
- Hasle P, Nielsen K T, Jensen P L & Pedersen S (2003) *En analyse af virkemidler i arbejdsmiljøreguleringen*. (An analysis of tools in work environment regulation.) IPL-Technical University of Denmark, Copenhagen & IMTS-Roskilde University, Roskilde.
- Hopkins A (2000) *Lessons from Longford: The ESSO Gas Plant Explosion*. CCH Australia, Sydney.
- Johansson J, Lugn A & Rexed B (2003) *Långtidsfrisk – så skapas hälsa, effektivitet och lönsamhet*. (Long-term health: how to ensure health, efficiency and profitability.) Ekerlids förlag, Stockholm.
- Johnstone R (1999) "Paradigm Crossed? The Statutory Occupational Health and Safety Obligations of the Business Undertaking". *Australian Journal of Labour Law*, vol 12:2, pp. 73–112.
- Larsson T (2000) "The Diffusion of Employer Responsibility". In Frick K, Jensen P L, Quinlan M & Wilthagen T (eds.) *Systematic Occupational Health and Safety Management – Perspectives on an International Development*. Elsevier, Oxford.
- Larsson T (2004) "Förutsättningarna för kommunernas arbetsmiljöarbete på 2000-talet" ("Prerequisites for work environment management in the municipal sector in the 21st century"). In Johansson B, Frick K & Johansson J (eds.) *Framtidens arbetsmiljö- och tillsynsarbete*. (Work environment work and labour inspection in the future.) Studentlitteratur, Lund.
- LO (1997) *Hur fungerar arbetsmiljöarbetet? – En enkätundersökning bland LO:s skyddsombud*. (How is work environment work going? A questionnaire among the LO safety representatives.) LO, Stockholm.
- Lundberg L (1982) *Från lag till arbetsmiljö*. (From law to work environment.) Liber, Malmö.
- Lundh C & Gunnarsson C (1987) *Arbetsmiljö, arbetarskydd och utvärderingsforskning – ett historiskt perspektiv*. (Work environment, worker protection and evaluation research – a historical perspective.) Reports published by Economic-Historical society, Lund University, Lund.

- Quinlan M & Mayhew C (2000) "Precarious Employment, Work Re-Organisation and the Fracturing of OHS Management". In Frick K, Jensen P L, Quinlan M & Wilthagen T (eds.) *Systematic Occupational Health and Safety Management – perspectives on an International Development*. Elsevier, Oxford.
- Regeringskansliet (2004) "Arbete & Hälsa: Ett magasin om hälsan i arbetslivet" ("Work and health – a magazine about health in the workplace") Government Office. ([www.naring.regeringen.se](http://www.naring.regeringen.se) 26 February 2004).
- Remaues B & Westerholm P (2000) "Official Supervision and the Occupational Health Service". In Marklund S (ed.) *Worklife and Health in Sweden 2000*. National Board of Occupational Safety and Health, Solna, and National Institute for Working Life, Stockholm.
- Rothstein B & Bergström J (1999) *Korporatismens fall och den svenska modellens kris. (The fall of corporatism and the crisis of the Swedish model.)* SNS Stockholm.
- SCB (Statistics Sweden) (2004) "Computer run of the SCB Business Register" 11 February 04 ([www.scb.se](http://www.scb.se)). Combined with: SCB Statistical report AM 63 SM 0304. "Short-term employment statistics 3rd quarter 2003" Table 1.
- SKTF (2002) *1 000 chefer kan inte ha fel – om utvecklingssamtal, antal medarbetare och andra förutsättningar för gott ledarskap. (1,000 managers can't be wrong – about peer review, numbers of employees and other prerequisites for good leadership.)* Svenska kommunaltjänstemannaförbundet (Swedish Union of Local Government Officers), Stockholm.
- SOU 1990:49 *Arbete och hälsa – betänkande av Arbetsmiljökommissionen. (Work and health – report from the Work Environment Commission.)* Ministry of Labour, Stockholm.
- SOU 2001:49 *Utnyttja företagshälsovården bättre. (Make better use of occupational health services.)* Swedish Agency for Administrative Development, Stockholm.
- SOU 2002:5 *Handlingsplan för ökad hälsa i arbetslivet. (Action plan for better health in the workplace). Part I final report.* Ministry of Social Affairs, Stockholm.
- SOU 2004: 113 *Utveckling av god företagshälsovård – ny lagstiftning och andra åtgärder. (The development of good occupational health services – new legislation and other measures.)* Ministry of Industry, Stockholm.
- Sund B & Åmark K (1990) *Makt och arbetsskador under 1900-talet. (Power and occupational injury in the 20th century.)* Carlssons, Stockholm.
- Walters D (2001) *Health and Safety in Small Enterprises*. P.I.E. Peter Lang, Brussels.
- Walters D & Frick K (2000) "Worker Participation and the Management of Occupational Health and Safety: Reinforcing or Conflicting Strategies? In Frick K, Jensen P L, Quinlan M & Wilthagen T (eds.) *Systematic Occupational Health and Safety Management – Perspectives on an International Development*. Elsevier, Oxford.
- Verkstadsföreningen (1978) *Se om miljön – en modell för att mäta, bedöma och redovisa arbetsmiljön. (Take care of the environment – a model for measuring, assessing and reporting the work environment.)* Sveriges Verkstadsförening (The Association of Swedish Engineering Industries) & Svenska Metallindustriarbetareförbundet (Swedish Metal Workers Union), Stockholm.

- Westerholm P & Bostedt G (2004) "Företagshälsovård i förändring" ("Occupational Health Services in Transition"). In Johansson B, Frick K & Johansson J (eds.) *Framtidens arbetsmiljö- och tillsynsarbete. (Work environment work and labour inspection in the future.)* Studentlitteratur, Lund.
- Wheeler D & Elkington J (2004) "The recent history of environmental and social reporting" ([www.sustainability.com/program/engaging/history-reporting.asp](http://www.sustainability.com/program/engaging/history-reporting.asp))
- Wikman A (2004) "Arbetsliv och sjukfrånvaro ("Working life and sickness absence"). In Hogstedt C, Bjurvald M, Marklund S, Palmer E & Theorell T (eds.) *Den höga sjukfrånvaron – sanning och konsekvens. (High sickness absence – truth and consequence.)* National Institute for Public Health, Stockholm.

# The Authors

**Gunnar Aronsson** is Associate Professor of Psychology at Stockholm University and has been Professor of Psychology at the National Institute for Working Life since 1990. His research area is work organisation, stress and health. In recent years his research has chiefly focused on changes in working life, such as the disappearance of boundaries in organisations, the reappearance of traditional forms of employment, and the interplay between the conditions of the labour market and work organisation. Gunnar Aronsson is now involved in organising a research programme named “Strategies for a healthier working life”. The objective of the programme is to examine working conditions and individual strategies that promote health, and to identify the characteristics of organisations in which most employees enjoy good health.

**Kerstin Ekberg** is Professor of Rehabilitation in Working Life at the Faculty of Health Sciences at Linköping University and is the Director of the Centre for Public Health Science run by Östergötland’s County Council. In recent years Kerstin Ekberg’s research has included epidemiological studies of the relationship between the organisation of working life and ill health, intervention studies promoting health and stimulating working capacity, and studies of the influence of the social system and workplace on the efficiency of rehabilitation measures in working life.

**Ove Eriksson** is a Bachelor of Social Science in History, Politics and Education at Uppsala University. He has worked for more than twenty years at the central administration office for further education in various capacities. His work for the Swedish Work Environment Authority is concerned with evaluation issues. His article “Evaluation of intervention in

the government sector in Sweden: A need for change” was published in *Policy and Practice in Health and Safety* in 2004.

**Kaj Frick** is a visiting professor at Luleå University of Technology and a researcher at the National Institute for Working Life. His research deals with regulation of the work environment, employee participation, management of the work environment in small enterprises, national policies regarding the work environment, regional safety supervisors and the economic debate regarding the work environment. He has organised international research seminars, and has initiated and edited comparative studies of these issues. At present he is involved in evaluating the introduction of a new regulation strategy in Sweden called Systematic Work Environment Strategy (SAM).

**Rolf Å Gustafsson** is Professor of Medical Sociology and a researcher at the National Institute for Working Life. His research includes studies of the privatisation of health and welfare services, focusing on how this is related to overall changes in the welfare state and how it affects staff participation, job satisfaction and trust in the public sector and its employers.

**Lennart Hallsten** is an Associate Professor of Psychology and is a researcher at the National Institute for Working Life. Since the beginning of the 1990s, he has studied the effects of structural change on the health and welfare of employees in the public sector. He has also spent many years studying the theoretical and practical aspects of burnout.

**Mikael Hjerm** is an Associate Professor of Sociology and works at the Sociology Department of Umeå University and at the National Institute for Working Life. His research focuses primarily on attitudes to issues such as nationalism and multiculturalism, and exclusion and racism from an international comparative perspective.

**Annika Hultin** is a behavioural scientist and is Head of Department at the Organisational and Medical Unit of the Swedish Work Environment Authority. She has worked for many years with the organisational and psychological aspects of supervisory control. In 1994, Annika Hultin evalu-

ated the investigation undertaken by what was then the Swedish Board of Occupational Health and Safety into threats and violence in the retail trade sector. She was also in charge of the investigation undertaken by the Swedish Work Environment Authority in 1999 into threats and violence in the work environment in schools and the care sector.

**Bengt Järholm** is Professor of Occupational and Environmental Medicine at Umeå University and also Senior Physician at the Department of Occupational and Environmental Medicine at the Norrland University Hospital in Umeå. His research area is the risks involved in the use of chemical and physical agents, focusing principally on epidemiological and clinical methodology. He is a member of the Swedish Council for Working Life and Social Research.

**Ulrik Lidwall** is an economist and is employed by the National Social Insurance Office Evaluation Department. He is also a doctoral student at the Department of Sociology, Stockholm University. His research has mainly focused on sick leave, long-term sickness absence, disability pensioning and rehabilitation. He has focused in particular on the relationship between unemployment and sickness absence at both the individual and the societal level, combined risk factors for unemployed people on sick leave, and the effects of the psychosocial work environment and other explanatory factors behind sickness absence due to psychological ill health.

**Ingvar Lundberg** is a physician specialising in occupational and environmental medicine and is Professor of Occupational Epidemiology at the National Institute for Working Life. His research has focused on mental ill health, both as a consequence and as a cause of differing conditions in working life and in the labour market. He is also investigating the reasons behind social inequality in health, partly in terms of working conditions and partly as a consequence of the conditions in earlier phases of the individual's life.

**Staffan Marklund** is Professor of Occupational Health Science at the National Institute for Working Life. His research focuses principally on

social insurance issues, sickness absence, disability pensions and occupational rehabilitation. He is responsible for the research programme “Organisational change and work-related ill health”, in which a number of projects aim to investigate how organisational conditions and organisational change are related to health and sickness absence. Staffan Marklund is also the editor of the scientific article series “Arbete och Hälsa” (“Work and Health”) published by the National Institute for Working Life.

**Bo Melin** is Professor of Occupational Psychology at the National Institute for Working Life. He is Associate Professor of Psychology at the Department of Biological Psychology at the Institute of Psychology, Stockholm University. Bo Melin’s research has a psycho-biological frame of reference, and includes experimental studies and field studies dealing with stress mechanisms in relation to health, ill health and recovery.

**Ewa Menckel** is a researcher at the National Institute for Working Life and Visiting Professor of Public Health Science at Halmstad University. She is a registered psychologist, specialising in Occupational Psychology. Her doctoral thesis from Karolinska Institutet (1990) deals with the preventive health care given by the Swedish occupational health service. Her research has principally focused on accidents, injuries and risk situations in the work environment, and the development of methods for intervention and evaluation. In the 1990s she was responsible for research and development projects on health and safety, and on threats and violence in working life and in schools. She has also been responsible for the Swedish part of the “European Network for Workplace Health Promotion”.

**Eva Månsson** is a company physician and has worked with rehabilitation issues in local authorities for more than ten years. This has given her the opportunity to closely study the problems and the work-related ill health that those employed by local authorities have suffered from in recent years. Since 2000 she has worked as a research assistant at the National Institute for Working Life, where she has studied the health and workload of teachers. At present her research is focused on health-promoting factors in schools.

**Anders Persson** is a sociologist and researcher at the National Institute for Working Life, Associate Professor at Lund University and Visiting Professor of Education at Malmö University. He has published a number of books, including *Skola och Makt* (*School and Power*, second edition 2003), *Social kompetens* (*Social Competence*, second edition 2003), and is the editor of the anthology *Skolkulturer* (*School Cultures*, 2003). At present he is responsible for the research project "Paid and unpaid teaching in the Swedish 9-year compulsory school".

**Peter Skogman Thoursie** has a PhD in Economics and is employed by the Trades Unions' Institute for Economic Research and the Department of Economics, Stockholm University. His research focuses on the behaviour of individuals in the social insurance systems, and the reasons for differences in wages and job opportunities between different groups in the labour market.

**Elisabeth Sundin** is a professor at the National Institute for Working Life and at the Department of Business Studies, Linköping University. In recent years her research has mainly focused on changes in working life and the business sector, and the inter-organisational and intra-organisational forms this can give rise to, for instance in the relations between and within large and small organisations, and between and within the private and public sectors. Her work includes a gender perspective as well as other aspects of relations involving power.

**Carin Sundström-Frisk** is a registered psychologist specialising in Occupational Psychology. She works at the Department for Work and Health at the National Institute for Working Life, where she does research and lectures on the mechanisms behind the occurrence of accidents and accident prevention, with special focus on mistaken actions and risk behaviour. Her research has led to the development of methods that can be employed by companies to prevent accidents in the workplace.

**Allan Toomingas** has a PhD in Medicine and a BA in Behavioural Science and works at the National Institute for Working Life. His principal fields of research are health and working conditions among computer workers. He



has paid particular attention to the the musculoskeletal system. He is also involved in training staff in the occupational health service sector.

**Kerstin Waldenström** is a behavioural scientist and is employed by Stockholm County Council at the Department of Occupational and Environmental Medicine. She is a doctoral student in Occupational Medicine at the Department of Public Health Science, Karolinska Institutet. Her research focuses on external assessments of psychosocial working conditions.

**Jan Weiner** is a statistician at the Department of Statistics at the National Institute for Working Life, which is responsible for the official work environment and work injury statistics in Sweden.

**Peter Westerholm** is a physician and Professor Emeritus of Occupational Epidemiology at the National Institute for Working Life. From 1980 to 1989 he was medical advisor to the Swedish TUC (LO). His fields of research are work-related epidemiological issues associated with cancer, cardiovascular disorders, reproductive disorders, and health and care sector research. Some of his research has been commissioned by ILO and ICOH, an international organisation for R&D in Occupational Medicine.

**Ewa Wigaeus Tornqvist** is Professor of Ergonomics at the National Institute for Working Life. She has mainly studied physical strain and work-related disorders and the epidemiology of the musculoskeletal system. In recent years her research has mainly focused on epidemiological studies of work-related disorders and problems of the neck and upper extremities amongst those who work intensively with computers. Ewa Wigaeus Tornqvist is the Director of the Department of Work and Health at the National Institute for Working Life.

**Anders Wikman** has a PhD in Sociology and is responsible for the development of systems for statistics and registers in the field of working life at the National Institute for Working Life. He has worked at Statistics Sweden (SCB), where he was responsible for the development of various statistics systems for monitoring working life and health. His research has included

survey methods, and the content and analysis of various measurement results. Anders Wikman has also studied mechanisms of exclusion and the changing prerequisites for people to be able to participate in working life.